City of Ventura

Parklands Specific Plan

Final

Environmental Impact Report

SCH # 2008031082

Volume II: Appendices

June 2009

City of Ventura
Parklands Specific Plan

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Final
Environmental Impact Report

SCH# 2008031082

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June 2009

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City of Ventura
Parklands Specific Plan

Environmental Impact Report

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Appendix A

Initial Study, Notice of Preparation,
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CITY OF SAN BUENAVENTURA
INITIAL STUDY

A. Case No.:

EIR 2459
General Plan Amendment A0-227
Annexation A-327
Zone Change Z-916
Specific Plan SP-6
Subdivision S-5632
Design Review, Case No.ARB-2985
Development Agreement DA-38

B. Lead Agency Name/Address:

City of San Buenaventura (Ventura)
501 Poli Street
PO Box 99
Ventura, CA 93002

Staff Planner/Telephone Number: Iain Holt/(805) 654-7752

Project Applicant Name/Address:

Westwood Communities Corporation
1263 Westwood Boulevard, Suite 210
Los Angeles, California 90024

C. Recommendation:

Based on the information contained in this Initial Study, attachments, and the findings set forth in Section III.P, staff has concluded that specific plan implementation would not have a significant effect on the environment and a preliminary Mitigated Negative Declaration is recommended.

D. Project Description:

This Initial Study analyzes the impacts associated with the development of a 66.7-acre eight-parcel area in the Wells Community under the proposed Parklands Specific Plan (City of San Buenaventura Specific Plan). The applicant's proposal would involve annexation of three parcels currently under agricultural production from the County to the City. The proposal involves a General Plan Amendment changing Figure 4.3 Roadway Classification Plan of the 2005 General Plan for Telegraph Road between Saticoy Avenue to Wells Road and Wells Road between Telegraph Road and Carlos Street from secondary arterial with four travel lanes to collector with two travel lanes. A zone change from AE-40 (County Agricultural Exclusive- 40 acres) to T-4 Corridor, T3.1 Neighborhood Edge and to T-3.2 Neighborhood General (SP-6). The remaining five parcels are currently located in the city limits. The 66.7-acre specific plan area is located at the southwest corner of the intersection of Telegraph Road and Wells Road in the Wells Community of the City of Ventura. The specific plan area is bounded by Telegraph Road on the north, Wells Road

on the east, Blackburn Road and State Route 126 (SR 126) on the south, and single family homes and a mobile home park on the west (see Appendix A, Figures 1 and 2).

Development under the Parklands Specific Plan would generally include predominantly residential uses, with supporting infrastructure, green-space, community recreational space, and a small amount of service commercial development (Table 1 summarizes the development accommodated under the Specific Plan). The Specific Plan contains a regulating land use plan, as shown on Figure 3 in Appendix A. The Land Use Plan includes four different zoning classifications: Corridor, Neighborhood General Neighborhood Edge and Open Space.

Table 1
Proposed Development

Quantity	Type of Use
173 units	Courtyard Condominium Housing or Live-Work option [a]
110 units	Triplex and Quadplex Condominium Residential
216 units	Single Family Homes
499 residential units total	
6,560 s.f.	Civic Space, Community Center
25,000 s.f.	Commercial/Retail Space
11.62 acres approximately	Green-Space, Open Space and Parks [b]

s.f. = square feet

Note: [a] Within theT-4.6 Corridor Zone, multi-family developments could include a ground floor commercial component. However, if a ground floor commercial component is included, it would replace residential units (i.e., the addition of commercial space would result in an overall reduction in residential units). In no case would overall development within the T-4.6 Corridor zone exceed the equivalent of 173 multi-family condominium residences.

[b] There are approximately 5.84 acres of active recreation, 1.82 acres of passive recreation, and 3.96 acres of sensitive habitat preserve (active and passive recreation designation pursuant to the Draft Specific Plan dated 8/30/2007).

Source: Parklands Specific Plan, Moule & Polyzoides,August 2007.

T-4.6 Corridor (COR) The Corridor (COR) would accommodate up 173 attached courtyard multi-family dwelling units with the option for live-work space. This area would potentially accommodate an estimated 25,000 square feet of commercial space; however, if developed, the commercial space would replace residential units (i.e., the overall amount of development would not exceed the equivalent of 150 multi-family residences). The COR zone is intended to be occupied primarily by live-work and mixed use buildings that may accommodate retail, office, or residential uses on ground floors with offices and residences on the second and third floors. T-3.2 Neighborhood General (NG). The intensities within the NG

zone are lower with single-family attached and detached houses fronting streets, parks and other public places. The NG zone is applied to areas intended for a variety and mix of houses, duplexes, triplexes, and bungalow courts on a variety of lot sizes.

T-3.1 Neighborhood Edge (NE). The Neighborhood Edge intensities are lower with single-family attached and detached houses fronting streets, parks and other public spaces. Large lot executive homes are at the Edge abutting existing detached housing on the West boundary. The NE zone is applied to areas intended for a mix of house and lot sizes, characterized primarily by detached single-family homes on larger lots.

The following components are specifically proposed and are generally illustrated on Figure 4.

A variety of architectural types mark each neighborhood area and are governed by a Form Based Development Code contained within and applied to all development that would occur under the Parklands Specific Plan. The requirements of this Development Code apply to all proposed development, subdivisions, and land uses within the specific plan area. No Building Permit or Grading Permit shall be issued by the City and no subdivision shall be approved, unless the proposed construction complies with all applicable requirements of the Development Code.

Open Space and Brown Barranca. Approximately 1,660 linear feet of Brown Barranca traverses the plan area from the northern boundary at Telegraph Road to the southeastern boundary at SR 126 and Wells Road. The applicant proposes to preserve 860 linear feet of Brown Barranca, while modifying the remaining portions (725 linear feet) up and down stream of the preserved portion. The preserved area would be excluded from public access through fencing and barrier plantings and would encompass existing unaltered riparian habitat as well as restored riparian habitat where invasive species currently occur.

The modifications to Brown Barranca include extending the existing arched concrete apron by 75 feet at the barranca's entrance to the plan area to prevent scouring downstream, culverting 725 linear feet of barranca in a triple box culvert downstream of the preserve, and converting the existing double box culvert tie in located at the downstream end of the plan area to a triple box culvert. Upon completion of the undergrounding activities, a manmade revegetated streambed would be reconstructed above the culvert would then empty into the existing concrete trapezoidal channel located culverts.

A pedestrian bridge would also be constructed across Brown Barranca to connect the commercial center in the northeastern corner of the plan area to the residential areas southwest of the barranca. The improvements to Brown Barranca were based on the improvements recommended in a Ventura County Watershed Protection District Study entitled "Brown Barranca Pre-Design Report" that was prepared by HDR Engineering and finalized in August 2005. This project utilized the design concepts in that report, adding additional culvert cells

and replacing the intermediate open channels to facilitate extension of Carlos Street westward into the project area between Blackburn Road and Telegraph Road along Wells Road.

Greenspace to be provided under the Specific Plan includes approximately 5.84 acres of active recreational parks, including a linear park/bikepath along Brown Barranca, 1.82 acres of passive recreational parks, and 3.96 acres of sensitive habitat reserves.

Circulation. Ingress and egress to the proposed development would utilize existing City streets, but will involve development of numerous internal streets including an extension of Carlos Street, which currently terminates along the eastern boundary of Wells Road. The internal street network would ultimately extend west of the plan area past Linden Drive to Saticoy Avenue. In addition, the applicant proposes to extend Nevada Avenue, which currently terminates at the northern boundary of Telegraph Road. The Nevada Avenue extension would continue southerly of Telegraph Road through the plan area (The proposed internal street network system is shown on Figure 5 in Appendix A). In addition, the project includes a network of sidewalks and bike paths.

The project goal is to create a traditional neighborhood embodying the principles of New Urbanism, emphasizing the public realm, pedestrian-friendly streets and blocks, a diversity of uses and a diversity of building types to generate a distinct sense of neighborhood identity. Project development would occur in phases, with the earthwork and infrastructure commencing as the first phase tentatively scheduled for summer 2007. The second phase would involve development of models for each of the six different product types. Subsequent phases would involve construction of 30-40 homes, with a three-month overlap of these phases. However, the building construction phase is market driven, which may cause construction to proceed faster or slower depending on market conditions.

The applicant has submitted a Draft Specific Plan, Tentative Tract Map, Traffic and Circulation Study, Noise Impact Study, Biology Impact Study, Phase I Environmental Site Assessment, Phase II Environmental Site Investigation, Cultural Resource Investigation, Geotechnical Investigation, Infrastructure Evaluation, Sewer Study, Stormwater Treatment Report, Water Supply Assessment Study and Detention Design Report for the project, which have been used for this environmental review.

E. Project Scope:

1. Location:

The 66.7-acre plan area is located southwest of the intersection of Telephone Road and Wells Road. The plan area is bounded by Telephone Road on the north, Wells Road on the east, and by Blackburn Road followed by SR 126 on the south. The western boundary is flanked by single family homes and a

mobile home park.

2. Assessor's Parcel Number:

The property is comprised of 8 assessor's parcels, including

089-0-012-004	0.41 acres
089-0-012-008	0.13 acres
089-0-012-014	21.11 acres
089-0-012-016	6.83 acres
089-0-012-018	26.42 acres
089-0-012-019	2.45 acres
089-0-012-020	5.20 acres
089-0-012-021	3.10 acres
Total	65.65 acres

There is a minor discrepancy between the acreage indicated in the Assessor's Parcel maps and that indicated on the plans. The discrepancy results from differences in survey methodology, with the plan acreage assessed at 1.05 acres greater than that recorded on the Assessor's maps.

3. Land Use Characteristics and Adjacent Land Use:

The plan area is currently utilized for agricultural row crop production. A supporting caretaker mobile home is located adjacent Telegraph Road near the center of the plan area. Adjacent uses are described below.

a. North – Residential assisted living retirement community and single family residential.
b. East – Commercial retail, educational, medical office and a detention basin.
c. South – Blackburn Road and SR 126, with a single family residence located adjacent the northern boundary of Blackburn Road.
d. West – Single family residential, and a mobile home park.

4. General Plan Land Use Designation:

Neighborhood Low (0-8 du/acre)

5. Current Zoning:

APNs 089-0-012-200, 089-0-012-190, 089-0-012-210, 089-0-012-045, and 089-0-012-080 are within the City limits and zoned R-1-7 (Single Family Residential). The remaining APNs are currently within unincorporated Ventura County and have a County zoning classification of AE-40 (Agricultural Exclusive -40 Acre Minimum).

6. Discretionary Permits Required:

Tentative Tract Map S-5632
Design Review, Case No.ARB-2985
Planned Development Permit, Case No. PD-861
Annexation, Case No.A-327
Specific Plan Approval, Case No.SP-6
Zone Change from County and City designated AE-40/R-1 to SP-6, Z-916
General Plan Amendment AO-227

7. Approvals required by other public agencies:

Department of Fish and Game Streambed Alteration Agreement
U.S. Army Corps of Engineers 404 permit
Regional Water Quality Control Board 401 Water Quality Certification
Ventura County Watershed Protection District approval of modifications to Brown Barranca
Ventura County Local Agency Formation Commission LAFCO approval of annexation to the City of Ventura

F. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors highlighted in **bold** below would be potentially affected by this project. If the impact requires mitigation or warrants further investigation pursuant to public or agency comments, it is further explored and addressed in the EIR.

Aesthetics	Energy/Mineral Resources	Population/Housing
Agriculture Resources	**Geology/Soils**	Public Services/Recreation
Air Quality	**Hazards/Hazardous Material**	Utilities/Service Systems
Biological Resources	**Land Use/City-Regional Plan**	**Transportation/Traffic**
Cultural Resources	**Noise**	Water Quality

G. EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factor as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

1) All answers must take account of the whole action involved, including offsite as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

2) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than

significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

3) Negative Declaration: "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

4) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion within this Initial Study identifies the following:

   a) The earlier analysis used and where it is available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

5) The explanation of each issue should identify: a) The significance criteria or threshold, if any, used to evaluate each question; and b) the mitigation measure identified, if any, to reduce the impact to less than significance

This Initial Study has been prepared in accordance with the CEQA Guidelines and relevant provisions of the California Environmental Act (CEQA) of 1970, as amended. Section 15063(c) of the CEQA Guidelines defines an Initial Study as the proper preliminary method of analyzing the potential environmental consequences of a project. Among the purposes of an Initial Study are:

1) To provide the Lead Agency (the City of San Buenaventura) with the necessary information to decide whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration;

2) To enable the Lead Agency to modify a project, mitigating adverse impacts, thus avoiding the need to prepare an EIR (if possible); and

3) Assist in the preparation of an EIR, if one is required.

II. CONCLUSION AND ACTION:

On the basis of the information contained in this Initial Study/Environmental Assessment, the Planning Commission finds that:

____ The proposed project is EXEMPT from further CEQA review under Section 15061 of the state CEQA Guidelines.

____ The project, as proposed, WOULD NOT have a significant effect on the environment, and a PROPOSED NEGATIVE DECLARATION will be prepared and forwarded to the Planning Commission for approval of a FINAL NEGATIVE DECLARATION.

__X__ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached mitigation measures and monitoring program have been added to the project. A PROPOSED MITIGATED NEGATIVE DECLARATION will be prepared and forwarded to the City Council for approval of a FINAL MITIGATED NEGATIVE DECLARATION.

____ The proposed project MAY have a significant effect on the environment and an EXPANDED INITIAL STUDY will be prepared to address:

____ The proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT should be prepared.

____ The proposed project is a SUBSEQUENT USE of a previously prepared EIR and any environmental impacts have been addressed in EIR-_____.

____ On the basis of the information contained in the Initial Study, and on the record as a whole, a finding has been made that there is no evidence that there will be an adverse effect on fish or wildlife habitats or resources pursuant to Municipal Code Section 2R.450.530.

III. ENVIRONMENTAL IMPACT EVALUATION:

A. Aesthetics:

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. Affect a scenic route or approach or vista open to public view?	_____	___X___	_____	_____
2. Create new light or glare or block access to sunlight?	_____	_____	___X___	_____
3. Result in an aesthetically offensive site or condition open to public view?	_____	_____	_____	___X___

Impact Discussion:

1. The proposed project has the potential to alter public views from SR 126, Wells Road and Telegraph Road, some of which are visually sensitive corridors pursuant to the 2005 General Plan. This is a potentially significant impact that will be further explored and discussed in the EIR.

2. Development of the plan area would introduce street lighting and possibly parking lot and outdoor building lighting associated with the community facility and the commercial retail components. While this would introduce lighting onto parcels not currently illuminated, this lighting would be of a character normally associated with urban development, and would be regulated for different applications through lighting standards contained in the form based development code. Thus, the introduction of these sources of lighting should not adversely affect any sensitive uses in the vicinity. In addition, street lighting currently exists in the neighborhoods to the north, east, and west. Any development within the plan area would be required to conform to the development code, which provides for enhancement of exposure to light and air and includes setbacks, lot coverage, and parking lot lighting standards to ensure that new structures would not affect adjacent uses. As such, the project's impact with regard to light generation and sunlight obstruction would be less than significant.

3. The proposed specific plan would facilitate the development of up to 499 residences and a community center. The specific plan would accommodate infill development in an area that is surrounded by urban development on all four sides. The neighborhood is designed to be aesthetically interesting, offering small scale pedestrian friendly streets, bikeways, park spaces, and a variety of architectural styles and housing sizes. The plan area currently contains a number of potentially offensive visual components, such as an abandoned dilapidated semi truck trailer, rusting farm equipment enveloped by weeds, storage areas with discarded containers, garbage, etc. Development under the specific plan would alter the visual character of the existing environment, but proposed development would not create any visually offensive condition. All development accommodated under the specific plan would be reviewed by the City's Design Review Committee to further ensure that the development would be compatible with surrounding neighborhoods and consistent with the City's design guidelines. Given the above, the specific plan would have no impact with respect to the creation of an offensive aesthetic condition.

B. Agricultural Resources:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project:				
1. Convert prime, unique or Statewide	_____	_____	X	_____

importance farmland, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resource Agency, to non-agricultural use?				
2. Conflict with an existing agriculturally zoned property or Williamson Act contract?	_____	_____	_____	X
3. Involve other changes to the existing Environment which, due to their location or nature, could result in a conversion of Farmland to non-agricultural use.	_____	_____	X	_____

Impact Discussion:

1. Implementation of the proposed specific plan would convert the entire 66.7-acre plan area from its current use as row crop agriculture to a non-agriculture (residential) use. The 2005 General Plan FEIR identified the plan area as Prime Farmland, as defined by the U.S. Soil Conservation Service Important Farmlands Inventory system, and identified the conversion of Prime Farmland into non-agricultural use as a significant impact. However, under Scenario 1 - Intensification/Reuse Only in Section 4.2 of the 2005 General Plan EIR, the plan area was included as one of a number of properties already designated for non-agricultural use under the previous Comprehensive Plan. During adoption of the 2005 Ventura General Plan and Housing Approval Program (HAP), the City Council considered the conversion of agricultural lands within the City's sphere of influence and determined that public benefits of the General Plan outweigh certain unavoidable adverse environmental effects, including the conversion of agricultural land. A Statement of Overriding Consideration was adopted. Therefore, the project would not have any significant impact to agricultural lands beyond that identified in a prior impact assessment and documented in the certified 2005 General Plan FEIR.

2. The project is not subject to a Williamson Act contract. The property is designated neighborhood low under the City's 2005 General Plan and the current County zoning designation is AE-40 (Agricultural Exclusive-40 acres). However, as discussed above, implementation of the proposed specific plan would convert the entire 66.7-acre plan area from its current use as row crop agriculture to a non-agriculture (residential) use. The 2005 General Plan FEIR identified the plan area as Prime Farmland, as defined by the U.S. Soil Conservation Service Important Farmlands Inventory system, and identified the conversion of Prime Farmland into non-agricultural use as a significant impact. However, under Scenario 1 - Intensification/Reuse Only in Section 4.2 of the 2005 General Plan EIR, the plan area was included as one of a number of properties already designated for non-agricultural use under the previous Comprehensive Plan. During adoption of the 2005 Ventura General Plan and Housing Approval Program (HAP), the City Council considered the conversion of agricultural lands within the City's sphere of influence and determined that public benefits of the General Plan

outweigh certain unavoidable adverse environmental effects, including the conversion of agricultural land. A Statement of Overriding Consideration was adopted. Therefore, the project would not have any significant impact to agricultural lands beyond that identified in a prior impact assessment and documented in the certified 2005 General Plan FEIR. Therefore, although the specific plan would change the designation of the property from AE-40 to SP-6, the change was planned for in the 2005 General Plan Update and no additional significant impacts would occur.

3. See discussion above under item B.1.

Mitigation/Residual Impact(s): Based on the above discussion, the specific plan would have a less than significant impact with regard to Agricultural Resources. Therefore, no mitigation measures are required.

C. Air Quality:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
a) Threshold of significance: greater than 25 pounds per day? a. **Threshold of significance:** 25 lbs per day b. **Analysis Year:** 2010 c. **Land Use Category:** Residential, Mixed Use d. **ROC per day:** 66.42 lb/day e. **NOx per day:** 49.72 lb/day	_____	___X___	_____	_____
b) Would the project create objectionable odors affecting a substantial number of people?	_____	_____	_____	__X___
c) Would the project expose sensitive receptors to substantial pollutant concentrations?	_____	_____	_____	___X__

Impact Discussion:

1. The proposed specific plan has the potential to exceed VCAPCD thresholds. This topic is potentially significant unless mitigated and will be further explored and discussed in the EIR.

2. The proposed specific plan would accommodate up to 499 residential units with supporting service community space and infrastructure. The proposed residential development would not generate objectionable odors affecting a substantial amount of

people. Elimination of agricultural use on the property is likely to reduce offensive odors associated with the application of fertilizers and soil amendments. This could be considered a beneficial effect.

3. Specific plan implementation would convert the plan area from its current agricultural use to residential use. Thus, no additional fertilizer and pesticide applications would occur adjacent the existing residences to the west, north, and south. The project could, therefore, have a beneficial effect with respect to reducing substantial pollutant concentrations for existing sensitive receptors. In addition, the neighborhood use proposed would not be anticipated to generate any substantial pollutant concentrations. At buildout, the specific plan would generate approximately 5,000 average daily trips; nevertheless, all study area intersections are forecast to operate at level of service (LOS) C or better at buildout. Because hotspots typically occur only at highly congested intersections (LOS E or F), specific plan buildout would not generate CO hotspot impacts that could be adverse to sensitive receptors at study area intersections.

D. Biological Resources:

Would the proposal result in:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. A loss or disturbance to, or reduction in the numbers of, or a restriction in the range of, or any other impact to any unique, rare, threatened, or endangered species of animals, or plants, or their critical habitat?	_____	___X__	_____	_____
2. A loss or disturbance to, or reduction in the numbers or diversity of, or restriction in the range of any other species of animals or plants or their habitat?	_____	_____	___X__	_____
3. A reduction in the extent, diversity, or quality of native or non-native vegetation (including brush removal for flood control improvements)?	_____	___X__	_____	_____
4. Impacts to historically designated species (e.g., heritage trees) or locally designated	_____	___X__	_____	_____

natural communities (e.g., Sensitive Habitat)?				
5. The loss of other healthy specimen trees?	_____	_____	__X__	_____
6. Introduction of any factors (light, fencing, noise, human presence and/or domestic animals) which could hinder the normal activities of wildlife or cause a deterioration of their habitat?	_____	_____	__X__	_____
7. Impacts to wetland or riparian habitat?	_____	__X__	_____	_____

<u>Impact Discussion:</u>

1. The plan area contains approximately 1,660 linear feet of natural riparian habitat (Brown Barranca) surrounded by agricultural fields. The portion of the Brown Barranca on the project site contains two existing storm drain system discharge points; one located at the south side of the Telegraph Road culvert and the other located at the west side of Wells Road opposite of Carlos Road. The discharge of these storm drains comes from the urban and irrigation runoff from the residential and agricultural properties to the north and west of the project site. Findings of the Biology Impact Study indicate that although Brown Barranca is a riparian habitat, there is low potential for special-status aquatic species due to the intermittent flow regime and presence of instream barriers (concrete lined channel for portions of the barranca downstream of the Specific Plan area, and at least two low-flow channel waterfalls with heights of at least three feet within the Specific Plan area). Thus, although climate and Brown Barranca's connectivity to the Santa Clara River indicate there is potential for southern steelhead, Santa Ana sucker, arroyo chub, southwestern pond turtle, and two-striped garter snake, an analysis of the plan area habitat and conditions immediately downstream indicate that the likelihood of occurrence for these water dependent species is none to low.

   The findings of the Biology Impact Study indicate that temporary riparian habitat loss during construction could have a temporary adverse effect on special status species, including Cooper's Hawk, yellow warbler, and yellow-breasted chat if these individuals were to utilize the riparian habitat for foraging during construction and before revegetation has reached maturity. However, no evidence of these individuals was observed during field visits and the probability of utilization is categorized as low to moderate because the habitat is isolated, fragmented and lacks upland foraging areas.

   There is potential for the San Diego mountain kingsnake to occur within the plan area; however, the likelihood of occurrence was classified as none to low due to an inadequate prey base. These snakes are dependant on lizards other snakes and bird eggs for prey, but the active agricultural row cropping associated with upland areas of the plan area reduces the habitat suitability for kingsnake prey and thus for San Diego mountain kingsnake.

With respect to plants, the only special status species present is southern California black walnut, but the grouping of these trees would not be adversely affected by project construction because it is within the area proposed for preservation.

The potential for special status species will be further explored and discussed in the EIR.

2. See item 1 above.

3. Development under the proposed Specific Plan would involve the removal of riparian and wetland vegetation. The plan area currently supports 4.14 acres of riparian habitat classified as California Department of Fish and Game wetlands (CDFG defines wetlands as synonymous with the limits of riparian vegetation) and approximately 0.11 acres of U.S. Army Corps of Engineers (Corps) defined wetlands. Temporary and permanent adverse effects to riparian and wetland habitat are characterized in Table 4.

Table 4
Effects to Riparian and Wetland Habitat

Type of Habitat	Acres Present	Areas Affected by Specific Plan	Total Acres Affected	Percent of Total
Riparian Vegetation (CDFG-Defined Wetlands)	4.11	Temporary – 0.86 acres removed by: • Culvert installation and other proposed improvements • Proposed footbridge over Brown Barranca Permanent – 0.77 acres removed by: • Extension of existing upstream arched culvert by 75 feet including aprons, headwall and rip rap • Culverting 725 linear feet downstream including aprons, headwall and rip rap • Roadways, bike path, and associated components	1.63	40%
Corps-Defined Wetlands*	0.11	0.02 acres affected by box culvert aprons, headwall, and riprap plus 0.01 temporary construction	0.03	27%

Source: Padre and Associates, Biology Impact Study, April 2007.
Notes: Corps defined wetlands occur within the limits of CDFG defined wetlands; therefore, the total area affected is 1.63 acres.

Approximately 1.63 acres of riparian vegetation/CDFG wetlands would be disturbed, including 0.86 acres that would be disturbed by temporary construction activity and 0.77 acres that would be permanently removed. Approximately 0.03 acres of Corps

defined wetlands would be disturbed. Project development includes a riparian habitat preserve that would function to maintain existing habitat as well as support enhancement activities to mitigate for adverse effects. The preserve, includes maintenance of a natural bottom open channel with riparian vegetation extending from Telegraph Road southeast to the downstream triple box culvert inlet. The preserve would exclude public access through split rail fencing and barrier plantings.

The preserve area contains approximately 0.21 acres of non-native invasive species such as castor bean and eucalyptus, which are proposed for replacement with native species for enhancement and offset. Additionally, the project includes two other proposed native vegetation enhancement areas to offset adverse effects. A natural man-made channel is proposed overlying the downstream culvert installation and a detention basin/wetlands creation area is proposed in the southeastern portion of the plan area adjacent Blackburn Road. The project restoration areas are detailed in Table 5.

Table 5
Proposed Riparian and Wetland Habitat Enhancements

Type of Habitat	Acres Proposed	Total Acres Proposed
Riparian Vegetation CDFG Defined Wetlands	• 0.83 acres of riparian habitat creation above downstream culvert * • 0.21 replacement of invasive species with native riparian species within the preserve	1.01
Detention Basin/Wetlands Creation	0.35	0.35
Total Habitat Creation		**1.36**

Source: Padre and Associates, Biology Impact Study, April 2007.
The Office of Katie O'Reilly Rogers, Exhibit 2, April 2007 (Figure 8 in Appendix A)

** The riparian habitat creation area includes approximately 300 feet of walkways that are 5 feet wide, which will be finished in decomposed granite or asphalt and would not contribute to mitigation area (Moule & Polyzoides, April16, 2007). This amounts to 0.03 acre, which has been deducted from the total riparian habitat creation area of 0.83 acres as indicated on Figure 8 in Appendix A.*

Action 1.11 of the 2005 General Plan requires that sensitive wetland and coastal areas be preserved as undeveloped open space wherever feasible and that future developments result in no net loss of wetlands or "natural" coastal areas. CDFG defined wetlands include the limits of riparian vegetation, whereas the Corps designates wetlands based on the presence of hydrology, hydric soils indicators and wetland vegetation. Based on these two definitions, the project would have no net loss of wetlands pursuant to Corps designation criteria because 0.35 acres of wetland creation in the detention basin would offset the permanent impact of 0.02 acres for installation of the box culverts. However, evaluating pursuant to CDFG criteria, the project would result in a net loss of an estimated 0.27 acres of CDFG-defined wetlands. This impact would be significant, but mitigable and will be further discussed in the EIR.

4. Project development would not involve adverse effects to any historically designated

species. However, it would involve adverse effects to sensitive natural communities, including riparian habitat as discussed above under item 3, and wetlands as discussed under item 7. This will be further discussed in the EIR.

5. Excluding the area within the riparian corridor, there are a number of other mature non-native trees within the project area. These include eucalyptus, fan palm, avocado, citrus, and olive trees. However, these trees are non-native and are not well maintained, nor do they appear to be of substantial age. Therefore, they are not considered specimen trees. The impact with respect to removal of specimen trees would be less than significant.

6. Project development would introduce noise, lighting and domestic animals in areas adjacent to the Brown Barranca preserve. In addition, the proximity of residential development could allow for pedestrian access to the preserve, which has potential to degrade the quality of the habitat. Although no protected animal species were observed and the potential for occurrence is low to none, there is potential for disturbance to wildlife utilizing the habitat. Therefore, mitigation has been included to require fencing and signage for residents that would limit access and educate residents regarding the sensitive nature of the habitat. In addition, adverse effects to the habitat could occur if erosion and sedimentation were to occur as a result of work in and around Brown Barranca. This issue will be further discussed in the EIR.

7. Project development would involve removal of 1.60 acres of riparian habitat that is also classified as California Department of Fish and Game (CDFG)–defined wetlands (only one indicator necessary - hydric soils, hydrophytic vegetation or hydrology for CDFG designation), and 0.03 acres of U.S. Army Corps of Engineers-defined wetlands (hydric soils, hydrophytic vegetation and hydrologic indicators all necessary). The Corps delineated wetlands would be affected at the location of the culvert inlet and outlet on the north and south ends of the proposed preserve. Temporary effects to an additional 0.01 acre of Corps defined wetlands would also occur during construction; however, this area adjacent the culvert inlet structure would be revegetated upon completion of construction activities.

   The applicant proposes creation of 1.36 acres of wetland/riparian habitat, of which 0.35 acres is anticipated to qualify for Corps criteria due to specialized maintenance practices within the detention basin. Thus, the specific plan would result in no net loss of wetlands pursuant to Corps designation criteria, and would maintain the majority of the riparian habitat present within the plan area. Of this area, Brown Barranca Preserve would contain 2.54 acres of habitat, while the downstream restoration area would include 0.80 acres of man-made channel enhanced with riparian vegetation and the detention basin would potentially contain up to 0.35 acres of wetland vegetation. Nevertheless, the impact would be significant if the additional 0.27 acres of riparian habitat were not restored, and if revegetation efforts were not successful. This issue will be further discussed in the EIR.

   Mitigation/Residual Impact(s): Based on the above discussion, specific plan implementation would result in potentially adverse effects to wildlife, riparian habitat and wetland habitat. Incorporation of mitigation measures is required and will be discussed and applied in the EIR.

E. Cultural Resources:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project:				
1. Cause a substantial adverse change in, or destroy or disturb important significant or unique historical, archeological or paleontological resources, including human remains interred outside formal cemeteries?	_____	___X___	_____	_____
2. Affect existing religious or sacred uses within the project area?	_____	_____	_____	__X__

Impact Discussion:

A Phase I Archaeological Survey (Conejo Archaeological Consultants, June 2006) was prepared for the plan area that involved a record search, field survey, and review of historical aerial photographs. The proposed project's effect on cultural resources was analyzed per the findings of this report. The report is included in Appendix D of the EIR.

1. Per the Phase I Archaeological Survey, no evidence of sensitive archaeological or historic resources was found within the plan area. Furthermore, it is unlikely that buried cultural resources are present within the plan area since the area has been highly disturbed by past and ongoing agricultural activity. However, it is possible that as yet undetected cultural resources are present. Therefore, impacts are considered potentially significant and this issue will be further discussed in the EIR.

2. The proposed project is not located in proximity to existing religious or sacred uses. As such, specific plan implementation would have no impact with regard to such uses.

Mitigation/Residual Impact(s): Mitigation will be applied in the EIR and residual impacts are not anticipated.

F. Energy and Mineral Resources:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project:				

X

1. Result in the loss of availability of known mineral resource value to the region?	_____	_____	____	____
2. Result in the loss of availability of locally important designated mineral resource recovery site?	_____	_____	____	X

Impact Discussion:

1 The 2005 General Plan FEIR indicates no known mineral resources within the plan area. No impact would occur.

2 The 2005 General Plan FEIR does not identify the plan area as a designated mineral resource recovery site. No impact would occur.

Mitigation/Residual Impact(s): Based on the above discussion, the specific plan would have no impact with regard to this issue area. As such, no mitigation measures are required. This issue will not be discussed in the EIR.

G. Geophysical:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. Is the project in proximity to a known or conjectured fault?	____	____	_____	X
2. Would the project result in or expose people or structures to potential impacts involving:				
a. Strong seismic ground shaking?	_____	____	X	_____
b. Seismic related liquefaction or other ground failure?	_____	____	X	_____
c. Subsidence/landslide?	_____	____	_____	X
d. Tsunami or seiche?	_____	____	_____	X
e. Expansive Soils?	_____	____	X	_____
3. Substantial grading or change in natural features, topography or other ground surface relief features?	_____	X	_____	_____
4. Destruction, covering or modification of any unique geologic or physical features?	____	X	_____	____

5. Removal or disturbance of beach sands?	____	____	_____	_X_
6. Siltation, deposition or erosion which may modify the channel of a river or a stream or the bed of the ocean?	_____	_X_	_____	____

Impact Discussion:

This section of the analysis was prepared based on the findings contained in a Geotechnical Engineering Report prepared for the project by Earth Systems Southern California (October 2005).

1. No known faults cross the plan area, and the plan area does not lie within a State of California designated fault hazard zone (State of California Alquist-Priolo Earthquake Fault Zones: Saticoy Quadrangle, 2003). The closest fault is the Country Club fault, located approximately 0.75 miles southwest of the plan area (Ventura General Plan FEIR, 2005)). Other faults in close proximity to the plan area are the Ventura-Foothill fault, the Oak Ridge fault, and the McGrath fault. These local faults are classified as active or potentially active. Potentially significant adverse impacts would occur if structures were proposed for construction overlying a fault due to the potential for surface rupture. However, since no faults are located within the boundaries of the plan area, there would be no impact.

2. a) Like most of Southern California the proximity of active faults is such that the plan area has experienced and will continue to experience strong seismically induced ground motion. However, implementation of standard development project conditions imposed under the requirements of the Uniform Building Code and California Building Code assure that specific plan implementation would have a less than significant impact for this issue area. In order to receive building permits, the applicant would submit a site-specific soils and geotechnical engineering report by a qualified expert providing a description of subsurface conditions and recommendations for site development in accordance with Uniform Building Code and California Building Code requirements. As such, the design and construction of new structures would be engineered to withstand the expected ground acceleration and seismic shaking that may occur within the plan area. Therefore, impacts would be less than significant.

   b) Liquefaction typically occurs in areas where the groundwater is less than 30 feet from the surface and where the soils are composed of poorly consolidated fine to medium sand. According to the geotechnical study prepared for the proposed project, groundwater was found under the plan area at variable depths. Groundwater depths range from 3.5 feet below the ground surface in the central portion of the plan area, to about 10 feet in the southern area, to about 14 feet in the north-central part of the plan area, to more than 50 feet near the northern plan area boundary. These groundwater measurements, along with soil textural analyses, indicate a potential for liquefaction in the central and north-central portions of the plan area.

   As noted above, in addition to new construction being required to comply with California Building Code requirements, a standard project condition requires the

preparation of a soils and geology investigation by a qualified expert to identify any site preparation or engineering design recommendations for site development that further ensure potential adverse effects from liquefaction hazards are less than significant. A report has been prepared for this project, which will be reviewed by the City Building Official/Fire Marshal. The recommendations of this report would establish required compliance measures. The building official may require that special provisions be made in foundation design and construction for the high-risk structures. Implementation of this standard development project condition would reduce risk due to liquefaction to a less than significant level and no mitigation measures are required.

c-d) The plan area and surrounding area slope gently toward the north, but are relatively flat and thus not subject to landslide hazards (Field Visit, Rincon Consultants, May 2006). In addition, the plan area is not located within a designated landslide hazard zone or in an area where tsunamis or seiches occur (Ventura General Plan EIR, 2005). Thus, there would be no impact from these hazards.

e) According to the 2005 General Plan FEIR, the plan area is in a “moderate” expansive soil zone. The geotechnical report indicates that the soils located at approximate bearing depths are in the “medium” to “high” expansion ranges, as defined by the CBC. However, according to the geotechnical report, soils are expected to be in the “medium” range after blending during grading. Impacts associated with expansive soils would be less than significant with incorporation of the recommendations contained in the geotechnical report, which will be required as standard conditions of approval. Thus, the impact with respect to expansive soils is less than significant.

3. The plan area is generally flat, sloping gently to the north. Grading activities facilitated by the proposed specific plan would involve relatively small cut and fill slopes for the building pads of the proposed structures. These cut and fill slopes are not expected to exceed 10 feet in height, and would not be steeper than 2:1 (Earth Systems Southern California, 2005). Retaining walls of approximately five feet in height may be utilized. Normal grading equipment is expected to be adequate for cuts. Brown Barranca traverses the eastern portion of the property from northwest to southeast. The project includes the installation of a culvert that spans approximately 525 linear feet (thus enclosing approximately 725 linear feet of creek) at the south end of the barranca and rip rap expansion along 65 feet of the northern end of the barranca. The proposed culvert installation would require work in parts of the barranca and backfilling along the southern 725 feet of the barranca. Adverse effects to water quality could occur if project construction were to allow sediment to enter flowing water that would be transported downstream, thus potentially degrading water quality downstream. This is considered a potentially significant but mitigable effect (see discussion under mitigation below).

4. See discussion above under Item 3.

5. Specific plan implementation would not involve the removal or disturbance of beach sands. There would be no impact.

6. Brown Barranca intersects a portion of the plan area, as discussed under item 3. The

project includes modifications to Brown Barranca; however, the potential adverse effects from grading and earth movement are limited to deposition of sediment within the water course. This is a potentially significant but mitigable impact. Please refer to discussion under item 3 above.

Mitigation/Residual Impact(s): Following construction activities and prior to vegetation establishment, there is potential for recently disturbed soil to enter the creek. However implementation of mitigation measure **BIO-3/GEO-1** would ensure that erosion control measures are implemented, which reduces the potential for adverse effects to a level that is less than significant. This mitigation measure is carried forward to the EIR as mitigation measure BIO-3(a). The topic of Geology and Soils will not be further discussed in the EIR.

BIO-3/GEO-1 Proper Erosion Control Device Installation. The applicant shall install erosion control devices in areas that have the potential to drain to Brown Barranca throughout the construction duration and prior to vegetation establishment. These devices should include silt fencing, sandbags, straw wattles, and/or straw bales.

H. Hazards:

Would the proposal:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. Create a significant hazard to the public or the environment through use of, potential release of, or routine transport of hazardous materials; risk of upset or accidental explosion, or other potential health or safety hazards?	_____	X	_____	_____
2. Be located in or adjacent to a fire hazard area with flammable grass, brush or trees?	_____	_____	_____	X

Impact Discussion:

This section was prepared based on the investigation and conclusions of a Phase I and II Environmental Site Assessment (ESA) Reports prepared for the proposed project by Earth Systems Southern California (November 2005) and Earthsytems Southwest (November 2006). The findings of the reports were also peer reviewed by Rincon Consultants, Inc. during preparation of the environmental document. The reports are on file and available for review at the City of Ventura Community Development Department.

1. The proposed project involves the development of 499 residential units and a community center. Specific plan implementation would not involve the transport, use or disposal of hazardous materials, thus there is no potential for adverse effects from transport, use or disposal of hazardous materials. However, the plan area would involve development on lands currently and historically used for agricultural production. The Phase II ESA identified potential hazards associated with contaminated soil due to former use of organochlorine pesticides (TDE), asbestos-cement debris likely from subsurface irrigation systems, and an underground storage tank. The impact is potentially significant unless mitigated and will be further discussed and explored in the EIR.

2. The plan area is not located within or adjacent to an identified wildland fire hazard zone, nor is it located adjacent to a flammable grass, brush, or tree area. There would be no impact with respect to location in a fire hazard area.

Mitigation/Residual Impact(s): Based on the above, specific plan implementation would require mitigation to reduce the potential for health hazards to humans and risk of upset to levels that are less than significant. These mitigation measures will be applied in the EIR.

I. Land Use/City and Regional Plans.

Would the project be consistent with the following (if applicable):	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. City's General Plan?			X	
2. Existing zoning?			X	
3. Industrial Performance Standards?				X
4. Hillside Management Program?				X
5. An adopted Specific Plan?			X	
6. County or Regional Plans (North Avenue Plan, Saticoy Plan, etc.)?				X

Impact Discussion:

1. The 2005 General Plan designates the plan area as “Residential Low” (0-8 dwelling units/acre). The plan area encompasses approximately 67 acres; therefore, the Residential Low designation would allow a maximum of 538 dwelling units. The

project involves the development of 499 dwelling units and a community center.

The applicant is proposing a specific plan and proposes to rezone the property to T-3.1, T3.2 and T4.6, consistent with the intent of the original zoning for residential development. The proposed specific plan is consistent with the intent of the 2005 General Plan to maximize development in areas of the City where infill is possible, prioritizing infill development. Although a portion of the plan area would need to be annexed into the City, the unincorporated areas of the project constitute an "island" surrounded by City jurisdiction. Provided that the requested zone change is approved, the specific plan would be consistent with City zoning, and the development code contained in the proposed Parklands City of San Buenaventura Specific Plan would supersede current Zoning Code requirements.

The plan area is included within the boundaries of the Wells Saticoy Community Plan work efforts. This Plan is currently in draft form and the Specific Plan has been undertaken concurrently but has been designed consistent with the draft Wells Saticoy Community Plan. However, it should be noted that at this time, the Community Plan is a draft document that has no legal weight. If the Parklands Specific Plan is adopted in advance of the Community Plan, the final Community Plan will need to consider and be consistent with the Specific Plan.

The proposed Parklands Specific Plan is consistent with the vision of the 2005 General Plan as the Parklands project would create an urban infill neighborhood with a variety of housing types, walkable streets interconnected with the existing neighborhoods, enhancement and preservation of Brown Barranca. In addition, the project would create a mixed use area east of Brown Barranca adjacent Wells Road at Telegraph Road incorporating commercial and live work uses within the Wells Corridor.

The specific plan area is considered under "Sphere of Influence/Other Infill/Neighborhood Centers" in the predicted development intensity & pattern table in the 2005 General Plan (Table 3-2 in the "Our Well Planned Community" chapter). A total of 1,050 residences is predicted for the Wells/Saticoy area. Current pending applications for the Saticoy Wells Area include 908 residential units (Saticoy Wells Housing Buildout, 9/2005). Thus, the 499 units accommodated under the proposed specific plan would bring the total to 1,407 units. Therefore, with this project, planned and pending development within the Saticoy Wells area exceeds the number of predicted residences by 357 residential units. However, the predictions of future development in the 2005 General Plan are not development caps, either citywide or for specific areas of the City. Rather, they were merely estimates of future development used for analytical purposes. Furthermore, development predictions of the 2005 General Plan included 8,300 residential units through 2025, and the addition of 499 residential units would not exceed the total development projections for the City through 2025.

Because the project is consistent with the 2005 General Plan, the project's impact with respect to land use and zoning is considered less than significant.

2. See discussion under I-1 above.

3. The project does not involve an industrial component; therefore, the City's industrial performance standards do not apply. There would be no impact with respect to industrial performance standards.

4. The proposed project is not located within the boundaries of the Hillside Planning Area and, therefore, is not subject to the City's Hillside Management Program. There would be no impact with respect to the City's Hillside Management Program.

5. The proposed project involves development under a proposed new specific plan, which would guide development according to the Development Code contained within the specific plan. The specific plan has been designed in accordance with relevant guidance documents including the 2005 General Plan and infrastructure analyses conducted for the Wells and Saticoy planning area. The Development Code shall be administered by: the Ventura City Council, Planning Commission, Community Development Director, and Community Development Department. These bodies are also individually and collectively referred to in the Development Code as the "review authority." Each of these City authorities is involved in reviewing and approving the Development Code. The final determination for consistency will rest with the review authority, but the project appears to implement the visions contained in the 2005 General Plan and thus appears to be consistent with relevant planning and policy.

6. The eastern portion of the plan area adjacent Wells Road is currently designated as within the Wells Corridor. This area is currently in agricultural production and is composed of two separate parcels. These two parcels are currently within the City limits, and the western boundary of parcel 089-0-012-020 forms both the city boundary and the Wells corridor western boundary. The portions of the plan area west of this boundary are not currently within the City limits; however, they are within the City Sphere of Influence and following annexation of these parcels, the City boundary would be amended to include the entire plan area, and the Wells Corridor boundary would be extended such that the western corridor boundary would align with Brown Barranca. A significant adverse effect with respect to land use planning could occur if the proposed specific plan were to conflict with goals/policies applicable to the Wells Corridor, or the <u>draft</u> Wells-Saticoy Community Plan, which is currently under development. The 2005 Ventura General Plan offers the following definition of a corridor.

   > *Corridors often form boundaries, as well as connections, between neighborhoods and/or districts. Corridors frequently encompass major access routes, especially ones with commercial destinations. Corridors also can incorporate parks or natural features such as streams or canyons.*

   The 2005 General Plan further characterizes the Wells Road corridor as "a mix of older industrial uses and newer sub-urban commercial and residential development". There are no particular guidelines for development within the Wells Road corridor exclusively; however, the following policies and actions are applicable to corridors in general and a discussion of specific plan consistency follows.

Action 3.2: *Enhance the appearance of districts, corridors, and gateways (including views from highways) through controls on building placement, design elements, and signage.*

This specific plan would organize development within the northeastern corner of the plan area (between Brown Barranca and Wells Road) to be a neighborhood center, focusing on mixed use, live work and multi-family residential. Connectivity to the east side of Wells Road would involve pedestrian and vehicular crossings at Wells and Telegraph (signalized), and Wells and Citrus Drive (signalized), and Wells and Carlos Street (stop sign controlled). Neighborhoods west of Brown Barranca would be directly accessible to pedestrians on a bridge over the barranca. For vehicular connectivity, access would be limited to Telegraph and Wells Roads.

Action 3.24: *Revise the Residential Growth Management Program (RGMP) with an integrated set of growth management tools including:*

- *Community or specific plans and development codes based on availability of infrastructure and transit that regulate community form and character by directing new residential development to appropriate locations and in ways that integrate with and enhance existing neighborhoods, districts and corridors;*
- *Appropriate mechanisms to ensure that new residential development produces high-quality designs and a range of housing types across all income levels; and,*
- *Numeric limitations linked to the implementation of community or specific plans and development codes and the availability of appropriate infrastructure and resources; within those limitations, the RGMP should provide greater flexibility for timing new residential development.*

Since adoption of the 2005 General Plan Update, the RGMP was replaced with the Housing Approval Program (HAP). The HAP is the result of implementation of Action 3.24 through City Council resolution 2006-057, effective September 7, 2006. The HAP is intended to guide development within the City pursuant to the growth management tools identified above. Under the HAP, projects on more than 20 acres require a Specific Plan. Because the acreage proposed by the applicant is approximately 66.7 acres, the proposed project includes the Parklands Specific Plan, thus formulating the basis of analysis for this mitigated negative declaration. Therefore, because the proposed project involves development of a Specific Plan that would guide the development of up to 499 residential units, the project complies with the HAP.

Action 3.25: *Establish first priority growth areas to include the districts, corridors, and neighborhood centers as identified on the General Plan Diagram; and second priority areas to include vacant undeveloped land when a community plan has been prepared for*

such (within the City limits).

The proposed project would involve development in the Wells Corridor area and within a vacant undeveloped area for which a community plan is being prepared. Development under this specific plan appears to be consistent with the first priority growth action.

Mitigation/Residual Impacts: Based on the above discussion, specific plan implementation would have a less than significant impact with regard to the Land Use/City and Regional Plans issue area provided that the Specific Plan is approved, annexation is approved, and necessary permits are granted. As such, no mitigation measures are required.

J. Noise:

Would the project result in:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. A substantial temporary, periodic or permanent increase in ambient noise level?	X			
2. Exposure of people to noise levels in excess of the established standards?	X			
3. Exposure of people to excessive ground borne vibration or noise levels?			X	

Impact Discussion:

This section was prepared based on the analysis and conclusions contained in the Noise Impact Study prepared for the project by Padre Associates, Inc. (April 2007). The findings of the report were also peer reviewed by Rincon Consultants, Inc. during preparation of the environmental document. A Noise Barrier Analysis was also conducted for the project and both of these studies are included in EIR appendix G.

The City of Ventura 2005 General Plan sets the interior noise standard for habitable rooms of new residences at 45 dBA CNEL (Policy 7E, Action 7.32). The exterior level for usable outdoor recreation space (patios, gardens, etc.) of both new single and multi-family residential structures is 65 dBA CNEL (Policy 7E, Action 7.32). The noise analysis is primarily concerned with outside noise levels estimated to occur within the project's designated outdoor recreations spaces in the backyard of the residences (65

dBA CNEL criteria).

The plan area is abutted by single family residential on the south, west, and across Telegraph Road to the North. Other sensitive receptors in the vicinity include a senior assisted living complex north of the plan area adjacent the northern boundary of Telegraph Road at Wells Road, and a private school across Wells Road to the east of the plan area. Noise sources in the vicinity of the plan area are primarily generated by cars on adjacent roadways. The plan area is bordered by three heavily traveled roadways including SR 126, Telegraph Road, and Wells Road. Existing noise levels in the vicinity of the plan area were measured for the Noise Impact Study and are shown in Table 6.

Potentially significant effects to existing sensitive receptors from project-generated noise could occur if temporary noise were to exceed standards provided for in the above mentioned General Plan Policy 7E, Action 7.32, or if project-generated traffic were projected to cause an exceedance of the 1.5 dBA threshold (applicable for existing ambient noise levels exceeding 65 dBA CNEL) indicated in the 2005 General Plan FEIR.

1. Traffic increases along SR 126 opposite the plan area have the potential to increase noise in the vicinity of the project. This is a potentially significant impact that will be further discussed in the EIR.

2. Existing noise levels in the vicinity of the plan area range from 67 to 74 dBA. Single and multi-family residential development is “conditionally acceptable” when ambient noise levels range from 60 to 70 dBA (“conditionally acceptable” means that the development type is generally acceptable if standard noise control techniques are implemented). The majority of the plan area falls within this category; however, residences proposed adjacent the southern project boundary and SR 126 could be exposed to ambient noise levels in excess of 70 dBA, which is categorized as “normally unacceptable.” The impact is potentially significant and will be further explored and discussed in the EIR.

3. Specific plan implementation would not generate excessive ground borne vibration or noise. The primary vibration source generally associated with the development of buildings results from the use of equipment utilized during construction of foundations.

Mitigation/Residual Impacts: Based on the above discussion, Noise exposure will be further analyzed and discussed in the EIR.

K. <u>Population and Housing</u>:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project:				

1. Induce substantial growth or concentration of population?	_____	_____	_____	X
2. Displace existing housing, especially affordable housing?	_____	_____	_____	X

Impact Discussion:

1. A proposed project will have a significant impact to population and housing if implementation would cumulatively exceed official regional or local population projections; induce substantial growth in an area either directly or indirectly; or displace existing housing, especially affordable housing. The City of Ventura is located within the regional planning area of the Southern California Association of Governments (SCAG), and Ventura Local Planning area of the Ventura Air Pollution Control District. SCAG's Regional Transportation Plan establishes adopted growth forecasts for local jurisdictions within the Southern California region. The Ventura County AQMP relies on the most recent population estimates developed by the Metropolitan Planning Organization (MPO). SCAG acts as the MPO for Ventura County. According to SCAG's 2008 Regional Transportation Plan (RTP) population forecasts, the projected 2010 population for the City of Ventura is 112,044. For the purposes of this analysis, it is presumed that the construction of 499 residential units would be completed in 2010. Based on the current average household size in the City (2.6 persons/ household), this number of units would generate 1,297 new residents. When added to the current population of 108,261 (California Department of Finance, 2008), this would bring the overall population to 109,558. This is well within the projected citywide population of 112,044 for 2010. Therefore, development of the 499 residences would not in itself generate population exceeding regional forecasts.

   In addition, although the proposed project includes 499 residences, this growth is planned for under the 2005 General Plan and the project fulfills goals and objectives of the plan. Specific plan implementation would not displace substantial housing, or affordable housing. The proposed project contains one existing house, which is a caretaker's unit for the existing agricultural operation that would be displaced by the proposed development. However, the specific plan would accommodate the development of up to 499 housing units, of which approximately 173 would be multi-family units and 48 would be triplex and quadplex units. Therefore, adverse impacts associated with loss of housing are not anticipated and the project's effect on population and housing is less than significant. Refer to discussion under Section I.1 for additional discussion regarding housing density and consistency with the 2005 General Plan. 2. See discussion under Item 1 above.

Mitigation/Residual Impact(s): Given the above, specific plan implementation would have no impact with regard to the Population and Housing issue area. As such, no mitigation measures are required.

L. Public Services:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1. Fire protection?	_____	_____	X	_____
2. Police protection?	_____	_____	X	_____
3. Schools?	_____	_____	X	_____
4. Neighborhood or regional parks or other recreational facilities?	_____	_____	X	_____
5. Other public services?	_____	_____	_____	X

Impact Discussion:

1. The Ventura Fire Department (VFD) provides fire protection service for the City. VFD's Fire Suppression Division provides direct responses to fire, emergency medical, hazardous material, hazardous conditions and public service incidents from a total of six fire stations. All fire-fighting personnel are also certified medical technicians. The VFD maintains a countywide mutual aid agreement with all fire protection agencies within Ventura County. This agreement has been arranged between the VFD and other fire agencies to facilitate response to large isolated incidents such as earthquake and wild fires, and does not include daily operations under normal conditions.

   The plan area is located within a zone designated as a three-minute response time for Fire Station Number 6. The VFD maintains a standard fire flow requirement for general categories of development. The water system infrastructure analysis for the proposed project states that the 430 zone water system will serve the plan area. At the time of the infrastructure analysis in 2005, the 430 zone was deficient in water storage and distribution for extreme fire flow conditions. These deficiencies were enumerated in the "Capital Improvement Deficiency Study" prepared for the Wells and

Saticoy Communities. Improvements necessary to alleviate the deficiency included new reservoir storage, distribution pipelines and a new well site (Saticoy Well # 3). City Staff have indicated that a 24" diameter transmission line and two 2 MG reservoirs were recently constructed as a Capital Improvement Project (City of Ventura Public Works, 2/29/2008). DTR Engineering completed a Fire Flow Study dated July 24, 2007 which indicates that adequate fireflow exists to serve the project.

Saticoy Well # 3 is planned to serve additional growth in the vicinity of the specific plan area, including development of the Parklands project, but would not be undertaken until the City identified the need to bring it online. Thus, although the Saticoy Well #3 is not yet constructed, the City is planning the construction of that well regardless of whether the Parklands Specific Plan is implemented. In addition, the proposed Specific Plan indicates that all development and land use proposals would be reviewed by the City so that the appropriate requirements are applied. Any additional specific requirements for the proposed project, and any improvements in the water supply system necessary to meet those requirements, would be verified by the City and completed and tested by the developer prior to occupancy of any unit or commercial building as proposed (Memo, City of Ventura Public Works, 8/9/2007).

Development accommodated under the specific plan would be required to conform to the most recently adopted California Building Code (CBC) and California Fire Code (CFC). Fire safety features such as sprinklers would be provided in accordance with these codes. Access points for the specific plan would be reviewed and approved by the City, and would also be required to conform to the CBC and CFC. The proposed water system supply for the Parklands project would include the following improvements:

- A new 12" main is required in Wells Road from Telegraph Road south along Wells Road following the alignment of the existing 6-inch pipeline (within City right-of-way) to the existing 24-inch pipeline near the intersection of Citrus Drive and Wells Road. Once the proposed 12-inch pipeline is complete the existing services from the 6-inch pipeline must be connected to the 12-inch pipeline and the 6-inch pipeline abandoned.

- Install a 12" main from Telegraph Road to Wells Road beneath the proposed Nevada Avenue.

- Extend a 12" main westerly within proposed "D" road and connect to the existing 8-inch water main in Linden Road.

- All interior streets to be served by looping 8" water lines tied to the new 12" mains as part of Phase I. No dead end water mains are allowed.

Estimated peak project domestic water demand was calculated for the proposed project based on 173 multi-family units and 326 single family units, utilizing the fixture units and demand/fixture unit as per the Uniform Plumbing Code. The project would result in a peak demand of 2,096 gallons per minute. With the increased water storage and distribution pipeline provided through the projects that are currently under construction, fire flow will be satisfactory to serve the proposed project (DTR

Engineering Fire Flow Study dated July 24, 2007).

With incorporation of the applicable standard fire and building code requirements, specific plan implementation would have a less than significant impact with regard to the fire protection issue area.

2. The Ventura Police Department (VPD) provides law enforcement and police protection within the City of Ventura. Currently the VPD employs 134 officers (Karen Heath, pers comm., 2008) and based on 2008 Department of Finance population forecasts, has a staffing ratio of 1.24 officers per 1,000 residents. The 2005 General Plan includes policies to improve community safety through enhanced police service. Action 7.15 specifically provides for increased staffing as necessary to serve the community, in addition to increasing community participation and researching funding options for police services.

   The plan area is located within Beat 3, which spans the area east of Mills Road to the east and north of the CA-126. Beat 3 had 18,543 calls for service in 2007. The closest police station is located approximately 4.7 miles from the project site at 1425 Dowell Drive. The VPD response time objectives for priority one calls (e.g. – "in progress," or injury traffic collisions) is approximately 5 minutes or less, while non-emergency service response times average 15-20 minutes.

   The proposed project, as does all new development, would increase the statistical probability of the occurrence of criminal incidents, and an increase in traffic-related calls for service. Based on the City's average of 2.55 residents per residential unit, specific plan buildout would add 472 residents within Beat 3. This increase would incrementally reduce the existing ratio of police officers to 1,000 residents to 1.23 without a change in personnel levels. However, it would not create the need for new VPD facilities and therefore would not cause physical environmental effects associated with provision of police protection service. Thus, the project's effect to police protection would be less than significant.

3. Based student generation rates contained in the 2005 General Plan, development of 499 residential units would generate 110 elementary age students (0.22 elementary school students per unit), 45 middle school students (0.09 middle school students per unit), and 55 high school students (0.11 high school students per unit). The Ventura Unified School District (VUSD) provides public educational services throughout the Ventura planning area. District schools are organized as kindergarten through fifth grade elementary schools, sixth through eighth grade middle schools, and ninth through twelfth grade high schools. The District has divided the City into four geographic attendance areas to direct a student's progression from elementary to high school: West Side, Midtown, Montalvo, and East End. The plan area is located within the East End area of the school district. All elementary schools except one serve a specific attendance area of one or more neighborhoods; the exception is Mound School, which is a District-wide math magnet school.

   Based on geographic location, students within the plan area would attend Saticoy Elementary, which is operating at 85% capacity based on a 2007-2008 enrollment of 396 students (California Department of Education, 2008). The addition of 110

students at this school would exceed the 466-student capacity by 46 students and result in operation at 115% of capacity. The addition of 45 middle school students would bring enrollment at Balboa Middle School to 1,413 students (closest school to the project area), and operation at 89% of that school's 1,582-student capacity. However, one of the goals in the VUSD master plan is the construction of a new middle school in the Wells Road area, and once constructed, this facility would serve students within the plan area.

The VUSD manages three non-continuation high schools in Ventura. Enrollment for the 2008 school year was 5,331 students for the three high schools, or 95% of total capacity (5,586 students). Foothill Technology High School, which opened in 2001 to emphasize development of technology and health related skills, has eased crowding at Buena and Ventura High Schools. The addition of 55 high school students would bring high school enrollment to approximately 96% of capacity.

In addition, the VUSD offers several special programs. Pacific Continuation High School occupies a former elementary school in central Ventura at 501 College Drive. Pacific Continuation had a 2008 school year enrollment of 223 students, or 79% of its 282 student capacity. Secondary alternative schools at Buena and Ventura High Schools, as well as the Opportunity Program and the Independent Study Program at the Pacific Continuation High School, enable students to make up units, get extra help, and transfer back to the mainstream schools.

Although many schools are at or near capacity, the school district is working toward resolving overcrowding through construction of a new middle school in the vicinity of the plan area, as well as exploring potential new school sites and expansion of facilities at existing sites. Mitigation of adverse effects on capacity at schools is accomplished through payment of School Mitigation Fees at issuance of building permits pursuant to State Law. Section 65995(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Therefore, mitigation is not required and the impact is thus considered less than significant.

4. The proposed specific plan includes development of several internal roadways, a community center, and 11.35 acres of green-space. In addition, the project involves development of improvements to Telegraph Road and Blackburn Road adjacent the plan area. However, the Economic Strategy for the Parklands Specific Plan, Section 6.A states the following.

> *The infrastructure and public facilities that will be required to enable development of Parklands will be provided per the requirements of this Specific Plan. The provision and maintenance of these public improvements will occur in a manner that does not encumber the City of San Buenaventura with any additional capital or ongoing service costs.*

The applicant would be responsible for payment of City fees, a one time contribution

of up 11.35 acres of green space, some of which would be maintained by the City and some of which would be maintained by a Maintenance Assessment District or Home Owners Association, and annually recurring fees based on the increase in property tax. The financial gain to the City from recurring property taxes is anticipated to offset the associated increase in maintenance for development of additional City streets and parks. The impact would be less than significant and no mitigation is required.

Action 6.2 of the 2005 General Plan requires higher density development to provide pocket parks, tot lots, seating plazas and other aesthetic green spaces. In addition, Action 6.3 of the 2005 General Plan requires development to include trails when appropriate. The Parklands Specific Plan would implement these two actions through inclusion of greenspace that includes 5.57 acres of active recreational parks, including a linear park/bikepath along Brown Barranca, 1.82 acres of passive recreational parks, and 3.96 acres of sensitive habitat reserves (see Table 8). Considering the sensitive areas are excluded from recreational use, the project's 7.39 acres of parks amounts to about 5.7 acres of parks per 1,000 residents based on the current citywide average household size of 2.6 persons (California Department of Finance, 2008). In addition, the applicant would be required to pay recreation fees consistent with City ordinance for the project's contribution to the development of citywide parks. Therefore, the project's impact with respect to recreational resources would be less than significant and no mitigation is required.

5. See above discussion under L.4.

Mitigation/Residual Impact(s): Given the above, specific plan implementation would have a less than significant impact with regard to the public service issue area. No mitigation measures are required.

Table 8
Proposed Parklands Greenspace

Green Space	Park Type	Area (acres)
Central Park	Active	0.83
Linear Park/Bike Path	Active	2.61
Tot lot	Active	0.09
Pocket Park	Active	.14
Neighborhood Park 1	Active	0.5
Neighborhood Park 2	Active	0.23
Recreation Field	Active	1.44
Subtotal Active Recreation		**5.84**

Pocket Park	Passive	0.40
Parkway/Allee	Passive	1.4
Rosewalk	Passive	0.20
Subtotal Passive Recreation		**1.82**
Brown Barranca Preserve [a]	Preserve	3.69
Detention Basin/Wetlands	Preserve	0.27
Subtotal Sensitive Habitat Reserve		**3.96**
Total Greenspace		**11.62**

Source: Moule & Polyzoides 8/30/2007

[a] includes upstream area of the Barranca between the two box culverts from Telegraph Road to the downstream culvert inlet (4.14 original acres – 1.60 acres = 2.54 acres of preserve).

M. Utilities and Service Systems:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Would the project result in a need for new systems or substantial alterations to the following utilities:				
1. Power or natural gas?			X	
2. Communication systems?				X
3. Local or regional water treatment or distribution facilities?			X	
4. Sewer or septic systems?			X	
5. Storm water drainage?			X	
6. Solid waste disposal?			X	

Impact Discussion:

1. Southern California Edison (SCE) provides electricity service in the City of San Buenaventura. SCE operates the Mandalay Beach and Ormond Beach electricity generating plants within Ventura County. Both plants are located in Oxnard and serve the entire Ventura County SCE service area. SCE operates other power plants within its service area, as well as purchasing electricity from other energy suppliers for a total generating capacity of approximately 18,320 megawatts. The service area peak demand is about 15,000 megawatts or 81 percent of the total service area generating capacity. According to past information forwarded by SCE, electricity supply is adequate to meet the City's current and future demands.

   Standard conditions relating to building permits require that the proposed project comply with Energy Building Regulations adopted by the California Energy Commission (Title 24 of the California Administrative Code) to reduce energy consumption. Given the above, in addition to mitigation measure AQ-5, which would require increasing energy efficiency by 20% beyond Title 24 requirements, potential impacts to electrical services are considered less than significant.

   The Southern California Gas Company (SCGC) provides natural gas services to the City of San Buenaventura. The availability of natural gas is based upon present conditions of gas supply and regulatory policies. As a public utility, the SCGC is under the jurisdiction of the California Public Utilities Commission and can be affected by actions of gas supply or the condition under which service is available. Gas service will be provided in accordance with any revised conditions. The regional gas supply is primarily from Texas via the El Paso Gas Company's pipeline to Southern California. With current natural gas reserves projected at a minimum of seven years, not including advancements in technology that would further extend the reserve life, natural gas supply is considered bountiful with no limitations expected on the quantities necessary for new or redeveloped projects.

   Specific plan buildout would generate additional demand for natural gas service. Nevertheless, it is anticipated that sufficient gas service can be provided to the proposed project. Also, development accommodated under the specific plan would comply with Energy Building Regulations adopted by the California Energy Commission (Title 24 of the California Administrative Code) to reduce energy consumption to the extent feasible. Therefore, specific plan implementation would have a less than significant impact with regard to this issue area.

2. Development accommodated under the specific plan would incorporate the use of standard telephone and television cable lines consistent with surrounding land uses. The communication lines will meet all applicable City standards and requirements. All communication systems would be constructed according to applicable City and service provider standards. Therefore, specific plan implementation would have no impact with regard to this issue area.

3. The City of Ventura supplies water to the plan area. Proposed Parklands Specific Plan infrastructure, including water distribution lines, is shown on Figure 10 in Appendix A. The project includes development of up to 499 dwelling units, up to 25,000 square feet of commercial space, and a 6,560 square foot community center. The project's effects on water supply were evaluated pursuant to Senate Bill 610 in a Water Supply

Assessment (WSA, 2008), included in Appendix I of the EIR).

Citywide water sources include the Lake Casitas, Ventura River, the Mound Groundwater Basin, the Oxnard Plain Groundwater Basin, the Santa Paula Groundwater Basin, and the Saticoy County Yard Well currently planned for operation in late 2009 (Water Supply Assessment, 2008). Plan area development would utilize City water. Significant impacts would result if sufficient domestic and/or fire protection water supply was not present to serve the project's current and long-term needs. The WSA (2008) indicates the total water available for City use to be 29,900 acre feet/year (AFY) in 2010. The City of Ventura characterizes overall water usage based on per capita consumption, and the 2005 UWMP indicates that per capita consumption is 0.18 AFY. Specific plan implementation would increase demand for water. The projected 1,297 plan area residents (499 units x 2.6 residents/unit) would generate water demand estimated at 233 AFY (0.18 AFY x 1,297 residents).

The water supply service area includes the City of Ventura and unincorporated areas served by the City (2005 UWMP). The City's population projections are based on 2005 California Department of Finance data with application of a 0.88% growth rate (2005 UWMP). The unincorporated service area population projections are based on a 2005 customer count with a growth rate of 0.35% (2005 UWMP). The water service area population is anticipated to be 114,629 in 2010 (WSA, 2008). Based on a per capita rate of 0.18 AFY, water demand in 2010 would be 20,633 AFY (0.18 x 114,629). The projected supply of 29,900 AFY minus the 2010 projected demand of 20,633 AFY indicates there is a surplus of 9,267 AFY. Thus, project demand of 233 AFY could be served by the excess supply.

The WSA (2008) concludes that the project is proposed at a density consistent with the 2005 General Plan Land Use designation for the site of up to 8 du/acre (Residential Low) and that the 2005 General Plan Land Use Development patterns were accounted for in the 2005 UWMP as evidenced by the population projections that are consistent between the two documents. The WSA further concludes that existing and future supplies are adequate to meet demands of this project in association with other General Plan buildout over a 20-year planning horizon under normal, single dry and multiple dry years. Water Service Area supply would be adequate serve the proposed project and impacts would be less than significant.

As discussed above under L.1, current pressure deficiencies in the Wells and Saticoy areas are being addressed through City planned improvements and additional water supply in the Saticoy area would be provided for planned growth under the 2005 General Plan through development of Saticoy Well #3. Thus, although there are deficiencies with respect to water delivery, these deficiencies are being addressed through ongoing and planned improvements. Therefore, the proposed project's impact with respect to water supply and delivery would be less than significant and no mitigation measures are required.

4. Development within the plan area would connect to the City wastewater system as shown on Figure 10 (Appendix A). The proposed infrastructure plan, including sewer disposal lines, is shown on Figure 10. Connection points for wastewater disposal would be at the existing service line in Blackburn Road and Wells Road. The Wells

community and much of the Saticoy community are currently served by two 12-inch trunk sewer lines crossing Highway 126 and increasing to 15 and 18-inches, respectively, at the Wells Road Lift Station. The City has completed the "Northbank Lift Station" and the Northbank Force Main, which resulted in capacity increases sufficient to allow for project development (DTR Engineering, October 2005). A new 18-inch to 21-inch trunk sewer from the Wells Lift Station to the new Northbank Lift Station was constructed as part of Tract 4542. This trunk line is shown in the CIDS Report as the "Southern Trunk - Saticoy Avenue to Northbank Lift Station" and the "Wells Road Trunk Sewer", which replaced the Wells Road Lift Station. The above improvements have eliminated wastewater system deficiencies in both the Wells and Saticoy communities. A sewer study completed for the project (DTR Engineering, included in Appendix F) states that the additional flow generated by the proposed project would add 0.4821 cubic feet per second to the existing 15” sewer line, which would increase capacity to 31.7%. Thus, the resultant post-project flow is within than the maximum design capacity of 50%. Further, the applicant would pay the required Capital Improvement Development fees (CIDS) to the City's Wells-Saticoy Infrastructure Master Plan. Thus, the project’s impact to wastewater disposal is less than significant.

5. Omrun Engineering prepared a “Brown Barranca Hydraulic Study” for the Parklands development. The text of that study, dated December 2006, is included in EIR Appendix E, while the full study (including attachments) is incorporated by reference and available for review at Ventura City Hall. In addition, Hawks & Associates prepared a “Detention Design” study for the Parklands development (dated December 28, 2006), while DTR Engineering prepared a “Stormwater Treatment Report” for the Parklands development. Those two reports are also incorporated by reference and available for review at Ventura City Hall.

   The plan area currently drains to Brown Barranca, which traverses the plan area from Telegraph Road to Wells Road at Highway 126 and to a drainage ditch located at the southern boundary of the plan area. Brown Barranca is currently deficient in capacity at Highway 126 for large storm flow events (100-year storm), but adequate for lesser storm flow events (10-year storm). The Parklands Specific Plan would provide storm drainage in a network of grassy swales, ultimately discharging 100-year or lesser storms to the proposed detention basin. The proposed culvert improvements and detention basin (also discussed under Section D.3) would address existing and project generated downstream impacts along and beyond Brown Barranca southerly. In addition, the applicant would contribute approximately $1,000,000 toward Brown Barranca Improvements through the CIDS Program. The Brown Barranca bridge crossing at Telegraph Road would be built and paid for by this development. The natural channel crossing would be improved and protected, allowing for the Brown Barranca linear park to extend through to SR 126. Implementation of the SWPPP (an erosion control plan required for construction activities) and compliance with applicable City requirements for control of storm runoff would reduce impacts to the storm water drainage system to a less than significant level.

   Development within the plan area would be required to comply with the National Pollution Discharge Elimination System (NPDES) General Construction Activity Storm Water Permit, as well as the County-wide Stormwater Quality Urban Impact Mitigation

Plan (SQUIMP). With regard to the increase in erosion potential, the 2000 Ventura Countywide Stormwater Quality Urban Impact Mitigation Plan (SQUIMP) requires proposed developments to "control the post-development peak storm water runoff discharge rates to maintain or reduce pre-development downstream erosion and to protect stream habitat." This affects both large and small storm water flows. Compliance with the aforementioned SQUIMP will address the projects impacts to the Brown Barranca.

The City, County, Watershed Protection District, and nine other local cities are co-permittees on NPDES Permit No. CAS004002 issued by the Regional Water Quality Control Board in 2000. A new Municipal Stormwater Permit with additional requirements for new developments is expected to be adopted in 2008 and will likely apply to this project. NPDES is a federal Environmental Protection Agency (EPA) program administered by the states to control water pollution by regulating point sources. In California, the State Water Quality Control Board is responsible for ensuring compliance with the provisions of the Federal Clean Water Act and the State Water Quality Control Act. The Los Angeles Regional Water Quality Control Board ensures local compliance with the countywide NPDES permit. The Ventura County SQUIMP is included as an attachment to the permit. The two primary municipal permit objectives are to:

- Effectively prohibit non-storm water discharges; and
- Reduce the discharge of pollutants from storm water conveyance systems to the maximum extent practicable.

The SQUIMP addresses storm water pollution from new development and redevelopment by the private sector, and contains a list of the minimum required Best Management Practices (BMPs) required for a designated project. A BMP is defined as any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces pollution. Per the SQUIMP, BMPs can be used for minimizing the introduction of pollutants of concern that may result in significant impacts to the storm water conveyance system from site runoff. Therefore, based on proposed improvements and standard conditions, specific plan implementation would have a less than significant impact on storm drainage facilities.

6. New development within the plan area would be required to comply with the City-adopted Model Ordinance of the California Integrated Waste Management Board, relating to areas for collecting and loading recyclable materials in development projects. Specific plan buildout would generate an estimated 1,266 new residents; therefore, based on a per capita rate of 0.0096 tons/day per person, it would generate approximately 12 tons per day. However, the City diverts 61% of this solid waste through source reduction programs such as recycling; therefore, the amount sent to area landfills would be approximately 4.7 tons per day. The Toland Road Landfill receives approximately 1,200 tons/day and has a 1,500 ton/day capacity, while the Simi Valley Landfill receives approximately 2,600 tons/day and has a 3,000 ton/day capacity, leaving a combined 700 ton/day capacity Thus, the project's contribution of 4.7 tons per day is well within the existing capacity and the impact to solid waste disposal is less than significant.

Mitigation/Residual Impact(s): Given the above, specific plan implementation would have a less than significant impact with regard to the utilities/service systems issue area. No mitigation measures are required.

N. Transportation/Circulation:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. Generation of vehicle trips: P.M. Peak: 531	_____	_____	X	_____
2. Would the project further the goals of the Circulation Element, complete needed street improvements, etc.?	_____	_____	_____	X
Would the project result in:				
3. Significant on or off-site traffic congestion?	_____	_____	X	_____
4. Impacts on or conflicts with existing air, rail, bus, bicycle, pedestrian or water transportation systems?	_____	___	_____	X
5. Inadequate provision of required parking or impact existing parking?	_____	_____	X	_____

Impact Discussion:

1,3,4,5. This evaluation was conducted based on information provided in a Traffic and Circulation study that was prepared for this project (Associated Transportation Engineers [ATE], revised September 2005). Full buildout of the proposed specific plan would result in the generation of 5,558 average daily trips, 332 A.M. peak hour trips and 531 P.M. peak hour trips. The project includes a number of improvements and would involve the development of an internal street system. The project's effects on the surrounding roadway network, including SR 126 and County Congestion Management Plan locations is further discussed in the EIR. The project's effects are less than significant; nevertheless because of the magnitude of the project, these effects are discussed in the EIR.

2. The proposed project would involve the development of a street segment that would extend Carlos Way from Wells Road to Saticoy Avenue and would further this goal of the Circulation Element as shown on the Roadway Classification Plan, Figure 4.3 of the 2005 General Plan Update. This is a beneficial impact.

O. Water:

Would the project:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. Change absorption rates, drainage patterns or the rate and amount of surface runoff?		X		
2. Be in a flood hazard area, based on the FIRM maps?		X		
3. Cause a discharge into surface waters or alter surface water quality (e.g., temperature, turbidity)?			X	
4. Change the amount of surface water in any water body?			X	
5. Change currents or the course or direction of water movements?			X	
6. Change the quantity of ground waters, either through direct additions or withdrawals or through interception of an aquifer by cuts or excavations?			X	
7. Alter direction or rate of flow of groundwater?				X
8. Impact groundwater quality?			X	
9. Impact the amount of water otherwise available for public Supplies?			X	

Impact Discussion:

Information for this section was obtained from the following sources:

a) Engineering memorandum prepared for the plan area by DTR engineering (October 7, 2005)
b) Information prepared by Hawks and Associates, (October 7, 2005)
c) Brown Barranca Hydraulic Study for the Parklands development prepared by Omrun Engineering (December 2006)

d) Detention Design Study prepared for the Parklands Development by Hawks & Associates (December 28, 2006)
e) Stormwater Treatment Report" prepared for the Parklands development by DTR Engineering

Items a and b and the text of item c are included in EIR Appendix E. The full Brown Barranca Hydraulic Study (including attachments) as well as items d and e are incorporated by reference and available for review at Ventura City Hall.

1. The plan area is an infill site surrounded by an established urban environment. The proposed specific plan would involve the development of up to 499 homes, up to 25,000 square feet of commercial space, roadways, and parking lots. The proposed specific plan would alter the drainage pattern of the area and would decrease the area that water percolates into the ground. This has the potential to increase the rate and quantity of runoff. This is a potentially significant impact that will be further explored and discussed in the EIR.

2. According to the 2005 General Plan FEIR, portions of the Specific Plan area are within the 100-year and 500-year flood plains. These flood hazard zones are shown on Figure 21. In addition to the documents listed above, the flood hazard evaluation considered the following:

   - Federal Emergency Management Agency (FEMA) Flood Insurance Study, Flood Insurance Rate Maps (FIRM), and Flood Plain Management Regulations
   - Ventura County Watershed Protection District (VCWPD) District Watercourse Permit Requirements
   - City of Ventura Flood Plain Management Ordinance
   - City of Ventura Stormwater Quality Urban Impact Plan (SQUIMP) requirements
   - Parklands Specific Plan as well as the plan area drainage concept
   - VCWPD Five Year Capital Projects Program

   Specific plan implementation would place residential development in an area that is currently classified as a 100-year flood zone. The applicant is working with the Ventura County Watershed Protection District to ensure that project drainage improvements in association with VCWPD planned capital improvements alleviate existing deficiencies as well as account for input to the conveyance system from surrounding developments. The proposed improvements would alleviate existing flooding in the vicinity of the plan area caused by deficiencies in Brown Barranca, on Linden Drive to the west and Blackburn road south of the plan area in the vicinity of the mobile home park. However, because the applicant is proposing to place residences in what is currently designated as a 100-year floodplain, a Letter of Map Revision (LOMR) must be obtained from FEMA indicating the revised 100-year flood plain. The final design of the improvements for the Barranca will be coordinated with the VCWPD and submitted to FEMA. If the design is acceptable to FEMA, typically a conditional LOMR can be granted during the design phase. The final map revision occurs when the physical improvements have been completed to the barranca and accepted for map revision. This is a potentially significant impact unless mitigated

and will be further explored and discussed in the EIR.

3. Discharges into surface waters will be altered as a result of the project. Runoff pollutants such as petroleum hydrocarbons and heavy metals generally associated with urban developments are typically washed off streets and parking areas during the first storm of the winter season, provided at least one-half inch of rain falls. However, because the project is subject to the requirements of the City of San Buenaventura and Ventura Countywide National Pollution Discharge Elimination System (NPDES) permit for municipal storm water runoff, the conditions of which limit the volume of contaminants allowed to enter the storm drain system, impacts are considered to be less than significant.

4. Implementation of the specific plan would increase in the amount of impermeable surfaces within the plan area, which would in turn alter the amount of surface water and the course and/or direction of plan area drainage. However, all specific plan area development would be subject to SQUIMP and proposed improvements would result in no net increase in surface runoff. Thus, the impact with respect to increased runoff would be less than significant.

5. Specific plan implementation would involve alterations to Brown Barranca; however, this action would be undertaken in a manner that minimizes the potential for adverse effects from erosion (see discussion under Section D.1 and D.7 as well as M.5). The potential for adverse effects resulting from changing the course or direction of water movements is less than significant and no mitigation is required.

6. Specific plan implementation would not change the quantity of ground water. The existing agricultural well and associated use would be eliminated and the project would receive water from local infrastructure, thereby reducing the existing draw on groundwater within the plan area. Adverse effects are not anticipated and the project's effect is considered less than significant.

7. Implementation of the proposed specific plan would not alter the direction or rate of flow of groundwater. No impact would occur.

8. The proposed project may have a beneficial effect on groundwater quality due to project incorporation of NPDES permit requirements, BMPs and other drainage improvements. In addition, conversion of the land from the existing agricultural use would eliminate the application of pesticides, herbicides and fertilizers from being leached down through the soil into the groundwater supply. Therefore, the project's effect on groundwater quality would be less than significant.

9. Specific plan implementation would replace the existing agricultural row crop use with residential use. Thus, the groundwater currently used for agricultural row crop irrigation would be conserved and residential demand would increase with development of 499 units. Water needs for the proposed project are anticipated at 233 acre-feet per year. Additionally, as discussed under item M.3, the water supply is adequate to serve planned growth within the City. As such, impacts to water supply availability would be less than significant (see discussion under item M.3).

Mitigation/Residual Impact(s): Based on the above discussion, specific plan implementation would have a less than significant impact with respect to all issues except increasing the rate and quantity of runoff, and construction of housing within a designated 100-year floodplain. These are potentially significant impacts that will be further discussed in the EIR.

P. Mandatory Findings of Significance:

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	_____	__X___	___	_____

Finding Discussion:

Based on the information obtained in the preparation of this Initial Study, the issue areas of biological resources, and cultural resources have the potential for adverse effects. These issues will be further explored and discussed in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
2. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	_____	___X__	____	_____

Finding Discussion:

Planned cumulative development associated with buildout of the 2005 General Plan in the City of Ventura would add more than 8,300 dwelling units, as well as about 1.2 million square feet of retail development, 1.2 million square feet of office development, 2.2 million square feet of industrial development, and more than 500,000 square feet of hotel development. Cumulative impacts for the issue areas of aesthetics, air quality, biology, cultural, hydrology, hazards, noise, and traffic are discussed in the EIR. Cumulative impacts would be addressed on a case by case basis depending on the issue. The 2005 General Plan FEIR found that solid waste disposal facilities serving the City are projected to close within or close to the time frame for buildout of the General Plan. A statement of overriding considerations was made for the impact and development within the plan area would be required to comply with the City-adopted Model Ordinance of the California Integrated Waste Management Board, relating to areas for collecting and loading recyclable materials in development projects. For all other issue areas dismissed in this initial study, cumulative impacts would be less than significant.

	Potentially Significant Mitigated	Potentially Significant Unless Impact	Less Than Significant Impact	No Impact
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

Finding Discussion:

The proposed specific plan has potential for adverse effects in the issue areas of air quality, flooding, hazards, and noise, all of which could have direct or indirect effects on human beings. These issues will be further explored and discussed in the EIR.

IV. CIRCULATE TO THE FOLLOWING AGENCIES/PERSONS:

VENTURA COUNTY

Agricultural Commissioner
Clerk of the Board of Supervisors* (3 Copies)
Ventura County Watershed Protection District*
County of Ventura Resource Management Agency (3 copies)
Ventura County Transportation Commission*
Local Agency Formation Commission

ADJACENT COUNTIES

None

ADJACENT CITIES

City of Oxnard
City of Santa Paula

OTHER PUBLIC AGENCIES

Air Pollution Control District*
Ventura County Organization of Government (VCOG)
South Coast Area Transit (SCAT)
Solid Waste Management Dept.
Ventura Regional Sanitation District*
Ventura Unified School District

LIBRARIES

Avenue Branch Library*
H.P. Wright Branch Library*
E.P. Foster Branch Library*

STATE AGENCIES

Caltrans District 7 (Santa Barbara) Environmental Section
California Regional Water Quality Control
California Integrated Waste Management
Southern California Association of Government (3 copies)
California Coastal Commission
California Department of Fish and Game
State Office of Planning and Research (16 copies)

FEDERAL AGENCIES

U.S. Army Corps of Engineers

CITIZENS GROUPS

Sierra Club
Building Industry Association
Region of Southern California, Inc.
Environmental Coalition
League of Women Voters
Ventura County Archaeological Society
East Ventura Community Council

***THESE AGENCIES ALWAYS RECEIVE MAILOUT ITEMS**

V. LIST OF REFERENCES:

These references, and those previously cited within the text of this Initial Study, are intended to provide a list of Supporting Information Sources and/or evidence staff has relied upon in completing this document and in reaching the conclusions contained herein. In addition, the materials that were submitted by the applicant have also been used in completing this document.

If any person or entity reviewing this Initial Study/Environmental Assessment has a question regarding the supporting information source and/or evidence, they may contact the staff planner at the address and telephone number noted on the front page of this document during the public review period.

a. City of San Buenaventura, 2005 General Plan, including all technical appendices, maps, and the 2005 General Plan Final Environmental Impact Report.

b. City of San Buenaventura, Zoning Ordinance, including all maps prepared and adopted therefore, 1992.

c. City of San Buenaventura Public Works Department, Annual Transportation Report, April 2002.

d. City of San Buenaventura, Engineering Design Standards, 1989.

e. Ventura County Solid Waste Management District, Countywide Solid Waste Management Plan, 1985.

f. City of San Buenaventura, Residential Growth Management Program.

g. City of San Buenaventura, Air Quality Mitigation Program, 1993.

h. Federal Emergency Management Agency (FEMA) MAPS, 1987.

i. City of San Buenaventura Grading Ordinance 95-25.

j. Uniform Building Code, 1998.

k. Moule & Polyzoides, Parklands City of San Buenaventura Specific Plan Draft No, 6, July 6, 2007.

l. Earth Systems Southern California Phase I Environmental Site Assessment, Tentative Tract 5632 (Parklands) Ventura, California VT-23523-02, November 3, 2005.

m. Earth Systems Southwest, Phase II Investigation, Tentative Tract 5632, Parklands Southwest Corner of Telegraph Road and South Wells Road, Ventura, California, November 22, 2006.

n. Padre Associates, Biology Impact Study for the Parklands Master Plan City of Ventura, California, April 2007.

o. Padre Associates, Noise Impact Study Parklands Master Plan, Tentative Tract Map No. 5632, Ventura California, April 2007.

p. Earth Systems Southern California, Geotechnical Engineering Report for Parklands (Tentative Tract 5632) Ventura, California, October 6, 2005.

q. Conejo Archaeological Consultants. Phase I Archaeological Survey of 66.7 Acres for Tentative Tract 5362 (Parklands). City of San Buenaventura, Ventura County, California, June 6, 2006.

r. DTR Engineering. Infrastructure Analysis Wells Community and “Parklands” Development Tract Number 5632, October 7, 2005.

s. Parklands Infrastructure Conditions Engineering Memorandum. DTR Engineering. August 17, 2005.

t. Associated Transportation Engineers. Traffic and Circulation Study, Parklands Project. City of Ventura, California, October 2005.

u. Bolt, Beranek and Newman, “Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances,” prepared for the U.S. Environmental Protection Agency, 1971.

v. City of San Buenaventura, Biennial Water Supply Report, 2006.

w. City of San Buenaventura Public Works Memorandum, March 14, 2007. Parklands Project (Telegraph Road /Wells Road). Response to request for comments regarding the project water plans (DTR Domestic Water Study).

x. DTR Engineering. Tentative Tract No. 5653. Domestic Water Study.

y. DTR Engineering. Parklands Tract Map No. 5632 Sewer Study. (no date).

z. DTR Engineering. Fire Hydrant Calculations Tract Map No. 5632 July 2007

aa. Omrun Engineering. Brown Barranca Hydraulic Study (Henderson Road to Telegraph Road) Parklands Development City of Ventura December 2006.

bb. City of San Buenaventura, Department of Public Works, Urban Water Management Plan, December 2005.

cc. Hawks & Associates, Parklands Development TTM No. 5632 Detention Design, December 28, 2006.

dd. DTR Engineering, Stormwater Treatment Report: Tentative Tract No. 5632 Parklands (no date).

ee. City of San Buenaventura, memorandum from V.S. Chandrashaker, Associate Transportation Engineer, to Iain Holt, Associate Planner, January 30, 2008.

ff. Chang Consultants, letter report regarding channel improvements for Brown Barranca, October 15, 2007.

gg. City of San Buenaventura, SB 610 Water Supply Assessment for Parklands, Specific Plan No. 6, January 14, 2008.

VI. PERSONS AND/OR AGENCIES CONSULTED DURING PREPARATION OF THIS INITIAL STUDY:

Person	Agency	Comments
Chandra Chandrashaker	Land Development	Transportation
Andrew Stuffler	Building Official/	Hazards
Brian Clark	Fire Marshall	Fire
Bob Williams	Land Development	Geophysical, Utilities
Joe Santos	Public Works	Sewer Services
Richard Jones	Public Works	Water Services
Susan Rungren	Public Works	Water/Sewer Services
Tom Mericle	Engineering	Traffic

STATE OF CALIFORNIA

ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

July 28, 2008

Iain Holt
City of San Buenaventura
P.O. Box 99
San Buenaventura, CA 93002-0099

Dear Iain Holt:

Re: SCH# 2008031082; Parklands Specific Plan and Tentative Map

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings.

The Commission's Rail Crossings Engineering Section (RCES) is in receipt of the *Notice of Completion & Environmental Document Transmittal-NOP* from the State Clearinghouse. RCES staff is concerned that the proposed project at Telegraph Road, Wells Road, Blackburn Road and SR-126 will cause an increase in traffic at the nearby Los Angeles Avenue (SR 118, DOT# 745890W, lat=34.282166, long=-119.148327) crossing.

Mitigation measures to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and continuous vandal resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad right-of-way.

The City of San Buenaventura should arrange a meeting, and Union Pacific Railroad Company to discuss relevant safety issues and, if necessary, file a GO88-B request for authority to modify an at-grade crossing.

If you have any questions, please contact Laurence Michael, Utilities Engineer at 213-576-7076, ldi@cpuc.ca.gov, or me at rxm@cpuc.ca.gov, 213-576-7078.

Sincerely,

Rosa Muñoz, PE
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division

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Community Development
PLANNING DIVISION

C: Dan Miller, UP

State of California - The Resources Agency ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FISH AND GAME

http://www.dfg.ca.gov
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

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Community Development
PLANNING DIVISION

July 24, 2008

Mr. Iain Holt
City of Buenaventura
Community Development Department
501 Poli Street
Ventura, California 93002

Subject: Notice of Preparation of a Draft Focused Environmental Impact Report for the Parklands Specific Plan and Tentative Tract Map, SCH # 2008031082, Ventura County

Dear Mr. Holt:

The Department of Fish and Game (Department) has reviewed the Initial Study and recognizes this project had been previously distributed as an Initial Study Mitigated Negative Declaration for the Parklands Specific Plan. The Department supports the County's decision to prepare a focused Environmental Impact Report to insure that all biological impacts resulting from this project are reduced to less than significant. The proposed project is the development of a 66.7-acre eight-parcel area in the Wells Community. The proposal includes annexation of three parcels currently under agriculture production from the County to the City. The proposal outlines the development of 499 total residential units, a 6,560 square foot community center, a 25,000 square foot commercial/retail space, and approximately 11.62 acres of open space along Brown Barranca. Currently the 66.7-acre project site is under agriculture with several private residences scattered along the parameter. The Brown Barranca includes approximately 1,660 linear feet of quality riparian habitat. The proposal is to maintain 860 feet of Brown Barranca and approximately 725 feet of riparian stream would be modified and placed underground in three box culverts. Native trees will be planted on the surface adjacent to a constructed stream and above the historic channel.

The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (CEQA Section 15386) and pursuant to our authority as a Responsible Agency under the California Environmental Quality Act (CEQA), Section 15381 over those aspects of the proposed project that come under the purview of Fish and Game Code Section 1600 et seq. regarding impacts to streams and lakes.

The California Wildlife Action Plan, a recent Department guidance document, identified the following stressors affecting wildlife and habitats within the project area: 1) growth and development; 2) water management conflicts and degradation of aquatic ecosystems; 3) invasive species; 4) altered fire regimes; and 5) recreational pressures. The Department looks forward to working with Ventura County to minimize impacts to fish and wildlife resources with a focus on these stressors.

The Specific Plan was published in March 2006 and the Biological Impact Study was initially prepared in December 2006 and updated in April 2007. A field survey was conducted in November 2005. The Department recommends that a Biological Constraints Analysis (BCA) be

prepared including updated wildlife and plant surveys for sensitive species that may occur in the project area. The following are specific comments concerning the Biological Impact Study and reference page and paragraph in the study report. These comments were included in a comment letter to Ventura County on the initial circulation of this project as a Draft Mitigated Negative Declaration and are reiterated in this letter to insure they are addressed in the Focused Environmental Impact Report.

Page 6, paragraph 3: The Department agrees that this Barranca has fragmented riparian habitat within the project reach. However, a site visit of the Barranca revealed that this is a high quality riparian fragment that is utilized by myriad of native species. The Department supports conserving the 11.62 acres of valuable stream resources, as outlined in the plan. We further recommend that the three box culverts proposed for the lower 725 linear feet be removed from the project and the area remain in a natural state. The Department also recommends increasing the size of the culvert as it exits the property to increase drainage during high flows. This would increase the open space component of the project and help maintain an already fragmented habitat.

Page 7, paragraph 2: The author states that due to the timing of the field survey in November 2005, bird nesting activity was not observed. However, yellow-rumped warbler, bushtit, song sparrow, American kestrel, Anna's hummingbird, and Bewick's wren were observed during the November field survey. The Department recommends updated avian surveys over several weeks of the nesting period and additional herpetological surveys in the spring.

1. The following outlines the Department's recommendations to minimize impacts to nesting birds with associated authority cited during the construction phase of the project.

    a) Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA).

    b) Proposed project activities (including disturbances to native and non-native vegetation, structures and substrates) should take place outside of the breeding bird season which generally runs from March 1- August 31 (as early as February 1 for raptors) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86).

    c) If avoidance of the breeding bird season is not feasible, the Department recommends that beginning thirty days prior to the disturbance of suitable nesting habitat the project proponent should arrange for weekly bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The surveys should be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys should continue on a weekly basis with the last survey being conducted no more than three days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent should delay all clearance/construction disturbance activities within

300 feet of suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biological monitor, must be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing marking the protected area 300 feet (or 500 feet) from the nest. Construction personnel should be instructed on the sensitivity of the area. The project proponent should record the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to the protection of native birds.

Page 19, paragraph 4: The author of the Biological Impact Study recommends replacement plantings in a 3:1 ratio for native trees. Clarification is needed when compared with Page 23 of the Initial Study that states a minimum of 1:1 replacement for riparian vegetation. The Department concurs with the recommendation of a minimum of 3:1 depending upon size of the tree removed.

Due to the limited acres of quality riparian habitat in the area the Department recommends that the entire length of the Barranca be conserved and that the northern corner of the proposed property be maintained as open space to provide a buffer for the Barranca. The Department recommends a wider buffer around the riparian habitat and contends that the quality of the development will offset the loss of a few residential units. Research has repeatedly shown that a quality development with adequate open space in close proximity increases property value.

To enable Department staff to adequately review and comment on the proposed project we recommend the following information, where applicable, be included in the Focused Environmental Impact Report:

1. A complete, recent assessment of fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species.

    a. A complete, recent assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and U.S. Fish and Wildlife Service. Field work should include protocol level surveys for California red-legged frog.

    b. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380).

    c. Proposed project activities (including disturbances to vegetation) should take place outside of the breeding bird season (February 1- August 15) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). If project activities cannot avoid the breeding bird season, nest surveys should be conducted and active nests should be avoided

and provided with a minimum buffer of 300 foot buffer (the Department recommends a minimum 500 foot buffer for all active raptor nests).

d. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

2. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

   a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

   b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

3. The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations.

   a. The Department requires a streambed alteration agreement, pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant prior to any direct or indirect impact to a lake or stream bed, bank or channel or associated riparian resources. The Department's issuance of a stream bed alteration agreement may be a project that is subject to CEQA. To facilitate our issuance of the agreement when CEQA applies, the Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) document for the project. To minimize additional requirements by the Department under CEQA the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.

The Department recommends that an update Biological Impact Study be completed and additional mitigation measures developed to fully mitigate impacts from this project and should be included in a revised DMND prior to lead agency approval of the project.

Thank you for this opportunity to provide comments. Questions regarding this letter should be directed to Mr. Dan Blankenship, Staff Environmental Scientist, at (661) 259-3750.

Sincerely,

Helen R. Birss

for Edmund J. Pert
Regional Manager
South Coast Region

cc: Helen Birss, Los Alamitos
Betty Courtney, Newhall
Dan Blankenship, Newhall
HCP-Chron Department of Fish and Game
State Clearinghouse, Sacramento

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

July 18, 2008

RECEIVED
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Community Development
PLANNING DIVISION

Iain Holt
City of San Buenaventura
501 Poli Street P.O. Box 99
San Buenaventura, CA 93001

RE: SCH#2008031082 Parklands Specific Plan and Tentative Map; Ventura County.

Dear Mr. Holt:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

CC: State Clearinghouse

Native American Contacts
Ventura County
July 18, 2008

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks , CA 91362
805 492-7255
(805) 558-1154 - cell

Chumash
Tataviam
Fe†rnandeño

Stephen William Miller
189 Cartagena
Camarillo , CA 93010
(805) 484-2439

Chumash

Owl Clan
Dr. Kote & Lin A-Lul'Koy Lotah
48825 Sapaque Road
Bradley , CA 93426
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Chumash

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1931 Shadybrook Drive
Thousand Oaks , CA 91362
ndnrandy@hotmail.com
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Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

Julie Lynn Tumamait
365 North Poli Ave
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jtumamait@sbcglobal.net
(805) 646-6214

Chumash

Coastal Band of the Chumash Nation
Janet Garcia,Chairperson
P.O. Box 4464
Santa Barbara , CA 93140
805-964-3447

Chumash

Patrick Tumamait
992 El Camino Corto
Ojai , CA 93023
(805) 640-0481
(805) 216-1253 Cell

Chumash

Charles S. Parra
P.O. Box 6612
Oxnard , CA 93031
(805) 340-3134 (Cell)
(805) 488-0481 (Home)

Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH # 2008031082 Parklands Specific Plan and Tentative Map; Ventura County.

Native American Contacts
Ventura County
July 18, 2008

Carol A. Pulido
165 Mountainview Street Chumash
Oak View , CA 93022
805-649-2743 (Home)

Melissa M. Para-Hernandez
119 North Balsam Street Chumash
Oxnard , CA 93030
805-988-9171

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH # 2008031082 Parklands Specific Plan and Tentative Map; Ventura County.

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UNITED WATER CONSERVATION DISTRICT

"Conserving Water Since 1927"

July 25, 2008

Mr. Iain Holt
Community Development Department
City of San Buenaventura
501 Poli Street
Ventura, CA 93001

Reference: Notice of Preparation for Parklands Specific Plan and Tentative Tract Map

Mr. Holt,

United Water Conservation District has reviewed the Notice of Preparation of a Draft Focused EIR: Parklands Specific Plan and Tentative Map. Staff has a couple of comments with respect to water supply for the proposed project area.

The amount of water needed for this development, which includes up to 499 residential units, commercial/retail businesses, and green spaces, might range up to 250 acre-feet per year. The parcels being proposed for developed are within the Santa Paula basin, which is subject to a California Superior Court Stipulated Judgment with respect to pumping within the basin. The current pumping allocation for the area designated for development appears to be 97 acre-feet per year, and is associated with the Coffman well (T3N, R22W, Section 35N01 SBB&M). Records show that an additional well, T3N, R22W, Section 35P01 SBB&M, was historically located near the eastern boundary of the proposed development area. This well however, has no apparent allocation for pumping under the stipulated judgment and it is unknown if the well still exists and if it does exist, whether it is being pumped. It's not clear how the allocation associated with the Coffman well would allows for a sufficient amount of water to be supplied to the existing approximate 66 acres of row crops on the parcels within the proposed project site. This assumes crops are grown throughout the year. This suggests that either the well along the eastern boundary still exists and is being pumped (but not reported), the Coffman well is being pumped beyond its allocation, and/or that another source of water is being delivered into the area. Alta Mutual Water Company delivers water northeast and northwest of this area but, to staffs knowledge, does not deliver south of Telegraph Road in this area.

UNITED WATER CONSERVATION DISTRICT

Although the Investigation of Santa Paula Basin Yield report (2003) found that the Santa Paula basin was not in overdraft as of 1998, the report also states that "*water levels in the west end of the basin behave differently than water levels in the remainder of the basin. In particular, well interference problems and long-term water-level declines have occurred.*" The proposed Parklands project is located within the western area of the Santa Paula basin. Any increased pumping in this area above the average pumping during the study period (1983 through 1995) might result in increased water-level decline. The general area is already pumped in excess of the allocations for this area, as based upon the 2006 Santa Paula Basin Annual Report, which shows cumulative pumping (2000 through 2006) of 480 acre-feet in excess of allocation on the approximate 36 acre Hanson Trust Fund tract just west of the proposed project area.

If you have any questions please contact Pete Dal Pozzo or Ken Turner at (805) 525-4431 or alternatively at peted@unitedwater.org or kent@unitedwater.org.

Sincerely,

E. Michael Solomon

E. Michael Solomon
Chief Financial Officer

Cc: BDRF
Santa Paula Basin Pumpers Association

File: City of San Buenaventura

Ventura
Local Agency Formation Commission

July 22, 2008

Mr. Iain Holt
City of San Buenaventura
Planning Division
501 Poli Street
Ventura, CA 93002

RE: Parklands Specific Plan NOP

Dear Mr. Holt:

Thank you for providing the Ventura Local Agency Formation Commission (LAFCO) with the opportunity to review the NOP for the Parklands Specific Plan EIR. As a CEQA responsible agency, we are charged with ensuring that environmental documents prepared by lead agencies address the issues that relate to our scope of authority. Please note that these comments are solely those of the LAFCO staff; the document has not been reviewed by the Commission.

The EIR should identify LAFCO as a public agency whose approval is required in conjunction with the development of the proposed project. Indeed, to annex the unincorporated portions of the proposed specific plan area to the City, LAFCO must first take action to approve an application for several changes of organization, collectively referred to as a reorganization. More specifically, the necessary reorganization action would need to include annexation of the portion of the project area currently located outside of the City boundaries and the simultaneous detachment of the same area from the Ventura County Resource Conservation District and the Ventura County Fire Protection District.

The issues raised in this letter should be addressed in the EIR. Should outstanding issues remain, LAFCO may consider the application as incomplete for processing.

LAFCO offers the following comments:

<u>April 1, 2008 letter</u>

Ventura LAFCO submitted a letter to the City on April 1, 2008 (attached) in response to the previously proposed mitigated negative declaration for this project. In this letter, LAFCO cites a number of issues which should be addressed in the EIR.

County Government Center • Hall of Administration • 800 S. Victoria Avenue • Ventura, CA 93009-1850
Tel (805) 654-2576 • Fax (805) 477-7101
http://www.ventura.lafco.ca.gov

Agricultural Resources

The NOP does not identify Agricultural Resources as a subject to be discussed in the EIR, though the project will eliminate about 67 acres of prime farmland. The cumulative impact to agricultural resources within the Saticoy-Wells Community Plan, of which this site is a part, is substantially greater. The loss of such farmland is a significant impact and must be evaluated.

The previously proposed initial study/mitigated negative declaration (as well the initial study recently prepared for the nearby development proposed on the Hansen property) stated that there would be no impact to agricultural resources because a statement of overriding consideration was adopted for such impacts when the General Plan EIR was certified. This should not be the basis to conclude that there will be no impacts to agricultural resources resulting from this project, as the FEIR for the General Plan specifically states in response to LAFCO's comments that, "As specific boundary adjustments are proposed in the future, the City will conduct analysis of applicable Government Code provisions as required by LAFCO." Please note in particular Ventura LAFCO Commissioner's Handbook Policy 2.1.2.1 (attached), which requires the submittal of specific information in conjunction with change of organization proposals that could lead to the conversion of agricultural lands to non-agricultural uses. Any of this information not included in the EIR will be required by LAFCO prior to deeming an application complete.

Island Annexation

Section 3.2.3 of the Ventura LAFCO Commissioner's Handbook states:

> Any approval of a proposal for a change of organization or reorganization will be conditioned to provide that proceedings will not be completed until and unless a subsequent proposal is filed with LAFCO initiating proceedings for the change of organization or reorganization of all unincorporated island areas that meet the provisions of Government Code Section 56375.3, provided all of the following criteria are applicable:
>
> i. The approved proposal was initiated by resolution of a city that surrounds or substantially surrounds one or more unincorporated island areas that meet the requirements of Section 56375.3.
> ii. The territory in the approved proposal consists of one or more areas that are each 40 acres or more in area.
> iii. The territory in the approved proposal will not be used exclusively for agriculture or open space purposes after the completion of proceedings.
> iv. The territory in the approved proposal is not owned by a public agency or used for public purposes.

The proposed annexation appears to meet the criteria outlined above. Under this policy, the reorganization/annexation of the Parklands project would be unable to be finalized until the City seeks annexation of its unincorporated islands. You may want to include this in the EIR.

Again, thank you for the opportunity to comment on the NOP. Please do not hesitate to contact me should you have any questions.

Sincerely,

Kai Luoma, AICP
Senior Analyst

Attachments

CC: Supervisor Steve Bennett, District 1

SECTION 2.1.2 APPLICATIONS

2.1.2.1 Application and fees required: No application shall be deemed complete and no Certificate of Filing shall be issued for any application that does not include a completed Ventura LAFCO application form accompanied by the required fees and supporting documentation and maps as specified in the Ventura LAFCO filing requirements. The Executive Officer or designee may, prior to deeming an application complete, require additional information, including but not limited to, complete details for plans for service, property tax redistribution agreements, and similar information necessary for the Ventura LAFCO to make informed decisions on the factors and determinations required by law.

i. Unless specifically waived by the LAFCO Executive Officer, for any proposal which could reasonably be expected to lead to the conversion of agricultural lands (as defined by Government Code Section 56016) to non-agricultural uses, information regarding the effects of the proposal on maintaining the physical and economic integrity of agricultural lands shall be submitted in conjunction with the application. Specifically, the information should address the following: The location of, and acreage totals for, prime and nonprime agricultural land involved in the area and adjacent areas. This analysis shall be based on the definition of “prime” agricultural land pursuant to Government Code Section 56064.
ii. The effects on agricultural lands within the proposal area.
iii. The effects on adjacent agricultural lands.
iv. The effects on the economic integrity of the agricultural industry in Ventura County.

In addition, information should be provided about any measures adopted to reduce the effects identified.

"Citrus Capital of the World"

City of Santa Paula

970 Ventura Street • Santa Paula, California • Mailing Address: P.O. Box 569 • 93061 • Phone: (805) 525-4478 • Fax: (805) 525-6278

July 16, 2008

City of Ventura Planning Division
Iain Holt, Acting Senior Planner
501 Poli Street, Room 117
Ventura, CA 93002

Re: NOP for a Focused EIR for Parklands Specific Plan& Tentative Tract Map

Dear Mr. Holt:

Thank you for the opportunity to comment on the NOP for the Parklands Specific Plan and tentative tract map. The project involves future development of a 66.7 acre; eight parcel area for development with residential uses with supporting infrastructure, green-space, community recreational and a small amount of service commercial development. The City of Santa Paula submits the following comments for consideration for inclusion in the EIR for the aforementioned project.

1. The air quality section should incorporate a discussion of Global Warming/Green House Gases and California Regulations as well as the required CEQA analysis on this issue.

2. The land use section should include a discussion on the proposed zone change from County designated AE-40 to the Specific Plan designations and the potential impact on the loss of agricultural lands.

Sincerely,

Anna Arroyo
Assistant Planner

RECEIVED
JUL 17 2008
Community Development
PLANNING DIVISION

SANTA YNEZ BAND OF MISSION INDIANS
Tribal Elders Council

July 17, 2008

RECEIVED
JUL 22 2008
Community Development
PLANNING DIVISION

Iain Holt
City of San Buenaventura
Community Development Department
501 Poli Street
Ventura, CA 93001

RE: Parklands Specific Plan & Tentative Map

Dear Mr. Holt:

Thank you for contacting the Tribal Elders Council for the Santa Ynez Band of Chumash Indians in regards to the above mentioned project.

At this time, the Elders Council requests no further consultation on this project; however we also recommend that Chumash from the project area are also inclusive in your request for information.

If regulations that apply to this project do not require the presence of a Native American monitor, we ask that you please consider having a monitor in place during ground disturbance to assure that any cultural items unearthed be identified as quickly as possible. If you decide to proceed with hiring a Native American monitor please contact the Chumash of the project area.

Thank you for remembering that at one time our ancestors walked this sacred land.

Sincerely Yours,

The Tribal Elders Council Governing Board

AAP: kk

P.O. Box 365 • Santa Ynez • CA • 93460
Phone: (805) 688-8446 • Fax: (805) 693-1768 • Email: elders@santaynezchumash.org

RESOURCE MANAGEMENT AGENCY
county of ventura

Planning Division
Kimberly L. Rodriguez
Director

July 25, 2008

City of Ventura
Community Development Dept.
501 Poli Street
Ventura, CA 93001
Attn.: Mr. Iain Holt

E-mail: Iholt@ci.ventura.ca.us

Subject: Comments on NOP of Draft Focused EIR; Parklands Specific Plan and Tentative Map

Thank you for the opportunity to review and comment on the subject document. Attached are the comments that we have received resulting from intra-county review of the subject document. Additional comments may have been sent directly to you by other County agencies.

Your proposed responses to these comments should be sent directly to the commenter, with a copy to Kari Finley, Ventura County Planning Division, L#1740, 800 S. Victoria Avenue, Ventura, CA 93009.

If you have any questions regarding any of the comments, please contact the appropriate respondent. Overall questions may be directed to Kari Finley at (805) 654-3327.

Sincerely,

Kim L. Rodriguez
County Planning Director

Attachment

County RMA Reference Number 08-010-1

800 South Victoria Avenue, L# 1740, Ventura, CA 93009-1740 (805) 654-2481 Fax (805) 654-2509

VENTURA COUNTY
WATERSHED PROTECTION DISTRICT
PLANNING AND REGULATORY DIVISION
800 South Victoria Avenue, Ventura, California 93009
Sergio Vargas. Deputy Director - 805 650-4077

DATE: July 23, 2008

TO: Kari Finley, Resource Management Agency

FROM: Sergio Vargas, P.E.
Planning and Regulatory

SUBJECT: RMA 08-010-1.PARKLANDS SPECIFIC PLAN

The Watershed Protection District has received the Notice of Preparation of a Draft EIR for the above project. The EIR should address the comments made by the District on the Draft Initial Study and Mitigated Negative Declaration (MND)

The comments are as follows:

The documents provided for the MND review did not contain sufficient information for review. Subsequently, two additional reports were obtained from the City of Ventura:

- Brown Barranca Hydraulic Study (Henderson Road to Telegraph Road) prepared by Omrun Engineering, December 2006
- Parklands Development, TTM No. 5632, Detention Basin prepared by Harks & Associates, December 28, 2006

The Detention Basin study was intended to mitigate the hydrologic impacts of the development.

The Brown Barranca Hydraulic Study proposes an interim improvement and future improvements. The interim improvement will replace the existing double 8'x6' RCB at Blackburn Road with a double 12' x 6' RCB and extend 700 feet upstream. This will reduce the 100-year floodplain upstream of HWY 126 but not eliminate it. Future improvements will widen the open channels and box culverts downstream from Blackburn Road to Henderson Road removing bottlenecks at HWY 126. The proposed channel and box culvert improvements in this study are smaller in size comparing with those proposed by HDR's Brown Barranca study, partly because the 700 feet box culvert extension has created supercritical flow conditions within the improved channels. For both interim and future conditions improvements, flow velocity leaving the development site will be much higher

than what it is at existing conditions. No flow velocity mitigation measures have been proposed under this study/development plan. Considering the high potential of erosion in downstream channels, the developer still bears the responsibility to mitigate the higher erosion potential of downstream channels.

The following summarizes the Watershed Protection District comments:

- On page 71 of the MND, item O Water: 1. Change absorption rates, drainage patterns or the rate and amount of surface runoff? Potentially Significant Unless Mitigated should be checked instead of Less Than Significant Impact. This change reflects the needs for onsite detention facilities to mitigate potential increase of surface runoff.
- In the Detention Basin plan prepared by Hawks & Associates, the conceptual plan of the onsite detention basin considers the development as one piece of land with a drainage area of 67 acres while in reality the development is composed of two pieces of land separated by Brown Barranca: a 54-acre portion located on south of the barranca and a 13-acre portion on the north bank of the Brown Barranca. Therefore, the basin needs to be design in accordance with the physical conditions of the development site.
- A conceptual plan & profile drawing is required to show: 1) the footprint, the location and the configuration of the detention basin, 2) the low-flow bypass channel (25 cfs), 3) the connection to Brown Barranca, and 4) the inlet and outlet structures.
- At existing conditions, the floodplain area upstream of the Hwy 126 acts as a natural detention facility with certain storage volume. At the interim conditions (with 700 feet culvert installed), the size of the floodplain will be reduced and so is its natural detention function. The onsite detention basin will have to compensate the loss of the natural detention volume.
- A comparison of pre- and post-development VCRAT hydrology for the whole Brown Barranca watershed is required in order to evaluate the effectiveness of the mitigation measures.
- The Brown Barranca Hydraulic Study provided two sets of HEC-RAS results for interim condition floodplain analysis, one for Subcritical Flow run and another for Mixed Flow. Mixed Flow run is more appropriate considering the physical conditions. However, the HEC-RAS run excluded the 700 feet box culvert section from Sta. 9063 to 8413 resulting in a discontinuity in flow velocity from 23 feet per second (fps) at 9063 to 7 fps at 8413. Because of this discontinuity, the higher flow velocity leaving the development site is not properly modeled. The interim condition hydraulics can be analyzed using either HEC-RAS or WSPG.

End of Text

PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
Traffic, Advance Planning & Permits Division
M E M O R A N D U M

DATE: July 23, 2008

TO: Resource Management Agency, Planning Division
Attention: Kari Finley

FROM: Nazir Lalani, Deputy Director

SUBJECT: **REVIEW OF DOCUMENT 08-010-1**
Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR)-Parklands Specific Plan and Tentative Tract Map. Project involves a Specific Plan, annexation from County to City, General Plan (GP) Amendment, and Zone Change located in southwest corner of the intersection of Telegraph Road and Wells Road in the Wells Community of the City of Ventura.
Applicant: Westwood Communities Corporation
Lead Agency: **City of Ventura**
APN 089-0-012-004, -008, -014,-016, -018, -0190, -020 & -021

Pursuant to your request, the Public Works Agency -- Transportation Department has completed the review of the NOP of a Draft EIR for the subject project. The proposed project involves Specific Plan and subdivision of the future development of a 66.7-acre area in the City of Ventura, Wells Community area. The proposal involves annexation of three parcels, currently under agricultural production from the County to the City, a GP Amendment changing Figure 4.3 Roadway Classification Plan of the 2005 GP for Telegraph Road between Saticoy Avenue to Wells Road and Wells Road between Telegraph Road and Carlos Street from secondary arterial with four travel lanes to collector with two travel lanes, a Zone Change from AE-40 and R-1-7to T-4 Corridor, T3.1 Neighborhood Edge and to T-3.2 Neighborhood General. Development would include 173 units of courtyard condominium housing, 110 units triplex and quadplex condominium residential, 216 single family homes, 6,560 SF civic space, community center, 25,000 SF commercial/retail space, and11.62 acre of green space, open space and parks (Table 1, Proposed Developments). The specific plan areas is located at the southwest corner of the intersection of Telegraph Road and Wells Road in the Wells Community of the City of Ventura, bounded by Telegraph Road on the north, Wells Road on the east, and Blackburn Road and State Route 126 on the south. Our comments are as follows:

1. We generally concur with the comments in the NOP of Draft EIR for those areas under the purview of the Transportation Department. However, no project specific impacts on County roadways were identified in the NOP of Draft EIR.

2. The Draft EIR should include the project site specific impacts, if any, and mitigation measures to address additional traffic from this project on Ventura County local roads and intersections, in particular, on the following road segments and intersections:

- Foothill Road, from City of Ventura city limits to Olive Road, including the intersection;
- Intersection of Foothill Road and Wells Road;
- Telegraph Road, from Ventura city limits to Olive Road, including the intersection;
- Olive Road, from Foothill Road to Telegraph Road;
- Saticoy Avenue, from and to City of Ventura city limits;
- Intersection of SR 118 and Nardo Street;
- Intersection of SR 118 and Vineyard Avenue (SR 232);
- Intersection of SR 118 and Rose Avenue;
- Intersection of SR 118 and Santa Clara Avenue, and
- Intersection of SR 118 and Hwy 34.

3. The project shall contribute their fair share of cost for the sidewalk improvement project on Foothill Road in the vacinity of Brown Baranca, which is to be a joint project between the City of Ventura and the County of Ventura.

4. The cumulative impact of this project, when considered with the cumulative impact of all other approved (or anticipated) development projects in the County, is potentially significant. The condition for paying the County Traffic Impact Mitigation Fee (TIMF) to address the cumulative impacts of this project on the County Regional Road Network should be included in the Draft EIR. Based on the information from Initial Study (reviewed April 16, 2008), and the Reciprocal Agreement between the City of Ventura and the County of Ventura, the fee due to the County is:

   5,559 ADT x $42.95/ADT = **$238,759.05**

   The above estimated fee may be subject to adjustment at the time of deposit, due to provisions in the TIMF Ordinance allowing the fee to be adjusted for inflation based on the Engineering News Record construction cost index. The above fee is an estimate only based on information provided in the Initial Study. If the project cumulative impacts are not mitigated by payment of a TIMF, current GP policy will require County opposition to this project.

5. Please provide us a copy of the Draft EIR for review, when it becomes available.

Our review is limited to the impacts this project may have on the County's Regional Road Network.

Please call me at 654-2080 if you have questions.

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VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: Kari Finley/Krista Blankenbiller, Planning DATE: July 23, 2008

FROM: Alicia Stratton

SUBJECT: Request for Review of Notice of Preparation for a Focused Environmental Impact Report (FEIR) for the Parklands Specific Plan, City of Ventura (Reference No. 08-010-0)

Air Pollution Control District staff has reviewed the subject project, which is a proposal for development of a 66.7-acre eight-parcel area in the Wells Community, with annexation of three parcels. The project would involve a general plan amendment and subsequent development would include residential uses, green-space, community recreational space and some service commercial development. There would be 499 residential units and 25,000 sq. ft. commercial/retail space. The project location is the southwest corner of the intersection of Telegraph Road and Wells Road in the City of Ventura.

District staff recommends the FEIR evaluate all potential air quality impacts that may result from the project. Specifically, the air quality assessment should consider reactive organic compound and nitrogen oxide emissions from all project-related motor vehicles and construction equipment. Additionally, the air quality assessment should consider potential impacts from fugitive dust and particulate matter, including PM10, that will be generated by construction activities. Compliance with the Ventura County Air Quality Management Plan should be addressed as well.

A carbon monoxide screening analysis should be conducted for any project-impacted roadway intersection that are currently operating, or that are expected to operate at, Levels of Service D, E, or F, or at any project-impacted roadway intersection that may be a CO hotspot. If a potential hotspot is identified, the District recommends that a complete CALINE3 or CALINE4 carbon monoxide analysis be conducted for that intersection.

This project will involve a large amount of grading of soil. The California Air Resources Board (CARB) has identified diesel exhaust particulate matter as a Toxic Air Contaminant (TAC). Diesel exhaust includes hundreds of different gaseous and particulate components, many of which are toxic. The earthmoving equipment has the potential to expose sensitive populations in the vicinity to elevated levels of diesel exhaust.

The District recommends that a screening health risk assessment be conducted for the project. Mitigation measures should also be identified and discussed if the assessment indicates a significant risk. Additional information on TACs can be obtained from the District's website at http://www.vcapcd.org/air_toxics.htm. If you have any general questions regarding air toxics, please contact Terri Thomas of the APCD at (805) 645-1405 or by email at terri@vcapcd.org. Section 2.6, Toxic Air Contaminants, of the Guidelines describes how a TAC can impact sensitive populations. In addition, Section 6.5 of the Guidelines discusses methods of assessing TAC impacts. Methods for TAC mitigation are discussed in Section 7.5.6 of the Guidelines.

If project-related air quality impacts are deemed significant, appropriate mitigation measures should be identified and included in the environmental impact report. Also, in addition to the above air quality issues, we recommend the draft environmental impact report also address global climate change.

If you have any questions, please call me at (805) 645-1426.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, OFFICE OF REGIONAL PLANNING
AND PUBLIC TRANSPORTATION
IGR/CEQA BRANCH
100 SOUTH MAIN STREET
LOS ANGELES, CA 90012
PHONE (213) 897- 6696
FAX (213) 897-1337

RECEIVED
APR 14 2008
Community Development
PLANNING DIVISION

Flex your power!
Be energy efficient!

April 08, 2008

Mr. Iain Holt
City of Ventura
Planning Department
501 Poli Street
Ventura, CA 93002

Re: ***Parklands Specific Plan***
General Plan Amendment A0-227
IGR/CEQA No. 080352/EA
SCH#2008031082
Vic. VN-126-PM 5.29

Dear Mr. Holt:

Thank you for including the California Department of Transportation in the environmental review process of a 66.7-acre eight-parcel area in the Wells Community under the proposed Parklands Specific Plan for the City of Ventura. The applicant's proposal would involve annexation of three parcels currently under agricultural production from the County to the City. The proposed General Plan Amendment would change Roadway Classification Plan of the 2005 General Plan for Telegraph Road between Saticoy Avenue to Wells Road and Wells Road between Telegraph Road and Carlos Street from secondary arterial with four travel lanes to collector with two travel lanes. A zone change from R-1 (County Single-Family Residential) to T-4 Corridor, T3.1 Neighborhood Edge and T-3.2 Neighborhood General.

Based on a review of information contained in the Notice of Preparation of a PEIR, we have the following comments:

We request that a traffic impact study be prepared to include an evaluation of traffic impacts to South Wells Road and State Route 126 (SR-126) interchange and Telephone Road and State Route 118 (SR-118) intersection. Generally, we request that a traffic impact study include the following information:

- Presentations of assumptions and methods used to develop trip generation, trip distribution, trip assignments, and choice of travel mode. Travel modeling should be consistent with other regional and local modeling forecasts and with travel data.

- We are generally concerned about queuing of vehicles using off-ramps back into mainline through lanes. Before approving the proposed project, we recommend the City determine whether project-related plus cumulative traffic is expected to cause long queues on off-ramp at SR-126 and SR-118. Also, off-ramp intersections should be analysis to determine whether their turn geometry is appropriate to accommodate transfer trucks.

- Inclusion of all appropriate traffic volumes. Analysis should include a) existing traffic b) cumulative traffic from all specific approved developments in the area, c) cumulative traffic from likely not-yet-approved developments in the area, and d) traffic growth other than from developments. Scenarios involving different assumptions on development and growth might be considered.

- Analysis of AM, and PM peak-hour volumes for both existing and future. Future conditions would include build-out of all projects and any plan-horizon years. Existing and buildout Level of Service should be specified (HCM2000 methodology is requested).

- Discussion of mitigation measures appropriate to alleviate anticipated traffic impacts. This discussion should include, but not be limited to, the following:
  - description of transportation infrastructure improvements
  - financial costs, funding sources and financing
  - sequence and scheduling considerations
  - implementation responsibilities, controls and monitoring

For additional information, please refer to State Guide for the Preparation of Traffic Impacts Studies at:
http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We strongly recommend the City and its traffic consultant coordinate the preparation of the Traffic Study with Caltrans. We would welcome the opportunity to meet and share information that has been collected in the area.

The Department is also interested in the transportation planning roles of local general plans and suggests that they emphasize the following areas:

- Development of coordinated transportation system management plans that achieve the maximum use of present and proposed infrastructure.

- For your information, please refer to the website for the California Environmental Resource Evaluation System. It provides information regarding General Plans that you may find helpful:

  http://ceres.ca.gov/planning/genplan/gp_chapter3.html#circulation

In addition to planning for physical transportation improvements, we encourage local jurisdictions to plan to mitigate traffic impacts on State highways by managing land use. Goals toward the achievement of a job/housing balance should be included in the General plan as it is critical to the regional transportation system.

If you have any questions regarding our comments, please call project coordinator Zeron Jefferson at (213) 897 – 1333 and please refer to our record number 071155/EA.

Sincerely,

for Alon Levi

Elmer Alvarez
IGR/CEQA Program Manager
Caltrans, District 7

cc: Scott Morgan, State Clearinghouse

State of California - The Resources Agency ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

April 16, 2008

Mr. Iain Holt
City of Buenaventura
Community Development Department
501 Poli Street
Ventura, California 93002

Draft Initial Study and Mitigated Negative Declaration for Parklands Specific Plan SCH # 2008031082, Ventura County

Dear Mr. Holt:

The Department of Fish and Game (Department) has reviewed the Draft Mitigated Negative Declaration (DMND), Parklands Specific Plan for the above-referenced project. The proposed project is the development of a 66.7 acre eight-parcel area in the Wells Community. The proposal includes annexation of three parcels currently under agriculture production from the County to the City. The proposal requires a General Plan Amendment for roadway reclassification and zone changes. The proposal outlines the development of 499 total residential units, a 6,560 square foot community center, a 25,000 square foot commercial/retail space, and approximately 11.62 acres of open space along Brown Barranca. Currently the 66.7 acre project site is under agriculture with several private residences scattered on the parameter. The Brown Barranca includes approximately 1,660 linear feet of quality riparian habitat. The proposal is to maintain 860 feet of Brown Barranca and modify approximately 725 feet of this riparian under-grounding placing three box culverts and planting native tree on the surface adjacent to a constructed stream channel above the historic channel.

The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (CEQA Section 15386) and pursuant to our authority as a Responsible Agency under the California Environmental Quality Act (CEQA), Section 15381 over those aspects of the proposed project that come under the purview of Fish and Game Code Section 1600 et seq. regarding impacts to streams and lakes.

The Specific Plan was published in March 2006 and the Biological Impact Study was initially prepared in December 2006 and updated in April 2007. A field survey was conducted in November 2005. The Department recommends that an updated Biological Impact Study be developed and updated wildlife surveys be conducted. The following are specific comments concerning the Biological Impact Study and reference page and paragraph in the study report.

Page 6, paragraph 3: The Department agrees that this Barranca is fragmented and the terminus riparian habitat in this reach. However, a site visit of the Barranca revealed that this is a high quality riparian fragment that is utilized by myriad of native species. The Department supports conserving this valuable resource of 11.62 acres outlined in the plan and recommend that the lower 725 linear feet proposed for confining in three box culverts remain in a natural state and increase the culvert size as it exits the property to increase

drainage during high flows. This would increase the open space component of the project and help maintain an already fragmented habitat.

Page 7, paragraph 2: The author states that due to the timing of the field survey in November 2005, bird nesting activity was not observed. However, yellow-rumped warbler, bushtit, song sparrow, American kestrel, Anna's hummingbird, and Bewick's wren were observed during the November field survey. The Department recommends updated avian surveys over several weeks of the nesting period and additional herpetological surveys in the spring. The following outlines the Department's recommendations to minimize impacts to nesting birds with associated authority cited during the construction phase of the project.

a. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA).

b. Proposed project activities (including disturbances to native and non-native vegetation, structures and substrates) should take place outside of the breeding bird season which generally runs from March 1- August 31 (as early as February 1 for raptors) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86).

c. If avoidance of the breeding bird season is not feasible, theDepartment recommends that beginning thirty days prior to the disturbance of suitable nesting habitat the project proponent should arrange for weekly bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The surveys should be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys should continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent should delay all clearance/construction disturbance activities within 300 feet of suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biological monitor, must be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing <u>marking the protected area 300 feet (or 500 feet) from the nest</u>. Construction personnel should be instructed on the sensitivity of the area. The project proponent should record the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to the protection of native birds.

Page 19, paragraph 4: The author of the Biological Impact Study recommends replacement plantings in a 3:1 ratio for native trees. Clarification is needed when compared with Page 23 of the Initial Study that states a minimum of 1:1replacement for riparian vegetation. The Department concurs with the recommendation of a minimum of 3:1 depending upon size of the tree removed.

Due to the limited acres of quality riparian habitat in the area the Department recommends that the entire length of the Barranca be conserved and that the northern corner of the proposed property be maintained as open space to provide a buffer for the Barranca. The Department recommends a wider buffer around the riparian habitat and contends that the quality of the development will offset the loss of a few residential units. Research has repeatedly shown that a quality development with adequate open space in close proximity increases property value.

To enable Department staff to adequately review and comment on the proposed project, we recommend the following information, where applicable, be included in an updated Biological Impact Study for the Parklands Master Plan:

1. A complete, recent assessment of fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species.

    a. A complete, recent assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Recent, focused, species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and U.S. Fish and Wildlife Service. Field work should include protocol level surveys for California red-legged frog.

    b. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380).

    c. Proposed project activities (including disturbances to vegetation) should take place outside of the breeding bird season (February 1- August 15) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). If project activities cannot avoid the breeding bird season, nest surveys should be conducted and active nests should be avoided and provided with a minimum buffer of 300 foot buffer (the Department recommends a minimum 500 foot buffer for all active raptor nests).

    d. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Department studies have shown that these efforts are experimental in nature and largely unsuccessful.

2. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to the proposed

project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, require that the Department issue a separate CEQA document for the issuance of a CESA permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA permit. For these reasons, the following information is requested:

a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

3. The Department opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains. All wetlands and watercourses, whether intermittent, ephemeral, or perennial, must be retained and provided with substantial setbacks which preserve the riparian and aquatic habitat values and maintain their value to on-site and off-site wildlife populations.

   a. The Department requires a streambed alteration agreement, pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant prior to any direct or indirect impact to a lake or stream bed, bank or channel or associated riparian resources. The Department's issuance of a stream bed alteration agreement may be a project that is subject to CEQA. To facilitate our issuance of the agreement when CEQA applies, the Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) document for the project. To minimize additional requirements by the Department under CEQA the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement. Early consultation is recommended, since modification of the proposed project may be required to avoid or reduce impacts to fish and wildlife resources.

The Department recommends that an update Biological Impact Study be completed and additional mitigation measures developed to fully mitigate impacts from this project and should be included in a revised DMND prior to lead agency approval of the project.

Thank you for this opportunity to provide comments. Questions regarding this letter should be directed to Mr. Dan Blankenship, Staff Environmental Scientist, at (661) 259-3750.

Sincerely,

Edmund J. Pert
Regional Manager
South Coast Region

cc: Helen Birss, Los Alamitos
Betty Courtney, Newhall
Dan Blankenship, Newhall
HCP-Chron Department of Fish and Game, San Diego
State Clearinghouse, Sacramento

EP:db

Ventura
Local Agency Formation Commission

April 1, 2008

RECEIVED
APR 03 2008
Community Development
PLANNING DIVISION

Mr. Iain Holt
City of San Buenaventura
Planning Division
501 Poli Street
Ventura, CA 93002

RE: Parklands Specific Plan Initial Study/Mitigated Negative Declaration

Dear Mr. Holt:

Thank you for providing the Ventura Local Agency Formation Commission (LAFCO) with the opportunity to review the Initial Study and Mitigated Negative Declaration prepared for the Parklands Specific Plan. As a CEQA responsible agency, we are charged with ensuring that environmental documents prepared by lead agencies address the issues that relate to our scope of authority. Please note that these comments are solely those of the LAFCO staff; the document has not been reviewed by the Commission.

The document should identify LAFCO as a public agency whose approval is required in conjunction with the development of the proposed project. Indeed, to annex the unincorporated portions of the proposed specific plan area to the City, LAFCO must first take action to approve an application for several changes of organization, collectively referred to as a reorganization. More specifically, the necessary reorganization action would need to include annexation of the portion of the project area currently located outside of the City boundaries and the simultaneous detachment of the same area from the Ventura County Resource Conservation District and the Ventura County Fire Protection District.

The issues raised in this letter should be addressed by the City prior to submitting an application for a reorganization to the Ventura LAFCO. Should outstanding issues remain, LAFCO may consider the application as incomplete for processing.

LAFCO offers the following comments:

<u>The Saticoy and Wells Community Plan</u>

The subject project is part of the Saticoy and Wells Community Plan (Community Plan).

County Government Center • Hall of Administration • 800 S. Victoria Avenue • Ventura, CA 93009-1850
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http://www.ventura.lafco.ca.gov

After preparation of an Initial Study/Notice of Preparation for the Community Plan (dated August 24, 2006), the City concluded that the preparation of an environmental impact report (EIR) was necessary due to numerous potentially significant impacts the Community Plan may have on the environment. Fifty-one direct, indirect, and cumulative potentially significant impacts were indentified in the following areas:

- Aesthetics
- Conversion of agricultural land
- Air quality
- Biological resources
- Cultural resources
- Hydrology and water quality
- Land use planning
- Noise
- Population and housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and service systems
- All three of the mandatory findings of significance are checked as a "potentially significant impact".

According to a March 3, 2008 presentation made by City staff to the City Council and Planning Commission, this community plan is nearing completion and is scheduled to be adopted later this year or the early part of 2009.

The development of the Parklands site, the density of which comprises up to 25% of the 2,000 to 2,500 units envisioned for the Community Plan at the time the Initial Study/Notice of Preparation for the Community Plan was prepared, is a substantial factor in the determination that there are many potentially significant impacts to the environment associated with the development of the Community Plan.

The Parklands Initial Study and Mitigated Negative Declaration (IS/MND) concludes that the proposed project is consistent with the Community Plan. However, the determination of consistency with a plan (and its EIR) that is not adopted appears to be premature (it may be consistent with the plan as currently proposed, but community plans are often revised in response to the completion of environmental review and identification of mitigation measures, public review and comment, and public hearings, none of which have occurred for the Saticoy and Wells Community Plan). The IS/MND ignores the findings of the Community Plan's Initial Study/Notice of Preparation and proceeds as if the proposed project is a stand-alone project not associated with the Community Plan. As a result, the conclusions in the Parklands IS/MND determining that no significant impacts would result are reached without any consideration given to the numerous potentially significant impacts identified from development of the

Community Plan. Conducting CEQA review for this development separate and apart from that being conducted for the Community Plan improperly minimizes the environmental impacts caused by this project *and* those caused by the overall Community Plan. Such practice has been referred to by the courts as "piecemealing" or "segmenting" and is considered to be a violation of CEQA. The environmental document prepared for the Specific Plan and the Community Plan should evaluate the "whole of the action", as required by CEQA Guidelines § 15378.

The Initial Study/Notice of Preparation prepared for the Community Plan concludes that, "The project may have cumulatively significant impacts, and may impact humans, through noise and traffic, among other issue areas, as noted throughout this initial study." This document appears to provide substantial evidence and a fair argument that development of this site may have a significant effect on the environment and that an EIR to analyze impacts from development of the Parklands Specific Plan is required (CEQA Guidelines § 15064(f)(1)).

The City should consider preparing an EIR in lieu of the MND for the proposed Specific Plan, or wait until the Community Plan and its EIR are adopted before proceeding with the project.

General Plan EIR

In its July 11, 2005 comment letter regarding the City's General Plan EIR, LAFCO noted, "Given that the subject EIR does not include an analysis of several of the above noted polices [those found in Government Code Section 56000 et. seq. and in the Ventura LAFCO Commissioner's Handbook], LAFCO does not consider this EIR adequate for the purposes of any future sphere amendments or annexations unless supplemental analysis is provided."

In response, additional analysis was added to the EIR, however, due to the general nature of that analysis, the response to comments states, "As specific boundary adjustments are proposed in the future, the City will conduct analysis of applicable Government Code provisions as required by LAFCO."

The IS/MND does not contain much of the analysis needed by LAFCO in order to make a determination for the annexation. Please refer to the relevant policies and factors that LAFCO must consider contained in Government Code Section 56668 and the Ventura LAFCO Commissioner's Handbook (available at www.ventura.lafco.ca.gov).

IS/MND Comments

The MND appears deficient in all areas in that it does not consider the cumulative impacts from development of the Community Plan. Also, the IS/MND appears to be deficient as follows:

Section E.7.

- Ventura LAFCo should be listed as a responsible agency.

Project Description

- According to the IS/MND, the existing General Plan designation for the site is Residential Low. The IS/MND states that "the applicant is proposing a specific plan and proposes to rezone the property to T-3.1, T3.2 and T4.6, consistent with the intent of the original zoning for residential development." However, the majority of the project is not within the City's boundary. The City cannot "rezone" property which never possessed City zoning. In fact, one of the primary steps in a city annexation is "prezoning" a site in anticipation of an annexation (Government Code § 56375(a)(3)). The prezoning becomes effective once the annexation is finalized. The project description must include the "prezoning" of the currently unincorporated portions of the project site.

- The General Plan land use designation is unclear. The IS/MND refers to the site as being both "residential low" and "neighborhood low". The FEIR prepared for the General Plan contains maps that identify the site as residential low. However, there is a map in the GP giving the site a "planning designation" of "neighborhood low". What is the difference between a land use designation and planning designation? What is the difference between "residential low" and "neighborhood low"?

- The Wells Corridor is identified in Chapter 3 of the General Plan. The eastern approximately 200 feet of the site along Wells Road is within the Wells Corridor. The project proposes to revise the boundaries of the Wells Corridor, extending the boundary west to the Brown Barranca, a distance of up to approximately 500 feet (along Telegraph). Because the corridor is established by the General Plan, it would appear that its revision would necessitate an amendment to the General Plan, something not included in the project description.

Land Use

- The IS/MND refers to the site as infill development several times in the analysis of the project. For instance, the Land Use section states, "The proposed specific plan is consistent with the intent of the 2005 General Plan to maximize development in areas of the City where infill is possible, prioritizing infill development." and "The proposed Parklands Specific Plan is consistent with the vision of the General Plan as the Parklands project would create an urban infill neighborhood" However, the overwhelming majority site is not part of the City's "infill first" strategy nor does it meet the definition of "infill" contained in CEQA.

  On page 3-18 of the general plan under the heading *Districts, Corridors, and Neighborhood Centers* it states, "These Districts, Corridors, and Neighborhood

Centers make up the growth priority areas as the City's "Infill First" strategy (See Figure 3-1 Infill Areas)." With the exception of the eastern 200 feet of the site which is included in the Wells Road corridor, the majority of the subject site is not among the sites indentified as infill on Table 3.1. Therefore, it appears that the majority of the site is not part of the city's infill first strategy.

- The IS/MND states that if the project were to be inconsistent with the Wells-Saticoy Community Plan, it would result in a potentially significant impact. As previously noted, consistency with the Community Plan which is not yet adopted cannot be determined. The inability to conclude that the project is consistent with the Community Plan leaves open the possibility that it ultimately may be inconsistent with the Community Plan, a potentially significant impact.

- It should be clarified in the IS/MND that General Plan Action 3.25 does not apply to the project as a whole, but only to the portion along Wells Road that is currently within the "corridor" designation as indicated in Figures 3.1 and 3.5 (corridors identified in the General Plan are a priority growth area according to Action 3.25). Action 3.25 states that second priority growth areas are those undeveloped lands for which a community plan has been prepared inside city limits. The majority of the site is not within city limits and a community plan has not been adopted for it. Therefore, it appears that the majority of the site is not a priority or secondary growth area and Action 3.25 does not apply to it.

Population and Housing

- The IS/MND states that a proposed project will have a significant impact to population and housing if implementation would cumulatively exceed official regional or local population projections. The IS/MND uses outdated population estimates from 2005. According to the Department of Finance, the City's population as of January 2007 was 107,490. SCAG's Regional Transportation Plan assumes an annual growth rate of .78% for Ventura. Therefore, the City's January 2008 population can be estimated at 108,328. According to the City's Website, as of January 2008, there were over 2,700 units either approved or pending, with a total projected population of over 6,800. When combined, the projected population of existing, approved, and pending units is over 115,100. If the 2010 population is predicted at 116,959, as indicated in the IS/MND, there is a difference of only about 1,850 people, or about 700 units. However, the IS/MND fails to consider the hundreds of reasonably foreseeable dwelling units that are, or will be, proposed on other properties, such as the nearby Hansen Trust property. Cumulatively, it appears that SCAG's official population/housing projections will be exceeded, a significant impact.

Public Services

Question L of the Initial Study asks whether the project will cause any adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. In response, the IS/MND concludes that there will be a less than significant impact to schools.

However, the IS/MND goes on the explain that this project will cause the local elementary school (Saticoy Elementary) to exceed its operating capacity, increasing capacity from 91% to 115%. Yet the IS/MND does not identify this as an adverse impact and provides no mitigation. Exceeding capacity may very well decrease acceptable service ratios and performance objectives. It may very well necessitate the need for additional classroom space and cumulatively, a new school. This appears to be a potentially significant impact.

The need for a new school in the vicinity is acknowledged in the Wells Saticoy Community Plan, of which this site is a part. However, separating this project from the Community Plan improperly minimizes the cumulative impacts it will have on local schools. This is an example of why CEQA prohibits project splitting.

In addition, Section 3.1.6 of the Ventura LAFCO Commissioner's Handbook discusses school capacity. LAFCO policies state that it will not favor any change of organization or reorganization where any affected school certifies that there is not sufficient existing school capacity or that there will not be sufficient capacity at the time of development

Again, thank you for the opportunity to review the document. Please do not hesitate to contact me should you have any questions.

Sincerely,

Kai Luoma, AICP
Senior Analyst

CC: Supervisor Steve Bennett, District 1

STATE OF CALIFORNIA Arnold Schwarzenegger, *Govemor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

March 24, 2008

RECEIVED
MAR 28 2008
Community Development
PLANNING DIVISION

Iain Holt
City of San Buenaventura
501 Poli Street, P.O. Box 99
Ventura, CA 93002

RE: SCH# 2008031082 Parklands Specific Plan and Tentative Map; Ventura County.

Dear Mr. Holt:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Completion (NOC) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst

CC: State Clearinghouse

Native American Contacts
Ventura County
March 24, 2008

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32835 Santiago Road
Acton , CA 93510

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suscol@intox.net

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Fernandeno
Tataviam
Kitanemuk

Owl Clan
Qun-tan Shup
48825 Sapaque Road
Bradley , CA 93426
(805) 472-9536
(805) 835-2382 - CELL

Chumash

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks , CA 91362
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805 492-7255

Chumash
Tataviam
Fe†rnandeño

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Chumash

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Chumash

Coastal Band of the Chumash Nation
Janet Garcia,Chairperson
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805-964-3447

Chumash

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Chumash

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Oxnard , CA 93031
(805) 340-3134 (Cell)
(805) 488-0481 (Home)

Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2008031082 Parklands Specific Plan and Tentative Map; Ventura County.

Native American Contacts
Ventura County
March 24, 2008

Carol A. Pulido
165 Mountainview Street
Oak View , CA 93022
805-649-2743 (Home)

Chumash

Melissa M. Para-Hernandez
119 North Balsam Street
Oxnard , CA 93030
805-988-9171

Chumash

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH# 2008031082 Parklands Specific Plan and Tentative Map; Ventura County.

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013

RECEIVED
APR 14 2008
Community Development
PLANNING DIVISION

April 10, 2008

Iain Holt
City of Ventura
P.O. Box 99
Ventura, CA 93002-0099

Dear Iain Holt:

Re: SCH# 2008031082; Parklands Specific Plan and Tentative Map

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings.

The Commission's Rail Crossings Engineering Section (RCES) is in receipt of the *Notice of Completion & Environmental Document Transmittal-Mit Neg Dec* from the State Clearinghouse. RCES staff is concerned that the proposed project at Telegraph Road and Wells Road will cause an increase in congestion at the nearby Sand Canyon Road (DOT# 745890W, lat=34.282166, long=-119.148327) crossing.

Mitigation measures to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and continuous vandal resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians.

If you have any questions, please contact Varouj Jinbachian, Senior Utilities Engineer at 213-576-7081, vsj@cpuc.ca.gov, or me at rxm@cpuc.ca.gov, 213-576-7078.

Sincerely,

Rosa Muñoz, PE
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection & Safety Division

C: Dan Miller, UP

"Citrus Capital of the World"

City of Santa Paula

970 Ventura Street • Santa Paula, California • Mailing Address: P.O. Box 569 • 93061 • Phone: (805) 525-4478 • Fax: (805) 525-6278

April 7, 2008

City of Ventura Planning Division
Iain Holt, Associate Planner
501 Poli Street, Room 117
Ventura, CA 93002

Re: Draft Mitigated Negative Declaration for Westwood Communities Corporation project at Southwest corner of Telegraph and Wells Roads, Ventura

Dear Mr. Holt:

Thank you for the opportunity to review Draft Mitigated Negative Declaration (MND) for the aforementioned project. While the draft MND is rather extensive in its analysis of potential environmental impacts resulting from the proposed project, the City of Santa Paula submits the following comments for consideration.

1. Initial Study page 1, Item D. Project Description –provide clarification whether or not the proposed project involves land covered by SOAR and is within a Greenbelt.

2. Initial Study page 9, Impact Discussion, 2nd paragraph-this paragraph describes the current land use of the project plan area. However, based upon the County zoning designation of R-1, clarify under what circumstances this land can be under agricultural production and zoned as R-1.

3. Initial Study page 10, Wells Road, 2nd sentence-clarify source from which the statement comes for qualifying "The visually sensitive designation for Wells Road…." i.e., has the City officially designated Wells Road in the Comprehensive Plan as visually sensitive?

4. Initial Study page 77, Global Warming/Green House Gases discussion-While this section mentions Green House Gases (GHG) an expanded discussion/definition of this issue is warranted coupled with a discussion of EPA efforts to combat GHG and California Regulations such as Executive Order S-3-05 (2005). Attached is suggested text used in a recent FEIR.

Sincerely,

Judith Johnduff, AICP
Associate Planner

Attachment: GHG text

Toxic Air Contaminants

In addition to pollutants that have a designated ambient standard, or criteria pollutants, California has aggressive requirements for reducing non-criteria pollutants, also known as toxic air contaminant (TAC) emissions. TAC emissions do not have air quality standards that specify levels considered safe for everyone. Exposure to TACs can increase the risk of contracting cancer or result in other deleterious health effects which target such systems as cardiovascular, reproductive, hematological, or nervous. Effects may be both chronic (i.e., of long duration) or acute (i.e., severe but of short duration). Local concentrations can pose a significant health risk and are termed "toxic hot spots." The regulatory approach used to control toxic air contaminant levels relies on a quantitative risk assessment process, rather than on ambient air concentrations, to determine allowable emissions from the source.

4.5.1.4 Global Climate Change

Global climate change is generally defined as a change in the long-term weather patterns that characterize the regions of the world.[1] The term "weather" refers to the short-term (daily) changes in temperature, wind, and/or precipitation of a region (Merritts *et al.* 1998). Weather is influenced by the sun, which heats the Earth's atmosphere and its surface causing air and water to move around the planet. The result can be as simple as a slight breeze or as complex as the formation of a hurricane.

The greenhouse effect is a warming process that balances the Earth's cooling processes.[2] During this process, sunlight passes through Earth's atmosphere as short-wave radiation. Some of the radiation is absorbed by the planet's surface. As the Earth's surface is heated, it emits long wave radiation toward the atmosphere. In the atmosphere, some of the long wave radiation is absorbed by certain gases called greenhouse gases. Greenhouse gases include but are not limited to carbon dioxide (CO_2), chlorofluorocarbons (CFCs), methane (CH_4), nitrous oxide (N_2O), tropospheric ozone (O_3), and water vapor.[3] Each molecule of greenhouse gas becomes energized by the long wave radiation. The energized molecules of gas then emit heat energy in all directions. By emitting heat energy toward Earth, greenhouse gases increase the Earth's temperature.

The greenhouse effect is a natural occurrence that maintains Earth's average temperature at approximately 16 degrees Celsius.[4] The greenhouse effect is a necessary phenomenon that retains most of the Earth's heat from escaping to the outer atmosphere. Without the natural greenhouse effect, the Earth would be approximately 33 degrees Celsius cooler and the existence of life on this planet would not be possible.[5] However, too many greenhouse gases in Earth's atmosphere could increase the greenhouse effect, which could result in an increase in mean global temperatures (i.e., "global warming"), as well as changes in precipitation patterns.

In the last 200 years, scientists have observed an unprecedented increase in the rate of global warming.[6] The recent global warming trend has coincided with the Industrial Revolution, which has resulted in release of substantial amounts of greenhouse gases from deforestation and use of fossil fuels.[7] Recently, controlling atmospheric CO_2 levels, which account for approximately 55 percent of the greenhouse effect,

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[1] Intergovernmental Panel on Climate Change. "Stabilization of Atmospheric Greenhouse Gases: Physical, Biological and Socio-Economic Implications - IPCC Technical Paper III." February 1997.
[2] *Ibid.*
[3] *Ibid.*
[4] *Ibid.*
[5] Jain, Ravi et al. Environmental Assessment. 2nd ed. McGraw-Hall: 2002, New York.
[6] Jain, Ravi et al. Environmental Assessment. 2nd ed. McGraw-Hall: 2002, New York.
[7] *Ibid.*

has been the primary focus of global warming prevention policy.[8] The United States alone accounts for nearly one-fourth of the world's generation of CO_2.[9] California is a substantial contributor of global greenhouse gases as it is the second largest contributor in the U.S. and sixteenth largest contributor in the world, emitting over 400 million tons of CO_2 per year.[10]

Global Climate Change Regulations

Voluntary greenhouse gas emission reduction programs are being implemented on an international level. In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change agreement with the goal of controlling greenhouse gas emissions, including methane. As a result, the Climate Change Action Plan was developed to address the reduction of greenhouse gases in the United States. The plan consists of more than 50 voluntary programs. The Kyoto Protocol of the United Nations Framework Convention on Climate Change is an amendment to the international treaty on climate change, assigning mandatory emission limitations for the reduction of greenhouse gas emissions to the signatory nations. The objective of the protocol is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. As of June 2007, a total of 172 countries and other governmental entities have ratified the agreement.

Federal and Local Regulations

Currently, there are no federal or local regulations that address GHG emissions. However, in *Massachusetts v. Environmental Protection Agency*, __ U.S. __, 127 S. Ct. 1438 (2007), the United States Supreme Court found that the U.S. Environmental Protection Agency has statutory authority under the Clean Air Act to regulate "greenhouse gas" emissions (including CO_2 emissions) from new motor vehicles.[11] In response to this court case's decision, the EPA is drafting regulations that address GHG emissions.

State Regulations

California regulations seek to reduce the effects of global warming in statutes and Executive Orders: Exec. Order S-3-05; Health and Safety Code §§ 38500, *et seq.*; and Health and Safety Code §§ 42823, 43018.5. These regulations recognize global warming as a significant threat to California and therefore certain guidelines must be enacted to limit the production of greenhouse gases. Executive Order S-3-05 (2005) states that:

- By 2010 Greenhouse gases must be reduced to 2000 emission levels
- By 2020 Greenhouse gases must be reduced to 1990 emission levels
- By 2050 Greenhouse gases must be reduced to 80% below 1990 levels

[8] *Ibid*
[9] *Ibid.*
[10] Hendrix, Michael et al. "Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents." 5 Mar. 2007.
[11] Abreu, Heidy and Miguel Loza. "Massachusetts v. Environmental Protection Agency (05-1120)." *The Legal Information Institute, Cornell Law School.* 2007. 5 Aug. 2007 http://www.law.cornell.edu/supct/cert/05-1120.html

The Order also states that the California Environmental Protection Agency will have oversight of regulation. Furthermore, starting January 2006 and bi-yearly afterwards, the CalEPA must prepare science reports of the potential impact global warming may have on California's economy and environment.

The California Global Warming Solutions Act of 2006 (Health and Safety Code §§ 38500, *et seq.*) became effective on January 1, 2007. The Act seeks to reduce California's greenhouse gas emissions to 1990 levels by 2020. This legislation represents the first enforceable statewide program in the U.S. to limit all greenhouse gas emissions from major sources that includes penalties for non-compliance. Primarily concerned with emissions of CO_2, it requires the California Air Resources Board (ARB) to establish a program for statewide greenhouse gas emissions reporting and to monitor and enforce compliance with this program. The Act authorizes ARB to adopt market-based compliance mechanisms including cap-and-trade, and allows a one-year extension of the targets. Under the Act, greenhouse gases do not include ozone-depleting substances, such as the freons used in air conditioning systems and refrigeration units, which are pollutants targeted for reduction because of their potential harm to the upper (protective) atmospheric ozone layer.

The following regulations would apply to the proposed project:

- Discrete early action GHG emission reduction measures Air Resources Board publicly available issued June 2007.
- Title 17, California Code of Regulations, Subchapter 10, Article 1, sections 95100 will require the reporting and verification of greenhouse gas emissions from greenhouse gas emissions sources in California. This article is designed to meet the requirements of section 38530 of the Health and Safety Code, the California Global Warming Solutions Act of 2006.
- We will use the comments received to prepare a proposed regulation and staff report, to be released on October 19, 2007, for a formal 45 day comment period. The board will consider the October 19th staff proposal at its December 6-7, 2007, meeting.
- By January 1, 2008 the state will determine the 1990 GHG emission levels and set that as a baseline for the 2020 emission limit.
- On or before January 1, 2011 the state will adopt quantifiable, verifiable, and enforceable emission reductions aimed to decrease GHG emissions to the 1990 baseline by 2020. These will come into effect by January 1, 2012 by the latest. The reductions measures may include direct reduction methods, alternative compliance mechanisms, and various incentives.

Health and Safety Code §§ 42823 and 43018.5 require the Air Resources Board to adopt regulations that address greenhouse gases emitted by motor vehicles in an effort to reduce emissions. In summary these sections require:

- The ARB not later than January 1, 2005 to develop and adopt regulation to achieve the most feasible and cost-effective reduction of GHGs emitted by motor vehicles.
- ARB regulations do not go into effect before January 1, 2006 and furthermore the regulations must only apply to vehicle 2009 models or later.

The California Climate Action Registry must consult with the ARB to develop procedures and protocols for the reduction of greenhouse gases. In regards to the proposed project vehicles in the construction phase will mostly likely not be affected by this regulation. Additionally, this will most likely not affect the proposed project on a local level.

SOUTHERN CALIFORNIA

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Transportation and Communications
Alan D. Wapner, Ontario

March 26, 2008

Mr. Iain Holt
City of San Buenaventura, Planning Division
501 Poli St.
Ventura, CA 93002
(805) 654-7752

RE: **SCAG Comments on the Notice of Intent to Adopt a Negative Declaration for the Parklands Specific Plan, Case No. Annexation A-327, General Plan Amendment AO-227, Specific Plan SP-6, Zone Change Z-916, Tentative Tract Map S-5632, Planned Development Permit PD-840, Design Review ARB-2985, EIR-2459 – SCAG No. I20080156**

Dear Mr. Holt,

Thank you for submitting the **Notice of Intent to Adopt a Negative Declaration for the Parklands Specific Plan, Case No. Annexation A-327, General Plan Amendment AO-227, Specific Plan SP-6, Zone Change Z-916, Tentative Tract Map S-5632, Planned Development Permit PD-840, Design Review ARB-2985, EIR-2459 – SCAG No. I20080156**, to the Southern California Association of Governments (SCAG) for review and comment. SCAG is the authorized regional agency for Inter-Governmental Review of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12372 (replacing A-95 Review). Additionally, pursuant to Public Resources Code Section 21083(d) SCAG reviews Environmental Impacts Reports of projects of regional significance for consistency with regional plans per the California Environmental Quality Act Guidelines, Sections 15125(d) and 15206(a)(1). SCAG is also the designated Regional Transportation Planning Agency and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080 and 65082.

SCAG staff has reviewed the aforementioned Notice of Intent to Adopt a Mitigated Negative Declaration and has determined that the proposed project is regionally significant per the California Environmental Quality Act (CEQA) Guidelines (Section 15125(d) and 15206). CEQA requires that EIRs discuss any inconsistencies between the proposed project and applicable general plans and regional plans (Section 15125 [d]). If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided. However, a regional discussion is not required to be contained in a Negative Declaration and none exists here. The project consists of an Annexation, Specific Plan, and Zone Change, a subdivision of 216 single-family residential dwellings and 283 courtyard and town home condominiums, commercial and community buildings, and a park area. The attached detailed comments are meant to provide guidance for considering the proposed project within the context of our regional goals and policies.

Policies of SCAG's Regional Comprehensive Plan and Guide (RCPG), Regional Transportation Plan (RTP), and Compass Growth Vision (CGV) that may be applicable to your project are outlined in the attachment. The RCPG, RTP and CGV can be found on the SCAG web site at: http://scag.ca.gov/igr.

Please provide a minimum of 45 days for SCAG to review the Negative Declaration and associated plans when these documents are available. If you have any questions regarding the attached comments, please contact Christine Fernandez at (213) 236-1923. Thank you.

Sincerely,

Jacob Lieb, Program Manager
Environmental Planning Division

DOCS#144835v1

NOTICE OF INTENT TO ADOPT A NEGATIVE DECLARATION FOR THE PARKLANDS SPECIFIC PLAN, CASE NO. ANNEXATION A-327, GENERAL PLAN AMENDMENT AO-227, SPECIFIC PLAN SP-6, ZONE CHANGE Z-916, TENTATIVE TRACT MAP S-5632, PLANNED DEVELOPMENT PERMIT PD-840, DESIGN REVIEW ARB-2985, EIR-2459 – SCAG NO. I20080156,

PROJECT DESCRIPTION

The proposed project consists of an Annexation, Specific Plan and Zone Change from County Single Family (R-1) and City Single Family (R-1-1AC) to form-based code transect zones T3.1, T3.1 and T4.6 and associated overlays zones and a subdivision of a 66.7-acre site for 216 single-family residential dwellings, 283 courtyard and town home condominiums, 25,000 square feet of commercial, 6,560 square feet of community building and approximately 11.62 acres of open space and park area. The project would involve the annexation of three parcels currently under agricultural production from the County to the City. Accompanying the project is a General Plan Amendment changing Roadway Classification Plan of the 2005 General Plan for Telegraph Road between Saticoy Avenue to Wells Road and Wells Road between Telegraph Road and Carlos Street from secondary arterial with four travel lanes to collector with two travel lanes.

The project is located on the Southwest corner of Telegraph Road and Wells Road, City and County of Ventura. The specific plan area is bounded by Telegraph Road to the north, Wells Road to the east, Blackburn Road and State Route 126 (SR 126) on the south.

CONSISTENCY WITH REGIONAL COMPREHENSIVE PLAN AND GUIDE POLICIES

The **Growth Management Chapter (GMC)** of the Regional Comprehensive Plan and Guide (RCPG) contains the following policies that are particularly applicable and should be addressed in the proposed project.

Regional Growth Forecasts

The project should reflect the most current SCAG forecasts, which are the 2004 RTP (April 2004) Population, Household and Employment forecasts. The forecasts for your region, subregion, and cities are as follows:

Adopted SCAG Regionwide Forecasts[1]

	2010	2015	2020	2025	2030
Population	19,208,661	20,191,117	21,137,519	22,035,416	22,890,797
Households	6,072,578	6,463,402	6,865,355	7,263,519	7,660,107
Employment	8,729,192	9,198,618	9,659,847	10,100,776	10,527,202

Adopted Ventura Council of Governments (VCOG) Forecasts[1]

	2010	2015	2020	2025	2030
Population	865,149	897,295	929,181	960,025	989,765
Households	275,352	289,318	303,596	317,831	332,109
Employment	381,680	403,000	424,470	445,193	465,466

Adopted Unincorporated - VCOG Forecasts[1]

	2010	2015	2020	2025	2030
Population	98,122	101,425	104,680	107,817	110,827
Households	32,143	33,542	34,976	36,406	37,836
Employment	45,557	47,063	48,583	50,048	51,480

Adopted City of Ventura Forecasts [1]

	2010	2015	2020	2025	2030
Population	116,959	119,247	121,488	123,645	125,705
Households	44,053	45,355	46,696	48,034	49,381
Employment	62,703	65,237	67,787	70,238	72,627

1. The 2004 RTP growth forecast at the regional, county and subregional level was adopted by RC in April, 2004. City totals are the sum of small area data and should be used for advisory purposes only.

The Draft 2008 RTP Baseline Growth Forecast (built upon subregion/local jurisdiction input) was released on November 1, 2007 by the Community, Economic and Human Development Committee (CEHD) along with the Draft 2008 RTP and RCP for public review and comment. You may wish to review these forecasts to determine compatibility with any Project Forecasts. The following 2035 forecasts are provided for your reference for the City of Ventura, VCOG (Unincorporated and COG), and SCAG Region. The forecasts for the intervening years (2010, 2015, 2020, 2025, and 2030) will be included in the 2008 RTP Baseline Growth Forecast.

2035 Forecasts[1]	Population	Households	Employees
City of Ventura	133,638	51,677	85,379
VCOG – Unincorporated Area	114,035	35,928	48,506
VCOG	1,013,756	330,189	463,227
SCAG Region	24,056,000	7,710,000	10,287,000

1. Source: Draft 2008 RTP Baseline Growth Forecast
(http://scag.ca.gov/forecast/downloads/RTP_baseline_forecasts_1001.xls)

3.01 *The population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies shall be used by SCAG in all phases of implementation and review.*

3.03 *The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.*

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL STANDARD OF LIVING

The Growth Management goals to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, strengthen the regional strategic goal to stimulate the regional economy. The evaluation of the proposed project in relation to the following policies would be intended to guide efforts toward achievement of such goals and does not infer regional interference with local land use powers.

3.04 *Encourage local jurisdictions' efforts to achieve a balance between the types of jobs they seek to attract and housing prices.*

3.05 *Encourage patterns of urban development and land use which reduce costs on infrastructure construction and make better use of existing facilities.*

3.06 *Support public education efforts regarding the costs of various alternative types of growth and development.*

3.09 *Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.*

3.10 *Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.*

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL QUALITY OF LIFE

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.11 *Support provisions and incentives created by local jurisdictions to attract housing growth in job-rich subregions and job growth in housing-rich subregions.*

3.12 *Encourage existing or proposed local jurisdictions' programs aimed at designing land uses which encourage the use of transit and thus reduce the need for roadway expansion, reduce the # of auto trips and vehicle miles traveled, and create opportunities for residents to walk and bike.*

3.13 *Encourage local jurisdictions' plans that maximize the use of existing urbanized areas accessible to transit through infill and redevelopment.*

3.14 *Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems, and activity centers.*

3.15 *Support local jurisdictions' strategies to establish mixed-use clusters and other transit-oriented developments around transit stations and along transit corridors.*

3.16 *Encourage developments in and around activity centers, transportation corridors, underutilized infrastructure systems, and areas needing recycling and redevelopment.*

3.17 *Support and encourage settlement patterns, which contain a range of urban densities.*

3.18 *Encourage planned development in locations least likely to cause adverse environmental impact.*

3.19 *Support policies and actions that preserve open space areas identified in local, state, and federal plans.*

3.20 *Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.*

3.21 *Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.*

3.22 *Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.*

3.23 *Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.*

GMC POLICIES RELATED TO THE RCPG GOAL TO PROVIDE SOCIAL, POLITICAL, AND CULTURAL EQUITY

The Growth Management goals to develop urban forms that avoid economic and social polarization promotes the regional strategic goal of minimizing social and geographic disparities and of reaching equity among all segments of society. The evaluation of the proposed project in relation to the policy stated below is intended guide direction for the accomplishment of this goal, and does not infer regional mandates and interference with local land use powers.

3.24 *Encourage efforts of local jurisdictions in the implementation of programs that increase the supply and quality of housing and provide affordable housing as evaluated in the Regional Housing Needs Assessment.*

3.27 *Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.*

AIR QUALITY CHAPTER

The **Air Quality Chapter** core actions related to the proposed project include:

5.07 *Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community-based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulation can be assessed.*

5.11 *Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional, and local) consider air quality, land use, transportation, and economic relationships to ensure consistency and minimize conflicts*

OPEN SPACE AND CONSERVATION CHAPTER

The **Open Space and Conservation Chapter** goals related to the proposed project include:

9.01 *Provide adequate land resources to meet the outdoor recreation needs of the present and future residents in the region.*

9.02 *Increase the accessibility to open space lands for outdoor recreation.*

9.03 *Promote self-sustaining regional recreation resources and facilities.*

9.04 *Maintain open space for adequate protection to lives and properties against natural and manmade hazards.*

9.05 *Minimize potentially hazardous developments in hillsides, canyons, areas susceptible to flooding, earthquakes, wildfire and other known hazards, and areas with limited access for emergency equipments.*

9.08 *Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.*

WATER QUALITY CHAPTER RECOMMENDATIONS AND POLICY OPTIONS

The **Water Quality Chapter** goals related to the proposed project include:

11.02 *Encourage "watershed management" programs and strategies, recognizing the primary role of local governments in such efforts.*

11.07 *Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.*

REGIONAL TRANSPORTATION PLAN

The **2004 Regional Transportation Plan (RTP)** also has goals and policies that are pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. The RTP continues to support all applicable federal and state laws in implementing the proposed project. Among the relevant goals and policies of the RTP are the following:

Regional Transportation Plan Goals:

RTP G1 *Maximize mobility and accessibility for all people and goods in the region.*
RTP G2 *Ensure travel safety and reliability for all people and goods in the region.*
RTP G3 *Preserve and ensure a sustainable regional transportation system.*
RTP G4 *Maximize the productivity of our transportation system.*
RTP G5 *Protect the environment, improve air quality and promote energy efficiency.*
RTP G6 *Encourage land use and growth patterns that complement our transportation investments.*

GROWTH VISIONING

The fundamental goal of the **Compass Growth Visioning** effort is to make the SCAG region a better place to live, work and play for all residents regardless of race, ethnicity or income class. Thus, decisions regarding growth, transportation, land use, and economic development should be made to promote and sustain for future generations the region's mobility, livability and prosperity. The following "Regional Growth Principles" are proposed to provide a framework for local and regional decision making that improves the quality of life for all SCAG residents. Each principle is followed by a specific set of strategies intended to achieve this goal.

Principle 1: Improve mobility for all residents.

GV P1.1 *Encourage transportation investments and land use decisions that are mutually supportive.*
GV P1.2 *Locate new housing near existing jobs and new jobs near existing housing.*
GV P1.3 *Encourage transit-oriented development.*
GV P1.4 *Promote a variety of travel choices*

Principle 2: Foster livability in all communities.

GV P2.1 *Promote infill development and redevelopment to revitalize existing communities.*
GV P2.2 *Promote developments, which provide a mix of uses.*
GV P2.3 *Promote "people scaled," walkable communities.*
GV P2.4 *Support the preservation of stable, single-family neighborhoods.*

Principle 3: Enable prosperity for all people.

GV P3.1 *Provide, in each community, a variety of housing types to meet the housing needs of all income levels.*
GV P3.2 *Support educational opportunities that promote balanced growth.*
GV P3.3 *Ensure environmental justice regardless of race, ethnicity or income class.*
GV P3.4 *Support local and state fiscal policies that encourage balanced growth*
GV P3.5 *Encourage civic engagement.*

Principle 4: Promote sustainability for future generations.

GV P4.1 *Preserve rural, agricultural, recreational, and environmentally sensitive areas.*
GV P4.2 *Focus development in urban centers and existing cities.*
GV P4.3 *Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.*
GV P4.4 *Utilize "green" development techniques*

CONCLUSION

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA.

VENTURA COUNTY
WATERSHED PROTECTION DISTRICT
PLANNING AND REGULATORY DIVISION
800 South Victoria Avenue, Ventura, California 93009
Sergio Vargas. Deputy Director - 805 650-4077

RECEIVED
APR 16 2008
Community Development
PLANNING DIVISION

DATE: April 15, 2008

TO: City of San Buenaventura
Iain Holt, Project Contact

FROM: Sergio Vargas, Deputy Director

SUBJECT: Notice of Intent to Adopt a
Mitigated Negative Declaration
Parklands Specific Plan

A Draft Initial Study and Mitigated Negative Declaration (MND) for Parklands Specific Plan were submitted to the District for review and comment. The package did not contain sufficient information for review. Subsequently, two additional reports were obtained from the City of Ventura:

- Brown Barranca Hydraulic Study (Henderson Road to Telegraph Road) prepared by Omrun Engineering, December 2006
- Parklands Development, TTM No. 5632, Detention Basin prepared by Harks & Associates, December 28, 2006

The Detention Basin study was intended to mitigate the hydrologic impacts of the development.

The Brown Barranca Hydraulic Study proposes an interim improvement and future improvements. The interim improvement will replace the existing double 8'x6' RCB at Blackburn Road with a double 12' x 6' RCB and extend 700 feet upstream. This will reduce the 100-year floodplain upstream of HWY 126 but not eliminate it. Future improvements will widen the open channels and box culverts downstream from Blackburn Road to Henderson Road removing bottlenecks at HWY 126. The proposed channel and box culvert improvements in this study are smaller in size comparing with those proposed by HDR's Brown Barranca study, partly because the 700 feet box culvert extension has created supercritical flow conditions within the improved channels. For both interim and future conditions improvements, flow velocity leaving the development site will be much higher than what it is at existing conditions. No flow velocity mitigation measures have been proposed under this study/development plan. Considering the high potential of erosion in downstream channels, the developer still bears the responsibility to mitigate the higher erosion potential of downstream channels.

The following summarizes the Watershed Protection District comments:

- On page 71 of the MND, item O Water: 1. Change absorption rates, drainage patterns or the rate and amount of surface runoff? Potentially Significant Unless Mitigated should be checked instead of Less Than Significant Impact. This change reflects the needs for onsite detention facilities to mitigate potential increase of surface runoff.
- In the Detention Basin plan prepared by Hawks & Associates, the conceptual plan of the onsite detention basin considers the development as one piece of land with a drainage area of 67 acres while in reality the development is composed of two pieces of land separated by Brown Barranca: a 54-acre portion located on south of the barranca and a 13-acre portion on the north bank of the Brown Barranca. Therefore, the basin needs to be design in accordance with the physical conditions of the development site.
- A conceptual plan & profile drawing is required to show: 1) the footprint, the location and the configuration of the detention basin, 2) the low-flow bypass channel (25 cfs), 3) the connection to Brown Barranca, and 4) the inlet and outlet structures.
- At existing conditions, the floodplain area upstream of the Hwy 126 acts as a natural detention facility with certain storage volume. At the interim conditions (with 700 feet culvert installed), the size of the floodplain will be reduced and so is its natural detention function. The onsite detention basin will have to compensate the loss of the natural detention volume.
- A comparison of pre- and post-development VCRAT hydrology for the whole Brown Barranca watershed is required in order to evaluate the effectiveness of the mitigation measures.
- The Brown Barranca Hydraulic Study provided two sets of HEC-RAS results for interim condition floodplain analysis, one for Subcritical Flow run and another for Mixed Flow. Mixed Flow run is more appropriate considering the physical conditions. However, the HEC-RAS run excluded the 700 feet box culvert section from Sta. 9063 to 8413 resulting in a discontinuity in flow velocity from 23 feet per second (fps) at 9063 to 7 fps at 8413. Because of this discontinuity, the higher flow velocity leaving the development site is not properly modeled. The interim condition hydraulics can be analyzed using either HEC-RAS or WSPG.

End of Text

Welcome! Please Sign In.

Name	*Address/e-mail*
Pat Billow	11291 Casa Lt Vta 93004 duckspa@AOL.com
DANIEL CORMODE	186 GORRION AVE VENTURA, CA 93004 dcormode@sbcglobal.net

CITY OF VENTURA
Parklands Specific Plan
Environmental Review Comment Form

This form is provided for your convenience to make written comments regarding potential impacts on the community you believe may result from the proposed Parklands Specific Plan to be considered by the City of Ventura in determining the issues to be addressed in the Environmental Impact Report (EIR) the City will be preparing on this proposed project. You may use this form in addition to, or instead of, making oral comments at this public meeting. After filling out the form, please leave it in the designated box prior to leaving this meeting or, prior to October 31, 2008, mail it to:

Iain Holt, Senior Planner
City of San Buenaventura (Ventura)
501 Poli Street
PO Box 99
Ventura, CA 93002
Fax: (805) 653-0763
Email: IHolt@ci.ventura.ca.us

Please also provide your name and address so you can receive additional information on this project as the City's review progresses. Please provide your comments below:

Traffic is a major concern - I feel it will affect everyone's quality of life who lives in the telegraph / wells area - much too dense. Buildings are too high - being built rite on the sidewalk is not appealing at all. What will be the access to this property on telegraph? or Wells? How can you have a linear park along a barranca - does not seem really like a park - What about the public view

Name: Pat Pillow

Address: 11291 Casa St
Ventura 93004

Please attach additional sheets if necessary

Does this project have farm workers housing -
affordable - low income.
How can you narrow Wells & Telegraph
like we all the cars to go?

28 October 2008

From: East Ventura Community Council
11178 Carlos St.
Ventura, CA 93004

To: City of San Buenaventura
PO Box 99
Ventura, CA 93002
Attn: Iain Holt, Acting Senior Planner

Subj: CITY OF SAN BUENAVENTURA ENVIRONMENTAL IMPACT REPORT, Case No. EIR-2459, PARKLANDS

Ref	Description
(a)	Notice of Scoping Meeting, Draft Focused Environmental Report, Parklands Specific Plan and Tentative Tract Map, EIR-2459dated 15 Oct 2008.
(b)	Planning & Development Part 01 Planned Projects 2008 08 08.ppt
(c)	Planning & Development Part 02 Schools 2008 08 09.ppt
(d)	Planning & Development Part 03 Water Supply 2008 07 03.ppt
(e)	Planning & Development Part 04 Walkability & Retail 2008 07 04.ppt
(f)	Planning & Development Part 05 Employment 2008 07 15.ppt
(g)	Planning & Development Part 06 Traffic 2008 09 01.ppt
(h)	Planning & Development Part 07 Parking 2008 07 05.ppt
(i)	Planning & Development Part 08 Public Transportation - Bus 2008 07 06.ppt
(j)	Planning & Development Part 09 Circulation 2007 11 09.ppt
(k)	Planning & Development Part 10A Public Safety - Fire Department 2008 10 28.ppt
(l)	Planning & Development Part 10B Public Safety - Police Department 2008 07 06.ppt
(m)	Planning & Development Part 11 Neighborhood Compatabiility 2007 11 09.ppt
(n)	Planning & Development Part 12 Land Use Changes 2007 11 09.ppt
(o)	Planning & Development Part 13 Specific & Community Plans 2007 11 09.ppt
(p)	Planning & Development Part 14 Historic Buildings 2007 11 09.ppt
(q)	Planning & Development Part 15 Notice of Preparation Initial Studies 20071110.ppt
(r)	Planning & Development Part 17 New Urbanism Concepts 2008 07 15.ppt
(s)	Planning & Development Part 20 Street Widths & Setbacks 2008 07 15.ppt
(t)	Planning & Development Part 21 Journey to Work 2008 07 15.ppt

(u) Planning & Development Part 22 Economic Impact 2008 07 22.ppt
(v) Planning & Development Part 23 Public Transportation - Rail 2008 07 06.ppt
(w) Planning & Development Part 24 Viewshed Protection.ppt
(x) Planning & Development Part 25 Retail Sales 2008 07 12.ppt
(y) Planning & Development Part 26 - Cumulative Impact.ppt
(z) Planning & Development Part 27 Stormwater Treatment 2008 07 15.ppt
(aa) Planning & Development Part 28 Brown Barranca Spillover 2008 06 05.ppt
(ab) Planning & Development Part 29 Architectural and Cultural 2008 07 13.ppt
(ac) Planning & Development Part 30 Drainage 2008 05 24.ppt
(ad) Planning & Development Part 31 Hazards & Soils 2008 04 04.ppt
(ae) Planning & Development Part 32 Expected Neighborhood Growth 2008 08 08.ppt
(af) Planning & Development Part 33 Covering 101 2008 07 20.ppt
(ag) Planning & Development Part 34 - Greening 2008 07 20.ppt
(ah) Planning & Development Part 35 Where Does It Stop 2008 07 21.ppt
(ai) Planning & Development Part 37 Future Traffic After SOAR 2008 09 19.ppt
(aj) Planning & Development Part 38 Swales 2008 09 28.ppt

Encl: (1) Compact Disc (CD) with Files

1. Reference (a) is an announcement of a Draft Focused Environmental Report Scoping Meeting for the Parklands Specific Plan and Tentative Tract Map, EIR-2459.

2. Comments to the subject document are forwarded in the form of PowerPoint Presentations which identify issues and deficiencies in reference (a):

A. Reference (b) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development on housing and population.

B. Reference (c) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development on schools such as: Exceeding capacity; fiscal impacts on the public, Site Selection Study; compatibility with California State Department of Education Site Selection Criteria; and lack of a planned future school site.

C. Reference (d) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development on the water supply including: non-compliance with CEQA guidelines, drought conditionsand ; demonstrations of the aquifers to meet future requirements.

D. Reference (e) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential

development in the failure to provide the necessary physical and retail/fiscal environment characteristics required to sustain and support a walkable neighborhood.

E. Reference (f)) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development on employment including: Housing not being provided near centers of employment; New development being built in housing rich neighborhoods distant from job rich centers; and, the impact on lower income households as a result of inadequate public transit.

F. Reference (g) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development on traffic and the need for the automobile due to the distance from employment, educational, retail and medical care facilities.

G. Reference (h) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development in the failure to provide adequate parking and the need for automobile transportation.

H. Reference (i) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of proposed residential development the failure of the public bus system to meet riders needs due to city topography and the inordinate time required to use bus transportation instead of the automobile.

I. Reference (j) identifies issues and deficiencies in reference (a) in the discussion of the adverse cumulative environmental impact of proposed residential development on circulation: Decreasing street widths, Non-compliance with street standards and narrow arterial streets

J. Reference (k) identifies issues and deficiencies in reference (a) in the discussion of the adverse cumulative environmental impact of proposed residential development on fire safety such as: Non-compliance with the California Fire Code; Increased response time; and, changes in incident rates.

K. Reference (l) identifies issues and deficiencies in reference (a) in the discussion of the adverse cumulative environmental impact of proposed residential development on the police department.

L. Reference (m)) identifies issues and deficiencies in reference (a) in the discussion of the adverse cumulative environmental impact of proposed residential development on neighborhood compatibility: Decreased parcel size; Excessive building heights; Increased density; Adverse impact on scenic corridors; and, narrow road widths.

M. Reference (n) identifies issues and deficiencies in reference (a) in the discussion of the adverse cumulative environmental impact of proposed residential development on land use changes.

N. Reference (o) identifies issues and deficiencies in reference (a) in the discussion of the adverse and incompatible cumulative environmental impact of community plans proposed residential development.

O. Reference (p) identifies issues and deficiencies in reference (a) in the discussion of the environmental impact of residential development on neighboring historic buildings within the Wells-Saticoy community.

P. Reference (q) identifies issues and deficiencies in Initial Studies.

Q. Reference (r) identifies issues and deficiencies in reference (a) in the discussion of the environmental impact of residential development based on new urbanism principles. Specifically discussed are inconsistencies between new urbanism principles and the physical location, economic and demographic chanracteristics.

R. Reference (s) identifies issues and deficiencies in reference (a) in the discussion of the environmental impact of residential development on: Street Widths; Inhibiting future expansion and neighborhood compatibility.

S. Reference (t) identifies issues and deficiencies in reference (a) in the discussion of the environmental impact of the location of residential development on the journey to work. The distant location of the proposed residential development from employment centers adds an additional 7,599,592 miles of travel for work annually.

T. Reference (u) identifies issues and deficiencies in reference (a) in the discussion of the economic impact of residential development as required by the California Environmental Quality Act (CEQA). The economic impact of the capital improvements to support future residential development is estimated to be $141,646,193. Furthermore, numerous environmental impact issues are identified in the 2005 General Plan Final EIR (FEIR) without any discussion of the economic/fiscal impact, thereby, precluding citation of the FEIR.

U. Reference (v)) identifies issues and deficiencies in reference (a) in the discussion of the environmental impact of residential development and the inability of rail transportation to meet requirements of the working community.

V. Reference (w) identifies issues and deficiencies in reference (a) in the discussion of the environmental impact of residential development on the viewshed. Not discussed are the impacts of freeway soundwalls and high buildings along the view corridors.

W. Reference (x) identifies issues and deficiencies in reference (a) in the discussion the environmental impact of residential development on retail sales. The expected sales leakage resulting from locating projects distant from the retail centers is estimated to be $14,739,840 annually.

X. Reference (y) identifies issues and deficiencies in reference (a) in the discussion of the cumulative environmental impact of residential development as required by CEQA Guidelines. Furthermore, the Potential Expansion Areas identified in the 2005 General Plan Final EIR probably do not meet the definitions of a future project as required by CEQA.

Y. Reference (z) identifies issues and deficiencies in reference (a) in the discussion of environmental impact of residential development on stormwater treatment. In addition to that discussed in reference (z), stormwater treatment and 'greening' principles discussed at the 14 July 2008 City Council Meeting are not included.

Z. Reference (aa) identifies issues and deficiencies in reference (a) in the discussion of environmental imppact of residential development on Brown Barranca Spillover

AA. Reference (ab) identifies issues and deficiencies in reference (a) in the discussion of environmental impact of residential development on architectural and cultural resources.

AB. Reference (ac) identifies issues and deficiencies in reference (a) in the discussion of environmental impact of residential development on drainage.

AC. Reference (ad) identifies issues and deficiencies in reference (a) in the discussion of environmental impact of residential development on hazards and soils.

AD. Reference (ae) provides tabular data to support the housing and population growth estimates contained in reference (b).

AE. Reference (af) identified issues pertaining to the proposed covering of US 101.

AF. Reference (ag) identified issues pertaining to greening which required addressing.

AG. Reference (ah) identifes issues with future development.

AH. Reference (ai) address issues with future traffic after expiration of the SOAR Initiative.

AI. Reference (aj) addresses issues created with the implementation of swales.

3. Attached are copies of correspondence also related to the above subject.

4. For additional information, please contact Daniel Cormode by telephone at 805-647-4063 or be e-mail at dcormode@sbcglobal.net.

Daniel Cormode, Chairman
Planning & Development Committee

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08 April 2008

From: East Ventura Community Council
11178 Carlos St.
Ventura, CA 93004

To: City of San Buenaventura (Ventura)
501 Poli Street
PO Box 99
Ventura, CA 93002
Attn: I. Holt

SubJ; City of San Buenaventura Notice of Intent to Adopt a Mitigated Negative Declaration, EIR-2459 dated 12 Mar 2008

Ref: (a) City of San Buenaventura Notice of Intent to Adopt a Mitigated Negative Declaration, EIR-2459 dated 12 Mar 2008
(b) Parklands Draft MND.pdf 03/13/2008 11:22 AM 55,156,409
(c) Parklands NOI.pdf 03/13/2008 11:22 AM 291,195
(d) *Title 14. California Code of Regulations,* Chapter 3. Guidelines for Implementation of the California Environmental Quality Act. Section 15063 . Initial Study

Encl: (1) Compact Disk of Files:
Parklands Specific Plan DMND Review - Architectural & Cultural 2008 04 04.pdf
Parklands Specific Plan DMND Review - Density & Land Use 2008 04 06.pdf
Parklands Specific Plan DMND Review - Drainage 2008 04 04.pdf
Parklands Specific Plan DMND Review - Missing Documeentation 2008 04 06.pdf
Parklands Specific Plan DMND Review - Hazards & Soils 2008 04 04.pdf
Parklands Specific Plan DMND Review - Mobility 2008 04 04.pdf
Parklands Specific Plan DMND Review - New Urbanism Concepts 2008 04 06.pdf
Parklands Specific Plan DMND Review - Public Safety 2008 04 06.pdf
Parklands Specific Plan DMND Review - Schools 2008 04 06.pdf
Parklands Specific Plan DMND Review - Viewshed 2008 04 06.pdf
Parklands Specific Plan DMND Review - Water Supply 2008 04 06.pdf
General Plan FEIR 2005 Deficiencies - Water Supply Cover Ltr & Encl 2007 05 27.pdf

1. Reference (a) is a City of San Buenaventura Notice of Intent to Adopt a Mitigated Negative Declaration which forwarded references (b) and (c) for review and comment by 16 Apr 2008 stating “The City of Ventura has performed a comprehensive evaluation of the potential impacts for this project in accordance with the State CEQA Guidelines and has determined that there is no substantial evidence the proposed project may have significant effect on the environment”. Reference (b) is an electronic copy of a City of Ventura Parklands Specific Plan Draft Initial Study and Mitigated Negative Declaration , dated 12 Mar 2008.

2. All phases of project planning, implementation, and operation must be considered in the Initial Study of the project. Since a lead agency must consider all impacts of a project, consultation provides access to the expertise of other agencies in evaluating a project. In *Sundstrom v. Mendocino* (1988) 202 Cal. App. 3d 296, the court held that "some degree of interdisciplinary consultation may be necessary on an initial study as well as in preparation of an EIR." It also stated that an agency must provide the information it used to reach its conclusions and that a checklist unsupported by data and facts is not sufficient for an adequate Initial Study. The Initial Study shall contain a general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities. Since the proposed project is part of an urban center to be located away from the Victoria Corridor and Downtown Specific Plan area the EIR must discuss the potential economic and social consequences of the project, if the proposed urban center would take business away from the downtown and thereby cause business closures and eventual physical deterioration of the downtown.

3. Furthermore, the Wells-Saticoy Community Plan and associated Initial Study/Environmental Impact Report is under development which will identify future requirements, costs, and mechanisms for funding those requirements has yet to be completed.

4. Comments contained in the files contained in Enclosure (1) demonstrate that the data contained in references (b) and (c) is incomplete and does not contain sufficient information to

demonstrate that the proposed project's technical, economic or environmental impacts have been considered.

5. For additional information, please contact Daniel Cormode by telephone at 805-647-4063 or by e-mail at dcormode@sbcglobal.net.

6. Comments and information contained in Enclosure (1) also applies to the Wells-Saticoy Community Plan Environmental Impact Report.
R/

Daniel Cormode
For W. C. Roderick

From: Daniel Cormode [mailto:dcormode@sbcglobal.net]
Sent: Wednesday, June 04, 2008 7:53 PM
To: 'Hernandez, Nelson'
Cc: 'Cole, Rick'; 'Councilmembers'; 'Rangwala, Kaizer'
Subject: RE: California Environmental Quality Act (CEQA) and Cumulative/Fiscal Impact

Nelson,

I believe the below issues stated in my e-mail dated June 01, 2008 are subject to CEQA and would expect discussion of those issues to be identified, quantified and discussed in all current and future environmental documents developed by the City of San Buenaventura.

> To my knowledge, there have been no cumulative physical, environmental or fiscal impact analyses performed to specifically **identify and quantify the specific resources and infrastructure requirements** nor have the **magnitude of the capital or operating expenditures or revenue** sources been identified to meet those requirements. The impact of physically planting a dwelling unit in the ground has generally been adequately identified and the specific plans paint a flowery picture of the benefits of new urbanism and smart growth, however, the benefits and related costs have not been quantified nor have requirements and locations for retail, commercial, industrial, manufacturing, educational and public facilities which provide both employment, goods and services have neither been identified or quantified.

Without first identifying and quantifying specific resources and infrastructure requirements and subsequently identifying the capital and operating expenditures and revenues to meet those requirements, the economic or social impact of the proposed project cannot be determined as required by Sections 15021 and 15064 of Title 14, California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act which are shown below.

Furthermore, specific plans under development cite numerous new urbanism and smart growth principles which supposedly result in a more environmentally friendly project and 'green practices'. If those cited principles truly have a positive impact on the environment, then the environmental analysis should quantify, validate and verify those benefits.

An example of an area of concern is continued development, which creates additional demands on the water supply infrastructure and which if not met, could have an adverse health, safety or economic impact on the public.

> Title 14. California Code of Regulations, Chapter 3. Guidelines for Implementation of the California Environmental Quality Act
>
> > Section 15021. Duty to Minimize Environmental Damage and Balance Competing Public Objectives
> >
> > > (d) CEQA recognizes that in determining whether and how a project should be approved, a public agency has an obligation to balance a variety of public objectives, including **economic, environmental, and social factors** and in particular the goal of providing a decent home and satisfying living environment for every Californian. An agency shall prepare a statement of overriding considerations as described in Section 15093 to reflect the ultimate balancing of competing public objectives

when the agency decides to approve a project that will cause one or more significant effects on the environment.

15064. Determining the Significance of the Environmental Effects Caused by a Project

(e) Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, **economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people**, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect

R/

Daniel Cormode
805-647-4063

From: Hernandez, Nelson [mailto:nhernandez@ci.ventura.ca.us]
Sent: Monday, June 02, 2008 1:59 PM
To: Daniel Cormode
Cc: Cole, Rick; Councilmembers; Rangwala, Kaizer
Subject: RE: California Environmental Quality Act (CEQA) and Cumulative/Fiscal Impact

Dan,
Thank you for your email. My comments are below in blue.

-----Original Message-----
From: Daniel Cormode [mailto:dcormode@sbcglobal.net]
Sent: Sunday, June 01, 2008 3:33 PM
To: Hernandez, Nelson
Cc: Cole, Rick; Councilmembers; Rangwala, Kaizer; DANIEL CORMODE
Subject: California Environmental Quality Act (CEQA) and Cumulative/Fiscal Impact

Nelson,

An analysis of data from various sources of planned and future possible residential development project submissions such as community meetings, planning commission meetings and city council meetings in the City of San Buenaventura has resulted in the determination that there are approximately 6,613 dwelling units either planned or are part of future residential projects. The total of 6,613 planned or future residential projects from the period of 2005-2008 comprise from 64% to 88% of the total 7,512 or 10,241 projected dwelling units

planned to be built during the current 2005 General Plan period of 2005-2025. The size of the Wells-Saticoy Community is expected to double as a result of planned or future residential projects. It is unclear where these numbers come from hence I do not accept the premise that they are correct.

The *CEQA Guidelines* require that an EIR provide a discussion of cumulative impacts, which is a change in the environment that results from adding the effect of the project to those effects of closely-related past, present and probable future projects. The discussion should focus on whether the impacts of the project would result in cumulative effects, and therefore need not consider cumulative impacts to which the project does not contribute. The cumulative analysis should be based upon past, present, and probable future projects and a summary of projections contained in an adopted general plan or related planning document or in a certified environmental document, which described or evaluated regional or areawide conditions contributing to the cumulative impact. We agree that cumulative impacts should be considered.

To my knowledge, there have been no cumulative physical, environmental or fiscal impact analyses performed to specifically identify and quantify the specific resources and infrastructure requirements nor have the magnitude of the capital or operating expenditures or revenue sources been identified to meet those requirements. The impact of physically planting a dwelling unit in the ground has generally been adequately identified and the specific plans paint a flowery picture of the benefits of new urbanism and smart growth, however, the benefits and related costs have not been quantified nor have requirements and locations for retail, commercial, industrial, manufacturing, educational and public facilities which provide both employment, goods and services have neither been identified or quantified. These comments, while legitimate planning issues, are not subject to CEQA.

It is recommended that all Negative Mitigated Declarations (MNDs) and Environmental Impact Reports (EIRs) both currently under development and planned for future development include a discussion of the above elements.

I look forward to hearing from you in the near future and if you have any questions or need any additional information, please feel free to contact my by telephone at 805-647-4063 or by e-mail at dcormode@sbcglobal.net.

R/

Daniel Cormode
805-647-4063

Appendix B

Air Quality Analyses

2/14/2008 11:55:23 AM

Urbemis 2007 Version 9.2.2

Combined Summer Emissions Reports (Pounds/Day)

File Name: L:\ESP\VTA Co\VTA, City of\05-58810 Parklands Specific Plan MND\Report\Appendices\air quality 1.08\urb 9.2 parklands.urb9

Project Name: Parklands

Project Location: Ventura County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2008 TOTALS (lbs/day unmitigated)	6.34	49.28	26.95	0.00	333.81	2.88	336.68	69.71	2.65	72.36	4,143.18
2008 TOTALS (lbs/day mitigated)	6.34	49.28	26.95	0.00	182.84	2.88	185.72	38.19	2.65	40.83	4,143.18
2009 TOTALS (lbs/day unmitigated)	71.93	39.40	98.83	0.10	0.47	2.39	2.86	0.17	2.18	2.35	12,328.10
2009 TOTALS (lbs/day mitigated)	71.93	39.40	98.83	0.10	0.47	2.39	2.86	0.17	2.18	2.35	12,328.10
2010 TOTALS (lbs/day unmitigated)	71.36	36.44	92.16	0.10	0.47	2.19	2.66	0.17	2.00	2.16	12,328.87
2010 TOTALS (lbs/day mitigated)	71.36	36.44	92.16	0.10	0.47	2.19	2.66	0.17	2.00	2.16	12,328.87

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	33.30	5.64	21.74	0.00	0.06	0.06	6,947.88

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TOTALS (lbs/day, mitigated)	33.21	4.55	21.26	0.00	0.06	0.06	5,564.46
Percent Reduction	0.27	19.33	2.21	NaN	0.00	0.00	19.91

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	48.36	47.20	552.53	0.40	71.11	13.47	40,590.92
TOTALS (lbs/day, mitigated)	45.63	44.17	517.04	0.38	66.55	12.61	37,985.55
Percent Reduction	5.65	6.42	6.42	5.00	6.41	6.38	6.42

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	81.66	52.84	574.27	0.40	71.17	13.53	47,538.80
TOTALS (lbs/day, mitigated)	66.42	9.10	42.52	0.00	0.12	0.12	11,128.92
Percent Reduction	18.66	82.78	92.60	100.00	99.83	99.11	76.59

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 4/21/2008-10/24/2008 Active Days: 135	6.34	**49.28**	26.95	0.00	**333.81**	**2.88**	**336.68**	**69.71**	**2.65**	**72.36**	4,143.18
Fine Grading 04/21/2008-10/24/2008	6.34	49.28	26.95	0.00	333.81	2.88	336.68	69.71	2.65	72.36	4,143.18
Fine Grading Dust	0.00	0.00	0.00	0.00	333.80	0.00	333.80	69.71	0.00	69.71	0.00
Fine Grading Off Road Diesel	6.28	49.18	25.15	0.00	0.00	2.87	2.87	0.00	2.64	2.64	3,963.89
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.80	0.00	0.01	0.00	0.01	0.00	0.00	0.01	179.29

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Time Slice 10/27/2008-12/31/2008 Active Days: 48	4.24	21.92	11.93	0.00	0.02	1.75	1.77	0.01	1.61	1.62	1,762.65
Asphalt 10/27/2008-01/09/2009	4.24	21.92	11.93	0.00	0.02	1.75	1.77	0.01	1.61	1.62	1,762.65
Paving Off-Gas	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.21	18.89	9.61	0.00	0.00	1.63	1.63	0.00	1.50	1.50	1,272.41
Paving On Road Diesel	0.19	2.95	1.03	0.00	0.01	0.12	0.13	0.00	0.11	0.11	362.18
Paving Worker Trips	0.04	0.07	1.28	0.00	0.01	0.00	0.01	0.00	0.00	0.00	128.07
Time Slice 1/1/2009-1/9/2009 Active Days: 7	4.04	20.77	11.61	0.00	0.02	1.66	1.68	0.01	1.53	1.53	1,762.64
Asphalt 10/27/2008-01/09/2009	4.04	20.77	11.61	0.00	0.02	1.66	1.68	0.01	1.53	1.53	1,762.64
Paving Off-Gas	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.02	17.99	9.48	0.00	0.00	1.55	1.55	0.00	1.43	1.43	1,272.41
Paving On Road Diesel	0.18	2.71	0.93	0.00	0.01	0.11	0.12	0.00	0.10	0.10	362.18
Paving Worker Trips	0.04	0.07	1.19	0.00	0.01	0.00	0.01	0.00	0.00	0.00	128.06
Time Slice 1/12/2009-3/13/2009 Active Days: 45	7.60	39.36	98.11	0.10	0.46	2.39	2.85	0.17	2.18	2.35	12,251.21
Building 01/12/2009-06/22/2010	7.60	39.36	98.11	0.10	0.46	2.39	2.85	0.17	2.18	2.35	12,251.21
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	0.82	10.49	8.16	0.02	0.07	0.41	0.48	0.02	0.38	0.40	1,898.51
Building Worker Trips	2.42	4.16	75.32	0.08	0.39	0.17	0.56	0.14	0.14	0.28	8,093.42

2/12/2008 10:18:57 AM

Time Slice 3/16/2009-12/31/2009 Active Days: 209	**71.93**	39.40	**98.83**	**0.10**	0.47	2.39	2.86	0.17	2.18	2.35	12,328.10
Building 01/12/2009-06/22/2010	7.60	39.36	98.11	0.10	0.46	2.39	2.85	0.17	2.18	2.35	12,251.21
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	0.82	10.49	8.16	0.02	0.07	0.41	0.48	0.02	0.38	0.40	1,898.51
Building Worker Trips	2.42	4.16	75.32	0.08	0.39	0.17	0.56	0.14	0.14	0.28	8,093.42
Coating 03/16/2009-06/04/2010	64.33	0.04	0.72	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.89
Architectural Coating	64.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.72	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.89
Time Slice 1/1/2010-6/4/2010 Active Days: 111	71.36	36.44	92.16	**0.10**	0.47	2.19	2.66	0.17	2.00	2.16	**12,328.87**
Building 01/12/2009-06/22/2010	7.02	36.40	91.50	0.10	0.46	2.19	2.65	0.17	2.00	2.16	12,251.97
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	0.75	9.31	7.56	0.02	0.07	0.36	0.43	0.02	0.33	0.35	1,898.62
Building Worker Trips	2.20	3.79	69.63	0.08	0.39	0.16	0.55	0.14	0.13	0.27	8,094.08
Coating 03/16/2009-06/04/2010	64.33	0.04	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.90
Architectural Coating	64.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.90
Time Slice 6/7/2010-6/22/2010 Active Days: 12	7.02	36.40	91.50	0.10	0.46	2.19	2.65	0.17	2.00	2.16	12,251.97
Building 01/12/2009-06/22/2010	7.02	36.40	91.50	0.10	0.46	2.19	2.65	0.17	2.00	2.16	12,251.97
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	0.75	9.31	7.56	0.02	0.07	0.36	0.43	0.02	0.33	0.35	1,898.62
Building Worker Trips	2.20	3.79	69.63	0.08	0.39	0.16	0.55	0.14	0.13	0.27	8,094.08

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Phase Assumptions

Phase: Fine Grading 4/21/2008 - 10/24/2008 - Default Fine Site Grading Description

Total Acres Disturbed: 66.76

Maximum Daily Acreage Disturbed: 16.69

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 10/27/2008 - 1/9/2009 - Default Paving Description

Acres to be Paved: 16.69

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/12/2009 - 6/22/2010 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

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Phase: Architectural Coating 3/16/2009 - 6/4/2010 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 4/21/2008-10/24/2008 Active Days: 135	6.34	**49.28**	26.95	0.00	182.84	**2.88**	185.72	38.19	**2.65**	40.83	4,143.18
Fine Grading 04/21/2008-10/24/2008	6.34	49.28	26.95	0.00	182.84	2.88	185.72	38.19	2.65	40.83	4,143.18
Fine Grading Dust	0.00	0.00	0.00	0.00	182.83	0.00	182.83	38.18	0.00	38.18	0.00
Fine Grading Off Road Diesel	6.28	49.18	25.15	0.00	0.00	2.87	2.87	0.00	2.64	2.64	3,963.89
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.10	1.80	0.00	0.01	0.00	0.01	0.00	0.00	0.01	179.29
Time Slice 10/27/2008-12/31/2008 Active Days: 48	4.24	21.92	11.93	0.00	0.02	1.75	1.77	0.01	1.61	1.62	1,762.65
Asphalt 10/27/2008-01/09/2009	4.24	21.92	11.93	0.00	0.02	1.75	1.77	0.01	1.61	1.62	1,762.65
Paving Off-Gas	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.21	18.89	9.61	0.00	0.00	1.63	1.63	0.00	1.50	1.50	1,272.41
Paving On Road Diesel	0.19	2.95	1.03	0.00	0.01	0.12	0.13	0.00	0.11	0.11	362.18
Paving Worker Trips	0.04	0.07	1.28	0.00	0.01	0.00	0.01	0.00	0.00	0.00	128.07

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Time Slice 1/1/2009-1/9/2009 Active Days: 7	4.04	20.77	11.61	0.00	0.02	1.66	1.68	0.01	1.53	1.53	1,762.64
Asphalt 10/27/2008-01/09/2009	4.04	20.77	11.61	0.00	0.02	1.66	1.68	0.01	1.53	1.53	1,762.64
Paving Off-Gas	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.02	17.99	9.48	0.00	0.00	1.55	1.55	0.00	1.43	1.43	1,272.41
Paving On Road Diesel	0.18	2.71	0.93	0.00	0.01	0.11	0.12	0.00	0.10	0.10	362.18
Paving Worker Trips	0.04	0.07	1.19	0.00	0.01	0.00	0.01	0.00	0.00	0.00	128.06
Time Slice 1/12/2009-3/13/2009 Active Days: 45	7.60	39.36	98.11	0.10	0.46	2.39	2.85	0.17	2.18	2.35	12,251.21
Building 01/12/2009-06/22/2010	7.60	39.36	98.11	0.10	0.46	2.39	2.85	0.17	2.18	2.35	12,251.21
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	0.82	10.49	8.16	0.02	0.07	0.41	0.48	0.02	0.38	0.40	1,898.51
Building Worker Trips	2.42	4.16	75.32	0.08	0.39	0.17	0.56	0.14	0.14	0.28	8,093.42
Time Slice 3/16/2009-12/31/2009 Active Days: 209	**71.93**	39.40	**98.83**	**0.10**	0.47	2.39	2.86	0.17	2.18	2.35	12,328.10
Building 01/12/2009-06/22/2010	7.60	39.36	98.11	0.10	0.46	2.39	2.85	0.17	2.18	2.35	12,251.21
Building Off Road Diesel	4.37	24.71	14.63	0.00	0.00	1.81	1.81	0.00	1.67	1.67	2,259.28
Building Vendor Trips	0.82	10.49	8.16	0.02	0.07	0.41	0.48	0.02	0.38	0.40	1,898.51
Building Worker Trips	2.42	4.16	75.32	0.08	0.39	0.17	0.56	0.14	0.14	0.28	8,093.42
Coating 03/16/2009-06/04/2010	64.33	0.04	0.72	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.89
Architectural Coating	64.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.72	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.89

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Time Slice 1/1/2010-6/4/2010 Active Days: 111	71.36	36.44	92.16	**0.10**	0.47	2.19	2.66	0.17	2.00	2.16	**12,328.87**
Building 01/12/2009-06/22/2010	7.02	36.40	91.50	0.10	0.46	2.19	2.65	0.17	2.00	2.16	12,251.97
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	0.75	9.31	7.56	0.02	0.07	0.36	0.43	0.02	0.33	0.35	1,898.62
Building Worker Trips	2.20	3.79	69.63	0.08	0.39	0.16	0.55	0.14	0.13	0.27	8,094.08
Coating 03/16/2009-06/04/2010	64.33	0.04	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.90
Architectural Coating	64.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.90
Time Slice 6/7/2010-6/22/2010 Active Days: 12	7.02	36.40	91.50	0.10	0.46	2.19	2.65	0.17	2.00	2.16	12,251.97
Building 01/12/2009-06/22/2010	7.02	36.40	91.50	0.10	0.46	2.19	2.65	0.17	2.00	2.16	12,251.97
Building Off Road Diesel	4.08	23.31	14.31	0.00	0.00	1.67	1.67	0.00	1.54	1.54	2,259.28
Building Vendor Trips	0.75	9.31	7.56	0.02	0.07	0.36	0.43	0.02	0.33	0.35	1,898.62
Building Worker Trips	2.20	3.79	69.63	0.08	0.39	0.16	0.55	0.14	0.13	0.27	8,094.08

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 4/21/2008 - 10/24/2008 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.42	5.44	2.43	0.00	0.01	0.01	6,917.07
Hearth - No Summer Emissions							
Landscape	2.85	0.20	19.31	0.00	0.05	0.05	30.81
Consumer Products	24.41						
Architectural Coatings	5.62						
TOTALS (lbs/day, unmitigated)	33.30	5.64	21.74	0.00	0.06	0.06	6,947.88

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.33	4.35	1.95	0.00	0.01	0.01	5,533.65
Hearth - No Summer Emissions							
Landscape	2.85	0.20	19.31	0.00	0.05	0.05	30.81
Consumer Products	24.41						
Architectural Coatings	5.62						
TOTALS (lbs/day, mitigated)	33.21	4.55	21.26	0.00	0.06	0.06	5,564.46

Area Source Mitigation Measures Selected

Mitigation Description	Percent Reduction
Residential Increase Energy Efficiency Beyond Title 24	20.00
Commercial Increase Energy Efficiency Beyond Title 24	20.00

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Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	23.20	22.30	263.73	0.19	33.64	6.38	19,245.38
Condo/townhouse general	15.83	14.82	175.35	0.13	22.37	4.24	12,795.85
City park	0.27	0.16	1.76	0.00	0.23	0.04	132.50
Supermarket	8.91	9.84	110.74	0.08	14.74	2.79	8,345.61
Community Center	0.15	0.08	0.95	0.00	0.13	0.02	71.58
TOTALS (lbs/day, unmitigated)	48.36	47.20	552.53	0.40	71.11	13.47	40,590.92

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	21.95	20.91	247.34	0.18	31.55	5.98	18,049.12
Condo/townhouse general	14.83	13.72	162.32	0.12	20.71	3.93	11,844.87
City park	0.26	0.15	1.67	0.00	0.22	0.04	125.40
Supermarket	8.45	9.31	104.81	0.08	13.95	2.64	7,898.41
Community Center	0.14	0.08	0.90	0.00	0.12	0.02	67.75
TOTALS (lbs/day, mitigated)	45.63	44.17	517.04	0.38	66.55	12.61	37,985.55

Operational Mitigation Options Selected

Residential Mitigation Measures

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Operational Mitigation Options Selected

Residential Mitigation Measures

Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2% (calculated as a % of 9.57 trips/day)))

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

The Presence of Local-Serving Retail checkbox was selected.

Residential Transit Service Mitigation

Percent Reduction in Trips is 0.31% (calculated as a % of 9.57 trips/day)

Note that the above percent is applied to a baseline of 9.57 and that product is

subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 28

The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0

The Number of Dedicated Daily Shuttle Trips is 0

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.05% (calculated as a % of 9.57 trips/day)

Note that the above percent is applied to a baseline of 9.57 and that product is

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Operational Mitigation Options Selected

Residential Mitigation Measures

subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Intersections per Square Mile is 20

The Percent of Streets with Sidewalks on One Side is 20%

The Percent of Streets with Sidewalks on Both Sides is 70%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 20%

Nonresidential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%

Inputs Selected:

The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.31%

Inputs Selected:

The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 28

The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 0

The Number of Dedicated Daily Shuttle Trips is 0

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Nonresidential Mitigation Measures

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 3.05%

Inputs Selected:

The Number of Intersections per Square Mile is 20

The Percent of Streets with Sidewalks on One Side is 20%

The Percent of Streets with Sidewalks on Both Sides is 70%

The Percent of Arterials/Collectors with Bike Lanes or where Suitable,

Direct Parallel Routes Exist is 20%

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2009 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	40.00	8.25	dwelling units	278.00	2,293.50	19,608.74
Condo/townhouse general	13.81	6.90	dwelling units	221.00	1,524.90	13,037.44
City park	11.5	1.59	acres	11.50	18.29	136.36
Supermarket	1.15	46.50	1000 sq ft	25.00	1,162.50	8,594.36

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Community Center	0.3	1.52	1000 sq ft	6.56	9.97	73.72
	66.67 acres				5,009.16 ✓	41,450.62

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.1	1.9	97.7	0.4
Light Truck < 3750 lbs	8.7	3.4	90.9	5.7
Light Truck 3751-5750 lbs	23.5	0.9	99.1	0.0
Med Truck 5751-8500 lbs	11.5	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	82.4	17.6
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.7	0.0	28.6	71.4
Heavy-Heavy Truck 33,001-60,000 lbs	0.2	0.0	0.0	100.0
Other Bus	0.0	0.0	0.0	0.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	4.5	73.3	26.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.5	6.7	80.0	13.3

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
Supermarket				2.0	1.0	97.0
Community Center				2.0	1.0	97.0

Operational Changes to Defaults

Ventura County APCD TDM Mitigation Fund Calculation

TC = EE * UC * D * 3 years
where:

TC = Total Cost for TDM Mitigation Fund Program
EE = Excess Emissions over threshold
UC = Unit Cost per pound
$5.18 ROC in 2000$ (January CPI at 167.9)
$7.54 NOx in 2000$ (January CPI at 167.9)
D = Days Of Operation

Project:	Parklands
Completion Date:	2010
Inflation Rate:	2.7%
Days of Operation:	365
Applicable Threshold:	25 pounds per day

Pollutant	Summer Daily Emissions	EE	Adjusted UC	Total Cost
ROC	66.42	41.4	$6.76	$102,220
NOx	9.1	-15.9	$9.84	$0

TDM Fund: ***$102,220***

Note: Based on URBEMIS 2001emission rates.

Greenhouse Gas Emission Worksheet
Mobile Emissions

From URBEMIS 2007 Vehicle Fleet Mix Output:

Daily Vehicle Miles Traveled (VMT):	41,451
Annual VMT:	15,129,615

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)
Light Auto	47.1%	0.4	0.1884	0.4	0.1884
Light Truck < 3750 lbs	8.7%	0.5	0.0435	0.6	0.0522
Light Truck 3751-5750 lbs	23.5%	0.5	0.1175	0.6	0.141
Med Truck 5751-8500 lbs	11.5%	0.5	0.0575	0.6	0.069
Lite-Heavy Truck 8501-10,000 lbs	1.7%	0.12	0.00204	0.2	0.0034
Lite-Heavy Truck 10,001-14,000 lbs	0.5%	0.12	0.0006	0.2	0.001
Med-Heavy Truck 14,001-33,000 lbs	0.7%	0.12	0.00084	0.2	0.0014
Heavy-Heavy Truck 33,001-60,000 lbs	0.2%	0.12	0.00024	0.2	0.0004
Other Bus	0.0%	0.5	0	0.6	0
Urban Bus	0.0%	0.5	0	0.6	0
Motorcycle	4.5%	0.09	0.00405	0.01	0.00045
School Bus	0.1%	0.5	0.0005	0.6	0.0006
Motor Home	1.5%	0.12	0.0018	0.2	0.003
Total			**0.41697**		**0.46085**

* from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
Assume Model year 2000-present, gasoline fueled.
Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.0, April 2008.

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	21 GWP
N2O	310 GWP

1 ton (short, US) = 0.90718474 metric ton.

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
CO2 Emissions* :	**6932.5**	tons CO2	**6,289**	metric tons CO2e
CH4 Emissions:	**6.3**	metric tons CH4	**132**	metric tons CO2e
N20 Emissions:	**7.0**	metric tons N2O	**2,161**	metric tons CO2e
		Project Total:	***8,583***	***metric tons CO2e***

* From URBEMIS 2007 results for mobile sources

Greenhouse Gas Emission Worksheet
Operational Emissions

Indirect Emission from Electricity Use

Total Project Annual KWh:	**782,417**	kWH/year
Project Annual MWh:	**782**	MWH/year

Emission Factors:

CO2 *	879	lbs/MWh/year
CH4 **	0.0067	lbs/MWh/year
N2O **	0.0037	lbs/MWh/year

Total Annual Operational Emissions (metric tons) = (Electricity Use (kWh) x EF)/ 2,204.62 lbs/metric ton

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	21	GWP
N2O	310	GWP

1 ton (short, US) = 0.90718474 metric ton.

Annual Operational Emissions:

	Total Emissions		**Total CO2e Units**	
CO2 emissions, electricity:	343.8648	tons	**311.9**	metric tons CO2e
CO2 emissions***:	1015.6000	tons	**921.3**	metric tons CO2e
CH4 emissions:	0.0024	metric tons	**0.0**	metric tons CO2e
N2O emissions:	0.0013	metric tons	**0.4**	metric tons CO2e
		Project Total	***1,234***	***metric tons CO2e***

References

* Table C.1: EPA eGRID CO2 Electricity Emission Factors by Subregion "Power Profiler"(Year 2004)
** Table C.3: Methane and Nitrous Oxide Electricity Emission Factors by State (Average years 2001-1003)
*** URBEMIS Annual Emissions output for Area Source emissions; includes natural gas combustion for heating.

Sources: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 2.2, March 2007.
Third Assessment Report, 2001, U.S. Environmental Protection Agency, U.S. Greeenhouse Gas Emissions and Sinks, 1990-2000 (April 2002).

Appendix C

Biological Resources Reports

BIOLOGY IMPACT STUDY
FOR THE PARKLANDS MASTER PLAN
CITY OF VENTURA, CALIFORNIA

Prepared for:

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Project No. 0502-2151

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1.0 PROJECT DESCRIPTION

The proposed Parklands Master Plan involves the development of a 66.73 acre site located immediately west of Wells Road and south of Telegraph Road, Ventura, California (see Figure 1). The development would consist of 326 single-family residences, 161 units of multi-family residences and 15,290 gross square feet of retail/commercial. This Biology Impact Study was prepared for submittal to the City of Ventura to facilitate assessment of environmental impacts.

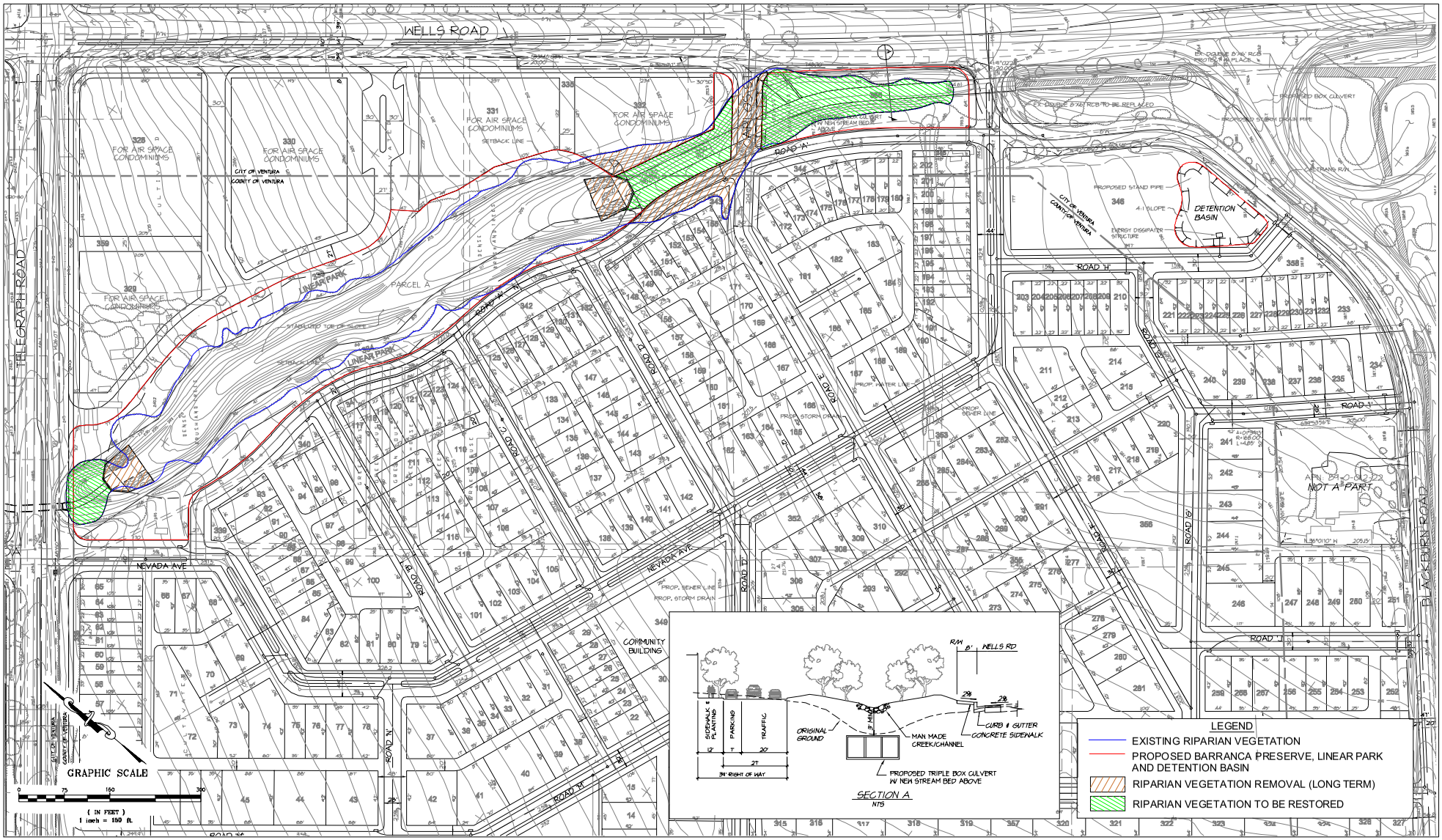
The Master Plan area has been identified by the City as a potential expansion area in the Comprehensive Plan Update 2025. The project proposes to integrate the existing riparian corridor (Brown Barranca) into the project design to create a linear park in the northeast portion of the Master Plan area. Most of Brown Barranca would be preserved in its existing condition, while the downstream portion would be channelized into an underground reinforced concrete box culvert. Areas above the underground box culvert would be restored as a local storm drain to mimic a natural streambed (see Figure 1). The remainder of the Master Plan area is cultivated with row crops, which would be converted to residential uses in several phases.

2.0 ENVIRONMENTAL SETTING

The Master Plan area is relatively level and is located in the western portion of the Santa Clara River Valley. Brown Barranca is an intermittent drainage located within the northeast portion of the Master Plan area, with approximately 1,660 feet of the Barranca within the Master Plan area. Approximately 1,600 linear feet of Brown Barranca within the Master Plan area supports native riparian vegetation. Approximately 290 linear feet of this reach has been fortified on the north bank with concreted rock rip-rap, where the Barranca then drains into a concrete box culvert beneath Blackburn Road. Downstream of the Master Plan area, Brown Barranca is channelized into a concrete trapezoidal channel. Brown Barranca originates from Long Canyon, a 1,000-acre (approximate) sub-watershed that drains the south facing slopes above Ventura. Approximately 1 mile downstream of the Master Plan area, Brown Barranca drains into the Santa Clara River, which then drains to the Pacific Ocean.

A field survey of the Master Plan area was conducted on November 8, 2005 to document the biological resources of the Master Plan area. Due to the majority of the Master Plan area having been converted for agricultural uses, the field survey focused specifically on Brown Barranca. A separate wetland delineation survey was conducted on November 16, 2005. In addition to field surveys, literature research was conducted to determine the potential for sensitive plant and wildlife species to occur within the Master Plan area.

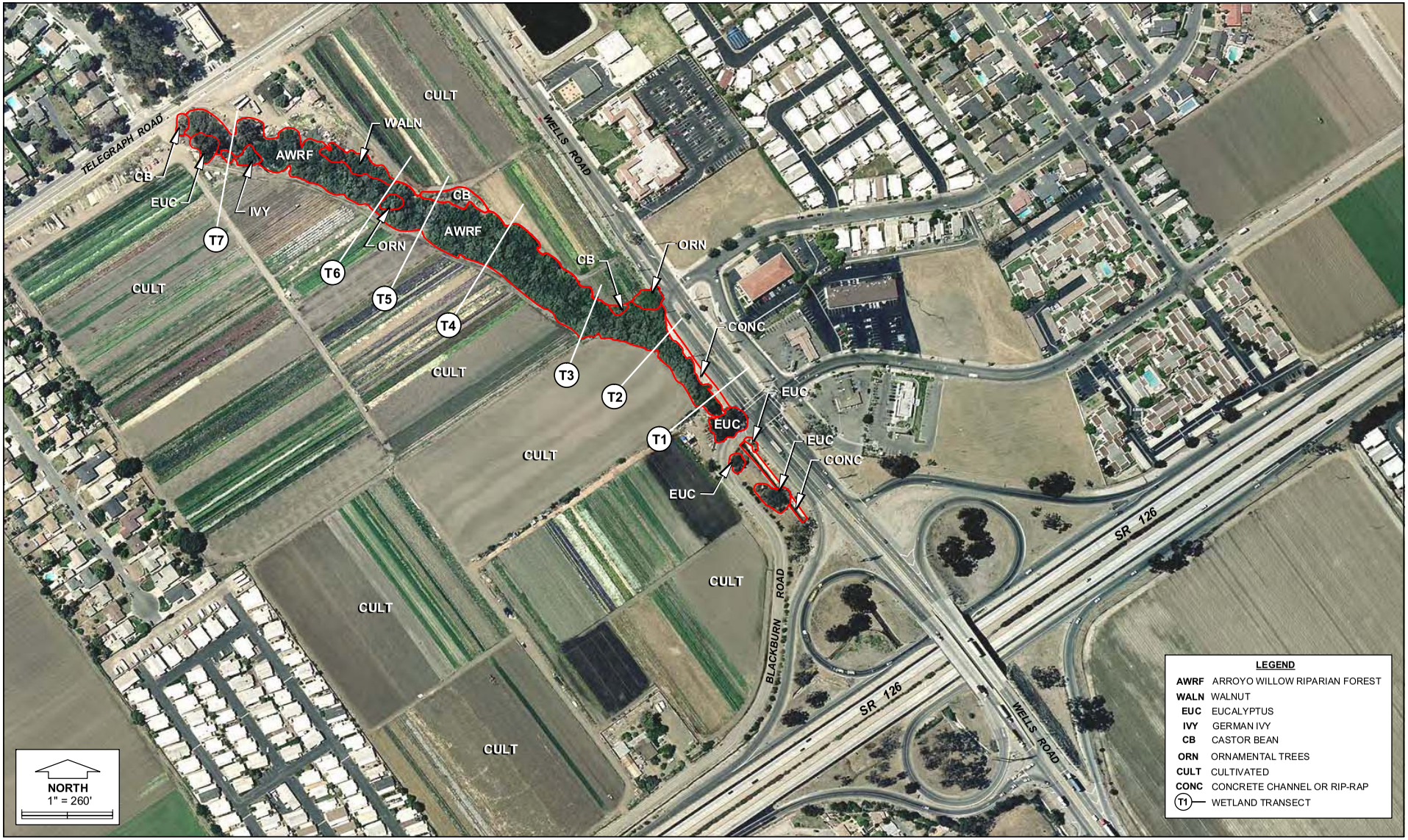
April 2007
Project No. 0502-2152



padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT SITE MAP
FIGURE 1

November 2005
Project No. 0502-2151



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Westwood Communities Parklands Development

VEGETATION MAP
FIGURE 2

Figure 3a. View of Brown Barranca and concreted rock rip-rap bank along Wells Road, immediately upstream of the Blackburn Road box culvert. Photograph is toward the northwest.

Figure 3b. View of Brown Barranca channel within arroyo willow riparian forest. Photograph is toward the west.

FIGURE 3
SITE PHOTOGRAPHS (1 of 2)

Figure 4a. View of agricultural field along north bank of Brown Barranca. Photograph is toward the west.

Figure 4b. View of Brown Barranca from Telegraph Road arched culvert outlet. Photograph is toward the east.

FIGURE 4
SITE PHOTOGRAPHS (2 of 2)

2.1 VEGETATION

The majority of the Master Plan area supports agricultural crops and does not support native vegetation. However, the portion of the Master Plan area within or directly adjacent to Brown Barranca does support native riparian vegetation, which is mainly composed of a dense overstory dominated by arroyo willow (*Salix lasiolepis*) (see Figure 2). California black walnut (*Juglans californica*) is also present at an upland location within the Master Plan area. Understory vegetation includes poison oak (*Toxicodendron diversilobum*), broad-leaved cattail (*Typha latifolia*), mulefat (*Baccharis salicifolia*), willow weed (*Polygonum lapathifolium*), and big saltbush (*Atriplex lentiformis*). Riparian vegetation within the Master Plan area is an isolated fragment as Brown Barranca has been converted to a linear park with eucalyptus plantings north of Telegraph Road, and is a concrete-lined culvert downstream of Blackburn Road.

Non-native vegetation within the Master Plan area includes blue gum trees (*Eucalyptus globulus*), castor bean (*Ricinus communis*), rabbit's foot grass (*Polypogon monspeliensis*), smilo grass (*Piptatherum miliaceum*), tree tobacco (*Nicotiana glauca*), garden nasturtium (*Tropaeolum majus*), German ivy (*Delairea odorata*), fan palm (*Washingtonia* sp.), summer mustard (*Hirschfeldia incana*) and garden blackberry (*Rubus ulmifolius*).

2.2 WILDLIFE

The riparian corridor of Brown Barranca may be considered suitable foraging habitat for riparian-dependent wildlife species. However, riparian vegetation within the Master Plan area consists of a small fragment surrounded by development and row crops. Many riparian-dependent species depend on upland foraging areas adjacent to riparian nesting areas, which is absent from the Master Plan area.

The dense willow overstory throughout the Barranca may provide nesting locations, refugia, and suitable foraging habitat for birds, mammals, reptiles and amphibians. Due to the intermittent flow regime of Brown Barranca and presence of instream barriers (concrete-lined channel for portions of the Barranca downstream of the Master Plan area, and at least two low-flow channel waterfalls with heights of at least 3 feet within the Master Plan area), the occurrence of fish species is unlikely.

Stream flow within Brown Barranca is highly intermittent and limited to short periods following storm events. However, run-off from adjacent irrigated agricultural fields and discharge from urban storm drains provide limited surface water during the dry season. No fish were observed in Brown Barranca during the field survey. However, western mosquitofish (*Gambusia affinis*) may occur as a result of planting for mosquito control.

No reptiles or amphibians were observed within the Master Plan area, but species common to the area may occur here, including pacific tree frog (*Hyla regilla*), western fence lizard (*Sceloporus occidentalis longipes*), side-blotched lizard (*Uta stansburiana elegans*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis sirtalis*), Pacific rattlesnake (*Crotalus viridus helleri*), and common kingsnake (*Lampropeltis getulus*).

Birds observed during the November 2005 survey included yellow-rumped warbler (*Dendroica auduboni*), bushtit (*Psaltriparus minimus*), song sparrow (*Melospiza melodia cooperii*), mourning dove (*Zenaidura macroura*), American kestrel (*Falco sparverius*), Anna's hummingbird (*Calypte anna*), scrub jay (*Aphelocoma coerulescens*), and Bewick's wren (*Thryomanes bewickii*) mainly within the riparian corridor, and killdeer (*Charadrius vociferous*), red-winged blackbird (*Agelaius phoeniceus*), and American crow (*Corvus brachyrhynchos*) mainly in adjacent cultivated fields. Other bird species common to riparian corridors may occur in Brown Barranca including (but not limited to) black phoebe (*Sayornis nigricans*), California towhee (*Pipilo crissalis*), common yellowthroat (*Geothlypis trichas*), Cooper's hawk (*Accipiter cooperi*), Pacific-slope flycatcher (*Empidonax difficilis*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and Say's phoebe (*Sayornis saya*).

Due to the timing of the survey during November, no bird nesting activity was observed. Trees within the Master Plan area suitable for raptor nests were surveyed for inactive nests using binoculars, but none were found.

Mammals (by observation of tracks, scat, and/or nests) included raccoon (*Procyon lotor*), black rat (*Rattus rattus*), gray fox (*Urocyon cinereoargenteus*), domestic cat (*Felis catus*), coyote (*Canis latrans*), striped skunk (*Mephitis mephitis*), and dusky-footed woodrat (*Neotoma fuscipes macrotis*).

2.3 WILDLIFE MOVEMENT CORRIDORS

Wildlife migration corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local such as between foraging and nesting or denning areas, or they may be regional in nature. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary habitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional ecology of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

Brown Barranca was evaluated to determine whether it provides a suitable wildlife migration corridor between the Santa Clara River Valley and the largely undeveloped areas to the north within Long Canyon and adjacent sub-watersheds. Concrete arched and box culverts beneath road crossings at the up- and downstream ends of the subject reach of Brown Barranca would provide access for wildlife traversing the Master Plan area. However, the concrete-lined trapezoidal channel downstream of the Master Plan area extends for about 1,000 feet through the SR 126/Wells Road interchange. The lack of cover and difficult access associated with steep concrete banks may discourage use of Brown Barranca by wildlife moving between the Santa Clara River and Long Canyon. In addition, dense growth of willows within the Master Plan area limits passage by larger mammals. Therefore, Brown Barranca is not considered an important wildlife movement corridor.

2.4 SPECIAL-STATUS PLANT SPECIES

Special-status plant species are either listed as endangered or threatened under the Federal or California Endangered Species Acts, or rare under the California Native Plant Protection Act, or considered to be rare (but not formally listed) by resource agencies, professional organizations (California Native Plant Society [CNPS]), and the scientific community. For the purposes of this project, special-status plant species are defined in Table 1.

The literature search and field surveys conducted for this impact analysis indicates that 5 special-status plant species have the potential to occur within the Master Plan area (see Table 2). Each of these species has been designated as List 4 by CNPS, meaning they have a limited distribution, but are not rare or declining.

Table 1. Definitions of Special-Status Plant Species

- Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register Vol. 70, No. 90, pp. 24870-24934, May 11, 2005).
- Plants that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines,* Section 15380).
- Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in CNPS, 2001).
- Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Lists 3 and 4 in CNPS, 2001).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5).
- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).
- Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), state and local agencies or jurisdictions.
- Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range

Table 2. Special-Status Plant Species Reported in the Vicinity of the Project Site

Common Name (*Scientific Name*)	Status	Occurrence at the Project Site
Plummer's baccharis (*Baccharis plummerae ssp. plummerae*)	List 4	Not found during field surveys
Round-leaved boykinia (*Boykinia rotundifolia*)	List 4	Not found during field surveys
Ocellated Humboldt lily (*Lilium humboldtii ssp. ocellatum*)	List 4	Not found during field surveys
Fish's milkwort (*Polygala cornuta var. fishiae*)	List 4	Not found during field surveys
Southern California black walnut (*Juglans californica* var. *californica*)	List 4	Present within Brown Barranca

Only one species, southern California black walnut, was observed within the Master Plan area during the November 2005 survey. Plummer's baccharis is known to occur in Hall Canyon, approximately 6 miles to the northwest. Round-leaved boykinia, ocellated Humboldt lily and Fish's milkwort have not been found within 5 miles of the Master Plan area, but may be found in riparian corridors throughout the region.

2.5 SPECIAL-STATUS WILDLIFE SPECIES

For the purposes of this project, special-status wildlife species are defined in Table 3. Literature research and field surveys conducted for this impact analysis indicates that 23 special-status wildlife species may occur in the project vicinity. Information regarding regulatory status for each species and likelihood of occurrence within the Master Plan area is provided in Table 4.

Table 3. Definitions of Special-Status Wildlife Species

Special-Status Wildlife Species
➢ Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species). ➢ Animals that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register Vol. 70, No. 90, pp. 24870-24934, May 11, 2005). ➢ Animals that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380). ➢ Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5). ➢ Animal species of special concern to the CDFG (Remsen, 1978 for birds; Williams, 1986 for mammals). ➢ Animal species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]). ➢ Marine mammals protected under the Marine Mammal Protection Act (Public Law 103-238).

Table 4. Special-Status Wildlife Species Reported in the Vicinity of the Project Site

Common Name (*Scientific Name*)	Status	Likelihood of Occurrence within the Master Plan area
Fish		
Southern steelhead (*Oncorhynchus mykiss irideus*)	FE, CSC	None, reported from the Santa Clara River (NDDB 2005) but barriers exist downstream of the Master Plan area that would preclude access to Brown Barranca.
Santa Ana sucker (*Catostomus santaanae*)	FT, CSC	None, reported from the Santa Clara River (NDDB 2005) but barriers exist downstream of the Master Plan area that would preclude access to Brown Barranca.
Arroyo chub (*Gila orcuttii*)	CSC	None-Low, reported from the Santa Clara River (NDDB 2005) but surface water is rare within the Master Plan area.
Reptiles		
Southwestern pond turtle (*Actinemys marmorata pallida*)	CSC, P	None-Low, surface water is rare, no suitable pool habitat.
Two-striped garter snake (*Thamnophis hammondi*)	CSC, P	None-Low, prey base (small fish and amphibian larvae) is rare or absent.
San Diego mountain kingsnake (*Lampropeltis zonata pulchra*)	CSC	None-Low, prey base (lizards, snakes, bird eggs) is rare or absent due to surrounding development.

Table 4. Continued

Common Name (*Scientific Name*)	Status	Likelihood of Occurrence within the Master Plan area
Birds		
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC, SE	None, rarely reported from the Santa Clara River (NDDB 2005), habitat within Master Plan area is not suitable.
Least Bell's vireo (*Vireo belli pusillus*)	FE, SE	None-Low, reported nesting in the Santa Clara River (NDDB 2005) in riparian habitats. Habitat within Master Plan area is too small, fragmented and lacks upland foraging areas.
Southwestern willow flycatcher (*Empidonax trailii extimus*)	SE, FE	None, rarely reported from the Santa Clara River (NDDB 2005), habitat within Master Plan area is not suitable.
Cooper's hawk (*Accipiter cooperi*)	CSC	Low-Moderate, common in the region (Ventura Audubon Society, 2003). May forage within Brown Barranca, no suitable nesting habitat.
Ferruginous hawk (*Buteo regalis*)	CSC	Low, an uncommon migrant (Ventura Audubon Society, 2003). Unlikely to forage within Brown Barranca.
Sharp-shinned hawk (*Accipiter striatus*)	CSC	Low, an uncommon migrant (Ventura Audubon Society, 2003). Unlikely to forage within Brown Barranca.
Northern harrier (*Circus cyaneus*)	CSC	Low, an uncommon migrant (Ventura Audubon Society, 2003). Unlikely to forage within Brown Barranca.
Golden eagle (*Aquila chrysaetos*)	CSC	Low, an uncommon migrant (Ventura Audubon Society, 2003). Unlikely to forage within Brown Barranca.
White-tailed kite (*Elanus caeruleus*)	SA, P	Low, uncommon in the region (Ventura Audubon Society, 2003). No suitable nesting habitat within the Master Plan area.
Prairie falcon (*Falco mexicanus*)	CSC	None-Low, rare in the region (Ventura Audubon Society, 2003). No suitable nesting habitat within the Master Plan area.
Long-eared owl (*Asio otus*)	CSC	None-Low, very rare in the region (Ventura Audubon Society, 2003). No suitable nesting habitat within the Master Plan area.
Yellow warbler (*Dendroica petechia brewsteri*)	CSC	Moderate, reported from the Santa Clara River, riparian vegetation within Master Plan area is considered marginal habitat as it is small, isolated and lacks upland foraging areas.
Yellow-breasted chat (*Icteria virens*)	CSC	Moderate-Low, uncommon in the region (Ventura Audubon Society, 2003). Riparian vegetation within Master Plan area is considered marginal habitat as it is small, isolated and lacks upland foraging areas.
Mammals		
Pallid bat (*Antrozous pallidus*)	CSC	None-Low, no roosting habitat (caves, crevices, buildings) present within Master Plan area. Prey base (large insects) limited by cultivation, unlikely to forage within Master Plan area.
California mastiff bat (*Eumops perotis californicus*)	CSC	None-Low, no roosting habitat (crevices) present within Master Plan area. Prey base (night-flying bees and wasps) limited by cultivation, unlikely to forage within Master Plan area.
Pale big-eared bat (*Plecotus townsendii pallescens*)	CSC	None-Low, no roosting habitat (caves, mines, buildings) present within Master Plan area. Prey base (small moths and beetles) limited by cultivation, unlikely to forage within Master Plan area.
Ringtail (*Bassariscus astutus octavus*)	P	Low, no documented sightings in the project area, but may forage in Brown Barranca.

Status Codes:
- FE Federal Endangered (USFWS)
- FT Federal Threatened (USFWS)
- FC Federal Candidate (USFWS)
- SE State Endangered (CDFG)
- CSC California Species of Special Concern (CDFG)
- P Protected under California Fish and Game Code
- SA Special animal (CDFG)

No special-status wildlife species were observed within the Master Plan area during the November 2005 survey. As listed in Table 4 above, species with at least a moderate likelihood to occur within the Master Plan area include Cooper's hawk, yellow warbler and yellow-breasted chat, due primarily to the presence of riparian woodland within Brown Barranca. A field survey during the breeding season (March-August) would be required to fully determine the status of these birds species at the project site.

3.0 WETLANDS AND WATERS OF THE U.S.

3.1 INTRODUCTION

The U.S. Army Corps of Engineers (Corps) has jurisdiction over waters of the United States (U.S.). The limit of jurisdiction in non-tidal waters extends to the ordinary high water mark and include all adjacent wetlands. Waters of the U.S. are defined as:

> "All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; including all interstate waters including interstate wetlands, all other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce."

The Corps and U.S. Environmental Protection Agency define wetlands as:

> "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

3.2 METHODOLOGY

A preliminary wetland delineation was conducted to determine the area of jurisdiction of the Corps under Section 404 of the Clean Water Act. The delineation was performed in accordance with the routine procedures for areas greater than 5 acres detailed in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Wetlands subject to the Clean Water Act (jurisdictional wetlands) were determined to be present if evidence of all three Federal criteria were observed (hydrophytic vegetation, hydric soils, and wetland hydrology). Wetlands under the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) definition were determined to be present if one of the wetland criteria was evident.

Federal Jurisdiction Determination. The limit of Corps jurisdiction in non-tidal waters extends to the ordinary high water mark and includes all adjacent wetlands. The ordinary high water (OHW) mark was established along the banks of Brown Barranca within the Master Plan area, using drift lines and bank shelving patterns. Drift lines (organic materials deposited along the banks) are direct evidence of the highest water elevation of the most recent rain year. Bank shelving patterns (eroded benches) indicate long-term patterns in high water elevation. The width of waters of the U.S. (distance between OHW marks) was measured and wetlands data (vegetation, hydrology and soils) collected at 7 transect locations.

Hydrophytic Vegetation. The predominance of hydrophytic (water-loving) vegetation was established by identifying dominant species within a 30-foot radius circle (sample plot) at each of the transects and determining the hydrophytic class (i.e., facultative, facultative-wetland or obligate wetland species) listed in Reed (1988).

Hydric Soils. Soil pits were excavated at each of the 7 transect locations within the Master Plan area. Additional soil pits were excavated as needed to estimate the width of hydric soils at each transect. Soils of Brown Barranca have been mapped as Gullied Land (Edwards et al., 1970). This soil type is not considered hydric by the Natural Resources Conservation Service (1992).

Wetland Hydrology. Observations were conducted at each transect and sample plot to identify evidence of inundation or soil saturation, such as drift lines, sediment deposits, drainage patterns and oxidized roots.

Wetland Determination. Based on field observations, it is unclear if Brown Barranca is inundated for a sufficient duration (at least 5 percent of the growing season) to meet the wetland hydrology criterion of the Corps of Engineers Wetland Delineation Manual.

3.3 SURVEY RESULTS

Federal Jurisdictional Determination. A summary of the wetlands delineation is provided in Table 5. Approximately 0.99 acres) of waters of the U.S. occur within the master Plan area. Wetland data forms are provided as Appendix A.

Federal Wetland Determination. Jurisdictional wetlands were found in a portion of Brown Barranca, generally in areas affected by agricultural run-off. The area of jurisdictional wetlands is based on the area where wetland hydrology, hydric soils and hydrophytic vegetation co-occur. Approximately 0.11 acres of Corps-defined wetlands occurs in Brown Barranca (see Table 5).

CDFG Wetland Determination. The extent of CDFG-defined wetlands within the Master Plan area is based on the area that encompasses any of the three wetland criteria (hydrophytic vegetation, hydric soils, wetland hydrology). For the proposed project, this area is composed of the area exhibiting hydrophytic vegetation. Approximately 4.14 acres of CDFG-defined wetlands occurs in Brown Barranca (see Table 5).

Table 5. Summary of Wetlands Delineation

Transect no.	Length of Streambed (ft)	Jurisdictional Width (ft)	Hydrophytic Vegetation Width (ft)	Hydric Soil Width (ft)	Area of Corps Wetlands (ac)	Area of CDFG Wetlands (ac)
1	280	35	38	0	0.00	0.24
2	150	20	135	0	0.00	0.47
3	145	20	145	0	0.00	0.48
4	280	26	105	12	0.08	0.68
5	220	30	135	6	0.03	0.68
6	335	26	125	0	0.00	0.96
7	250	20	110	0	0.00	0.63
Total	1,660				0.11	4.14

4.0 IMPACT ANALYSIS

As stated above, the project proposes to construct a 67-acre housing development, which integrates Brown Barranca into the landscape architecture of the development. As such, approximately 860 linear feet of Brown Barranca and much of its riparian woodland corridor would be preserved in its existing condition. The remainder of Brown Barranca (totaling approximately 725 linear feet) would be modified by the construction of underground reinforced concrete culverts upstream and downstream of the preserved portion of the Barranca, and subsequent placement of fill on top of the culverts and creation of a landscaped streambed.

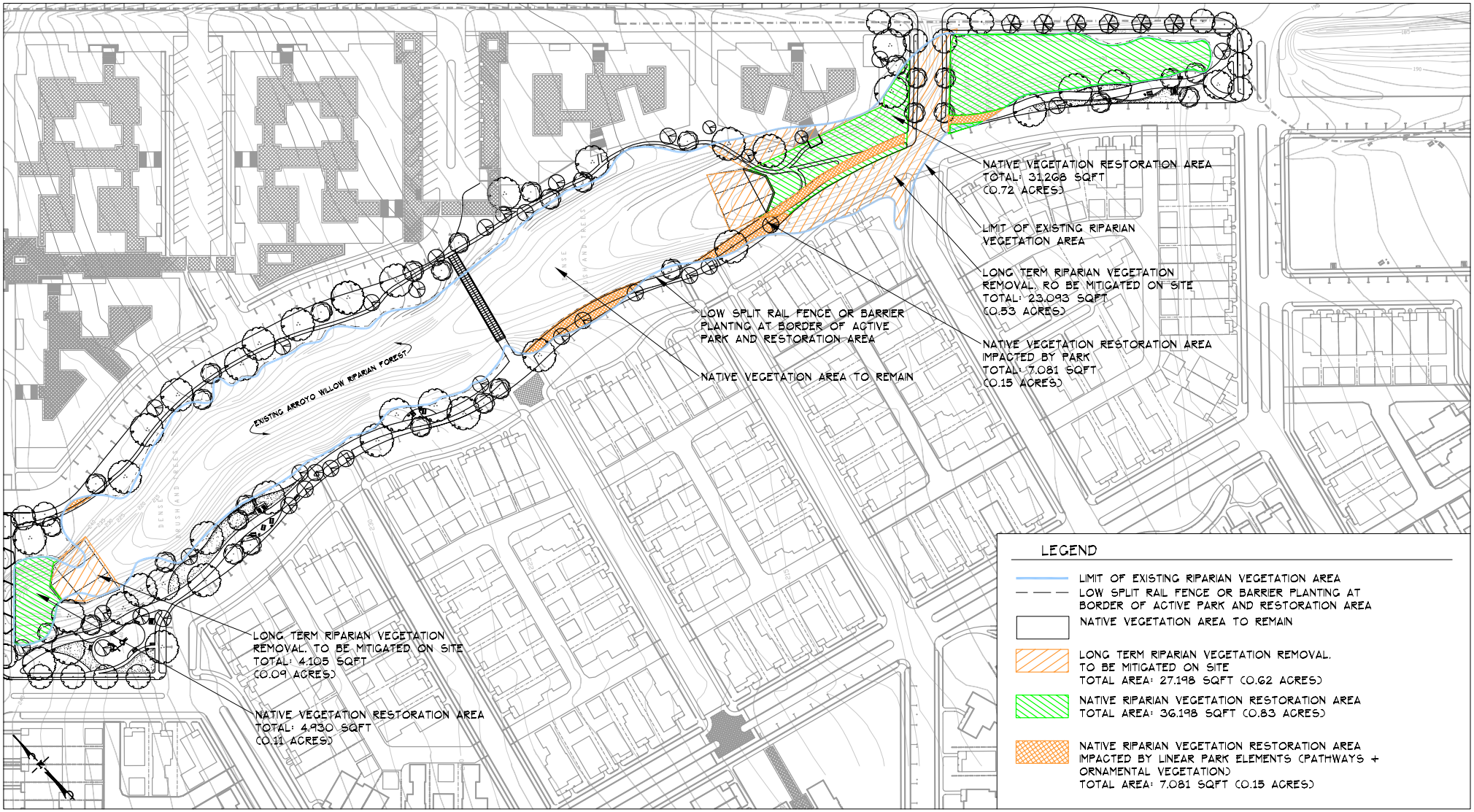
Based on recent hydraulic modeling, the new culverts are necessary to increase storm flow capacity (especially near the Wells Road/Blackburn Road intersection) which would reduce the potential for overbank flow of Brown Barranca and flood damage to proposed residential land uses at the project site and existing land uses south and west of the Blackburn Road/Wells Road intersection.

4.1 RIPARIAN VEGETATION LOSS

Temporary. Approximately 0.83 acres of riparian vegetation would be removed as part of culvert installation and other proposed improvements (see green fill pattern in Exhibit 1). However, this area would be revegetated with native riparian species to form a nature preserve. Barrier plantings and split-rail fencing would be used to separate this restoration area from the adjacent linear park. The restoration area would be off-limits for active recreation, and may include an unpaved foot path with interpretative signage. In addition, approximately 0.03 acres of riparian vegetation would be adversely affected by the proposed foot bridge over Brown Barranca, as a result of canopy trimming to maintain access over the free span bridge. Native vegetation would remain under the bridge.

Permanent. At the upstream end of the Master Plan area, the existing concrete arched culvert beneath Telegraph Road would be extended downstream by approximately 75 feet. At its outlet, a reinforced concrete headwall, a concreted rock rip-rap apron (15 linear feet), and approximately 50 linear feet of concreted rock rip-rap banks would be constructed to prevent scouring during storm events. Downstream of the proposed entrance road crossing (Carlos Street, see Figure 1), the Barranca would be converted into an underground triple box culvert for approximately 725 linear feet. At its inlet, a reinforced concrete headwall, a concreted rock rip-rap apron (15 linear feet), and approximately 50 linear feet of concreted rock rip-rap banks would be constructed to prevent scouring during storm events. In addition, riparian vegetation would be permanently displaced by roadways, bike path and associated project components. Overall, approximately 0.77 acres of riparian vegetation would be permanently removed (see both orange fill patterns in Exhibit 1). Although not shown on Exhibit 1, a small area of riparian vegetation (less than 0.005 acres) would be permanently displaced by the abutments for the proposed foot bridge over Brown Barranca.

Permanent loss of riparian vegetation would be partially offset through enhancement of remaining riparian vegetation, which would include removal of non-native plant species (including castor bean, German ivy, eucalyptus and ornamentals) and replanting with native riparian species. In addition, the proposed detention basin would be managed to maintain native wetland and riparian plant species. As shown in Exhibit 2, approximately 1.60 acres of riparian vegetation loss would be partially offset through restoration, enhancement and creation of 1.39 acres of native riparian and wetland vegetation.



BARRANCA PRESERVE AND RESTORATION AREAS

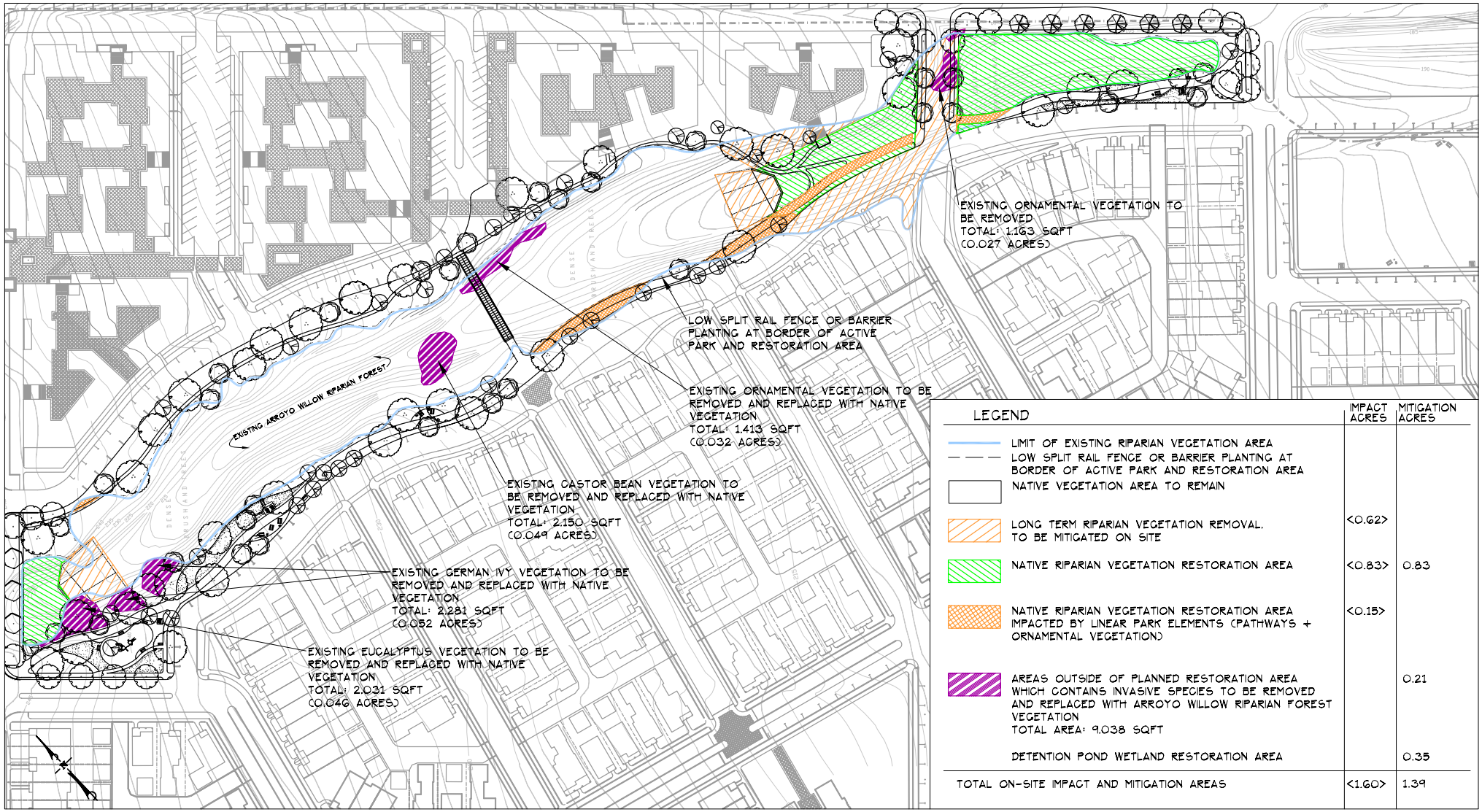
SCALE: 1"=60'-0"

0 60 120 180

THE OFFICE OF
KATIE O'REILLY ROGERS
INC
LANDSCAPE ARCHITECT
CA # 2008
114 EAST DE LA GUERRA St SANTA BARBARA CA 93101
805.965.2007

EXHIBIT 1

APRIL 2007



LEGEND	IMPACT ACRES	MITIGATION ACRES
LIMIT OF EXISTING RIPARIAN VEGETATION AREA		
LOW SPLIT RAIL FENCE OR BARRIER PLANTING AT BORDER OF ACTIVE PARK AND RESTORATION AREA		
NATIVE VEGETATION AREA TO REMAIN		
LONG TERM RIPARIAN VEGETATION REMOVAL. TO BE MITIGATED ON SITE	<0.62>	
NATIVE RIPARIAN VEGETATION RESTORATION AREA	<0.83>	0.83
NATIVE RIPARIAN VEGETATION RESTORATION AREA IMPACTED BY LINEAR PARK ELEMENTS (PATHWAYS + ORNAMENTAL VEGETATION)	<0.15>	
AREAS OUTSIDE OF PLANNED RESTORATION AREA WHICH CONTAINS INVASIVE SPECIES TO BE REMOVED AND REPLACED WITH ARROYO WILLOW RIPARIAN FOREST VEGETATION TOTAL AREA: 9,038 SQFT		0.21
DETENTION POND WETLAND RESTORATION AREA		0.35
TOTAL ON-SITE IMPACT AND MITIGATION AREAS	<1.60>	1.39

THE OFFICE OF
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INC
LANDSCAPE ARCHITECT
CA # 2008
114 EAST DE LA GUERRA St. SANTA BARBARA, CA 93101
805.965.8007

BARRANCA EXISTING VEGETATION RESTORATION AREAS

SCALE: 1"=60'-0"

0 60 120 180

EXHIBIT 2

APRIL 2007

4.2 WILDLIFE IMPACTS

Construction within and adjacent to wildlife habitat of Brown Barranca may reduce foraging and breeding opportunities for common wildlife species such as song sparrow, mourning dove, scrub jay and raccoon. Noise and dust generated by construction may alter behavior patterns and reduce habitat quality. Temporary loss of habitat associated with project implementation may also cause a short-term reduction in wildlife populations in the immediate area.

4.3 SPECIAL-STATUS SPECIES IMPACTS

Southern California black walnut occurs within Brown Barranca, but would not be adversely affected by project implementation as it occurs within natural open space as designated in the Master Plan.

Riparian habitat to be affected by the project may support special-status wildlife species potentially including Cooper's hawk, yellow warbler and yellow-breasted chat. Loss of riparian vegetation along Brown Barranca may adversely affect these species (if present) through habitat loss and construction-related disturbance of habitat to remain.

4.4 WETLANDS

The Master Plan area supports approximately 0.11 acres of Corps-defined wetlands and 4.1 acres of CDFG-defined wetlands. The CDFG-defined wetlands are synonymous with riparian vegetation (discussed above). Approximately 0.03 acres (27 percent) of Corps-defined wetlands would be temporary disturbed by box culvert installation. Approximately 0.02 acres would be displaced by the proposed culvert inlet structure. Therefore, the permanent loss of Corps-defined wetlands would be limited to 0.02 acres (18 percent). These wetland losses would be offset by wetlands that would develop within the proposed detention basin.

4.5 CHANGES IN HABITAT QUALITY

Temporary impacts to habitat quality during construction may occur as a result of the project. Noise, dust and night lighting (if required) associated with construction within or adjacent to Brown Barranca may disturb wildlife using this riparian corridor. Such disturbance may result in reduced foraging success, reduced reproduction and increased predation risk.

Following proposed restoration, the overall width of vegetation/habitat along Brown Barranca would not be substantially different from existing conditions. However, some of this area would be incorporated into the proposed linear park. Increased human activity (biking, dog-walking, child play) associated with use of the linear park may adversely affect wildlife foraging success, reduce reproduction and increase predation risk, and discourage habitat use by secretive species. However, barrier plantings and fencing would be used to discourage public access into the Brown Barranca riparian corridor. Wildlife use of proposed parklands along Brown Barranca would occur, and the parklands would provide a buffer from adjacent residential uses.

4.6 BENEFICIAL IMPACTS

Detention Basin as Wetland Habitat. The detention basin would provide up to 0.35 acres of wetland habitat, which would offset project-related loss of Corps-defined wetlands. Wetlands within the detention basin may provide foraging and nesting wildlife habitat. However, it is expected that maintenance of the basin would prevent maturity of woody vegetation.

Water Quality Improvements. The termination of agricultural activities within the Master Plan area may improve water quality conditions in Brown Barranca by terminating or reducing nutrient and sediment inputs to the streambed. Constituents that would likely be reduced as a result of terminating these inputs to Brown Barranca may include (but are not limited to) organic and inorganic chemicals (fertilizers and pesticides), total suspended solids, turbidity, and extremes in pH.

In addition, the proposed detention basin would serve to remove urban pollutants and prevent degradation of water quality in Brown Barranca.

5.0 CITY OF VENTURA GENERAL PLAN POLICY CONSISTENCY

The City of Ventura 2005 General Plan provides policies for resource conservation that may apply to the subject project. The following is a discussion of consistency for each applicable policy:

5.1 POLICY 1B: INCREASE THE AREA OF OPEN SPACE PROTECTED FROM DEVELOPMENT IMPACTS.

Action 1.8: Buffer barrancas and creeks that retain natural soil slopes from development according to State and Federal guidelines.

Consistency: The project proposes a setback from Brown Barranca and would preserve the slopes along the Barranca (banks), and provide parklands as a buffer. Project implementation would require acquisition of permits from CDFG, California Regional Water Quality Control Board, and the Corps to ensure consistency with State and Federal guidelines.

Action 1.9: Prohibit placement of material in watercourses other than native plants and required flood control structures, and remove debris periodically.

Consistency: Construction of the proposed flood control structures (box or arched culverts) would be required to prevent flood impacts to the proposed development. In addition, areas on top of the culverts would be revegetated with native plants (see Mitigation Measures below). Therefore, the project appears to be consistent with City policy.

Action 1.11: Require that sensitive wetland and coastal areas be preserved as undeveloped open space wherever feasible and that future developments result in no net loss of wetlands or “natural” coastal areas.

Consistency: The project has been designed to preserve wetlands to the extent feasible; however, losses of Corps-defined wetlands and CDFG-defined wetlands (riparian vegetation) would occur. Wetland losses would be offset by creation of wetland habitat as part of the proposed detention basin, and use of native plants in park areas. Most of the loss of riparian vegetation (CDFG-defined wetlands) would be offset through restoration of the area affected by installation of the box culvert. In addition, the project includes parkland and trails adjacent to Brown Barranca, which is considered a valuable amenity by the City and provides wildlife habitat value.

5.2 POLICY 1C: IMPROVE PROTECTION FOR NATIVE PLANTS AND ANIMALS.

Action 1.17: Require development to mitigate its impacts on wildlife through the development review process.

Consistency: Mitigation for impacts to wildlife are provided in the discussion below. Implementation of these mitigation measures would result in the project being consistent with City policy.

Action 1.18: Require new development adjacent to rivers, creeks, and barrancas to use native or non-invasive plant species, preferably drought tolerant, for landscaping.

Consistency: The Master Plan indicates landscaping near Brown Barranca would not include invasive plant species. Therefore, the project is consistent with City policy.

Action 1.19: Require projects near watercourses, shoreline areas, and other sensitive habitat areas to include surveys for State and/or federally listed sensitive species and to provide appropriate buffers and other mitigation necessary to protect habitat for listed species.

Consistency: As previously discussed, a biological survey of Brown Barranca was conducted to determine the potential for special-status species. Additional surveys are recommended in the spring (see Mitigation Measures below). Implementation of these mitigation measures would result in the project being consistent with City policy.

Action 1.24: Require new development to maintain all indigenous tree species or provide adequately sized replacement native trees on a 3:1 basis.

Consistency: The project would involve the loss of riparian vegetation composed of native willows. These trees would be replaced by native species at a ratio of 3:1 (see Mitigation Measures below). Therefore, implementation of tree replacements would result in the project being consistent with City policy.

6.0 MITIGATION MEASURES

The following pre-project and project integrated mitigation measures are recommended to ensure the proposed project is consistent with local, State and Federal policies and regulations:

- A qualified biologist should conduct pre-construction field surveys for arroyo chub, southwestern pond turtle, two-striped garter snake, and San Diego mountain kingsnake;
- If special-status wildlife species are observed on the project site during pre-construction surveys, construction activities within Brown Barranca should be monitored by a qualified biologist, and any wildlife species found in work areas during construction should be relocated to suitable habitat areas up- or downstream of the Master Plan area;
- A qualified biologist should conduct spring surveys for breeding birds within and adjacent to the project site with emphasis on Cooper's hawk, yellow warbler, yellow-breasted chat and other riparian-dependent special-status bird species. If active bird nests are found, prohibit work activities within 100 feet for non-listed species, and 200 feet for listed species and raptors;
- Ensure the proper installation of erosion control devices in areas that have the potential to drain to Brown Barranca throughout the project duration. These device should include silt fencing, sandbags, straw wattles and/or straw bales;
- Install aesthetic (split-rail, or equivalent) fencing between the proposed footpath and Brown Barranca to reduce disturbance of habitat;
- Provide signage and written materials to all property owners describing biological resources and prohibiting entry into the Brown Barranca Preserve;
- Conduct a pre-construction tally of all native trees to be removed;
- Incorporate replacement of native trees as required by General Plan Action 1.24 into planting plans for the area above the underground box culvert and other portions of the proposed Linear Park;
- Fence Brown Barranca during construction to prevent inadvertent entry or storage of materials and equipment within the proposed Preserve by contractors;
- Remove invasive or non-native plants from the Preserve to offset impacts including (but not limited to) castor bean, German ivy, garden blackberry, tree tobacco, garden nasturtium, and palm trees;
- Inlets of storm drains designed to discharge to Brown Barranca should be fitted with oil/grease traps;
- Promote development of wetlands in the proposed detention basin by minimizing vegetation and sediment removal; and
- Provide any additional mitigation required by CDFG and the Corps of Engineers as required by future regulatory permitting.

7.0 REFERENCES

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APPENDIX A

WETLAND DATA FORMS

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

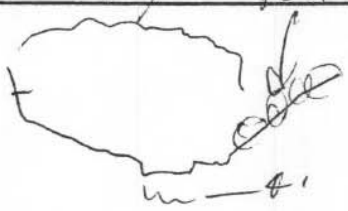
DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

Project Site:	Parklands Master Plan	**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities	**County:**	Ventura
Investigator:	Ingamells	**State:**	CA
Normal circumstances present?	Yes (circled) / No	**Community:**	
Site significantly disturbed (Atypical)?	Yes / No (circled)	**Transect:**	T1
Site considered Problem Area?	Yes / No (circled)	**Plot:**	

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW
Typha latifolia	Herb	OBL
Echinochloa crusgalli	Herb	FACW

hydrophytic veg. not-hydro



Othw - 35

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks: within Othw - width - ~30'

HYDROLOGY

Recorded Data? (explain in Remarks)	Yes	No	**Wetland Hydrology Indicators**	
Stream, lake, tide gauge?	Yes	No	**Primary**	
Aerial photographs?	Yes	No	Inundated	X
			Saturated in upper 12"	X
			Water marks	
			Drift lines	X
Field Observations:	Pit	Channel	Sediment deposits	
Depth of surface water (inches)	0	Z	Drainage patterns	X
Depth to free water in pit (inches)	2		**Secondary**	
Depth to saturated soil (inches)	0		Oxidized roots in upper 12"	
			Water-stained leaves	
Remarks:			Local soil survey data	
			FAC-Neutral test	
			Other (explain in remarks)	

SOILS

Series and Phase: Gullied Land
Drainage Class: well drained
Taxonomy (Subgroup): NA
Field Data Confirm Series? (Yes) No

Profile Description

Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
0-12	A	10YR 3/2			sticky clay

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma		Other (explain in remarks)	
All dominant plants FACW or OBL (one must be OBL)			

Remarks:
width of soil 8-10', too sticky to walk on to measure

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is Plot a Wetland? Yes (No)

Remarks:

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

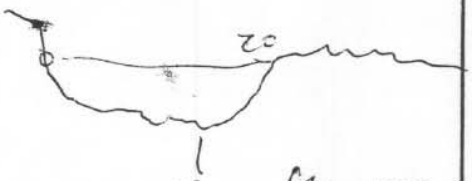
Project Site:	Parklands Master Plan	**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities	**County:**	Ventura
Investigator:	Ingamells	**State:**	CA

Normal circumstances present?	Yes	No	**Community:**	
Site significantly disturbed (Atypical)?	Yes	No	**Transect:**	T2
Site considered Problem Area?	Yes	No	**Plot:**	

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~

OHW = 20'



Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks: Salix dom.

HYDROLOGY

			Wetland Hydrology Indicators	
Recorded Data? (explain in Remarks)	Yes	No	**Primary**	
Stream, lake, tide gauge?	Yes	No	Inundated	X
Aerial photographs?	Yes	No	Saturated in upper 12"	X
			Water marks	X
			Drift lines	X
Field Observations:	Pit	Channel	Sediment deposits	
Depth of surface water (inches)	0	~0.5	Drainage patterns	X
Depth to free water in pit (inches)	4		**Secondary**	
Depth to saturated soil (inches)	1		Oxidized roots in upper 12"	
			Water-stained leaves	
Remarks:			Local soil survey data	
			FAC-Neutral test	
			Other (explain in remarks)	

SOILS

Series and Phase: Gullied Land
Taxonomy (Subgroup): NA
Drainage Class: well drained
Field Data Confirm Series?: Yes No

Profile Description

Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
0-8		10YR 3/2		none	sticky clay
>8		10YR 3/4			coarse sand

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma		Other (explain in remarks)	
All dominant plants FACW or OBL (one must be OBL)			

Remarks: sediment, some black streaking - leaf decomposition

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No		
Wetland Hydrology Present?	Yes	No	Is Plot a Wetland?	Yes No
Hydric Soils Present?	Yes	No		

Remarks:

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

Project Site:	Parklands Master Plan	**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities	**County:**	Ventura
Investigator:	Ingamells	**State:**	CA

Normal circumstances present?	Yes	No	**Community:**	
Site significantly disturbed (Atypical)?	Yes	No	**Transect:**	T3
Site considered Problem Area?	Yes	No	**Plot:**	

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW

OAW = 20

20

well

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks: some German ivy, P. oak

HYDROLOGY

Recorded Data? (explain in Remarks)	Yes	No
Stream, lake, tide gauge?	Yes	No
Aerial photographs?	Yes	No

Field Observations:	Pit	Channel
Depth of surface water (inches)	0	0
Depth to free water in pit (inches)	>14	
Depth to saturated soil (inches)	>14	

Remarks:

Wetland Hydrology Indicators

Primary	
Inundated	
Saturated in upper 12"	
Water marks	
Drift lines	X
Sediment deposits	X
Drainage patterns	X
Secondary	
Oxidized roots in upper 12"	
Water-stained leaves	
Local soil survey data	
FAC-Neutral test	
Other (explain in remarks)	

SOILS

Series and Phase: Gullied Land
Taxonomy (Subgroup): NA
Drainage Class:
Field Data Confirm Series?: (Yes) No

Profile Description

Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
0-1		10YR 4/4		none	coarse sand
1-8		10YR 3/4		none	clay loam
8-14		10YR 3/3			loam

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma		Other (explain in remarks)	

All dominant plants FACW or OBL (one must be OBL)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is Plot a Wetland? Yes (No)

Remarks:

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

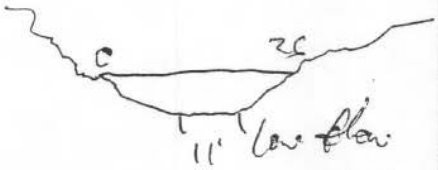
Project Site:	Parklands Master Plan	**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities	**County:**	Ventura
Investigator:	Ingamells	**State:**	CA

Normal circumstances present?	Yes	No	**Community:**
Site significantly disturbed (Atypical)?	Yes	No	**Transect:** T4
Site considered Problem Area?	Yes	No	**Plot:**

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW

other = 26



Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks: Horseweed, Garden nasturtium also seen in area

HYDROLOGY

Recorded Data? (explain in Remarks)	Yes	No
Stream, lake, tide gauge?	Yes	No
Aerial photographs?	Yes	No

Field Observations:	Pit	Channel
Depth of surface water (inches)	0	0
Depth to free water in pit (inches)	7/4	
Depth to saturated soil (inches)	7/4	

Remarks: unclear if inundated long enough

Wetland Hydrology Indicators	
Primary	
Inundated	
Saturated in upper 12"	
Water marks	
Drift lines	X
Sediment deposits	
Drainage patterns	X
Secondary	
Oxidized roots in upper 12"	
Water-stained leaves	
Local soil survey data	
FAC-Neutral test	
Other (explain in remarks)	

SOILS

Series and Phase: Gullied Land
Taxonomy (Subgroup): NA
Drainage Class:
Field Data Confirm Series?: (Yes) No

Profile Description

Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
0-4		10YR 4/3		none	sand
4-8		10YR 3/2			sandy loam
8->14		10YR 3/1			loam
2nd pit found		10YR 4/1		@ 6"	

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma	X	Other (explain in remarks)	

All dominant plants FACW or OBL (one must be OBL)

Remarks:
Hydric soil width ~12'

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No
Wetland Hydrology Present? * (Yes) No
Hydric Soils Present? (Yes) No

Is Plot a Wetland? (Yes) No

Remarks:
* Assume site is inundated for at least 5% of growing season in most years = wetland hydrology

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DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

Project Site:	Parklands Master Plan	**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities	**County:**	Ventura
Investigator:	Ingamells	**State:**	CA

Normal circumstances present?	Yes	No	**Community:**	
Site significantly disturbed (Atypical)?	Yes	No	**Transect:**	75
Site considered Problem Area?	Yes	No	**Plot:**	

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW

OHW = 30'
low flow channel = 6'

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks: also Rubus - 5 ft, no spines/thorns

HYDROLOGY

			Wetland Hydrology Indicators	
Recorded Data? (explain in Remarks)	Yes	No	**Primary**	
Stream, lake, tide gauge?	Yes	No	Inundated	
Aerial photographs?	Yes	No	Saturated in upper 12"	
			Water marks	
			Drift lines	X
Field Observations:	Pit	Channel	Sediment deposits	
Depth of surface water (inches)	0	0	Drainage patterns	X
Depth to free water in pit (inches)	7/4		**Secondary**	
Depth to saturated soil (inches)	7/4		Oxidized roots in upper 12"	
			Water-stained leaves	
			Local soil survey data	
			FAC-Neutral test	
			Other (explain in remarks)	

Remarks: Duration of inundation is unknown

SOILS

Series and Phase: Gullied Land
Taxonomy (Subgroup):
Drainage Class:
Field Data Confirm Series? (Yes) No

Profile Description

Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
0-5	A	10YR 4/3			SaLA
5-11		10YR 3/2			
11-714		10YR 3/1	3/2 mot	Comm	10YR 4/6

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma	X	Other (explain in remarks)	

All dominant plants FACW or OBL (one must be OBL)

Remarks:
Hydric soil ~ 6' wide

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No		
Wetland Hydrology Present? *	(Yes)	No	Is Plot a Wetland? (Yes)	No
Hydric Soils Present?	(Yes)	No		

Remarks:
* Assume site is inundated at least 5% of growing season in most years = wetland hydrology.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

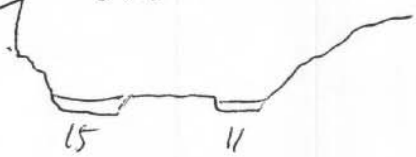
DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

Project Site:	Parklands Master Plan		**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities		**County:**	Ventura
Investigator:	Ingamells		**State:**	CA
Normal circumstances present?	Yes	No	**Community:**	
Site significantly disturbed (Atypical)?	Yes	No	**Transect:**	T6
Site considered Problem Area?	Yes	No	**Plot:**	

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW

OHW = 11+15



2 channel

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks: Gopher spurge, Viaca

HYDROLOGY

			Wetland Hydrology Indicators	
Recorded Data? (explain in Remarks)	Yes	No	**Primary**	
Stream, lake, tide gauge?	Yes	No	Inundated	
Aerial photographs?	Yes	No	Saturated in upper 12"	
			Water marks	
			Drift lines	X
Field Observations:	Pit	Channel	Sediment deposits	X
Depth of surface water (inches)	0	0	Drainage patterns	X
Depth to free water in pit (inches)	>22		**Secondary**	
Depth to saturated soil (inches)	>22		Oxidized roots in upper 12"	
			Water-stained leaves	
			Local soil survey data	
			FAC-Neutral test	
			Other (explain in remarks)	

Remarks: Duration of inundation is unclear

SOILS

Series and Phase: Gullied Land
Taxonomy (Subgroup): _____
Drainage Class:
Field Data Confirm Series? (Yes) No

Profile Description

Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
0-12		10YR4/4			Sand
* 12->14		10YR4/4			Loamy Sand

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma		Other (explain in remarks)	
All dominant plants FACW or OBL (one must be OBL)			

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No
Wetland Hydrology Present? * (Yes) No
Hydric Soils Present? Yes (No)
Is Plot a Wetland? Yes (No)

Remarks:
* Assumed inundation period at least 5% of growing season

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

DATA FORM
ROUTINE WETLAND DELINEATION
(1987 COE Wetlands Delineation Manual)

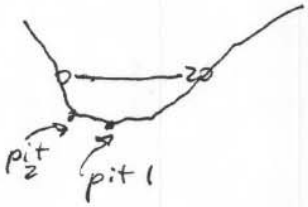
Project Site:	Parklands Master Plan	**Date:**	11/16/2005
Applicant/Owner:	Westwood Communities	**County:**	Ventura
Investigator:	Ingamells	**State:**	CA

Normal circumstances present?	Yes	No	**Community:**	
Site significantly disturbed (Atypical)?	Yes	No	**Transect:**	7 7
Site considered Problem Area?	Yes	No	**Plot:**	

VEGETATION

Dominant Plant Species	Stratum	Indicator
Salix lasiolepis	Tree	FACW

OHW = 20



Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks:

HYDROLOGY

Recorded Data? (explain in Remarks)	Yes	No
Stream, lake, tide gauge?	Yes	No
Aerial photographs?	Yes	No

Field Observations:	Pit	Channel
Depth of surface water (inches)	0	0
Depth to free water in pit (inches)	>20	
Depth to saturated soil (inches)	>20	

Remarks:
Period of inundation is unknown

Wetland Hydrology Indicators	
Primary	
Inundated	
Saturated in upper 12"	
Water marks	
Drift lines	x
Sediment deposits	x
Drainage patterns	x
Secondary	
Oxidized roots in upper 12"	
Water-stained leaves	
Local soil survey data	
FAC-Neutral test	
Other (explain in remarks)	

SOILS

Series and Phase: Gullied Land
Taxonomy (Subgroup): NA
Drainage Class:
Field Data Confirm Series?: (Yes) No

Profile Description

	Depth (")	Horizon	Matrix Color	Mottle Color	Mottle Abundance	Texture, Structure, etc.
Pit 1	0->20	A	10YR 3/4		none	sand
Pit 2	0-5	A	10YR 3/4		none	sand
	5->10	B	10YR 3/3		none	loamy sand

Hydric Soil Indicators:

Histosol		Concretions	
Histic epipedon		High organic content (sandy soil)	
Sulfidic odor		Organic streaking (sandy soil)	
Aquic moisture regime		Local hydric soil list	
Reducing conditions		National hydric soil list	
Gleyed or low chroma		Other (explain in remarks)	

All dominant plants FACW or OBL (one must be OBL)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No
Wetland Hydrology Present? * (Yes) No
Hydric Soils Present? Yes (No)
Is Plot a Wetland? Yes (No)

Remarks:
* Assumed duration of inundation is at least 5% of growing season

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May 30, 2008
Project Number: 05-58810

Iain Holt, Planner
City of Ventura
501 Poli Street
P.O. Box 99
Ventura, CA 93002

Subject: **Results of Breeding Bird Surveys at Parklands Specific Plan, City of San Buenaventura, California**

A breeding bird survey was completed at the above referenced site on May 23, 2008. This survey was conducted as a "good faith effort" to respond to CDFG requests in conjunction with the Parklands Specific Plan Mitigated Negative Declaration. The project site is bounded on the northwest by Telegraph Road, to the southwest by a mobile home park and residences, to the southeast by Blackburn Road, and to the northeast by Wells Road.

The survey site is composed of an agricultural field growing mostly flowers, cilantro, and other low-growing crops, and a riparian area – Brown Barranca. Brown Barranca consists of various riparian trees and shrubs as well as non-native vegetation (dominants include arroyo willow, California walnut, eucalyptus, German ivy, and castor bean). It is a partial dirt-bottom and concrete-lined channel throughout the project site. The determination of breeding status was based on the definitions provided in Table 1, below.

Table 1. Breeding Bird Status Definitions

Status	Symbol	Definition
Observed	O	Present, does not breed within habitat at site.
Possible	X	Seen or heard in appropriate breeding habitat.
Probable		
	S	Singing male seen in appropriate habitat
	P	Pair observed in suitable habitat
	T	Territorial behavior
	A	Agitated behavior
	C	Courtship or copulation
	N	Visiting probable nest site or cavity
Confirmed		
	NB	Nest building
	DD	Distraction display
	UN	Used nest
	FL	Fledglings
	FS	Adult with fecal sac
	FY	Adult with food
	ON	Occupied nest
	NE	Nest with eggs
	NY	Nest with young

The locations of species observed (Table 2) were categorized by use area: the agricultural field ("field"), Brown Barranca ("the barranca"), or the entire site. Juveniles and breeding birds were identified at the project site. Species were noted that possibly have nested at the site or in the near vicinity, or were currently nesting at or near the site. These included Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), Brewer's blackbird (*Euphagus cyanocephalus*), brown-headed cowbird (*Molothrus ater*), house sparrow (*Passer domesticus*), Hutton's vireo (*Vireo huttoni*), lesser goldfinch (*Carduelis psaltria*), mourning dove (*Zenaida macroura*), and song sparrow (*Melospiza melodia*). Each of these was identified copulating, carrying nest material or food, or otherwise displaying nesting behavior within the site. Secondary nesting attempts could occur given the time of year.

Table 2. Survey Results

Species	Status	Comments
Allen's hummingbird	X	Male observed in barranca
American crow	O	Group, pair observed flying over site
American goldfinch	X	Male observed foraging all over site
Anna's hummingbird	X, S, P	Pair observed foraging together and exhibiting aggression toward each other
Band-tailed pigeon	X	Individual observed flying
Barn swallow	X	Many observed all over site
Bewick's wren	X	Individual seen in barranca
Black-headed grosbeak	X	Male seen in barranca
Black phoebe	FL, X	One pair observed exhibiting aggression toward Western scrub jay in field, fledglings observed
Brewer's blackbird	X, FY	Female observed carrying food in field
Brown-headed cowbird	X, P, C	Copulation observed in field, individuals also observed in barranca
Bushtit	X	Group foraging in field rows
California towhee	X	Pair observed flying, foraging all over site
Cliff swallow	O	Many observed all over site
Common raven	X	Individual seen flying over site
Common yellowthroat	X	Male heard singing in barranca
Domestic chicken	X	Male observed in field
European starling	X	Many individuals seen all over site
Hooded oriole	X	Males and females in barranca
Horned lark	X	Many individuals seen in field
House finch	X	Groups observed all over site
House sparrow	X, FY	Adults seen carrying food in field
Hutton's vireo	P, X	Pair observed; male observed pecking at female's cloaca repeatedly in barranca
Lesser goldfinch	X, C, FL	Copulation observed between pair, fledglings observed
Mourning dove	X, C	Flew over site, courtship observed
Northern mockingbird	X	Observed all over site
Northern rough-winged swallow	O	Pair observed flying/foraging over site
Red-shouldered hawk	P, X	Pair observed perching at two locations on utility poles, onsite and just adjacent to site
Red-winged blackbird	X	Observed in field rows
Rock dove	X, P	Pair observed foraging in fields

Selasphorous hummingbird (unknown species)	X	Female seen foraging and perching in barranca
Song sparrow	X, S, P, FL, FY	Fledglings and adult with food observed all over site
Spotted towhee	X, V	Male heard singing and observed in barranca
Turkey vulture	O	Observed flying over site
Warbling vireo	X	Individual seen in barranca
Western gull	O	Observed flying over site
Western scrub jay	X	Observed perching in barranca near road
Yellow warbler	X, S	Mainly seen in barranca, but also in field rows along the edge of the barranca

Of the birds seen during this survey, Allen's hummingbird is considered a Special Animal by California Department of Fish and Game (CDFG) while nesting, the California horned lark is on the CDFG Watch List, and the yellow warbler is a CDFG Species of Special Concern while nesting. These birds are not listed as threatened or endangered under the federal or state Endangered Species Acts, but are under consideration for conservation. Specifically, a Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status (Comrack et al. 2008).

Allen's hummingbird has a small geographic area of breeding and wintering ranges compared to other hummingbirds (Mitchell 2000). This, in addition to being at a potential competitive disadvantage for food sources with Anna's hummingbird (*Calypte anna*), has contributed to the decline in this species range. A female of this species was seen onsite, but its breeding status was unknown and more detailed surveys would be required to determine whether this species is nesting onsite. This species generally breeds from early February to mid-June (Mitchell 2000). Nest-building typically takes 8–11 days, incubation takes 17–22 days, and nestling period 18–23 days to fledging.

The California horned lark (*Eremophila alpestris actia*) is on the CDFG watch list, but it frequently intergrades with other subspecies, so is not always easy to differentiate in the field (Beason 1995). Moreover, the species is in need of review and revision to determine whether prairie and western subspecies represent discrete forms or a highly variable series (Beason 1995). This species is experiencing population declines partially as a result of land

clearing in North America. As this species prefers to nest in agricultural fields that are sometimes marshy, it could be nesting onsite, but more detailed surveys would be necessary to determine breeding status. This species generally breeds from March through July (Zeiner et al. 2988).

The range of the yellow warbler (*Dendroica petechia*) is considered greatly (>40-80%) reduced, its range is slightly (>10-20%) reduced or suspected of having been reduced but the trend is unknown, and its population size is ≥ 100,000 but <1,000,000 individuals (Shuford and Gardali 2008). Although Shuford and Gardali (2008) do not note any records of breeding in Ventura County, this species generally breeds in riparian vegetation. Therefore, it is possible that this species is breeding on the site, but more detailed surveys would be necessary to determine breeding status. This species generally breeds from mid-April to early August (Zeiner et al. 1988).

Native birds, including raptors such as the red-tailed hawk, are regulated under the Federal Migratory Bird Treaty Act (MTBA) of 1918 (50 C.F.R.) and protected under California Fish and Game Code (Section 3503, raptors under Section 3503.5). According to this legislation, breeding birds and nests should be avoided until the young have fledged and left the nest.

If you have any questions, please call Nancy Fox-Fernandez at 805-641-1000 ext. 36.

Sincerely,

RINCON CONSULTANTS, INC.

Nancy Fox-Fernandez, M.S.
Associate Biologist

Duane Vander Pluym, D. ESE
Principal

REFERENCES

Beason, Robert C. 1995. Horned Lark (*Eremophila alpestris*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/195.

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MEMORANDUM

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Date: 2 July 2008

To: Iain Holt, Associate Planner

Organization: City of Ventura

From: Jennifer M Turner, Biologist

Email: Jturner@rinconconsultants.com

cc: Cori Thomas, Rincon Consultants

Re: **Results of Site Assessment Surveys at Parklands Specific Plan, City of San Buenaventura, California**

A general site reconnaissance of the above referenced project was completed on May 23 and June 16, 2008. The purpose of these surveys was to verify that onsite conditions had not substantially changed since the preparation of the Padre Associates study (revised April 2007). Survey efforts focused on Brown Barranca, as the majority of the Plan Area has remained in agricultural use. Surveys in 2008 confirmed that onsite conditions were similar to those discussed in the Padre study.

General species composition within the barranca was found to be similar and the barranca continues to support dense native riparian habitat primarily composed of arroyo willow (*Salix lasiolepis*) and poison oak (*Toxicodendron diversilobum*). The California black walnut (*Juglans californica*) identified in the Padre study is located in an associated upland area. Some non-native species, such as blue gum trees (*Eucalyptus globulus*) and castor bean (*Ricinus communis*) appear to have increased in area since the Padre study. A notable difference from the earlier study is the presence of vegetation within the concrete trapezoidal channel, which is located downstream of Blackburn Road. This vegetation is growing on sediment deposited on the floor of the channel and consists primarily of cattails (*Typha* sp). Stream flow within the barranca continues to be intermittent, however several large pools of ponded water were observed from the middle of the barranca (approximate transect T4 of Padre Associates study) south towards Blackburn Road. More significant ponding than was apparently present during the Padre Associates study was found from just north of Blackburn Road to the south through the trapezoidal channel. Bird species observed during these surveys have already been reported in the May 30, 2008 Breeding Bird Survey Report. Additional wildlife species that were observed include western fence lizard (*Sceloporus occidentalis*) and desert cottontail rabbit (*Sylvilagus auduboni*).

Anecdotal discussions with residents living within the Plan Area indicate the presence of other species of reptiles (lizards, snakes, turtles), mammals (e.g. coyote, opossum), and amphibians (frogs). Furthermore, one resident stated that a California Department of Fish and Game (CDFG) representative had visited the site earlier in the year during a California red-legged frog (*Rana aurora draytonii*) survey. Animals mentioned by the residents had generally not been identified to species, and are most likely common species such as the native Pacific tree frogs (*Hyla regilla*) and the introduced red-eared sliders (*Trachemys scripta elegans)*. However, the potential presence of sensitive species such as Western pond turtles (*Actinemys marmorata*; California Sensitive Species) and California red-legged frogs (federally threatened) warrant further investigation. A search of the California Natural Diversity Database (CNDDB) RareFind indicated that the nearest recorded Western pond turtle sighting was approximately 5 miles away from the Parklands Specific Plan area at the Santa Clara River mouth. The nearest red-legged frog sighting was approximately 11 miles away in Santa Paula Creek. Dan Blankenship, the CDFG representative mentioned above, confirmed via phone conversation on June 20, 2008 that he had visited the project site in April or May during a site survey for red-legged frogs and that no frogs were observed. Mr. Blankenship stated that the Brown Barranca within the Plan Area was "moderately healthy riparian habitat for red-legged frogs" and that he was recommending to the Department and the U.S. Fish & Wildlife Service (USFWS) that protocol level surveys be conducted.

Parklands Specific Plan
Environmental Impact Report

California Red-legged Frog
Site Assessment and Surveys

Prepared for:
City of San Buenaventura
Community Development Department
501 Poli Street
Ventura, CA 93002

Prepared by:
Rincon Consultants, Inc
790 East Santa Clara Street, Suite 103
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August 2008

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Appendix

Appendix A Qualifications of Surveyors for California Red-legged Frogs
Appendix B Site Assessment and Survey Data Sheets
Appendix C Photo Plate of Brown Barranca at Parklands Specific Plan Site

1.0 INTRODUCTION

The Parklands Specific Plan Area (Plan Area) is comprised of eight parcels on 66.7-acres in Wells Community, near West Saticoy, Ventura County, California. A proposal has been submitted that would annex three parcels currently under agricultural production into the City of San Buenaventura for development into residential and commercial uses. The remaining five parcels are currently within the city limits. Brown Barranca, a natural drainage that crosses through the Plan Area, would be set aside as open space under the plan. Brown Barranca (study site) is the lower reach of Long Canyon within the valley of the Santa Clara River. Approximately 1,660 linear feet of this drainage is present in the Plan Area.

U.S. Fish and Wildlife Service (USFWS; 2005) protocol surveys and a site assessment for the California red-legged frog (*Rana draytonii*) were requested by the California Department of Fish and Game (CDFG; 2008a) in their review of the Draft Mitigated Negative Declaration of the Parklands Specific Plan. Prior surveys known to be conducted at the site include a biological impact study (Padre Associates 2007), a site assessment (Rincon Consultants 2008a), and a breeding bird survey (Rincon Consultants 2008b).

This document describes a protocol site assessment and four non-breeding season surveys for the California red-legged frog at Brown Barranca within the Plan Area.

1.1 Site Location

The Plan Area is situated in Ventura County, east of the City of San Buenaventura (= Ventura; Figure 1). It occurs entirely in the USGS Saticoy, CA 7.5 minute topographic quadrangle map (Townships 2 and 3 N, Range 22 W). It is located south of the intersection of Telegraph Road and Wells Road (Figure 2). The Plan Area is bounded by Telegraph Road on the northwest, Wells Road on the northeast, Blackburn Road and State Route 126 (SR 126) on the southeast, and single family homes and a mobile home park on the southwest.

1.2 Site Description

Most of the site outside of Brown Barranca is cultivated with row crops, and a single family residence is present in the northwestern corner of the site with access from Telegraph Road. Additional areas of human occupancy or use include recreational vehicles in the vicinity of the residence, several outbuildings near Blackburn Road, and camps within the riparian area. On-site elevations range from approximately 192 to 250 feet above sea level. The area is on a terrace northwest of the Santa Clara River, and occurs at the base of Sulphur Mountain, which is to the northwest.

Brown Barranca passes through the site generally in a southeast direction. It originates in the foothills below Sulphur Mountain where it is called Long Canyon. It flows into Santa Clara

River through a modified channel to the south of Saticoy. The Santa Clara River flows into the Pacific Ocean north of McGrath Beach State Park, south of the City of Ventura.

Flows in Brown Barranca appear to be intermittent during dry years, although there may be subsurface flow that supports standing water in isolated pools throughout the summer in wet years. Downstream of the Blackburn Road crossing, the drainage is confined to a concrete trapezoidal channel. This area is outside of the Plan Area, but it was included in the surveys to be consistent with prior biological studies of the site. Flows in this stretch may be perennial since a culvert just upstream of Blackburn Road contributes a large amount of discharge to the drainage. The portion of the creek adjacent to Wells Road has riprap on the eastern bank. Upstream from these areas in which the channel has been confined, there are at least two low flow channels within the band of riparian vegetation. Additional information on the habitat at the study site is provided in Section 3.3.

1.3 California Red-legged Frog

The California red-legged frog, *Rana draytonii*, is a member of the true frog family Ranidae. Formerly considered a subspecies of *Rana aurora*, evidence currently supports full species status (Hayes and Miyamoto 1984, Hayes and Kremples 1986, Shaffer et al. 2004). The California red-legged frog is the largest (2.7 to 5.3 inches snout-urostyle length) frog native to the western United States (Stebbins 2003). The California red-legged frog is named for a reddish or salmon coloration on the hind legs and lower abdomen of adult frogs. Their dorsal surface is brown, black, dark red, or olive, with black flecks that have light centers (Stebbins 2003). Dorsolateral folds are prominent, and are often pinkish on juvenile frogs and tan on adults. The species is endemic to Baja California, Mexico and California, and occurs at elevations from sea level to 5,000 feet. It occurs in the Coast Ranges of California from Marin County to Ventura County, with a few isolated localities in the Sierra Nevada, San Joaquin Valley, and southern California (Jennings and Hayes 1994, U.S. Fish and Wildlife Service 2002). Historically, this species also was found throughout the Central Valley, the western slope of the Sierra Nevada from Shasta County to Tulare County, and the coastal regions of southern California, but almost all of these populations are now extinct.

California red-legged frogs occupy ephemeral and permanent ponds, intermittent and perennial streams, springs, man-made aquatic impoundments, marshes, dune ponds, lagoons, riparian forest, blackberry thickets, scrub habitats, non-native annual grasslands, and oak savannas. Preferred aquatic habitat of the California red-legged frog is characterized by dense shoreline or emergent riparian vegetation, such as arroyo willow, cattails, and bulrushes, associated with deep (greater than 2 feet), still or slow-moving water (Hayes and Jennings 1989). Breeding habitat is characterized as the shallow (0.8 – 1.6 feet deep) vegetated margins of ponds or stream pools, although they can successfully breed in artificial ponds with little or no emergent vegetation. Adults remain at breeding sites throughout the year or move to other aquatic or upland habitats. While in upland habitats, adult frogs take cover under dense leaf litter and shrubby vegetation such as willow thickets, blackberry, herbs, German ivy, nettles, downed trees or logs, root balls, rocks, or in small mammal burrows (Rathbun et al. 1993, Christopher 2004a). They can occupy upland areas for as long as 60 consecutive days (Bulger et

al. 2003). Adults not already at the breeding sites begin moving to them during the first heavy rain storms, usually in November through December. Radio-tagged California red-legged frogs have been found to move between aquatic sites that were up to 1.7 miles apart in one season (Bulger et al. 2003), but in many cases individuals remain within 164 feet of water (Rathbun et al. 1993). Males typically remain at the breeding site through the entire breeding season, while females often leave the site after egg laying. California red-legged frogs breed from late November to late April (Jennings and Hayes 1994), with most egg laying occurring in late-February through March in the Central Coast. Larvae typically metamorphose between July and September, but occasionally they may overwinter as tadpoles and transform the following spring (Fellers et al. 2001). Metamorphs are active during the day and at night, and they disperse to upland areas July through February where they apparently remain throughout the winter (Christopher 2004b).

The California red-legged frog is federally listed as threatened and is a state species of special concern. Habitat loss, the introduction of aquatic predators such as fish and bullfrogs, pesticides, and disease are the primary factors that appear to have negatively affected the California red-legged frog throughout its range (USFWS 2002, Christopher 2004b, Davidson 2004). The majority of extant localities are isolated and fragmented remnants of larger historical populations. Large populations still remain in the Central Coast, Marin County, and the vicinity of San Francisco Bay (Lannoo 2005). Many of the largest remaining populations occur in stock ponds that have undergone cattle grazing for 150 years (Lannoo 2005).

2.0 METHODS

Prior to and during the field survey effort, Rincon Consultants reviewed the U.S.G.S. Saticoy 7.5-minute topographic map and a site-specific aerial photograph (Padre Associates 2007). California red-legged frog localities within 1 mile radius from the Plan Area were determined by a search of the California Natural Diversity Data Base (CNDDB; CDFG 2008b). Literature containing California red-legged frog distribution information was searched (Jennings and Hayes 1994, U.S.D.A. Forest Service 1999, Davidson et al. 2001, Stebbins 2003) and unpublished data from taxon experts were consulted (Samuel S. Sweet 1989). Specimen records from natural history museums were searched via HerpNET online. Habitats within a one mile radius of the project site were determined by ground-truthing aerial photography. Since areas within this area were privately owned, ground-truthing was conducted by driving public streets on 29 July 2008. Habitat mapping within the Plan Area was adapted from Padre Associates (2007). A protocol Site Assessment data sheet was completed, and photographs of the study site were taken.

The U.S. Fish and Wildlife Service (2005) protocol recommends a total of up to eight surveys to determine the presence of California red-legged frogs at a project site. Two day surveys and four night surveys are recommended during the breeding season, which is February 25 and April 30 in this area. One day and one night survey are recommended during the non-breeding season, July 1 to September 30. As detailed in Rincon's 27 June 2008 proposal for this study, two day and two night surveys in the non-breeding season were conducted. While not meeting the protocol standards to determine absence of the frog, this level of effort was determined to

provide a sufficient level of information to determine the likelihood of presence and aid in developing any appropriate mitigation measures.

One day and one night survey were conducted on 28 July 2008, and these surveys were repeated on 4 August 2008. Biologists experienced with the identification of all life stages of amphibians and in performing California red-legged frog protocol surveys conducted the surveys (Appendix A). Daytime surveys were conducted at least one hour after sunrise and one hour before sunset, and night surveys were conducted at least one hour after sunset. Night surveys were conducted using Wizard II adjustable focus beam lights (Nite Lite, Clarksville, Arkansas) to detect eyeshine. Weather conditions were recorded prior to the start of each survey, and were appropriate during both surveys for the detection of frogs as outlined in the protocol. Visual encounter surveys were conducted by walking through the drainage, and visually scanning stream pools and banks. Binoculars were used to aid in frog identification. Downstream of Blackburn Road, the trapezoidal ditch was surveyed from the bank. Observers used caution during the surveys to ensure that disturbance to sediments, vegetation, and other features of the aquatic habitat was minimized, and no life stages of amphibians were disturbed. All amphibians observed or heard were identified to species. Data were recorded on the protocol data sheets, and additional information was recorded in a field note book and on maps. Significant habitat features were mapped on aerial photographs. Equipment that came in contact with water was decontaminated following the survey.

3.0 RESULTS

No California red-legged frogs were observed during the surveys, although marginally suitable habitat is present. Completed site assessment and survey data sheets are provided in Appendix B.

3.1 Known Occurrences of California Red-legged Frogs

The study site is within the historic range of the California red-legged frog (Jennings and Hayes 1994, Stebbins 2003). No localities recorded by the CNDDB were within 1 mile (1.6 kilometer) of the Plan Area. Several historic localities exist in the Santa Clara River watershed, including the Santa Clara River approximately 4.5 miles upstream of Saticoy, Wheeler Canyon, Santa Paula Creek, and Sespe Creek (Samuel S. Sweet, unpublished data, 1989; U.S.D.A. Forest Service 1999, Los Angeles County Museum of Natural History 2008). The populations in the Santa Clara River and Wheeler Canyon appear to have been extirpated (Jennings and Hayes 1994). The Santa Paula Creek population apparently has been extirpated, but they remained extant at Sespe Creek at least until the late 1990s (Davidson et al. 2001). The study area is not within designated California red-legged frog critical habitat (USFWS 2006).

3.2 Habitats Within the Vicinity of the Study Site

Land use in the vicinity of the Plan Area is predominantly residential and agriculture (Figure 2). Agricultural areas included row crops and orchards. Other land use types include commercial, industrial, parks, golf courses and vacant lots (intensively disturbed by mowing or discing). The foothills to the northwest of the Plan Area have a mixture of orchards and ranches with patches of native coastal scrub. Drainages in the foothills appear to be vegetated by southern willow scrub. Areas with southern coast live oak riparian forest and southern cottonwood-willow riparian forest may also be present along these drainages.

Upstream from the Plan Area, Brown Barranca passes through a residential area in which the riparian habitat is confined to the drainage channel by roadways, a recreational path, and residential development. Many non-native species, such as eucalyptus (*Eucalyptus* sp.) and Peruvian peppertree (*Schinus molle*), co-occurred with the native arroyo willow (*Salix lasiolepis*) and poison oak (*Toxicodendron diversilobum*) at the Foothill Road crossing of the creek. Upstream from Foothill Road, Long Canyon is bordered on each side by orchards, and the riparian vegetation appears to be less dense. Downstream from the Plan Area, Brown Barranca continues through a trapezoidal concrete channel that has cattails (*Typha* sp.) and small willows in the bottom. Wetland habitat present in this portion of the ditch could be considered to be coastal and valley freshwater marsh. After diverging away from Wells Road, Brown Barranca continues through a new development as a maintained ditch.

Other drainages in the vicinity of the Plan Area have been modified and are currently maintained or concrete agricultural ditches that lack riparian vegetation. Wason Barranca was vegetated by non-native eucalyptus and giant reed (*Arundo donax*) at the crossing of Foothill Road (just outside the 1 mile buffer; Figure 2) and did not contain water at the crossing of Telegraph Road. After crossing under the Santa Paula Freeway Highway 126, Wason Barranca becomes a modified agricultural ditch. Franklin Barranca was a concrete ditch as it passed through agricultural areas.

Despite the amount of agriculture surrounding the Plan Area, the only agricultural pond or reservoir seen during the driving survey or from aerial photography was the pond immediately to the east of the Plan Area, which was to the southeast of the intersection of Wells Road and Telegraph Road (Figures 2 and 3). This pond was lined with concrete and the only vegetation present was floating algae.

3.3 Habitat Characterization of the Study Site

The vegetation within Brown Barranca was comprised mainly of dense arroyo willow. The understory was vegetated by poison oak, non-native castor bean (*Ricinus communis*), and ornamental saw palmettos (*Serenoa repens*). California black walnut (*Juglans californica*), blue gum trees (*Eucalyptus globulus*), and German ivy (*Senecio mikanioides*) were present in some areas. Immediately upstream of Blackburn Road for a distance of 30-40 feet, the channel was vegetated by dense cattails. The substrate was silt, with areas of sand, gravel and cobble. A few natural pools fed by subsurface flow were present at the time of the survey. Natural pools were

approximately six by eight feet wide and maximum depth was one and one-half feet. Some of these pools were plunge pools formed by flow over dense willow roots. Undercut banks and dense bank vegetation were observed in association with these pools. A pool that was formed by erosion at the base of a concrete weir was about six feet wide by ten feet long and at least three feet deep at the time of the first survey (Figure 3). Water depth had dropped about six inches within one week by the time of the second survey, and many of the smaller pools had dried up.

There were two low flow channels between Telegraph Road and the reach abutting Wells Road, and the channel width at high water was approximately 20 feet. At high flow, water could be as much as six feet deep. Outfall pipes along Wells Road were seen that discharge into Brown Barranca. Additional flows may enter the stream from irrigation runoff from the adjacent agricultural fields. Water clarity was poor in the deeper pools due to suspended mud, and was clear in pools fed by subsurface flow. Water quality appeared to be poor as there was a cloudy and/or oily film on the surface and orange-colored fungal or bacterial mats. Green filamentous algae was present only in one area below an outfall. Agricultural and urban trash was present throughout the study area.

Downstream of Blackburn Road the drainage is confined to a trapezoidal concrete channel. Vegetation growing on sediment deposited on the channel floor consisted of cattails, watercress (*Rorippa nasturtium-aquaticum*), grasses, and an aquatic smartweed (*Polygonum* sp.). This area could be considered to be coastal and valley freshwater marsh habitat even though it exists in an anthropogenic situation. On 28 July, water in this section was flowing swiftly due to input from an outfall immediately upstream of Blackburn Road, which increased flow by at least four times that present in Brown Barranca upstream of the outfall. On 4 August, there was no discharge from this outfall and flow rates in the trapezoidal channel were substantially reduced. Water depth was less than one foot in this portion of the channel.

3.4 Survey Results

The only amphibian species seen during the surveys was the non-native African clawed frog (*Xenopus laevis*). They were present in extremely high densities in the pool at the concrete weir, and occurred in pools throughout the study site, including the shallow areas downstream of Blackburn Road. Water turbidity and underwater crevasses prevented a direct count of the number of African clawed frogs present in the weir pool. More African clawed frogs were seen at night than during the day, but they were highly light sensitive. Observers stood quietly at the edge of the pool with the lights off for several minutes, and then turned on lights and counted frogs that could be seen in the shallow edges of the pool. On 28 July, approximately 50 were seen in the pool and on 4 August, 44 were seen. It is estimated that 100-200 African clawed frogs could have been present in the pool. Adults and juveniles were seen, and no tadpoles were observed. During the 4 August day survey, a cast net was used to capture and remove 12 African clawed frogs that were dispatched.

Aquatic invertebrate diversity was very low, and could be related to poor water quality and/or predation by African clawed frogs. Water striders (family Gerridae), conical-shelled snails

(probably in the family Lymnaeidae or Physidae.), and the non-parasitic flatworm planaria (family Planariidae) were observed during the surveys.

It is reported that no frogs were observed in Brown Barranca within the Plan Area during a survey for California red-legged frogs in April or May 2008 by Dan Blankenship from the California Department of Fish and Game (Rincon Consultants 2008a).

4.0 CONCLUSIONS

Marginally suitable habitat exists for the California red-legged frog at Brown Barranca within the Plan Area. During the spring when deeper water would be present, the aquatic habitat at the site would be of higher quality. The cultivated areas surrounding Brown Barranca could be used for dispersal by California red-legged frogs, but these areas are marginal to poor for upland habitat use. Riparian habitat bordering the creek and coastal and valley freshwater marsh habitat within the modified portion of the channel could potentially provide sufficient cover for California red-legged frogs.

Due to the abundance of predatory African clawed frogs, it is unlikely that the California red-legged frog could reproduce successfully in Brown Barranca. The absence of the common species Pacific treefrog (*Pseudacris regilla*) and the low diversity of aquatic invertebrates suggests that predation by African clawed frogs is responsible for impacting or eliminating some native aquatic species. It is possible that African clawed frogs are present in the irrigation reservoir or in other areas near the study site, and that these sources provide immigrants that recolonize Brown Barranca after dry periods. In addition, because California red-legged frogs are not thought to occur within the site vicinity or the Santa Clara River watershed, it is highly unlikely that they would occur within the Plan Area.

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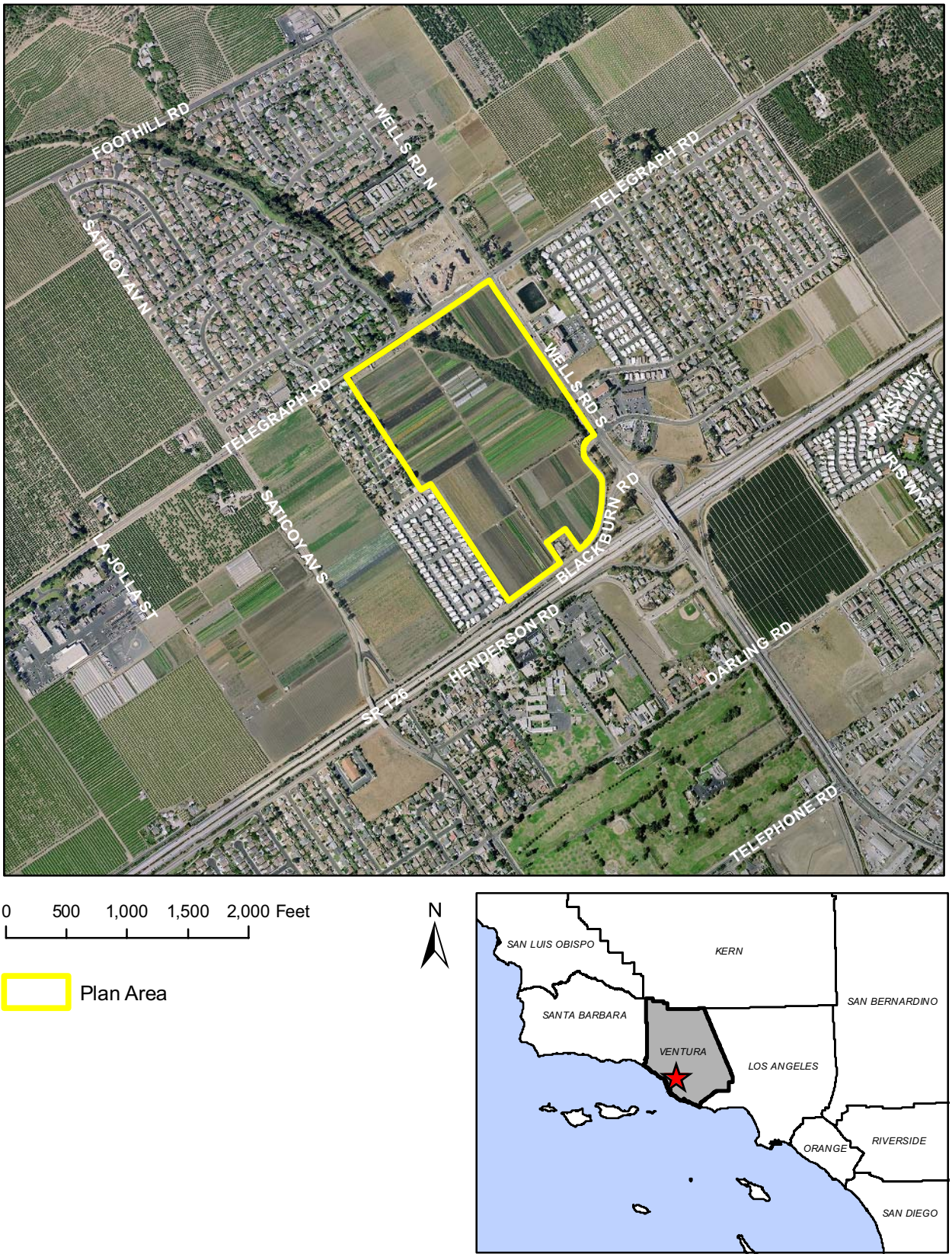
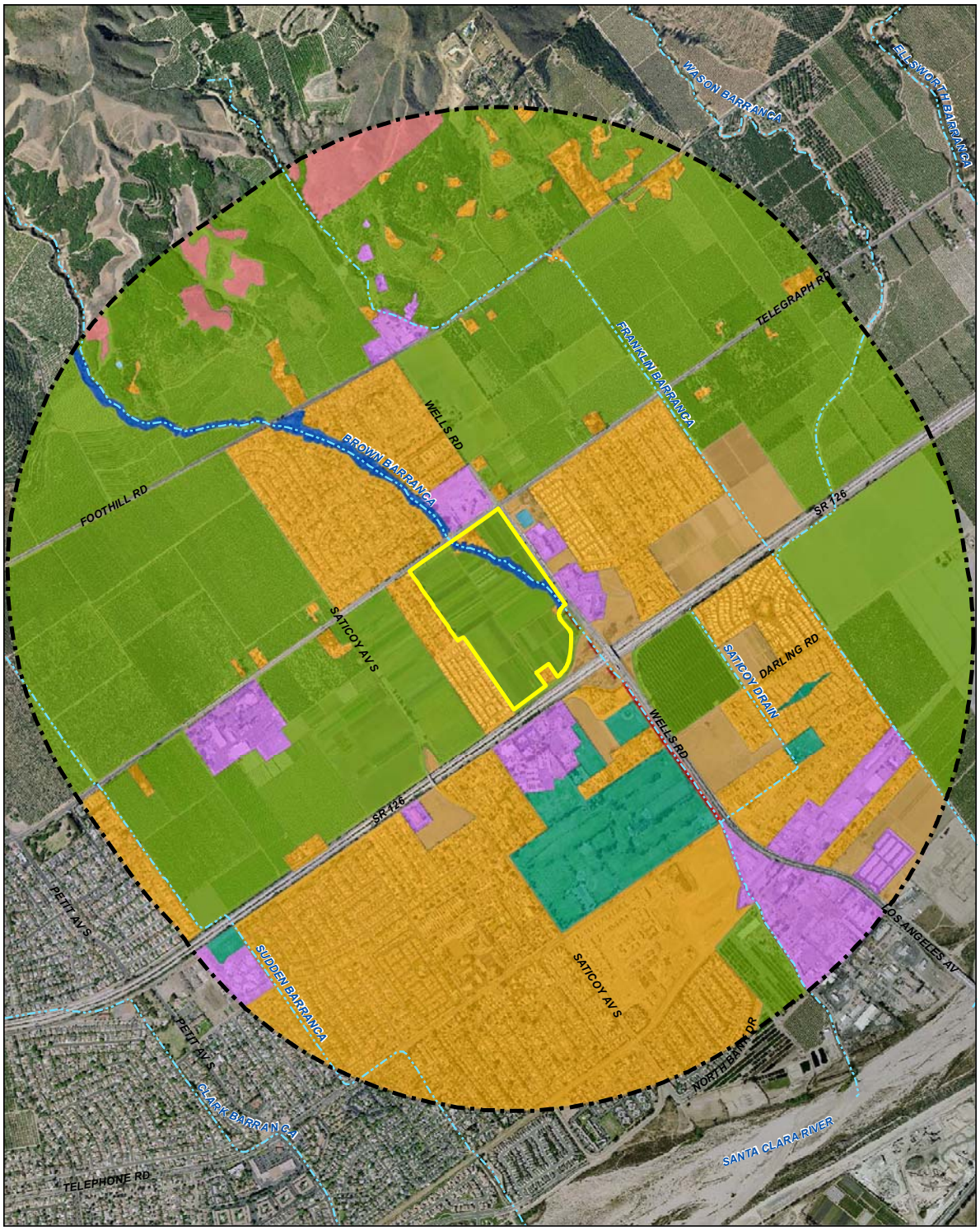


Source: US Bureau of the Census TIGER 2004 data.
Image Source: CIRGIS, 2004.

Project Vicinity Map

Figure 1



Base Aerial Source: CIRGIS, 2004.

Plan Area
One-Mile Buffer
Maintained Ditch/Other Drainage
Agriculture
Coastal Scrub
Coastal and Valley Freshwater Marsh
Developed Parks/Golf Course
Industrial/Commercial
Irrigation Reservoir
Residential
Southern Riparian Forest/Willow Scrub
Vacant Land

N
0 0.125 0.25 0.375 0.5 Mile

Habitat Types within the Project Vicinity

Figure 2

Habitat Types Source: Padre Associates, Inc., 2007.
Base Aerial Source: CIRGIS, 2004.

Habitat Types and Species Observed at the Project Site
Figure 3

Appendix A

Qualifications of Surveyors for California Red-legged Frog

QUALIFICATIONS OF SURVEYORS FOR CALIFORNIA RED-LEGGED FROGS

Susan V. Christopher, Ph.D. Dr. Christopher is a herpetologist who has performed specialized research on the ecology of the California red-legged frog (*Rana draytonii*) since 1992. She holds a B.A. in Biology from the University of North Carolina at Wilmington and a Ph.D. in Biology from the University of California, Santa Barbara. Her dissertation research focused on non-native fish and bullfrog effects on the California red-legged frog. Other aspects of her research included movement patterns, breeding and upland habitat use, larval ecology, and distribution patterns. She has taught the field portion of the California red-legged frog training workshop with Dr. Norman Scott and led California red-legged frog training workshops for the California Conservation Corps. As an associate research biologist for the Museum of Systematics and Ecology and the Santa Barbara Museum of Natural History, Dr. Christopher has expertise in the identification, collection, and curation of California central coast amphibian and reptile species. She has taught the Herpetology Lab at the University of California, Santa Barbara. She has conducted numerous herpetological inventories that involved the identification of local amphibian eggs, larvae and adults. She has performed over 500 protocol California red-legged frog surveys, and handled 1000s of ranid frogs and larvae. She holds a current 10(a)(1)(A) federal permit and a state permit for handling California red-legged frogs.

Lacrissa Cook, MESM, serves as a biologist and manages Rincon's Ventura Biological Services group. Ms. Cook holds a Master's of Environmental Science and Management degree with an emphasis in Conservation Planning from the University of California at Santa Barbara, with expertise in the areas of watershed and resource management, ecology, threatened and endangered species, as well as CEQA and NEPA. She has wide ranging biological, ecological, business, and land-use planning experience in the government, academic, non-profit, and private sectors. Ms. Cook is an experienced field biologist and technical writer. She has worked extensively on watershed management and human impact studies for the National Forest Service and The Nature Conservancy, developing relational databases to unify resources data, reduce data entry and data analysis efforts, and promote standardized and geographically referenced data. She has conducted amphibian surveys (Red-Legged Frog and Arroyo Toad) in Los Padres National Forest, California, including eggmass surveys, habitat characterization, human-impact monitoring, and night surveys.

Appendix B

Site Assessment and Survey Data Sheets

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Site Assessment: 07/29/2008
(mm/dd/yyyy)

Site Assessment Biologists: Christopher Susan _____
(Last name) (first name) (Last name) (first name)

_____ _____
(Last name) (first name) (Last name) (first name)

Site Location: Ventura Co., Ventura, Brown Barranca, 34° 17.571'N, 119° 09.636'W
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Parklands Specific Plan EIR
Brief description of proposed action:
Annex 66.7 acres into the City of Ventura for residential and commercial development.

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES (NO)
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION

(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____
_____
_____

Substrate: _____
_____

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: 8–20'

Depth at bank full: ~2m

Stream gradient: low unplunge pools

Are there pools (circle one)? YES NO

If yes,

Size of stream pools: 6' X 8' X 1'1/2' deep

Maximum depth of stream pools: 1m deep at old weir

Characterize non-pool habitat: run, riffle, glide, other: riffles, alternate channels

Vegetation: emergent, overhanging, dominant species: Salix, castor bean poison oak, palmetto, cattails at Blackburn Rd xing + watercress, ornamental

Substrate: silt, sand, cobble, gravel

Bank description: Densely vegetated with willows. Rip rap along Wells Rd.

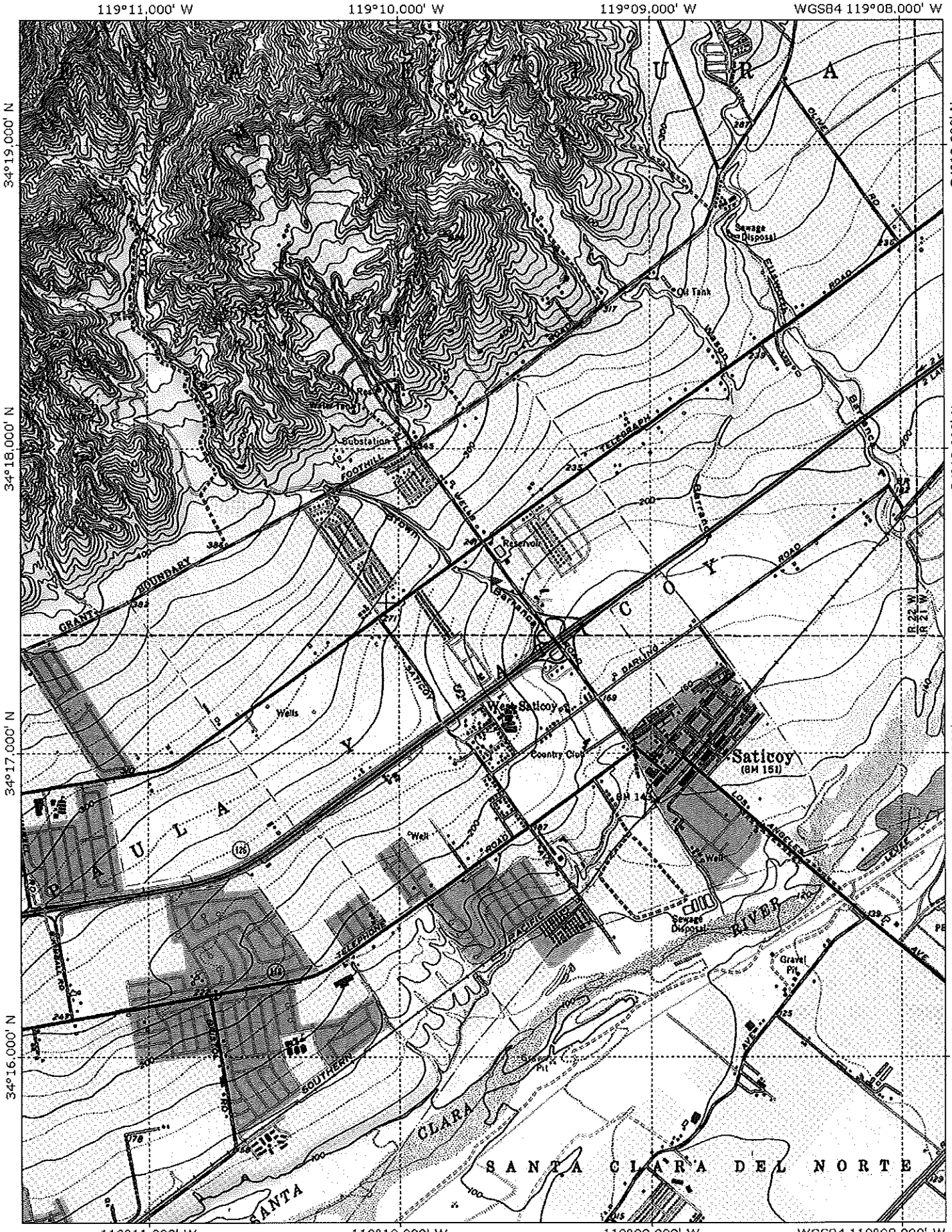
Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: If ephemeral, dry by September

Other aquatic habitat characteristics, species observations, drawings, or comments:

See field notes

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location



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Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____
(FWS Field Office) (date) (biologist)

Date of Survey: 07/28/08 (mm/dd/yyyy) **Survey Biologist:** Christopher Susan (Last name) (first name)
Survey Biologist: Cook Larissa (Last name) (first name)

Site Location: Ventura Co., Ventura, Brown Barranca; 34° 17.571'N, 119° 09.636'W
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Parklands Specific Plan EIR
Brief description of proposed action:
Annex 66.7 acres into the City of Ventura for residential + commercial development

Type of Survey (circle one): **DAY** / **NIGHT** **BREEDING** / **NON-BREEDING**

Survey number (circle one): **1** 2 3 4 5 6 7 8

Begin Time: 1655 **End Time:** 1815

Cloud cover: 0 **Precipitation:** 0

Air Temperature: 24.5 °C **Water Temperature:** 21.0 °C

Wind Speed: Ave. 4.5 mph **Visibility Conditions:** very good

Moon phase: less than 1/4 **Humidity:** dry

Description of weather conditions: breezy, mild

Brand name and model of light used to conduct surveys: Wizard Nite Lite (2) (night surveys)

Were binoculars used for the surveys (circle one)? **YES** **NO**
Brand, model, and power of binoculars: Nikon 8x23, Bushnell 10x12

1655 –

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Xenopus laevis	~10	O	Adults + JV		100%

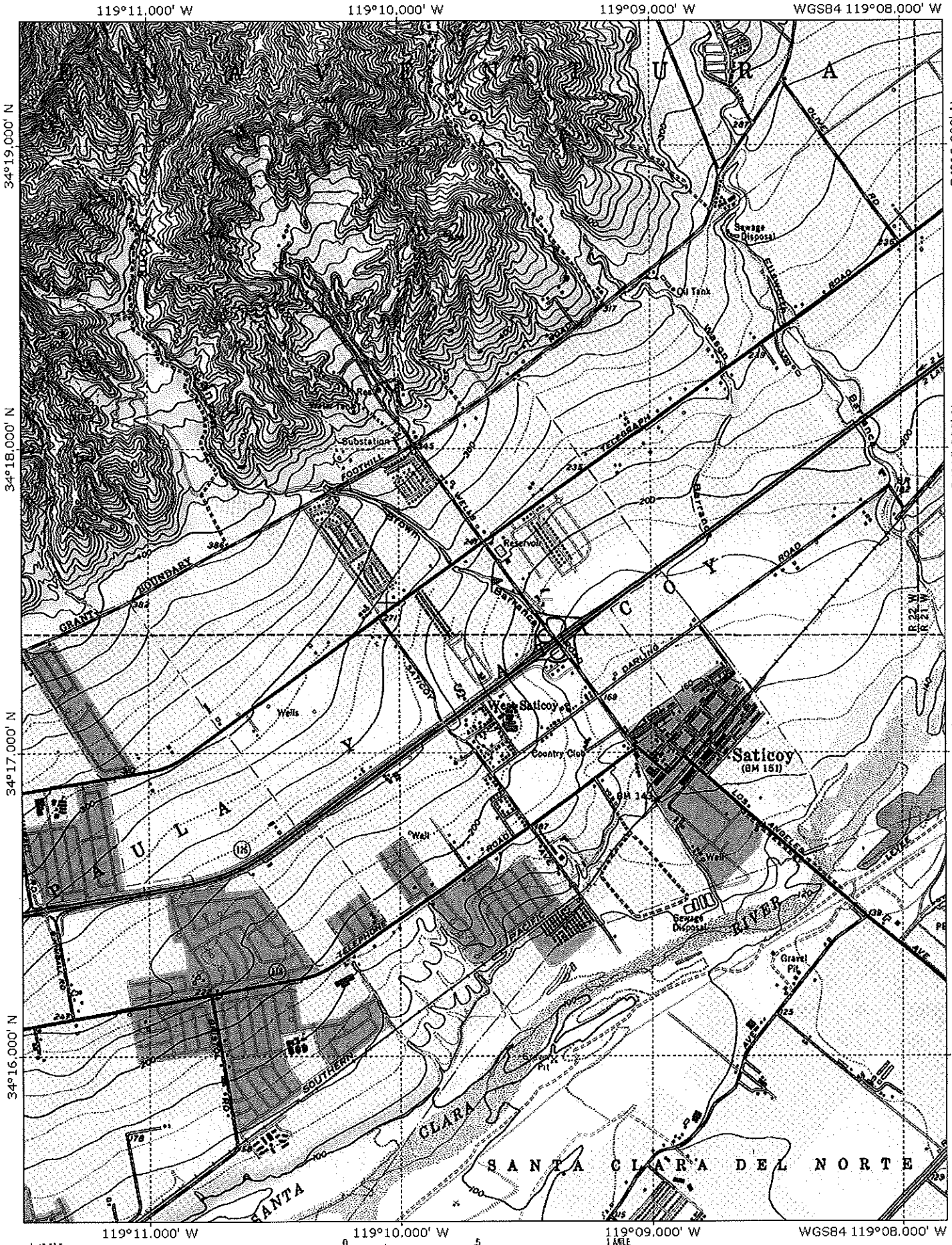
Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Water quality appears poor - orange fungi, cloudy water, oil sheen; dam in creek Xenopus

Other notes, observations, comments, *etc.*

See field notes

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations



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Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (RWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 07/28/2008 (mm/dd/yyyy) **Survey Biologist:** Christopher (Last name) Susan (first name)
Survey Biologist: Poole (Last name) Melissa (first name)

Site Location: Ventura Co., Ventura, Brown Barranca
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).
34° 17.571'N, 119° 09.6036'W
****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Parklands Specific Plan EIR
Brief description of proposed action:
Annex 66.7 acres into City of Ventura for residential + commercial development.

Type of Survey (circle one): **DAY** **NIGHT** **BREEDING** **NON-BREEDING**

Survey number (circle one): **1** **2** **3** **4** **5** **6** **7** **8**

Begin Time: 2036 **End Time:** 2155

Cloud cover: 0 **Precipitation:** None

Air Temperature: 20.5°C **Water Temperature:** 18.5°C

Wind Speed: Ave 0 to mph **Visibility Conditions:** Very good

Moon phase: < 1/4, not out yet **Humidity:** Dry

Description of weather conditions: Still, slight breeze, mild

Brand name and model of light used to conduct surveys: Wizard Nite Lite (2)

Were binoculars used for the surveys (circle one)? **YES** **NO**
Brand, model, and power of binoculars: Nikon 8x25 / Bushnell 10x12

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Xenopus laevis	50+	O	Adults + Juveniles		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Xenopus

Other notes, observations, comments, *etc.*
Invertebrates depauperate - water Striders, planaria, + conical snails only. No crayfish or treefrog.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 08/04/2008 (mm/dd/yyyy) **Survey Biologist:** Christopher (Last name) Susan (first name)

Survey Biologist: ~~Cook Tacosa~~ (Last name) (first name)

Site Location: Ventura Co., Ventura, Brown Barranca
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).
34° 17.571'N, 119° 09.636'W

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Parklands Specific Plan EIR
Brief description of proposed action:
Annex 66.7 acres into the City of Ventura for residential + commercial development.

Type of Survey (circle one): **DAY** **NIGHT** **BREEDING** **NON-BREEDING**

Survey number (circle one): **1** **2** **3** **4** **5** **6** **7** **8**

Begin Time: 1625 **End Time:** 1717

Cloud cover: 35% **Precipitation:** none

Air Temperature: 30.0°C **Water Temperature:** 22.0°C

Wind Speed: 6.1 mph ave **Visibility Conditions:** very good

Moon phase: 1/4 **Humidity:** dry

Description of weather conditions: breezy + warm, clear

Brand name and model of light used to conduct surveys: n/a

Were binoculars used for the surveys (circle one)? **YES** **NO**
Brand, model, and power of binoculars: Nikon 8X25, ~~Bushnell 10X25~~

Appendix E.
California Red-legged Frog Survey Data Sheet

8/4/08
Day

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Xenopus laevis	12	O (mugging)	Net cast 10 Adult 2-juv.		100%
			Released from wild		

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*
Water level at pool by weir is down ~6" + some of the smaller pools have dried.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 08/04/2008 (mm/dd/yyyy)

Survey Biologist: Christopher (Last name) Susan (first name)

Survey Biologist: Cook (Last name) Larissa (first name)

Site Location: Ventura Co., Ventura, Brown Barranca
(County, General location name, UTM Coordinates or Lat./Long, or T-R-S).
34° 17.571N, 119° 09.636W

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Packlands Specific Plan EIR
Brief description of proposed action:
Annex 661 acres into the City of Ventura for residential + commercial development.

Type of Survey (circle one): **DAY** **NIGHT** **BREEDING** **NON-BREEDING**

Survey number (circle one): 1 2 3 4 5 6 7 8

Begin Time: 2020 **End Time:** 2108

Cloud cover: 50% **Precipitation:** none

Air Temperature: 21.0°C **Water Temperature:** 20.0°C

Wind Speed: 3.5mph **Visibility Conditions:** Very good

Moon phase: less than 1/4 **Humidity:** dry

Description of weather conditions: Breezy + mild

Brand name and model of light used to conduct surveys: Wizard Nite Lite (2)

Were binoculars used for the surveys (circle one)? **YES** **NO**
Brand, model, and power of binoculars: Nikon 8x25, Bushnell 10x25

Appendix E.
California Red-legged Frog Survey Data Sheet

night
8/4/08

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Xenopus laevis	49	O	Adult + juv		100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*

No discharge thru Blacktown Rd. pipe

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix C

Photo Plate of Brown Barranca at Parklands Specific Plan Site

PHOTO PLATE OF BROWN BARRANCA AT PARKLANDS SPECIFIC PLAN SITE

Photo Point 1. Brown Barranca is confined to a concrete channel downstream of Blackburn Road, and this picture is looking upstream from midway down the channel. Grasses, watercress and cattails filled the bottom of the channel.

Photo Point 2. Upstream view from the Blackburn Road crossing showing riprap on the northeast bank along Wells Road, and cattails and willows in the channel.

Photo Point 3. The channel was densely vegetated by willows and contained small pools separated by gentle riffles or dry areas.

Photo Point 4. A natural plunge pool formed by water flow over willow roots. Undercut banks associated with willow roots were common in the survey area. The water quality appeared poor in this and other areas.

Photo Point 5. Pool exceeding three feet in depth formed from scour under and around a concrete weir. African clawed frogs were observed in this pool, and it is estimated that at least 100 individuals could have been present.

Photo Point 6. Dense riparian vegetation in the channel as viewed from outside the stream channel.

Appendix D

Phase I Archaeological Survey

PHASE I ARCHAEOLOGICAL SURVEY OF 66.7 ACRES FOR TENTATIVE TRACT 5362 (PARKLANDS) CITY OF SAN BUENAVENTURA, VENTURA COUNTY, CALIFORNIA

(USGS 7.5' Saticoy Quadrangle)

Prepared for:
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805/641-1000
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Document No. 05-413
June 6, 2006

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1.0 INTRODUCTION

1.1 Management Summary

This report was prepared at the request of Joe Power for Rincon Consultants. It presents the results of a Phase I archaeological investigation conducted by Conejo Archaeological Consultants (Conejo) for Tentative Tract 5362 (Parklands) in the city of San Buenaventura, Ventura County, California (Figure 1). The goal of the investigation was to determine if the proposed project would result in any potentially significant impacts to archaeological resources and, if so, present mitigation recommendations that would reduce any such impacts to a less than significant level.

This investigation consisted of a record search at the South Central Coastal Information Center (SCCIC) and an archaeological survey of the project site. The SCCIC record search identified no archaeological sites within a 0.5-mile radius of the project site. Three historic buildings were identified within a 0.5-mile radius, but none of these are within or adjacent to the project site. Conejo's archaeological survey of the project property identified no prehistoric or historic archaeological resources. The ground surface throughout the project site has been extensively disturbed by

REGIONAL LOCATION MAP

Figure 1

agricultural activity.

Based on the record search, field survey results and the extent of past ground disturbances, the proposed project will result in no impacts to cultural resources. Therefore, no further archaeological investigations are warranted prior to project approval as long as the recommendations detailed in Section 5.0 are incorporated as conditions of project approval. In summary these recommendations consist of temporary halt work orders in the event that archaeological resources and/or human remains are exposed during project construction.

1.2 Project Location and Characteristics

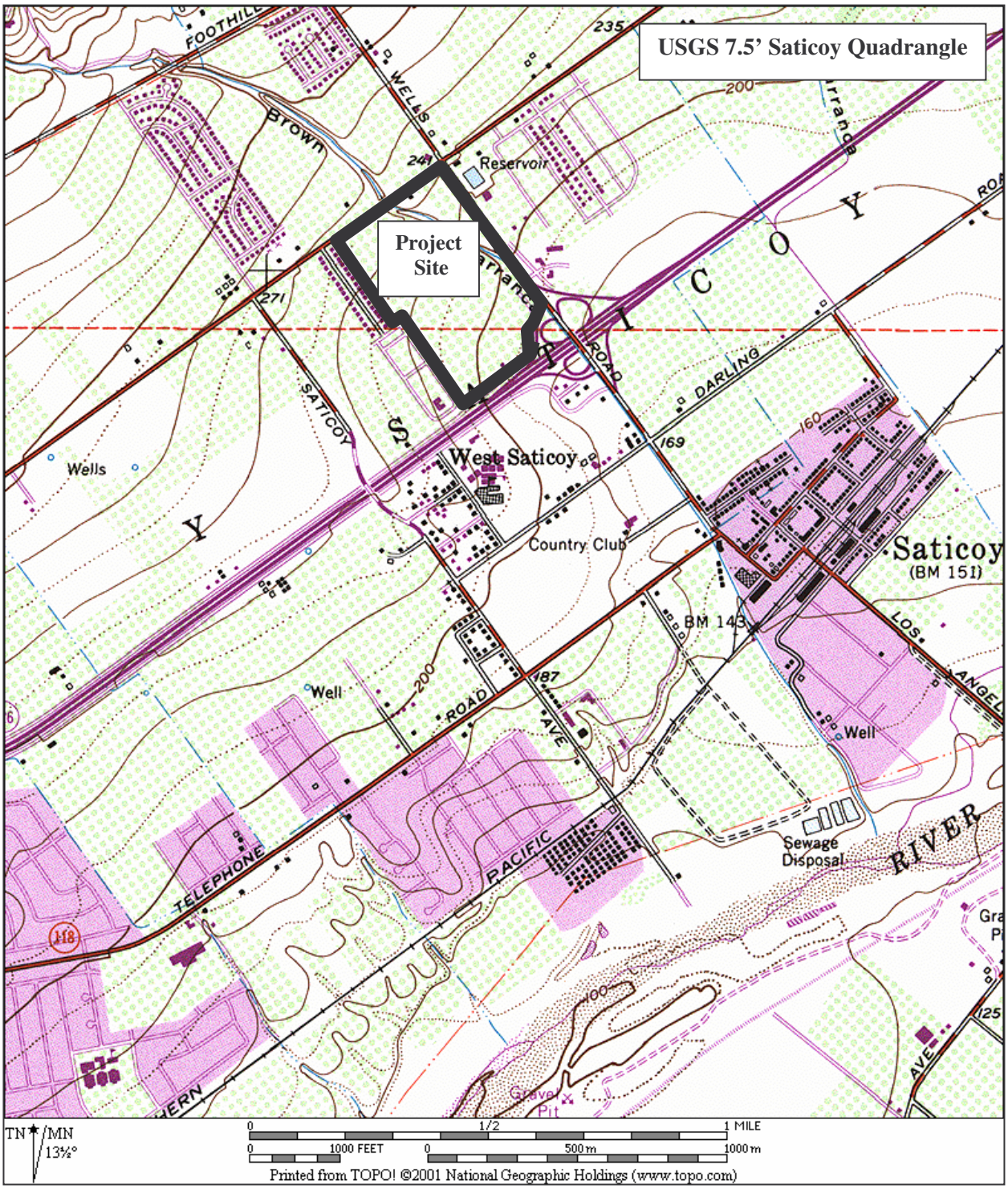
The project site is located north of Highway 126, approximately 0.5-miles north of Saticoy, within Township 2 & 3 North, Range 22 West, in an unsectioned portion on the USGS 7.5' Saticoy Quadrangle (Figure 2). More specifically, the project site is located at the southwest corner of Telegraph Road and Wells Road in Ventura. The 66.7-acre project site is bound by Telegraph Road to the north, Wells Road to the east and Blackburn Road to the south (Figure 3). The project site includes the following Assessor Parcel Numbers:

APN: 89-0-012-04, APN: 89-0-012-20, APN: 89-0-012-08, APN: 89-0-012-21,
APN: 89-0-012-16, APN: 89-0-012-14, APN: 89-0-012-18, APN: 89-0-012-19.

The proposed project consists of the development of a 66.7-acre neighborhood in the Wells-Saticoy Community under the Parklands Specific Plan No. 2. Development would include approximately 208 multi-family residential units, 279 single-family homes, a community center, 11.51 acres of parkland, and 15,000 sq. ft. of commercial space. The project site is currently used for flower cultivation.

1.3 Project Personnel

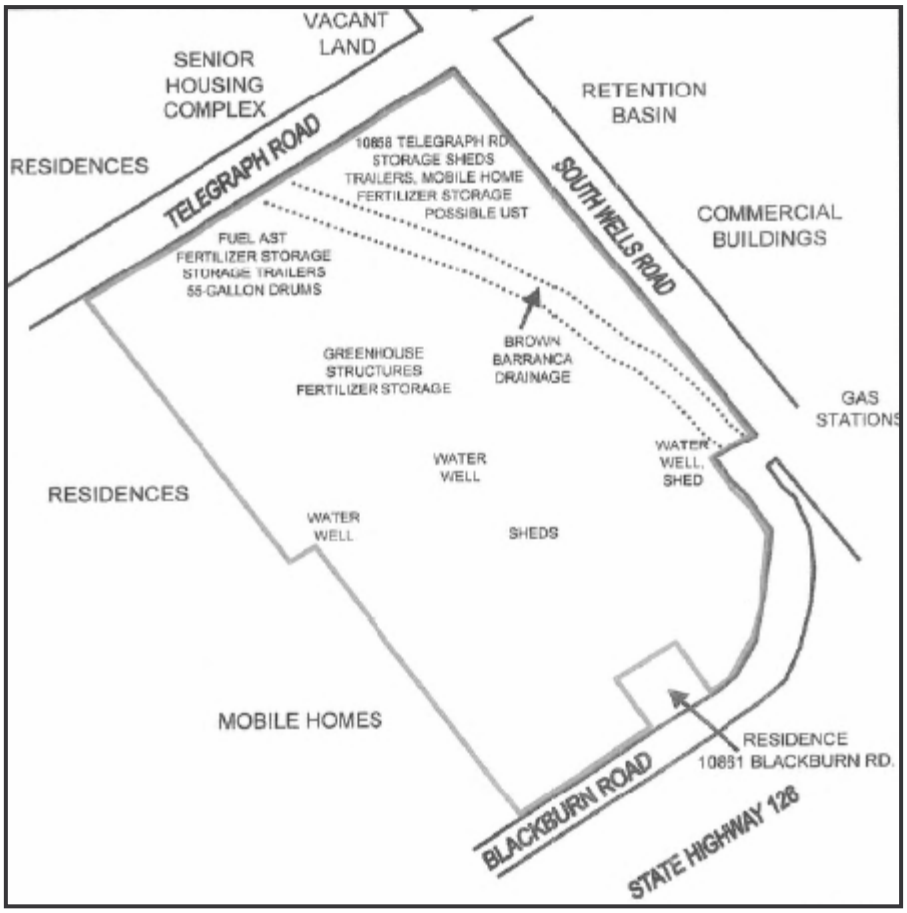
Mary Maki, M.A., served as the Principal Investigator for this report. Ms. Maki is certified by the Register of Professional Archaeologists (RPA). Archaeologists Gwen Romani, M.A., and Glen Higgins assisted Ms. Maki with the field survey. Joe Power served as the Project Manager for Rincon Consultants.



CULTURAL RESOURCES SURVEY AREA
Tentative Tract 5362 (Parklands) Project
City of San Buenaventura, Ventura County

Figure 2

Project Location Tract



Site Tentative 5362

Source: Earth Systems, 2005

PROJECT SITE SKETCH MAP
Tentative Tract 5362 (Parklands) Project
City of San Buenaventura, Ventura County

Figure 3

2.0 ENVIRONMENTAL SETTING

The project site currently contains a mobile home on Telegraph Rd., a single-family residence on Blackburn Road, storage sheds and trailers, fertilizer storage areas, and temporary greenhouses. The vast majority of the property consists of cultivated flower fields. The property is relatively flat, with an elevation of approximately 220 feet above sea level and covered by alluvial deposits. The eastern portion of the property is traversed from northwest to southeast by Brown Barranca. Vegetation along the barranca consists primarily of arroyo willow riparian forest with some eucalyptus trees, German ivy with patches of castor bean. Several geological formations are found in Long Canyon (which drains into the Brown Barranca) including Pleistocene marine deposits and marine terrace deposits in which marine shell deposits are present.

3.0 CULTURAL SETTING

3.1 Prehistoric Overview

The project area lies within the historic territory of the Native American Indian group known as the Chumash. The Chumash occupied the region from San Luis Obispo County to Malibu Canyon on the coast, and inland as far as the western edge of the San Joaquin Valley, and the four northern Channel Islands (Grant 1978). The Chumash are subdivided into factions based on distinct dialects. Ventura County is within the historic territory of the Ventureño Chumash.

The Ventureño were the southernmost Chumash group, occupying most of the area of present day Ventura County and the southwest corner of Los Angeles County. The name Ventureño is derived from the mission with local jurisdiction, San Buenaventura.

The archaeological record indicates that sedentary populations occupied the coastal regions of California more than 9,000 years ago. Several chronological frameworks have been developed for the Chumash region. One of the most definitive works on Chumash chronology is that of King (1990). King postulates three major periods -- Early, Middle and Late. Based on artifact typologies from a great number of sites, he was able to discern numerous style changes within each of the major periods.

The Early Period (8000 to 3350 Before Present [B.P.]) is characterized by a primarily seed processing subsistence economy. The Middle Period (3350 to 800 B.P.) is marked by a shift in the economic/subsistence focus from plant gathering and the use of hard seeds, to a more generalized hunting-maritime-gathering adaptation, with an increased focus on acorns. The full development of the Chumash culture, one of the most socially and economically complex hunting and gathering

groups in North America, occurred during the Late Period (800 to 150 B.P.).

The Spanish missionaries began a program of converting the Chumash to Christianity, baptizing them, and moving them into missions. The Ventureño Chumash were recruited primarily to Missions San Buenaventura and San Fernando Rey de Espana. The end of the Chumash aboriginal way of life began with Spanish colonization. As neophytes were brought into the mission system they were transformed from hunters and gatherers into agricultural laborers and exposed to diseases to which they had no resistance. By the end of the Mission Period in 1834, the Chumash population had been decimated by disease and declining birthrates. Population loss as a result of disease and economic deprivation continued into the next century. Still today many people proudly claim Chumash ancestry and take an active interest in promoting their culture and protecting archaeological evidence of their ancestors.

3.2 Historic Overview

Earth Systems (2005) completed a historic land use review of the subject property that included an examination of historic aerial photographs and historical topographic quadrangles; their findings are summarized below.

The 1903 15' USGS Santa Paula quadrangle shows a residence located at the southern end of the property. The remainder of the land is vacant and bordered by Telegraph Road to the north. A 1938 aerial photograph shows two residences and sheds along the southern end of the property along with an unpaved Kimball Road, and one residence and sheds along the northern portion of the property. The remainder of the property consists of orchards and agricultural fields. Land use and development of the subject property is consistent in the 1945 and 1959 aerial photographs as what was noted in the 1938 aerial photograph. The 1951 USGS 7.5' Saticoy Quadrangle, shows the residences seen in the 1938 aerial photograph and a residence along the eastern edge, with the rest of the property consisting of orchards. The 1964 aerial photograph shows the northern and eastern residences, but the southern residences and sheds are gone. The remainder of the site consists of orchards and agricultural fields. The 1970 aerial photograph includes Blackburn Road and a new residence along the southern portion of the property; otherwise it is similar to the 1964 photograph. In the 1977 aerial photograph the residences and sheds along the northern and eastern edges of the property are gone. In the 1989 aerial photograph a new residence is located along the northern edge of the property and the orchards are gone, replaced by agricultural fields.

4.0 CULTURAL RESOURCES INVESTIGATION

4.1 South Central Coastal Information Center Records Search

Ms. Maki conducted a records search at the SCCIC located on the CSU Fullerton campus on May 25, 2006. The SCCIC record search identified no prehistoric or historic archaeological sites within a 0.5-mile radius of the project site. Three historic structures are located within a 0.5-mile radius, but none of them are located within or adjacent to the project site and they will not be impacted by project development. One historic isolate, consisting of eight fragments of amethyst colored glass, is located approximately 0.25-miles north of the project site; the isolate will not be impacted by project development.

The listings of the National Register of Historic Places (2006), California Historical Landmarks (California Department of Parks and Recreation 2006), California Historic Property Data File (California Department of Parks and Recreation 2005), and the California Points of Historical Interest (California Department of Parks and Recreation 1992), include no properties within or adjacent to the project site. No Ventura County Historical Landmarks are located within or adjacent to the project site.

Nine archaeological surveys have been conducted within a 0.5-mile radius of the project site, but the subject property has not been subject to previous archaeological investigation.

4.2 Field Reconnaissance

An archaeological survey of the 66.7-acre project site was conducted by Ms. Maki, Ms. Romani and Mr. Higgins on June 3, 2006 (Figure 2). Survey methodology consisted of walking linear transects across the entire property spaced approximately 10 meters (33 ft.) apart. Ground surface visibility ranged from excellent in the recently plowed fields to poor in the German ivy areas along the barranca. Overall ground surface visibility was good across the majority of the project site. The survey area was covered with a clayey soil with few rocks.

Conejo's field survey noted no evidence of prehistoric or historic resources within the project site. Some pieces of chipped fused shale from Grimes Canyon were found along the western wall that borders the mobile home development. Although fused shale is often found in prehistoric sites, this fused shale was clearly imported in as ornamental rock along with quartz and other types of rock for decoration in the mobile home development. The ground surface throughout the project site has been extensively disturbed by agricultural activity that dates back at least to the 1930s.

5.0 SUMMARY AND RECOMMENDATIONS

Based on the SCCIC records search findings, Conejo's field survey results and the extent of previous ground disturbance on the subject property, the proposed project will not impact any known prehistoric or historic resources. This investigation found no information that would indicate that buried cultural resources occur on the subject property. Therefore, no further archaeological investigation is warranted prior to project implementation as long as the following two recommendations are incorporated as conditions of project approval:

1. In the event that archaeological resources are unearthed during project construction, all earth disturbing work within the vicinity of the find must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume. A Chumash representative should monitor any mitigation work associated with Native American cultural material.
2. If human remains are unearthed, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC).

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Ventura County

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Appendix E

Hydrological Reports

Brown Barranca Hydraulic Study
(Henderson Road to Telegraph Road)

Parklands Development
City of Ventura

Prepared for:

Hawks and Associates
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Ventura, California 93003

December 2006

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PLANNING DIVISION

OMRUN ENGINEERING

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A. Exhibit 1 - Preliminary Future & Proposed Interim Improvements Plan

B. Exhibit 2 – Preliminary Updated Existing & Proposed (Interim) Floodplain Boundaries (Workmap)

C. Hydraulic Analyses Output Results (HEC-RAS & WSPG Runs)

ELECTRONIC FILES

1. Hydraulic Analyses for Updated Existing & Proposed Conditions Floodplain (HEC-RAS ver. 3.1.3)
2. 100-year Hydraulic Analyses for Future/Interim Improvements (WSPG)

Brown Barranca Hydraulic Study
(Henderson Road to Telegraph Road)

1. INTRODUCTION

The purpose of this report is to summarize the results of a preliminary hydraulic and floodplain study for Brown Barranca as part of the Parklands Development project in the City of Ventura. The proposed Parklands Development will be located adjacent to Brown Barranca west of Wells Road and north of State Highway 126 (HWY 126) (Figure 1). The study area encompassed the reach of the barranca from Henderson Road to south of Telegraph Road, which is under the regulatory jurisdiction of the Ventura County Watershed Protection District (VCWPD). Within this reach, there are a series of RC box culverts and RC open channels that were constructed as part of HWY 126 by Caltrans. The effective FEMA Flood Insurance Rate Map (FIRM) for the area indicates that these facilities are undersized for the 100-year flow, and the excess flow will flood the areas adjacent to the barranca including portions of the proposed development area. This report also provides information on the project's impact to the existing floodplain, and recommendations for mitigation measures.

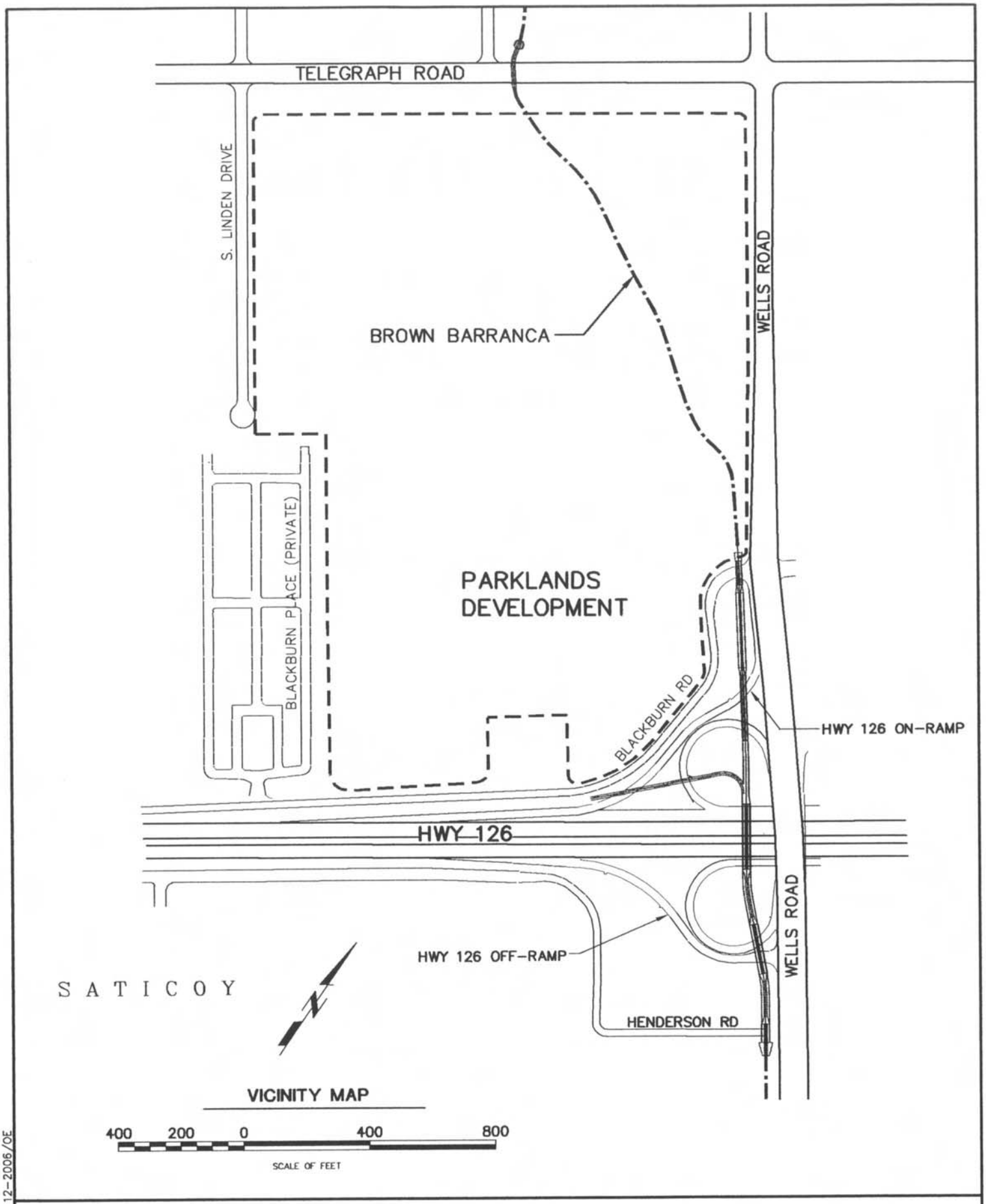
2. HYDROLOGY

Brown Barranca originates from north of Foothill Road and generally flows in a southeasterly direction to its outlet at Santa Clara River. It has a total drainage area of about 2,256 acres with parts of the watershed located in both the County (unincorporated areas) and City of Ventura. One of the main tributaries to Brown Barranca within the reach under study is a lateral drain (drainage area of 178 acres) from the west that joins the barranca just north of HWY 126.

The flow rates for this study were based upon the future condition hydrology study (November 2004) by VCWPD. Table 1 represents the peak flow rates within the scope of the study.

Table 1 – Brown Barranca Future Condition Peak Flows

Location	Drainage Area (acres)	Areal Reduced Peak Flows (cfs)	
		50-YR	100-YR
@ Telegraph Road	1476	1162	1604
North of HWY 126	1780	1408	1845



BROWN BARRANCA HYDRAULIC STUDY

(Henderson Road to Telegraph Road)

FIGURE 1

3. EXISTING CONDITIONS

3.1 Existing Facilities:

Brown Barranca between Henderson Road and Telegraph Road consists of both improved and natural channels. The improved portion of the barranca which is all within the freeway reach including the culvert at Blackburn Road was constructed in 1961 by Caltrans. These improvements consist of five double or triple RC box culverts and the intermediate RC open rectangular or trapezoidal channels through the freeway. The reach of the barranca upstream of Blackburn to Telegraph Road is natural. There is also a tributary rectangular channel that joins Brown Barranca from the west on north side of the HWY 126.

The existing culverts under present conditions are all undersized and can not contain the 100-year flow. The intermediate open channels consist of RC lined trapezoidal sections with a bottom width of 6 to 10 feet and a height of 6 feet. The open channel section from north of the freeway to the on-ramp is a rectangular section with a bottom width of 16 feet and a height of 6 feet. The capacities of the intermediate channels are influenced by the existing deficient culvert sizes. However, for the purpose of this study the capacities of the culverts were determined based on bank-full flows prior to overtopping the adjacent banks.

Brown Barranca upstream of Blackburn Road is a relatively deep and confined channel covered with moderate to heavy vegetation, containing the 100-year flow. This reach of the barranca appears to have experienced severe erosion in some areas.

Table 2 represents the sizes and approximate capacity of the maintained culverts under present conditions. The sizes of existing culverts were based upon the as-built drawings.

Table 2 – Existing Culverts & Capacity

Existing Culverts	Capacity (cfs)	100-YR Overflow (cfs)
8'W x 6'H Triple Box Culvert @ Henderson Road	1300	NA
8'H x 6'H Triple Box Culvert @ HWY 126 South Off-Ramp	1300	NA
8'H x 6'H Triple Box Culvert @ HWY 126	1195	650
8'H x 6'H Double Box Culvert @ HWY 126 North On-Ramp	1055	549
8'W x 6' H Double Box Culvert @ Blackburn Road	1300	304

3.2 Existing Floodplain:

The FEMA Effective FIS analyses for the County (unincorporated areas) and City were completed in 1985 and 1986. Flood elevations for the 100-year event were computed through use of the United States Army Corps of Engineers (USCE) HEC-2 step-backwater computer program.

The 100-year discharges used in the FIS study are 1,450 cfs at Telegraph Road and 2,310 cfs north of the freeway. The effective FIRM shows the 100-year flow contained within the natural channel south of Telegraph Road for approximately 1,000 feet before overtopping the easterly bank and Wells Road. The FIRM also shows water overtopping the westerly bank at approximately 300 feet upstream of Blackburn Road. Overflow also occurs at other existing culverts downstream causing flooding of the westerly property including the southeasterly corner of the proposed development. The overflow will then overtop Blackburn Road and the freeway traveling to the southeasterly direction. *See* Exhibit 2, Appendix "B" for the scanned FEMA 100-year floodplain boundary.

3.3 Topographic Map:

Topographic map and survey information used for this study were provided by the DTR Engineering and Hawks & Associates, and they include:

1. A topographic map that was generated by Hawks & Associates from LiDAR (Light Detection and Ranging) data points taken in February 2005 by Airborne1.
2. Field survey of flowlines (9/2006) for the existing improved reach through the freeway and the natural channel upstream of Blackburn Road were provided by DTR Engineering.
3. All survey and topographic information utilized the California State Zone 5 Coordinate System, North American Datum (NAD) 1983 horizontal datum (metric), and the North American Vertical Datum (NAVD) 1988.

The LiDAR topographic map and surveyed data were supplemented with the as-built information for the hydraulic modeling, and floodplain delineation. Due to the inconsistency in mapping, the topographic data did not correlate to one another in some areas; therefore, some estimation was made in the modeling. This was considered reasonable because of the planning level of this study.

3.4 Hydraulics & Methodology:

The US Army Corps of Engineers HEC-RAS (ver 3.1.3) and the Los Angeles County Water Surface Pressure Gradient (WSPG) computer programs were utilized to perform the analysis for this study. The WSPG program which is more suitable for engineered lined systems was used for the future improved facilities, and for verifying the capacity of some of the existing improved structures.

The HEC-RAS program was used to analyze the existing and proposed conditions floodplain boundaries including the overflow analyses. The HEC-RAS program is capable

of performing standard step method hydraulic calculations in both subcritical and supercritical flow regimes. Special provisions are provided for analysis of bridges/culverts, and split flow conditions where flood flows may leave the channel system and never return. Ineffective flow areas are defined as areas in a cross section that will contain water that is not actively being conveyed and the velocity of the water in the downstream direction is close to zero. Ineffective flow areas are generally caused by obstructions that may be natural or manmade that would block flow from being effectively conveyed to the downstream section. The analyses for this study utilized the ineffective flow area concept at the bridges/culverts where applicable, and areas where water will pond.

For the hydraulic modeling, sufficient cross sections were taken at regular intervals to define the controlling conditions that will determine the flood water surface profile. All the cross sections were coded looking downstream from left to right. Normal depths were assumed for starting water surface elevations at the downstream and upstream limits of study.

It appears that the FEMA FIS study considered the reach of Brown Barranca from Blackburn Road to downstream of the freeway to have a medium debris potential, and doubled the pier widths of the culverts. This study assumed the same conditions for the updated existing and interim floodplain analyses.

The Manning's Roughness Coefficients "n" assigned for the hydraulic modeling were based on the aerial photograph and field investigations. The "Horizontal Variation of *n* Value" method in HEC-RAS was selected to describe the lateral roughness changes in the cross sections. Table 3 represents typical "n" values assigned to various surface features in a cross section.

Table 3 - Manning's Roughness Coefficients

Surface Type & Description	"n" - Value
Concrete structure	0.015
Uniform earth bed or bank	0.03 to 0.035
Rock riprap and rock revetment	0.035 to .040
Scattered brush or plants	0.035
Light to Medium trees	0.040 to 0.055
Light to medium urbanization	0.060
Heavy urbanization	0.07 to 0.150
AC pavement	0 .016 to 0.02

3.5 Updated Existing Floodplain:

The existing floodplain was updated using the available topographic information described above and the future condition hydrological data provided by VCWPD. Similar to the FEMA effective FIS analysis and FIRM, the updated analysis and floodplain (Exhibit 2, Appendix "B") shows that Brown Barranca under current conditions can not contain the 100-year flow.

The analysis indicates approximately 304 cfs overtopping the existing culvert at Blackburn Road and inundating the westerly property. Although the overflow may reach to the crown of Wells Road, it does not appear to overtop Wells Road as shown in the effective FEMA FIRM, unless the culvert inlet is obstructed by debris. This is mainly attributed to the lower westerly bank just upstream of the culvert, and the Blackburn Road embankment which rapidly drops to the west. The undersized culvert and the high embankment at the freeway on-ramp (approx. 300 feet downstream) will divert the excess flow including the overflow from Blackburn (approx. 549 cfs) to the westerly direction where the water will then overtop Blackburn Road, the freeway on-ramp and the freeway heading in a southeasterly direction. The excess flow from the tributary drain just north of the freeway will add to the overflow. The estimated overflow going over the freeway is approximately 650 cfs. Due to the divided flow caused by the freeway on-ramp, the overflow was analyzed separately from the main channel. Downstream of the freeway, the undersized culvert and the high embankment at the freeway off-ramp will cause the water to back up. This condition and the freeway elevation drop to the easterly direction will cause some of the overflow to escape through the freeway under-pass. In the overflow analysis a side weir was assumed to model this condition.

4. PROPOSED PRELIMINARY IMPROVEMENTS & FLOODPLAIN

4.1 Future Improvements:

Future improvements from Blackburn Road to Henderson Road were evaluated based upon the HDR Engineering, Inc. study titled "Brown Barranca Pre-Design Report" prepared for VCWPD in July 2005. The HDR study which encompassed the entire reach of Brown Barranca recommended that all existing culverts and intermediate channels through the freeway to upstream of the Blackburn Road be improved by adding additional culvert cells and replacing the intermediate open channel.

This study generally follows the same planning as outlined in the HDR report, except that the improved culvert at Blackburn Road will be extended approximately 700 feet upstream as part of Parklands Development. The future condition analysis was performed utilizing the WSPG hydraulic program which is more suitable for engineered lined channels. The flow rates were based on the future condition hydrology represented in Table 1, assuming clear water conditions. The preliminary sizes and configuration for the improved culverts and the intermediate open channels through the freeway to upstream of Blackburn are shown in Exhibit 1, Appendix "A".

Similar to the HDR study, the proposed improvements through the freeway assumes adding additional culvert cells to the existing culverts. Considering these facilities are almost fifty years old, their condition and structural integrity will need to be evaluated.

4.2 Proposed Interim Improvements:

The interim improvements of Brown Barranca proposed by Parklands Development include the replacement of existing culvert at Blackburn Road. The new culvert will extend to upstream of the new Road 'E' approximately 700 feet north of Blackburn Road. A RC warped structure and a concreted rock riprap transition structure will also be constructed at the upstream end where the proposed culvert joins the natural channel. It is also recommended to provide a larger section at the entrance to the culvert to account for some potential debris that may reach the inlet. The preliminary sizes and configuration for the proposed interim improvements are shown on Exhibit 1, Appendix "A".

4.3 Proposed (Interim) Condition Floodplain:

Under the proposed conditions most of the existing agricultural land within the updated floodplain will remain as open space which will include an area for a new park. The new Road 'H' is also being proposed at the same grade as the existing Blackburn Road, allowing for inundation by flood water (Exhibit 2, Appendix "B"). Under these conditions and the improvement of the culvert at Blackburn Road, Brown Barranca floodplain south of Blackburn Road will generally be similar to the updated floodplain with the exception of the area to the southeasterly corner of the proposed development. Within this area, the proposed development will encroach into the existing floodplain causing an increase of less than one-foot (0.58') in flood elevation, and a reduction of approximately 135 feet to the updated floodplain width (overflow analysis). The estimated depth of flood water over Blackburn at this location is approximately 2 feet, and the increase in velocity is estimated to be 1.5 ft/s (5.6 ft/s versus 4.1 ft/s). Table 4 summarizes and compares the results between the updated existing overflow and proposed overflow models.

Table 4 - Updated Existing Overflow Model vs. Proposed (Interim) Overflow Model

		Updated Existing Model				Proposed (Interim) Model				Differences		
Station	Overflow (cfs)	W.S. Elev (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	W.S. Elev (ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	W.S. Elev (ft)	Vel Chnl (ft/s)	Top Width (ft)
8228	304.00	191.60	3.46	87.88	124.71	191.6	3.46	87.9	124.71	0.00	0.00	0.00
8107	549.00	190.42	2.97	184.65	205.27	190.42	2.98	184.13	205.07	0.00	0.01	-0.20
8083	549.00	190.18	3.39	169.98	296.84	190.24	3.07	188.53	302.89	0.06	-0.32	6.05
7977	Existing Culvert @ HWY 126 On-ramp											
7871	549.00	189.37	2.97	203.08	467.80	189.95	3.35	163.73	333.47	0.58	0.38	-134.33
7826	549.00	188.97	4.11	133.45	432.29	189.43	5.55	106.40	378.22	0.46	1.44	-54.07
7771	650.00	188.34	2.01	146.37	442.65	188.30	2.19	124.82	391.92	-0.04	0.18	-50.73
7691	650.00	185.83	3.04	194.56	402.14	185.83	3.04	194.56	402.14	0.00	0.00	0.00
7667	650.00	185.47	3.21	165.29	385.11	185.47	3.21	165.29	385.11	0.00	0.00	0.00

5. CONCLUSIONS AND RECOMMENDATIONS

Under existing conditions, the reach of Brown Barranca from Blackburn Road to downstream of Henderson Road can not convey the 100-year flow. Excess flows will overtop the existing channel banks and flood adjacent properties to the west of the barranca, and HWY 126. The proposed Blackburn Road culvert replacement as part of Parklands Development will convey the 100-year flow and eliminate the flooding of the area immediately to the west of the existing culvert. However, the downstream flooding problems will remain until all the culverts and open channels through the freeway are improved.

The following is a list of some of the assumptions and recommendations for subject development and Brown Barranca improvements.

1. All new building pad elevations shall be above 100-year flood and shall be protected from erosion meeting the FEMA and City's floodplain requirements.

2. The natural channel upstream of Blackburn Road appears to have experienced severe bank and invert erosion. It is important that the natural channel be stabilized. This would require measures to stabilize the invert and the banks to reduce erosion and transport of debris to the existing system downstream.

   Additionally, the existing culvert at Telegraph Road discharges to the natural channel at a steep slope. Some measures will be required to dissipate the energy in the flow at the culvert outlet.

3. The existing culvert at Telegraph Road consists of an old arch concrete pipe that was extended (at the north end) with a 10'x 10' RC box conduit and a drop-box inlet in 2005. The evaluation of the existing culvert system was not included in this study and it will need to be examined.

4. As stated previously, FEMA effective FIS analysis doubled the pier widths for the existing culverts downstream of Blackburn Road to account for debris. The FIS analysis also assumed bulked flow (1.5 x Q100) for the culvert under Telegraph Road. The investigation of the Telegraph Road culvert and the final design of the proposed improvements downstream will need to include measures to address the potential debris.

5. The final design for future and proposed (interim) improvements will need to comply with the VCWPD and City's design requirements and standards.

6. An on-site detention basin will be required in order to provide no increase in post-development runoff from the site meeting the City's and County requirements.

7. The floodplain boundaries determined by this study are only for the flooding caused by Brown Barranca and do not include other potential flooding that could occur because of the inadequate tributary drains.

8. As previously stated, the topographic information for this study was based on different sources requiring some assumptions and estimations. A more detailed analysis with a more detailed topographic map will be required for final design and preparation of a request to FEMA for a Condition Letter of Map Revision (CLOMR) and post-project Letter of Map Revision (LOMR) for the project.

References

1. *Brown Barranca Future Condition Hydrology Study by VCWPD, November 2004*
2. *Brown Barranca Channel & Wells Road Interchange As-built Drawings by Caltarns (May 15, 1961)*
3. *Brown Barranca Pre-Design Report prepared in July 2005 by HDR Engineering, Inc. for VCWPD.*
4. *FEMA effective FIS & FIRM completed in 1985 and 1986 for the County and City*
5. *Parklands Tentative Tract Map No. 5632 by DTR Engineering*

CHANG Consultants
Hydrology•Hydraulics•Sedimentation
P.O. Box 9492 (required for regular mail)
6001 Avenida Alteras
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October 15, 2007

Mr. Charles W. Cohen
Weston Benshoof
Rochefort Rubalcava & MacCuish, Attorneys at Law
2801 Townsgate Road, Suite 215
Westlake Village, CA 91361

Dear Chuck:

RE: Brown Barranca

Pursuant to our recent meeting and my field inspection, I have prepared this letter report to provide my professional opinion on channel improvements for Brown Barranca. The channel reach of Brown Barranca under consideration is between Telegraph Road and Blackburn. The Parkland Development has been planned along this channel reach.

Brown Barranca is an alluvial stream; it is heavily infilled with willow, mulefat, ivy, cat-tail, castor bean, and other native and non-native plants at this time. According to a recent hydrology and hydraulic study by Omrun (2006), the 100-yr flood is contained in the channel and the velocities in the earthen channel ranges from 3 to 13.9 feet per second.

In order to protect future improvements from flood-related damages; the Parkland Development needs to be *flood free* and *flood safe.* While the property along the channel is not subject to flooding, it must also be protected against any potential erosion of the stream channel. In other words, the stream channel must be stabilized to avoid future flood-related damages to the properties. Channel stabilization can be accomplished in different ways. One must consider physical conditions of the stream channel in selecting a suitable method for channel stabilization.

Physical conditions of the stream channel suggest that *vegetative control of stream bank erosion* is a suitable means to control erosion of the channel bank for the proposed development. Protection of a stream bank by vegetation has been a traditional practice in this county (Parsons, 1963). Willow cuttings or stems can be inserted into the channel bank. Such cuttings will develop into low growing bushes or trees; they are pliable and capable of recovery after mauling. Such plants provide protection of the stream bank in the following ways:

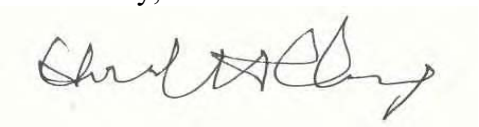
(1) They reduce the flow speed or shear stress at the stream bank to a value below the erosive speed or shear stress.
(2) They provide a buffer for the bank material against transported materials such logs and other kinds of debris.
(3) The root system of plants forms a network of reinforcement for the bank material.

It is also important to point out that the use of vegetation in the stream channel is environmentally friendly. It preserves the natural appearance of the stream channel, the wetland, and natural wildlife habitat and it will continue to allow ground water recharge. Maintenance trimming of the dense growth can be made periodically. Thick branches and leaves can be removed; tree and bush trucks can be trimmed but not removed.

Brown Barranca is an ephemeral stream with storm flows occurring during the winter rainy season. Storm flows at higher velocities are erosive but such flows are typically short in duration. As a safety measure, it is suggested that improvements along the stream channel maintain a minimum setback of 15 feet from existing channel banks that are flatter than 36 degrees and a minimum setback of 25 feet along steeper banks. If any bank erosion occurs in the future, repairs can be made to restore the channel bank. Maintenance repair of the channel bank should be a condition for the proposed development project.

Please let me know if you have any questions regarding this letter.

Sincerely,



Howard H. Chang, Ph.D., P.E.

References

Omrun Engineering, "Brown Barranca Hydraulic Study", prepared for hawks and Associates, October 2006

Parsons, D. A., "Vegetative Control of Streambank Erosion", Proceedings of the Interagency Sedimentation Conference, 1963, pp130-136
Setback

LETTER OF TRANSMITTAL

DTR Engineering

CIVIL ENGINEERING & SURVEYING
1695 MESA VERDE AVENUE, SUITE 100
VENTURA, CA 93003
TEL. (805) 676-1533 • FAX (805) 676-1966

TO: City of Ventura
Community Development

DATE: Oct. 7, 2005

RE: "Parklands"
Susan Dalruddung

JOB: 3980

- [ ] PRINTS
- [ ] MYLARS
- [ ] VELLUMS
- [ ] SPECIFICATIONS
- [ ] LEGAL DESCRIPTIONS
- [ ] APPROVED BILLS
- [x] Report

- [ ] FOR YOUR FILES
- [x] FOR YOUR APPROVAL
- [ ] FOR REVIEW AND COMMENT
- [ ] AS REQUESTED
- [ ] RETURNED FOR CORRECTIONS
- [ ] FOR PAYMENT
- [ ]

- [ ] UPS
- [ ] VIA US MAIL
- [ ] FEDERAL EXPRESS
- [ ] OVERNIGHT EXPRESS
- [ ] PICK UP
- [x] HAND DELIVERED
- [ ]

REMARKS:

Infrastructure report & letter on drainage improvements for John Ashhar's "Parkland" project tract No. 5632

CC: John Ashhar
Dan Holt

BY: David J Rose

Printed on recycled paper

Infrastructure Analysis Wells Community and "Parklands" Development
Tract Number 5632

The following is a status report on infrastructure needs and deficiencies for the Wells Community, and more specifically, the proposed "Parklands" development.

The City, in 1986, commissioned the preparation of the "Wells and Saticoy Communities Capital Improvement Deficiency Study (CIDS). The document was updated in November, 1996.

The CIDS, prepared by the Engineering firm of Penfield and Smith, is a comprehensive analysis of infrastructure needs and deficiencies within the Wells Community covering water, wastewater, storm drainage, traffic, parks and fire protection systems. It also allocates a cost sharing of these needs to all of the developable sites being served.

This document is intended to give an update of progress on these defined needs as they relate to the proposed "Parklands" development, and represents all of the defined needs and deficiencies outlined in the CIDS document.

Water System

As indicated in the Master Plan document for Parklands, the 430 zone water system will serve the subject site. The 430 zone is currently deficient in water storage and distribution for extreme fire flow conditions. These deficiencies were enumerated in the "Capital Improvement Deficiency Study" prepared for the wells and Saticoy communities. The improvements needed are a new reservoir storage, distribution pipelines and a new well site (Saticoy Well #3).

The city is currently under design, having already obtained the necessary property to construct a new reservoir holding 4 million gallons and a 24 inch trunk pipeline within Saticoy Avenue. When complete, those improvements will resolve the fire flow deficiencies in both the Wells and Saticoy communities. Completion is scheduled for mid to late 2005. Saticoy Well #3 will be constructed at a later date when the need calls for it.

Parklands is serviced by a 12-inch distribution pipeline in Telegraph Road, 6-inch in Wells Road and 8-inch in Blackburn Road. A new 8-inch and a new 12-inch pipeline will be installed by this development, including a 12-inch pipeline in Wells Road, which will maintain and improve upon the pipeline GRID

in the area and conform to the City's Water Master Plan document, the "Boyle" report. The Parklands water system is being designed to meet or exceed City standards.

A total fee for CID's improvements is estimated to be $69,714.00, which sum shall be a part of the Parklands' CIDs obligation and paid by Parklands to the City.

Wastewater System

The City has recently completed construction of the North Bank Lift Station and the North Bank Force Main. With the completion of these facilities, the capacity for Parklands has been achieved.

The Bristol Trunk Sewer, which commences at the City treatment plant and terminates at the new Northbank Lift Station, has received substantial upgrades by the City over the last 10 years or so. Studies by the City of the trunk sewer divided the total length into 3 phases. Reconstruction of phase 3 and then phase 2 have occurred. These phases cover the area from the Northbank Lift Station westerly and southerly to Olivas Park Road (near Olivas Park Golf Course). The remaining segment of this total system is not now in need of replacement since wastewater capacity still exists. When capacity begins to run out, the City will complete this final phase. East end development contributes to this entire system through the CIDS program. There is no current plan to complete this last phase which indicates no foreseeable need. Major capital improvements are not undertaken by the City until the need is foreseen.

As part of the infrastructure design for "Parklands," trunk sewer capacities will be determined and where needed, upgraded. This upgrade will be sized to accommodate all upstream areas within the Wells Community and any future hillside areas as is required by the City and good engineering practice. A total fee for CIDS defined improvements estimated to be $347,976 will be paid to the City by "Parklands."

Storm Drain System

Brown Barranca is the only defined regional drainage deficiency listed in CIDS (divided into 4 segments). However, other localized deficiencies have been determined to exist, which will be alleviated through development of "Parklands."

The development of the Parklands site will improve known flooding problems westerly of the site through upgrades to the currently deficient drainage system.

For instance, flooding occurs along Blackburn Road caused by runoff from the existing mobile home park. The Parklands drainage systems will upgrade this system to City standards to alleviate the problem fronting the mobile home park.

Additionally, the Parkands drainage system will extend easterly to intercept stormwater runoff at the southerly terminus of Lindon Drive, alleviating a drainage problem for both Lindon Drive residents and the mobile home park due south of this terminus.

All site storm drains will be sized to accommodate upstream runoff. This includes the Hanson Trust property westerly of the site. That site may be required to provide onsite detention, the same as "Parklands," depending on the timing of this development as it relates to Brown Barranca ultimate improvements.

The subject property drains to Brown Barranca which traverses the site from Telegraph Road to Wells Road at Highway 126. Brown Barranca is deficient in capacity commencing at Highway 126 for large storm flow events (100-year storm), but is adequate for lesser storm flow events (10-year storm).

Parklands will provide storm water detention onsite, while allowing only a 10-year storm flow to discharge to Brown Barranca at Highway 126. This will mitigate downstream impacts along Brown Barranca that may be caused by this development. Additionally, the project will contribute approximately $1,000,000 toward Brown Barranca improvements through the CIDS Program, which along with other contributing properties, will allow for implementation of the CIDS listed Brown Barranca improvements to begin.

A hydraulic study of Brown Barranca, from Foothill Road to the Santa Clara River, has been prepared for the Ventura County Watershed Protection District. Improvements to Brown Barranca by this development will be governed by the results of this study.

However, in any event, improvements to Brown Barranca north of Highway 126 will be addressed as part of this development. For instance, the barranca, as it leaves Telegraph Road and approaches Wells Road, becomes both shallower and narrower. It is at this location where large storms can overtop the barranca and flow across Wells Road. This reach will need to be redesigned to full capacity (100-year storm flow). The culvert crossing at Blackburn Road will be upgraded also. These improvements will allow large storm flows to proceed farther south towards the freeway, effectively removing the current bottleneck. Also, because of infiltration swales, biofilters, previous pavements and signification area dedicated to stormwater detention, it is expected the runoff generated by this site will be reduced to "at" or below existing underdeveloped conditions. While storm flows crossing Highway 126 are limited to downstream

channel capacities, the improvements will lessen or eliminate the potential for flooding across Wells Road. Additional downstream improvements, as may be determined from the hydraulics study, could also be accomplished concurrently utilizing the CIDS contribution funds required of both this development and all others in the area. This would be determined in consort with City staff.

CIDS fees estimated to be $999,280 will be paid to the City by "Parklands."

Traffic System

The CIDS document lists three regional improvements which are impacted by "Parklands." These include Highway 118 improvements (stripping and signing; bridge construction on Darling Road at Highway 118) a new signal at Telegraph Road and Saticoy Avenue and signal improvements at Wells Road and Citrus Drive.

Aside from above, "Parklands" is preparing a Traffic Study to determine project related impacts to the City street system. These will include, at a minimum, the widening of Telegraph Road at Wells Road to 108 feet wide with medians, signal upgrades at Telegraph Road and Wells Road and an east/west street connection across the site from Wells Road east to the Hanson Trust property located along Saticoy Avenue, which upon development of the Hanson Trust property can be extended to Saticoy Avenue. Each of these improvements is in compliance with the city's general Plan. Additional improvements as may be defined and justified through the Traffic Study, will be completed by the Parklands development to mitigate its impact on the traffic system in the area. The three CIDS projects listed above are the only regional projects contained in the CIDS which relate to the Wells Community. The Parklands project will contribute an estimated $59,850 in fees toward these projects.

Parks System

Neighborhood parks are funded through the CIDS fee program. The CIDS made no attempt to locate these parks within the Wells or Saticoy Communities. In the past, City staff has requested the neighborhood parks be approximately 5 acres in size; however, the integration of smaller "pocket" parks throughout developments has been the trend of late.

Parklands, as part of its on-site infrastructure, and at its sole cost, is proposing a variety of park sites, types and sizes totaling 11.7 acres, throughout its 60 acre development, including linear parks along Brown Barranca, joint use parks for play field use and storm water detention, pocket parks and a community center with various community park amenities, instead of one single neighborhood park

site. Should a single 5 acre park site still be considered necessary for the Wells Community, the Hanson Trust site could be considered.

Through the CIDS, Parklands will be contributing an estimated $452,916 toward neighborhood parks, which could be off-set by the proposed park areas within the development.

Pedestrian/Bike System

The CIDS did not specifically address bikeways and pedestrian access ways. The City's General Plan, however, does. Parklands will be conforming to the Traffic Circulation Element of the General Plan including providing Class I and Class II bikeways along major arterial streets, within the linear park and extending west toward the Hanson Trust property within the central portion of the site. Other pedestrian/bike friendly aspects of the project are outlined within the master plan documents including pedestrian and bike friendly street sections and other specific features, all provided at the sole cost of the Parklands project.

Fire Protection

Through the CIDS, Parklands will be contributing an estimated $54,350 toward reimbursing the City for its share of the recently constructed Fire Station No. 6.

Hawks & Associates

Engineering Planning Surveying

October 7, 2005

DTR Engineering
1695 Mesa Verde Avenue
Ventura, CA 93003

Attn: Dave Rose

RE: Review of Brown Barranca Flood Control for Proposed "Parklands Development," City of Ventura

In response to your request we have researched the flood control issues for the proposed Parklands Development adjacent to Brown Barranca east of Wells Road and south Telegraph Road, as shown on attached Exhibit A. The following available information was reviewed to assist in this review:

- Federal Emergency management Agency (FEMA) Flood Insurance Study, Flood Insurance Rate Maps, (FIRM) and Flood Plain Management regulations.
- Ventura County Watershed Protection (VCWPD) District Watercourse permit requirements.
- City of Ventura Flood Plain Management Ordinance
- City of Ventura Stormwater Quality Urban Impact Plan (SQUIMP) Requirements
- "Parklands" Master Plan as well as the site drainage concept as outlined by you.
- Ventura County Watershed Protection District Five Year Capital Projects Program.

The issues are divided into those involved with (a) the site improvement impacts and mitigation measures and (b) Brown Barranca, both existing and future conditions.

Parklands Drainage Impacts and Mitigation Measures

1. The development project proposes on-site stormwater detention and other runoff reduction measures such as vegetated swales and pervious pavement to provide for no increase in post-development runoff from the site and a probable decrease in runoff. No increase in runoff to Brown Barranca will comply with SQUIMP requirements.
2. Through extension of onsite storm drainage facilities, the project proposes to resolve localized drainage problems caused by Linden Drive drainage, affecting the existing mobile home park, and localized flooding on Blackburn Road near the mobile home site.
3. The project proposes to preserve and make a recreational focal point of Brown Barranca as a natural channel through the development from Telegraph to Wells Roads. This will require environmentally friendly measures to stabilize the invert and protect the Brown Barranca banks from erosion.

2259 Portola Road - Suite B Ventura, California 93003 Fax 805-658-6791 805-658-6611

4. Project on-site flooding will be eliminated by implementation of two mitigating measures. Enlarging and extending the existing undersized Blackburn Road culvert will not only reduce or eliminate on-site flooding, but also alleviate flooding on Wells Road. Additional flood protection will be assured by the placement of fill, if needed, on any remaining portions of the reduced floodplain.
5. The estimated $1,000,000 development contribution by the project toward planned Brown Barranca improvements by VCWPD could allow work to begin in the most critical downstream locations along Wells Road.

Brown Barranca Flooding – Existing Conditions

The composite FEMA Flood Insurance Rate Mat (FIRM) of the City (1986) and County (1985) attached as Exhibit A shows that the regulatory 100 year flood (1450 cfs+) Zone A7 is confined within the deeply inclined natural Brown Barranca for 1,000 feet south of Telegraph Road. As the channel depth decreases, FEMA data shows a 350 cfs overflow of the east bank and across a 700-foot length of Wells Road, upstream of the Blackburn Road culvert. This becomes a shallow street flow of an average depth of one foot as it continues easterly. Overflow also occurs to the south along Blackburn Road and across the Santa Paula Freeway.

There are a series of box culverts (RCB) and concrete lined channels through the Hwy. 126 Freeway interchange between Blackburn Road on the north and Henderson Road on the south. The culvert sizes vary at locations shown below:

- Henderson Road—Triple 8 X 6 RCB
- Hwy. 126 & Off Ramp—Triple 8 X 6 RCB
- Hwy. 126 On Ramp & Blackburn Road—Double 8 X 6 RCB

FEMA Hydraulic calculations indicate that all of the culverts are inadequate for the FEMA 100-year flood. The undersize Blackburn Road culvert and low upstream banks often result in the overflow of Wells Road to the east and Blackburn Road to the south through the Hwy. 126 Freeway interchange. Portions of the proposed development area are north and west of Blackburn Road within the floodplain. The remaining flow is confined to Brown Barranca south of the freeway on-ramp and continuing its confluence with the Santa Clara River. FEMA and City floodplain regulations require that any new building must be protected from inundation and erosion from the 100-year flood.

Brown Barranca—Future Conditions

The VCWPD has performed a very recent hydrologic analysis of the future developed watershed for Brown Barranca which is under its jurisdiction for planning and regulatory permits. The resulting flood flows shown on attached Exhibit B are higher than the FEMA flows in some reaches and represent the VCWPD required capacity for channel improvements. The VCWPD has commissioned a study to define specific channel improvements to contain the 100-year flood along Brown Barranca from Telegraph Road to the Santa Clara River. After exploring seven alternatives to improve channel capacity and considering several other off-channel alternatives for mitigating flood risk, a draft pre-design report was published in July, 2005. This report recommends a number of modifications to structures, several of which are located in the vicinity of the Parklands site. The VCWPD five-year capital project program includes Brown Barranca improvements, as shown on Exhibit C.

Based on the FEMA Flood Insurance Study, channel capacity analysis, recent storm records and our review of the same, Brown Barranca from Hwy. 126 south has flow capacity up to a 50-year flood. The open channel south of Henderson Road, for instance, was estimated to have a capacity of 1900 cfs. The existing freeway and Henderson Road culverts have approximately the same capacity.

The Parklands development team is coordinating with the VCWPD to finalize a set of improvements that would increase the capacity of Brown Barranca north of the freeway. Construction of these improvements will allow for the additional utilization of the downstream capacity of the channel while reducing the potential of channel overtopping which now exists just north of the freeway. This would be an improvement over the existing condition for areas east of Wells Road, where per the FEMA Study, overflow of the channel would impact existing development.

Summary

It should be noted that the Parkland development, because of its proposed mitigation measures, will not pose an impact upon or increase storm flows within Brown Barranca. It appears that, with the proposed well planned channel improvements north of the freeway in conjunction with planned VCWPD planned improvements, this development would have a positive impact on flooding potential to other areas north of the freeway. The development's CIDS contribution, estimated at $1,000,000, may be earmarked for Brown Barranca improvements. Other prior and future contributions then could be used to enhance the VCWPD Improvement Program

If you have any question or need additional information please give me a call.

Sincerely,

Hawks & Associates

William G. Frank, Principal Engineer

Attachments:

- Exhibit A – FEMA Composite Flood Insurance Rate Map
- Exhibit B – Brown Barranca Future Condition Hydrology
- Exhibit C – Brown Barranca – Proposed VCWPD 5 year Program Project

Brown Barranca Future Condition Hydrology - 11/04							
VCRAT ID	LOCATION	AREA (acres)	AR Factor	AREAL REDUCED Q2	AREAL REDUCED Q10	AREAL REDUCED Q50	AREAL REDUCED Q100
25AF	@ Foothill Rd.	1087	0.902	78	490	980	1353
31A	U/S of Telegraph Rd.	1158	0.895	78	486	972	1342
41AD	@ Telegraph Rd.	1476	0.885	93	581	1162	1604
53AF	@ Hwy. 126	1780	0.873	155	789	1408	1845
67AC	@ Telephone Rd.	2171	0.863	194	987	1763	2309
70A	@ Santa Clara River	2256	0.859	195	993	1773	2323

Note: Q2, Q10 and Q50 Flowrates Approximated From Peak Flow Multipliers - Q100 VCRAT Filename = BRWNBARR.99\99.O

EXHIBIT B

VENTURA COUNTY PUBLIC WORKS AGENCY
WATERSHED PROTECTION DISTRICT

Project Name: Brown Barranca Channel Improvements Project No.:

Supervisorial District: 1 District Zone: 2 Location: City of Ventura

LOCATION MAP

SCOPE OF WORK AND OBJECTIVE

Construct channel improvements from Santa Clara River to Foothill Road to upgrade the existing inadequate earth ditch. Environmentally sensitive approaches will be evaluated during the preliminary design phase. The objective is to provide 100-year flood protection to the adjacent properties.

SCHEDULED FUNDING

ESTIMATED COST PER FISCAL YEAR

	Prev Yrs	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Preliminary Design		$ 60,000	$ 40,000			
Environ. Processing/Permits			$ 60,000	$ 60,000		
Final Design				$ 200,000		
Right-of-Way/Utility Relocations			$ 50,000			
Construction					$3,750,000	$1,130,000
Mitigation						$ 500,000
Project Closeout						$ 50,000
FY TOTAL		$ 60,000	$ 150,000	$ 260,000	$3,750,000	$1,680,000

Total Estimated Cost: $5,900,000

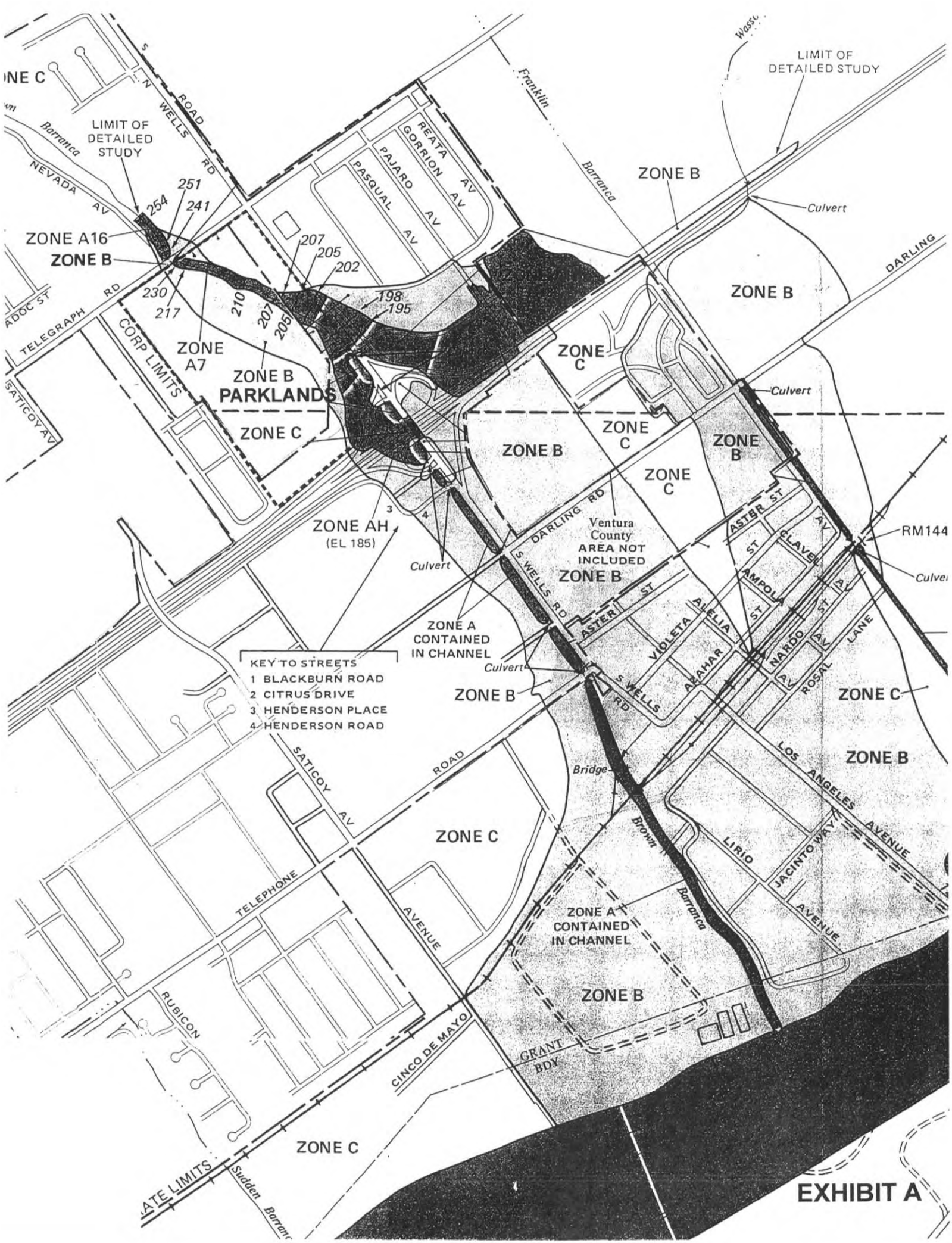
ENVIRONMENTAL REQUIREMENTS

Cat. Ex. ____ Neg. Dec. ____ EIR/EIS X Date Completed ____ Date Filed ____

REMARKS

Additional Annual Operations and Maintenance Costs = $40,000
Mitigation Maintenance and Monitoring Costs = $200,000

EXHIBIT C


LIMIT OF DETAILED STUDY
LIMIT OF DETAILED STUDY
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195
TELEGRAPH RD
CORP LIMITS
ZONE A7
ZONE B
PARKLANDS
ZONE C
SATICOY AV
PASQUAL AV
PAJARO AV
REATA AV
GORRION AV
Franklin
Barranca
ZONE B
Culvert
DARLING
ZONE B
ZONE C
Culvert
ZONE C
ZONE B
ZONE C
ZONE B
ZONE AH
(EL 185)
3
4
Culvert
DARLING RD
Ventura County AREA NOT INCLUDED
ZONE B
S WELLS RD
ASTER ST
ZONE A CONTAINED IN CHANNEL
Culvert
ZONE B
KEY TO STREETS
1 BLACKBURN ROAD
2 CITRUS DRIVE
3 HENDERSON PLACE
4 HENDERSON ROAD
SATICOY AV
ROAD
ZONE C
TELEPHONE
AVENUE
RUBICON
CINCO DE MAYO
ATE LIMITS
Sudden Barranc
ZONE C
ASTER ST
CLAVEL
AMPOLA
VIOLETA
ALELIA
ARAHAR
NARDO
ROSAL
LANE
S WELLS RD
Bridge
Brown
Barranca
ZONE A CONTAINED IN CHANNEL
ZONE B
GRANT BDY
ZONE C
ZONE B
LOS ANGELES AVENUE
LIRIO
JACINTO WAY
AVENUE
RM144
Culvert
EXHIBIT A

Hawks & Associates

Engineering Planning Surveying

July 29, 2008

City of San Buenaventura
Community Development Department
501 Poli Street
Ventura, CA 93001

RECEIVED
JUL 31 2008
Community Development
PLANNING DIVISION

Attn: Iain Holt, Acting Senior Planner

Subject: Notice of Intent to Adopt a Negative Declaration, Parklands Specific Plan, Responses to Ventura County Watershed Protection District Comments

We reviewed the Ventura County Watershed Protection District comments dated April 15, 2008 and we have the following responses in order of the comments. Also the attached revised plan Detention Design Report reflects the comments and revisions to the detention basin.

1. The proposed plan incorporates measures to mitigate an increase in runoff caused by development including pervious pavement, grass swales and the detention basin. Therefore the check of less than significant impact is appropriate.
2. Although the development plan is composed of two separate areas of 54 acres and 13 acres the detention basin is designed to more effectively mitigate revised runoff from the total 67 acres in a single basin. It will be designed to capture all flows in excess of the pre-development Q_{10} and to discharge these flows at the pre-development flow rate. Flows less than the pre-development Q_2 will bypass the primary underground detention area to provide compliance with storm water quality requirements in a small surface detention basin.
3. A conceptual plan and profile drawing of the basin, low flow pipe, connections to Brown Barranca and location of inlet and outlet structures is attached. Profile elevations and structure details will be included in the final plans.
4. The proposed improvements will remove approximately 2.5 acres of the floodplain within the westerly overbank upstream of HWY 126. The natural detention volume associated with this area is approximately 1 acre-ft.
5. The VCRAT Brown Barranca hydrology analysis of the development impact on flood flow is included in the attached revised Detention Design Report. The results shown in the Report demonstrate that the post development 100-year peak flow in less than the flow for pre-development conditions.

2259 Portola Road - Suite B Ventura, California 93003 Fax 805-658-6791 805-658-6611

6. The **interim condition** HEC-RAS analyses included runs for both the mixed flow condition and subcritical flow condition. The subcritical condition was utilized to evaluate the maximum base flood elevations for the reach of the existing undersized channel downstream of the proposed improvements. This is a conservative approach in terms of floodplain delineation since the existing channel cannot contain the 100-year flow. However, we agree that the mixed flow condition should be considered for the proposed improvements including the evaluation of the velocities downstream of the proposed culvert. The HEC-RAS analyses included the proposed culvert in both mixed and subcritical runs. The culvert was modeled as one long culvert approximately 690 feet in length (between Sta 83+73 & Sta 90+63). The results from both condition runs were similar due to the existing subcritical channel conditions and the backwater from the deficient culvert (culvert #3, under HWY 126 on-ramp) located approx. 250 feet downstream. The runs indicate a jump within the proposed box culvert.

   The detailed analysis of the proposed interim condition including the evaluation of the hydraulic jump, the tie-in and the transition configuration to the existing trapezoidal channel will be required during the final design of the project as stated in the Conclusions & Recommendation, Section 5 of the Study. It should be noted that the existing trapezoidal channel downstream of the proposed culvert is a lined concrete system that would accommodate the possible higher velocity that may occur at the outlet of the proposed culvert. However, since the existing channel system was built years ago, its condition and structural integrity should be investigated.

If you have any questions or comments please call Bill Frank at (805) 658-6611.

Sincerely,

Hawks & Associates

Glenn C. Hawks

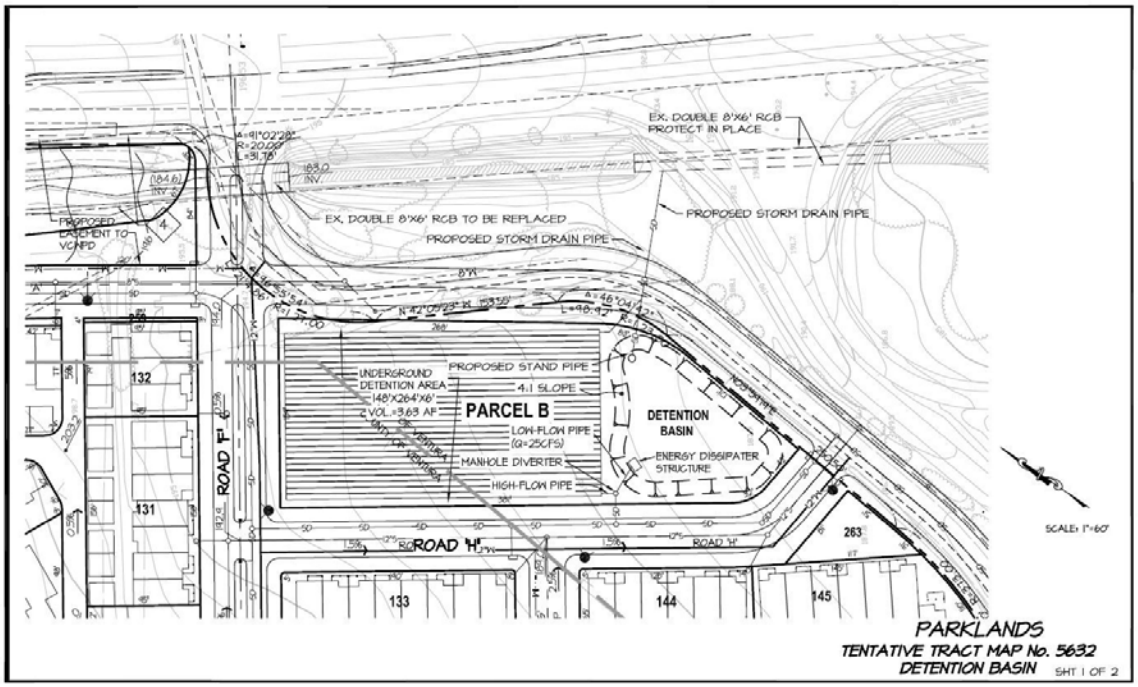
Attachments: Revised Detention Design Report
Updated Detention Basin Plan

\\Hal\eng\!Active Projects\184-11 Brown Barranca\Ltr. to City of Ventura.doc

PARKLANDS DEVELOPMENT

TTM NO. 5632

DETENTION DESIGN



December 28, 2006

Revised July 27, 2008

Second Revision October 20, 2008

REGISTERED PROFESSIONAL ENGINEER
BARRY C. RANDS
No. 72929
Exp. 12-31-08
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STATE OF CALIFORNIA

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Ventura, CA 93003
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Parklands Detention Requirements

Introduction

The Parklands project comprises 67 acres of land at the northwest corner of the intersection of the 126 freeway and Wells Road. 13 acres of the site are located on the north side of Brown Barranca and the remaining 54 acres lie to the south. The project will construct a mixture of homes and condominiums on land which is currently used for agricultural purposes. The purpose of this report is to analyze pre- and post-development hydrology and to design a detention system that will mitigate the impact of development on peak runoff rates discharging to Brown Barranca.

Detention Basin Design Approach

The detention basin captures runoff from the 54-acre south portion of the development. Runoff from the northern 13 acres site will not be detained. However, the detention basin will be designed to mitigate increased runoff from the entire site. It will be designed to capture flows in excess of the post-development Q5 and to discharge them at pre-development flow rates. Flows less than the post-development Q5 will bypass the basin. Smaller flows are designed to bypass the basin to increase its efficiency during extreme flood events.

Existing Conditions Hydrology

Hydrology is calculated for the 67-acre parcel as a whole. The existing conditions peak runoff rates for the 67-acre parcel are calculated with the VCWPD Tc Calculator with the following assumptions:

Area: 67 acres
Effective Imperviousness: 0% (agricultural land)
Soil Group: 3
Rainfall Zone: K
Time of Concentration: as shown in Tc Calculator Output Report

The results of this analysis are presented in Table 1:

	EXISTING CONDITIONS HYDROLOGY			
	Q10	Q25	Q50	Q100
Tc (minutes)	16	13	12	10
Peak Flow (cfs)	93	120	150	192

These flows will be used to determine the target maximum discharge rates at the given storm frequencies to design the detention basin.

Proposed Conditions Hydrology

Hydrology is calculated for the 67-acre parcel as a whole and pro-rated by area to the 13-acre and 54-acre portions of the site. The project will incorporate a system of vegetated swales and conventional storm drain pipes designed to handle the Q10 storm event. Excess flows from larger storm events will be conveyed overland in the swales and streets. The VCWPD Tc Calculator was used to calculate peak flows for these conditions, assuming a travel path through the swale/pipe system for the Q10 event and a swale/street flow path for the higher flow events. Other than changes in times of concentration, the effective imperviousness was the other main difference between pre- and post-development runoff. The VCWPD Hydrology Manual has historically used an effective impervious percent of 23% for residential developments, but the higher density residential developments that are more common today (including Parklands) would be better modeled with an effective impervious percentage of 37% as recommended for condominium developments. It should be noted that this is a conservative estimation of effective imperviousness, more appropriate for larger storms, as the development will incorporate many low-impact development (LID) features such as pervious pavement which will act as pervious surfaces in smaller storms.

Based on these assumptions, the results are presented in Table 2:

	PROPOSED CONDITIONS HYDROLOGY			
	Q10	Q25	Q50	Q100
Tc (minutes)	9	9	8	7
67-acre peak flow (cfs)	149	168	202	246
Pro-rated 13-acre peak flow (cfs)	29	33	39	48
Pro-rated 54-acre peak flow (cfs)	120	135	163	198

Target Detention Basin Discharge

Flow from two sources discharge directly to Brown Barranca:

1. Flows designed to bypass the detention basin
2. Peak flows from the northern 13-acre portion of the development.

The detention basin must be designed to discharge the difference between the pre-development flows and the direct flows to Brown Barranca. The direct flows from the 13-

acre site are shown in Table 2. Bypass flows are calculated based on the performance of the diversion structure illustrated in the appendix (A-4). Table 3 shows the values used to develop the target detention basin flows.

Table 3: Target detention flows

Flows (cfs)	TARGET DETENTION FLOWS			
	Q10	Q25	Q50	Q100
Pre-development	93	120	150	192
Bypass flow	31	32	33	35
13-acre site flow	29	33	39	48
Target Basin Outflow	**33**	**55**	**78**	**109**

Proposed Conditions Runoff Volume

The SCS method has been used to calculate runoff volumes needed to design the detention basin. HydroCAD software has been used to facilitate the design and configuration of the detention basin and its outlets. The required inputs in the SCS runoff volume model are area, Curve Number (CN) and 24-hr precipitation for each storm frequency. The area served by the detention basin is 57 acres. The CN for residential condominiums for soil group 3 is 89 (according to VCWPD tables). VCWPD rainfall maps are used to determine the 24-hr precipitation for the design events. Based on these input values, gross storm volumes are calculated. The net storm volume to the basin is then determined by subtracting the volume bypassed.

Table 4: Storm Volumes

	Storm Event			
	Q10	Q25	Q50	Q100
24-hr rainfall (in)	5.5	6.6	7.5	8.3
Gross Storm Volume (af)	19.0	23.8	27.7	31.2
Bypass Volume (af)	15.3	18.4	20.8	22.8
Net Volume to Basin (af)	3.7	5.4	6.9	8.4

The basin configuration and outlet dimensions that provide adequate storage and discharge characteristics have been modeled with HydroCAD with a full report included in the appendix. A summary of volume requirements and discharges are given in Table 5:

Table 5: Basin Performance

	Storm Event			
	Q10	Q25	Q50	Q100
Volume required (af)	2.24	2.83	3.26	3.62
Peak Elevation (ft)	184.9	185.9	187.0	188.0
Peak Discharge (cfs)	32.8	49.5	77.0	104.6
Target Discharge (cfs)	33	55	78	109

Detention Basin Configuration and Operation

The detention basin is an underground system, formed by a bank of arched chambers, connected in series and backfilled with gravel on the outside. The detention volume is based on a combination of the empty space volume of the arched chambers and the void space in the backfill, assumed to be 40% of the backfill volume. The chambers occupy a 148' x 264' space, with a base at elevation 182 feet. They provide a volume of 2.74 af of chamber storage. The backfill material adds an additional 0.89 af for a total storage volume of 3.63 af. The outlets are built into a pre-fab endwall configured so that the Q10 discharges from lower rectangular orifice while larger flows discharge from the higher weir. The outlets will be connected to a pipe or box of sufficient capacity to convey the flow to Brown Barranca.

For modeling purposes, the basin has been designed with ConStorm concrete chambers as shown in the appendix. Alternate materials and configuration may be substituted in the final design, but storage volumes and basic function will remain the same.

Watershed Impact

A comparison of pre- and post-development VCRAT Q100 hydrology was made to determine the impact of the mitigation measures on the flows in Brown Barranca. The VCRAT hydrology files were obtained from VCWPD and modified to model existing conditions of the Parklands site. Changes made to the original model are described and illustrated in the appendix. The run was then revised to model proposed conditions, with and without detention. The results of the runs are presented in table 6:

Table 6: Watershed Impact

Location	***100-year Peak Flow***			
	WPD model	***Existing***	***Proposed (no detention)***	***Proposed (with detention)***
Parklands (67 ac)	~213*	192	246	188
At Hwy 126	2113	2179	2132	2173
At Sta Clara River	2704	2715	2690	2708

* The WPD model does not treat the 67-acre Parklands site separately. The value reported here is extrapolated from the 40-acre subarea 52F.

The results indicate that the detained post-development flow (*proposed with detention*) is less than the flow for existing conditions at both Hwy 126 and the confluence with the Santa Clara River. It may appear unusual that all scenarios show much higher flows at Hwy 126 than the WPD model. The reason for this is that the hydrograph for runoff from the subarea representing 54 acres of the Parklands site was fattened in all three modified runs. Another anomaly is that it appears that the "no detention" scenario has the least impact on the watershed. This is due to the fact that the Parklands site is so close to the main stem of Brown Barranca and at the downstream end of the watershed. The increased runoff from the developed site would "beat the peak" of the hydrograph in the main stem and thus would have a smaller impact on the peak flow in Brown Barranca than in the detained condition. This anomaly is accentuated by the fact that the VCRAT model routinely underestimates hydrograph volumes and their corresponding shapes. This makes confluence hydrographs smaller than they would be if both incoming hydrographs were shaped (fattened) to represent their true volumes.

Another watershed impact to be considered is the loss of floodplain storage (natural detention) with the improvements to Brown Barranca. The estimated loss of natural floodplain storage is 1 acre-foot. The detention basin volume is 3.63 acre-feet. Due to its location in the watershed and elevation relative to Brown Barranca, reverse flow will occur during extreme storm events. Depending on the relative timing of peak flows from the Parklands site and the larger Brown Barranca watershed, the detention basin could provide 1 acre-foot of floodplain storage for Brown Barranca.

TECHNICAL APPENDIX

A1

HYDROLOGY CALCULATIONS

Tc CALCULATOR REPORT

VENTURA COUNTY WATERSHED PROTECTION DISTRICT
TIME OF CONCENTRATION
Project: Parklands
Engineer: Dave Rose
Consultant: Barry Rands

Watershed Name: Parklands

EXISTING CONDITIONS

Sub-Area Name: Parklands Undeveloped Land
Computing Tc for all rainfall frequencies for sub-area Parklands Undeveloped Land...

Tc for frequency = 10.00: 15.977 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 15.977 min. = 16 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Undeveloped Land
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 1.976
C Total: 0.701
Sum Q Segments (cfs): 92.88
Q Total (cfs): 92.88
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 958.61
Time of Concentration (min): 15.977

DATA FOR FLOW PATH 1

Flow Path Name: Fields
FLOW PATH TRAVEL TIME (min): 11.4907
Flow Type: Overland
Length (ft): 300

Top Elevation (ft): 250
Bottom Elevation (ft): 241
Percent of Sub-Area: 5
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0300
Effective Slope: 0.0300
Q (cfs): 4.64
Avg Velocity (ft/s): 0.44

DATA FOR FLOW PATH 2

Flow Path Name: Farm Road
FLOW PATH TRAVEL TIME (min): 3.0941
Flow Type: Natural Channel
Length (ft): 1380
Top Elevation (ft): 241
Bottom Elevation (ft): 200
Percent of Sub-Area: 40
Overland Type: Valley
Map Slope: 0.0297
Effective Slope: 0.0297
Q (cfs): 37.15
Q Top (cfs): 4.64
Q Bottom (cfs): 41.79
Velocity Top (ft/s): 3.57
Velocity Bottom (ft/s): 6.34
Avg Velocity (ft/s): 4.96
Wave Velocity (ft/s): 7.43

DATA FOR FLOW PATH 3

Flow Path Name: Channel
FLOW PATH TRAVEL TIME (min): 1.3920
Flow Type: Natural Channel
Length (ft): 575
Top Elevation (ft): 200
Bottom Elevation (ft): 193
Percent of Sub-Area: 55
Overland Type: Valley
Map Slope: 0.0122
Effective Slope: 0.0122
Q (cfs): 51.08
Q Top (cfs): 41.79

Q Bottom (cfs): 92.88
Velocity Top (ft/s): 4.06
Velocity Bottom (ft/s): 5.12
Avg Velocity (ft/s): 4.59
Wave Velocity (ft/s): 6.88

Tc for frequency = 25.00: 13.262 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 13.262 min. = 13 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Undeveloped Land
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 2.430
C Total: 0.740
Sum Q Segments (cfs): 120.47
Q Total (cfs): 120.47
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 795.73
Time of Concentration (min): 13.262

DATA FOR FLOW PATH 1

Flow Path Name: Fields
FLOW PATH TRAVEL TIME (min): 9.0881
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 250
Bottom Elevation (ft): 241
Percent of Sub-Area: 5
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0300
Effective Slope: 0.0300

Q (cfs): 6.02
Avg Velocity (ft/s): 0.55

DATA FOR FLOW PATH 2

Flow Path Name: Farm Road
FLOW PATH TRAVEL TIME (min): 2.8848
Flow Type: Natural Channel
Length (ft): 1380
Top Elevation (ft): 241
Bottom Elevation (ft): 200
Percent of Sub-Area: 40
Overland Type: Valley
Map Slope: 0.0297
Effective Slope: 0.0297
Q (cfs): 48.19
Q Top (cfs): 6.02
Q Bottom (cfs): 54.21
Velocity Top (ft/s): 3.80
Velocity Bottom (ft/s): 6.83
Avg Velocity (ft/s): 5.32
Wave Velocity (ft/s): 7.97

DATA FOR FLOW PATH 3

Flow Path Name: Channel
FLOW PATH TRAVEL TIME (min): 1.2892
Flow Type: Natural Channel
Length (ft): 575
Top Elevation (ft): 200
Bottom Elevation (ft): 193
Percent of Sub-Area: 55
Overland Type: Valley
Map Slope: 0.0122
Effective Slope: 0.0122
Q (cfs): 66.26
Q Top (cfs): 54.21
Q Bottom (cfs): 120.47
Velocity Top (ft/s): 4.37
Velocity Bottom (ft/s): 5.54
Avg Velocity (ft/s): 4.96
Wave Velocity (ft/s): 7.43

Tc for frequency = 50.00: 11.711 Minutes

DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 11.711 min. = 12 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Undeveloped Land
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0

SUB AREA OUTPUT

Intensity (in/hr): 2.902
C Total: 0.771
Sum Q Segments (cfs): 149.89
Q Total (cfs): 149.89
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 702.65
Time of Concentration (min): 11.711

DATA FOR FLOW PATH 1

Flow Path Name: Fields
FLOW PATH TRAVEL TIME (min): 7.7863
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 250
Bottom Elevation (ft): 241
Percent of Sub-Area: 5
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0300
Effective Slope: 0.0300
Q (cfs): 7.49
Avg Velocity (ft/s): 0.64

DATA FOR FLOW PATH 2

Flow Path Name: Farm Road
FLOW PATH TRAVEL TIME (min): 2.7169

Flow Type: Natural Channel
Length (ft): 1380
Top Elevation (ft): 241
Bottom Elevation (ft): 200
Percent of Sub-Area: 40
Overland Type: Valley
Map Slope: 0.0297
Effective Slope: 0.0297
Q (cfs): 59.96
Q Top (cfs): 7.49
Q Bottom (cfs): 67.45
Velocity Top (ft/s): 4.01
Velocity Bottom (ft/s): 7.28
Avg Velocity (ft/s): 5.64
Wave Velocity (ft/s): 8.47

DATA FOR FLOW PATH 3

Flow Path Name: Channel
FLOW PATH TRAVEL TIME (min): 1.2077
Flow Type: Natural Channel
Length (ft): 575
Top Elevation (ft): 200
Bottom Elevation (ft): 193
Percent of Sub-Area: 55
Overland Type: Valley
Map Slope: 0.0122
Effective Slope: 0.0122
Q (cfs): 82.44
Q Top (cfs): 67.45
Q Bottom (cfs): 149.89
Velocity Top (ft/s): 4.66
Velocity Bottom (ft/s): 5.92
Avg Velocity (ft/s): 5.29
Wave Velocity (ft/s): 7.94

Tc for frequency = 100.00: 9.579 Minutes
DATA FOR SUB AREA 1

SUB AREA TIME OF CONCENTRATION: 9.579 min. = 10 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Undeveloped Land

Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Undeveloped
Soil Type: 3.00
Percent Impervious: 0
SUB AREA OUTPUT

Intensity (in/hr): 3.570
C Total: 0.802
Sum Q Segments (cfs): 191.89
Q Total (cfs): 191.89
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 574.75
Time of Concentration (min): 9.579

DATA FOR FLOW PATH 1

Flow Path Name: Fields
FLOW PATH TRAVEL TIME (min): 5.9226
Flow Type: Overland
Length (ft): 300
Top Elevation (ft): 250
Bottom Elevation (ft): 241
Percent of Sub-Area: 5
Overland Type: Valley
Development Type: Undeveloped
Map Slope: 0.0300
Effective Slope: 0.0300
Q (cfs): 9.59
Avg Velocity (ft/s): 0.84

DATA FOR FLOW PATH 2

Flow Path Name: Farm Road
FLOW PATH TRAVEL TIME (min): 2.5358
Flow Type: Natural Channel
Length (ft): 1380
Top Elevation (ft): 241
Bottom Elevation (ft): 200
Percent of Sub-Area: 40
Overland Type: Valley
Map Slope: 0.0297

Effective Slope: 0.0297
Q (cfs): 76.76
Q Top (cfs): 9.59
Q Bottom (cfs): 86.35
Velocity Top (ft/s): 4.26
Velocity Bottom (ft/s): 7.83
Avg Velocity (ft/s): 6.05
Wave Velocity (ft/s): 9.07

DATA FOR FLOW PATH 3

Flow Path Name: Channel
FLOW PATH TRAVEL TIME (min): 1.1208
Flow Type: Natural Channel
Length (ft): 575
Top Elevation (ft): 200
Bottom Elevation (ft): 193
Percent of Sub-Area: 55
Overland Type: Valley
Map Slope: 0.0122
Effective Slope: 0.0122
Q (cfs): 105.54
Q Top (cfs): 86.35
Q Bottom (cfs): 191.89
Velocity Top (ft/s): 5.01
Velocity Bottom (ft/s): 6.39
Avg Velocity (ft/s): 5.70
Wave Velocity (ft/s): 8.55

PROPOSED CONDITIONS

Sub-Area Name: Parklands Developed Land Path 1
Computing Tc for all rainfall frequencies for sub-area Parklands Developed Land Path 1...
Tc for Q10: 9.044 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 9.044 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Developed Land Path 1
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 10
Development Type: Residential
Soil Type: 3.00
Percent Impervious: 37
SUB AREA OUTPUT

Intensity (in/hr): 2.680
C Total: 0.829
Sum Q Segments (cfs): 148.77
Q Total (cfs): 148.77
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 542.66
Time of Concentration (min): 9.044

DATA FOR FLOW PATH 1

Flow Path Name: Lot flow
FLOW PATH TRAVEL TIME (min): 4.0485
Flow Type: Overland
Length (ft): 105
Top Elevation (ft): 249
Bottom Elevation (ft): 246
Percent of Sub-Area: 1
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0286
Effective Slope: 0.0286
Q (cfs): 1.49
Avg Velocity (ft/s): 0.43

DATA FOR FLOW PATH 2

Flow Path Name: Paved Street
FLOW PATH TRAVEL TIME (min): 2.0532
Flow Type: Street
Length (ft): 417
Top Elevation (ft): 246
Bottom Elevation (ft): 241
Percent of Sub-Area: 2
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0120
Q (cfs): 2.98
Q Top (cfs): 1.49
Q Bottom (cfs): 4.46
Velocity Top (ft/s): 1.95
Velocity Bottom (ft/s): 2.57
Avg Velocity (ft/s): 2.26
Wave Velocity (ft/s): 3.38

DATA FOR FLOW PATH 3

Flow Path Name: 18 RCP
FLOW PATH TRAVEL TIME (min): 1.8049
Flow Type: Pipe
Length (ft): 1190
Top Elevation (ft): 241
Bottom Elevation (ft): 213
Percent of Sub-Area: 32
Pipe Diameter (in): 30
Manning's N: 0.014
Map Slope: 0.0235
Q (cfs): 47.61
Q Top (cfs): 4.46
Q Bottom (cfs): 52.07
Avg Velocity (ft/s): 8.21
Wave Velocity (ft/s): 10.99

DATA FOR FLOW PATH 4

Flow Path Name: 24 RCP
FLOW PATH TRAVEL TIME (min): 0.3660
Flow Type: Pipe

Length (ft): 260
Top Elevation (ft): 213
Bottom Elevation (ft): 205
Percent of Sub-Area: 30
Pipe Diameter (in): 36
Manning's N: 0.014
Map Slope: 0.0308
Q (cfs): 44.63
Q Top (cfs): 52.07
Q Bottom (cfs): 96.70
Avg Velocity (ft/s): 9.29
Wave Velocity (ft/s): 11.84

DATA FOR FLOW PATH 5

Flow Path Name: 36 RCP
FLOW PATH TRAVEL TIME (min): 0.7718
Flow Type: Pipe
Length (ft): 515
Top Elevation (ft): 205
Bottom Elevation (ft): 190
Percent of Sub-Area: 35
Pipe Diameter (in): 42
Manning's N: 0.014
Map Slope: 0.0291
Q (cfs): 52.07
Q Top (cfs): 96.70
Q Bottom (cfs): 148.77
Avg Velocity (ft/s): 8.93
Wave Velocity (ft/s): 11.12

Tc for frequency = 25.00: 8.614 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 8.614 min. = 9 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Developed Land Path 1
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 25
Development Type: Residential

Soil Type: 3.00
Percent Impervious: 37
SUB AREA OUTPUT

Intensity (in/hr): 2.987
C Total: 0.840
Sum Q Segments (cfs): 168.19
Q Total (cfs): 168.19
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 516.84
Time of Concentration (min): 8.614

DATA FOR FLOW PATH 1

Flow Path Name: Lot flow
FLOW PATH TRAVEL TIME (min): 3.1996
Flow Type: Overland
Length (ft): 105
Top Elevation (ft): 249
Bottom Elevation (ft): 246
Percent of Sub-Area: 1
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0286
Effective Slope: 0.0286
Q (cfs): 1.68
Avg Velocity (ft/s): 0.55

DATA FOR FLOW PATH 2

Flow Path Name: Cobble Street
FLOW PATH TRAVEL TIME (min): 1.9908
Flow Type: Street
Length (ft): 417
Top Elevation (ft): 246
Bottom Elevation (ft): 241
Percent of Sub-Area: 2
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0120
Q (cfs): 3.36
Q Top (cfs): 1.68
Q Bottom (cfs): 5.05
Velocity Top (ft/s): 2.01

Velocity Bottom (ft/s): 2.65
Avg Velocity (ft/s): 2.33
Wave Velocity (ft/s): 3.49

DATA FOR FLOW PATH 3

Flow Path Name: Nevada Avenue
FLOW PATH TRAVEL TIME (min): 3.1242
Flow Type: Natural Channel
Length (ft): 1630
Top Elevation (ft): 241
Bottom Elevation (ft): 197
Percent of Sub-Area: 65
Overland Type: Valley
Map Slope: 0.0270
Effective Slope: 0.0270
Q (cfs): 109.32
Q Top (cfs): 5.05
Q Bottom (cfs): 114.37
Velocity Top (ft/s): 3.47
Velocity Bottom (ft/s): 8.12
Avg Velocity (ft/s): 5.80
Wave Velocity (ft/s): 8.70

DATA FOR FLOW PATH 4

Flow Path Name: RoadF
FLOW PATH TRAVEL TIME (min): 0.2993
Flow Type: Natural Channel
Length (ft): 200
Top Elevation (ft): 197
Bottom Elevation (ft): 193
Percent of Sub-Area: 32
Overland Type: Valley
Map Slope: 0.0200
Effective Slope: 0.0200
Q (cfs): 53.82
Q Top (cfs): 114.37
Q Bottom (cfs): 168.19
Velocity Top (ft/s): 6.99
Velocity Bottom (ft/s): 7.86
Avg Velocity (ft/s): 7.43
Wave Velocity (ft/s): 11.14

Tc for frequency = 50.00: 7.889 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 7.889 min. = 8 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Developed Land Path 1
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 50
Development Type: Residential
Soil Type: 3.00
Percent Impervious: 37
SUB AREA OUTPUT

Intensity (in/hr): 3.525
C Total: 0.856
Sum Q Segments (cfs): 202.17
Q Total (cfs): 202.17
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 473.34
Time of Concentration (min): 7.889

DATA FOR FLOW PATH 1

Flow Path Name: Lot flow
FLOW PATH TRAVEL TIME (min): 2.7402
Flow Type: Overland
Length (ft): 105
Top Elevation (ft): 249
Bottom Elevation (ft): 246
Percent of Sub-Area: 1
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0286
Effective Slope: 0.0286
Q (cfs): 2.02
Avg Velocity (ft/s): 0.64

DATA FOR FLOW PATH 2

Flow Path Name: Cobble Street

FLOW PATH TRAVEL TIME (min): 1.9008
Flow Type: Street
Length (ft): 417
Top Elevation (ft): 246
Bottom Elevation (ft): 241
Percent of Sub-Area: 2
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0120
Q (cfs): 4.04
Q Top (cfs): 2.02
Q Bottom (cfs): 6.07
Velocity Top (ft/s): 2.10
Velocity Bottom (ft/s): 2.77
Avg Velocity (ft/s): 2.44
Wave Velocity (ft/s): 3.66

DATA FOR FLOW PATH 3

Flow Path Name: Nevada Avenue
FLOW PATH TRAVEL TIME (min): 2.9652
Flow Type: Natural Channel
Length (ft): 1630
Top Elevation (ft): 241
Bottom Elevation (ft): 197
Percent of Sub-Area: 65
Overland Type: Valley
Map Slope: 0.0270
Effective Slope: 0.0270
Q (cfs): 131.41
Q Top (cfs): 6.07
Q Bottom (cfs): 137.47
Velocity Top (ft/s): 3.63
Velocity Bottom (ft/s): 8.59
Avg Velocity (ft/s): 6.11
Wave Velocity (ft/s): 9.16

DATA FOR FLOW PATH 4

Flow Path Name: RoadF
FLOW PATH TRAVEL TIME (min): 0.2829
Flow Type: Natural Channel
Length (ft): 200
Top Elevation (ft): 197

Bottom Elevation (ft): 193
Percent of Sub-Area: 32
Overland Type: Valley
Map Slope: 0.0200
Effective Slope: 0.0200
Q (cfs): 64.69
Q Top (cfs): 137.47
Q Bottom (cfs): 202.17
Velocity Top (ft/s): 7.39
Velocity Bottom (ft/s): 8.32
Avg Velocity (ft/s): 7.86
Wave Velocity (ft/s): 11.78

Tc for frequency = 100.00: 6.960 Minutes
DATA FOR SUB AREA 2

SUB AREA TIME OF CONCENTRATION: 6.960 min. = 7 min.

SUB AREA INPUT DATA

Sub Area Name: Parklands Developed Land Path 1
Total Area (ac): 67
Flood Zone: 3
Rainfall Zone: K
Storm Frequency (years): 100
Development Type: Residential
Soil Type: 3.00
Percent Impervious: 37
SUB AREA OUTPUT

Intensity (in/hr): 4.226
C Total: 0.869
Sum Q Segments (cfs): 246.03
Q Total (cfs): 246.03
Sum Percent Area (%): 100.0
Sum of Flow Path Travel Times (sec): 417.60
Time of Concentration (min): 6.960

DATA FOR FLOW PATH 1

Flow Path Name: Lot flow
FLOW PATH TRAVEL TIME (min): 2.0822
Flow Type: Overland
Length (ft): 105

Top Elevation (ft): 249
Bottom Elevation (ft): 246
Percent of Sub-Area: 1
Overland Type: Valley
Development Type: Residential
Map Slope: 0.0286
Effective Slope: 0.0286
Q (cfs): 2.46
Avg Velocity (ft/s): 0.84

DATA FOR FLOW PATH 2

Flow Path Name: Cobble Street
FLOW PATH TRAVEL TIME (min): 1.8092
Flow Type: Street
Length (ft): 417
Top Elevation (ft): 246
Bottom Elevation (ft): 241
Percent of Sub-Area: 2
Street Width (ft): 32
Curb Height (in): 6
Map Slope: 0.0120
Q (cfs): 4.92
Q Top (cfs): 2.46
Q Bottom (cfs): 7.38
Velocity Top (ft/s): 2.21
Velocity Bottom (ft/s): 2.91
Avg Velocity (ft/s): 2.56
Wave Velocity (ft/s): 3.84

DATA FOR FLOW PATH 3

Flow Path Name: Nevada Avenue
FLOW PATH TRAVEL TIME (min): 2.8024
Flow Type: Natural Channel
Length (ft): 1630
Top Elevation (ft): 241
Bottom Elevation (ft): 197
Percent of Sub-Area: 65
Overland Type: Valley
Map Slope: 0.0270
Effective Slope: 0.0270
Q (cfs): 159.92
Q Top (cfs): 7.38

Q Bottom (cfs): 167.30
Velocity Top (ft/s): 3.81
Velocity Bottom (ft/s): 9.12
Avg Velocity (ft/s): 6.46
Wave Velocity (ft/s): 9.69

DATA FOR FLOW PATH 4

Flow Path Name: RoadF
FLOW PATH TRAVEL TIME (min): 0.2662
Flow Type: Natural Channel
Length (ft): 200
Top Elevation (ft): 197
Bottom Elevation (ft): 193
Percent of Sub-Area: 32
Overland Type: Valley
Map Slope: 0.0200
Effective Slope: 0.0200
Q (cfs): 78.73
Q Top (cfs): 167.30
Q Bottom (cfs): 246.03
Velocity Top (ft/s): 7.85
Velocity Bottom (ft/s): 8.85
Avg Velocity (ft/s): 8.35
Wave Velocity (ft/s): 12.52

A2

RAINFALL CONTOUR MAPS

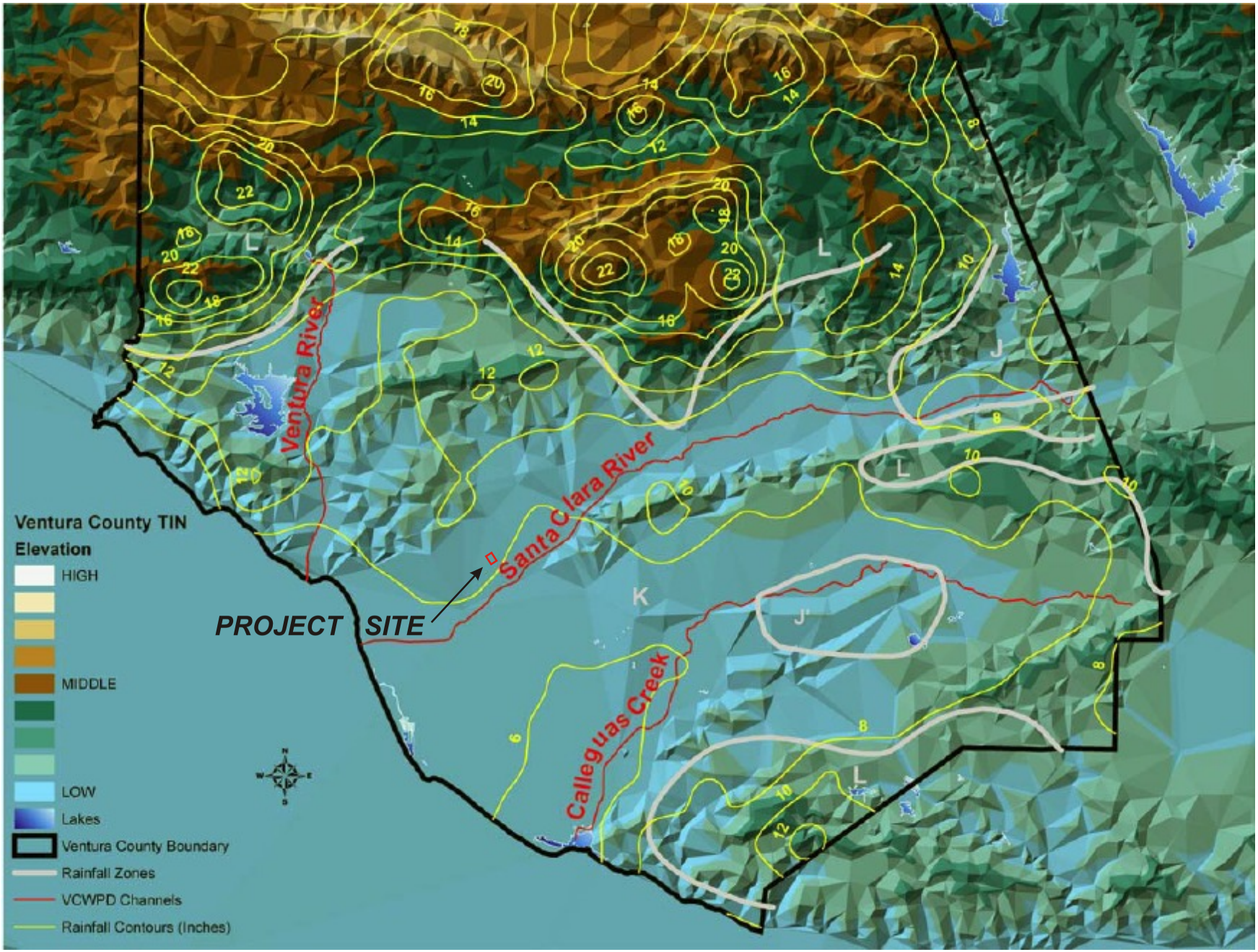


EXHIBIT 1A. DESIGN STORM RAINFALL CONTOURS- 100-YR STORM

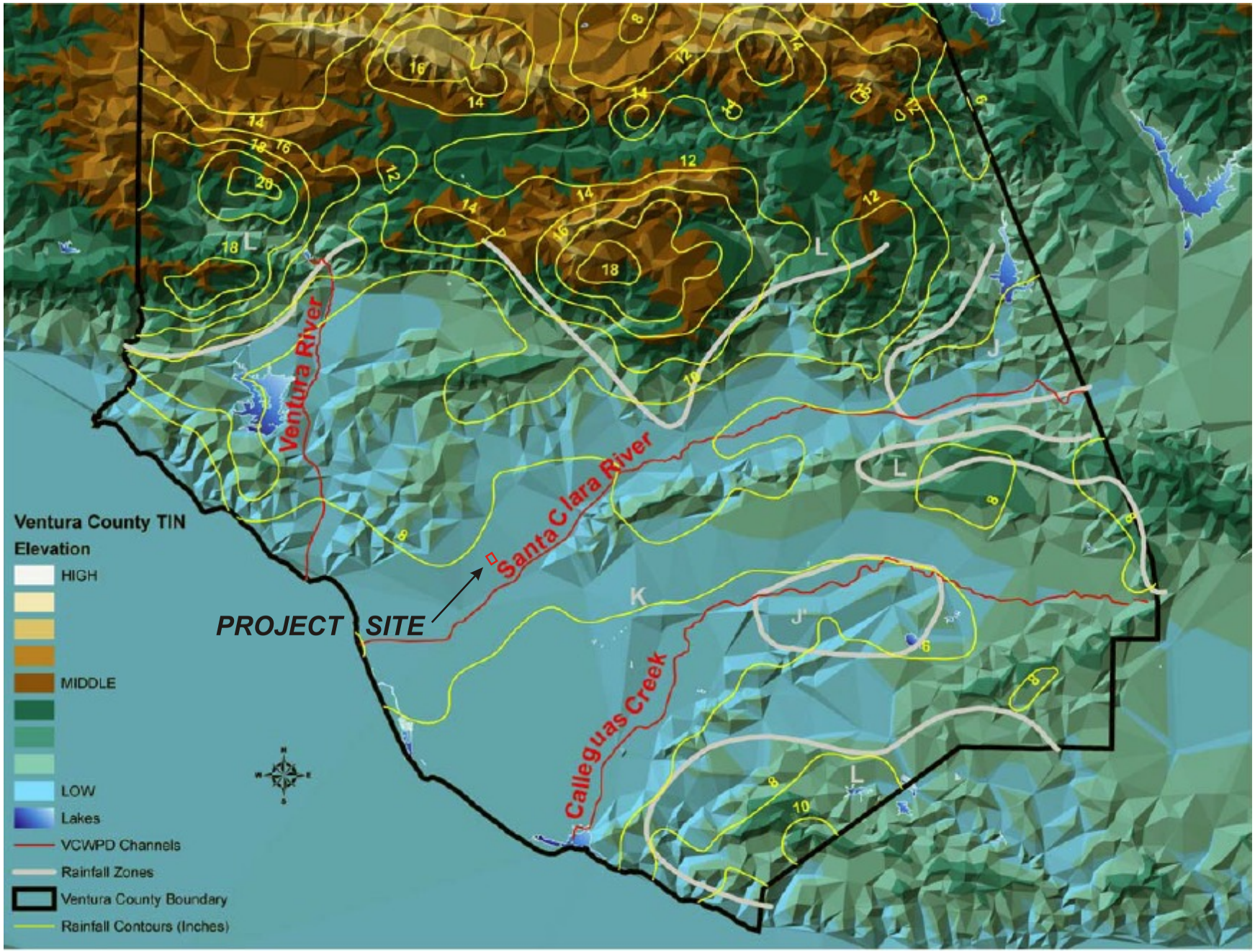


EXHIBIT 1B. DESIGN STORM RAINFALL CONTOURS- 50-YR STORM

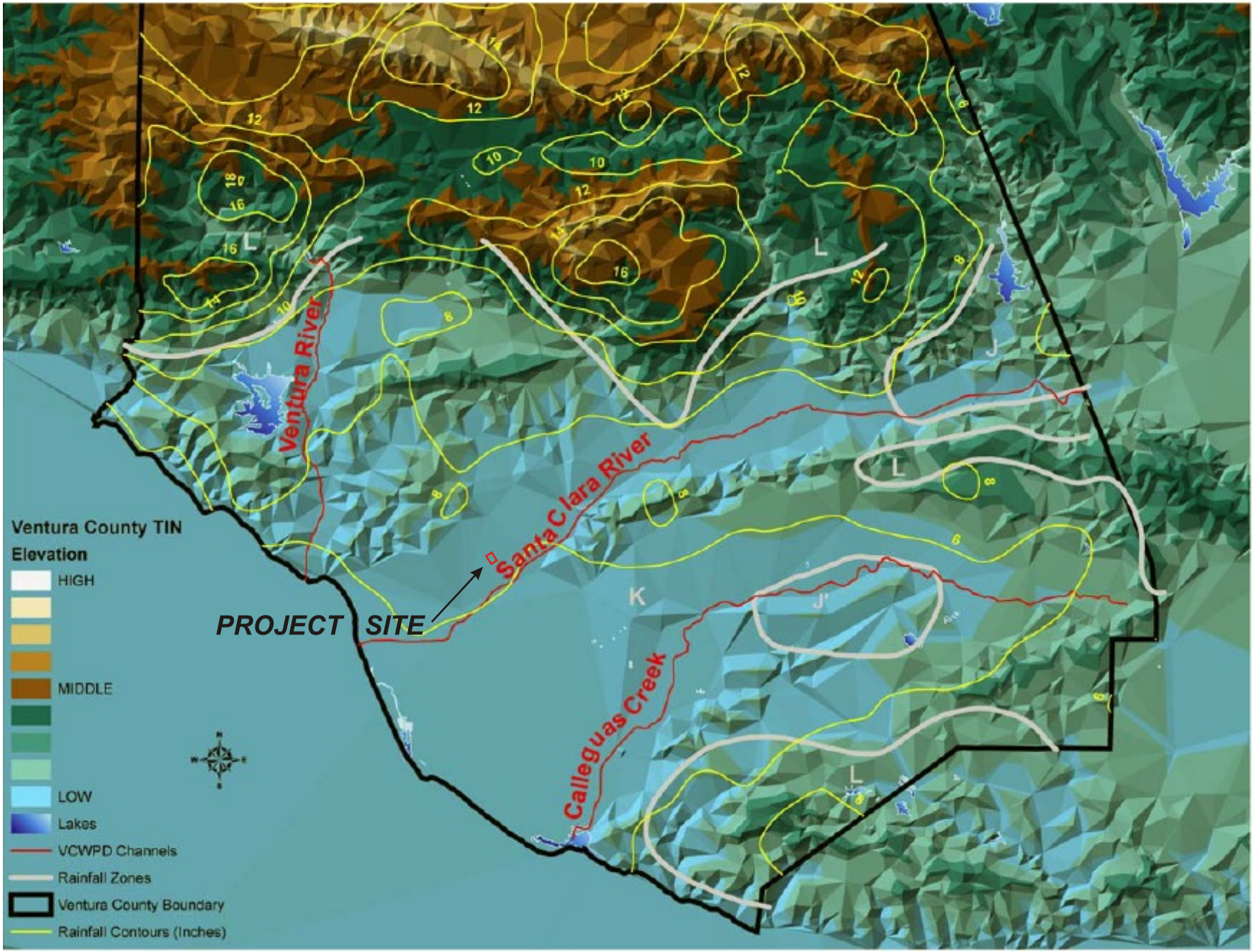


EXHIBIT 1C. DESIGN STORM RAINFALL CONTOURS- 25-YR STORM

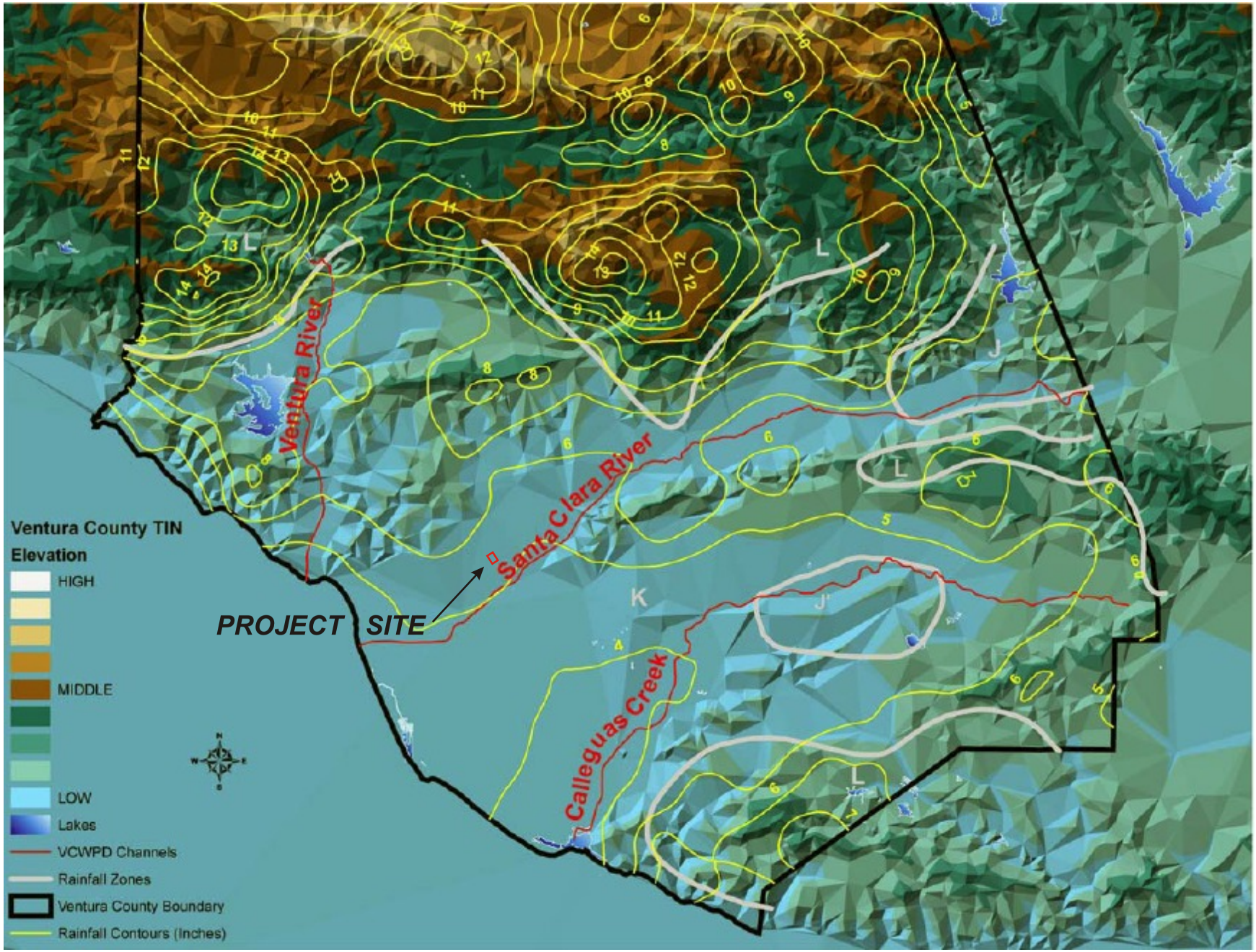


EXHIBIT 1D. DESIGN STORM RAINFALL CONTOURS- 10-YR STORM

A3

RUNOFF CURVE NUMBER TABLE

APPENDIX A **EXHIBITS**

EXHIBIT 14B. CURVE NUMBERS FOR DEVELOPED LAND USES- NRCS

DEVELOPED LAND USE DESCRIPTION	EFFECTIVE IMPERV %	AVERAGE IMPERV %	HYDROLOGIC SOIL GROUP A 7	A 6	B 5	B 4	C 3	C 2	D 1
OPEN SPACES, LAWNS, PARKS, GOLF COURSES, CEMETERIES, ETC., GRASS COVER ON 75% OR MORE	0	0	37	41	60	62	73	75	80
OPEN SPACES...ETC., GRASS COVER ON 50-75%	0	0	48	50	70	71	78	80	84
RESIDENTIAL 1 ACRE LOT	10	20	50	52	67	69	78	80	84
RESIDENTIAL 1/2 ACRE LOT	13	25	53	55	69	71	79	81	85
RESIDENTIAL 1/3 ACRE LOT	15	30	56	58	71	73	80	82	86
RESIDENTIAL 1/4 ACRE LOT	19	38	60	62	74	76	82	84	87
RESIDENTIAL 1/5 ACRE LOT	23	47	65	67	77	79	84	86	89
RESIDENTIAL 1/6 ACRE LOT	28	56	71	73	81	83	87	89	90
RESIDENTIAL 1/8 ACRE LOT	32	65	76	78	84	86	89	91	92
RESIDENTIAL - CONDOMINIUMS	37	69	78	80	86	88	89	92	93
INDUSTRIAL - UNPAVED YARDS, ETC.	36	72	80	82	87	89	90	92	93
COMMERCIAL & BUSINESS	50	85	88	90	91	93	93	95	95
INDUSTRIAL PARKS PAVED PARKING, ETC.	70	93	93	94	95	96	96	97	97
PARKING LOTS, ROOFS, DRIVEWAYS, PAVED STREETS WITH CURBS & DRAINS	90	100	98	98	98	98	98	98	98

NOTE: MODIFIED RATIONAL METHOD USES SOIL TYPES 1-7

Note: Percent effective impervious values apply only to SCS Unit Hydrograph Method

A4

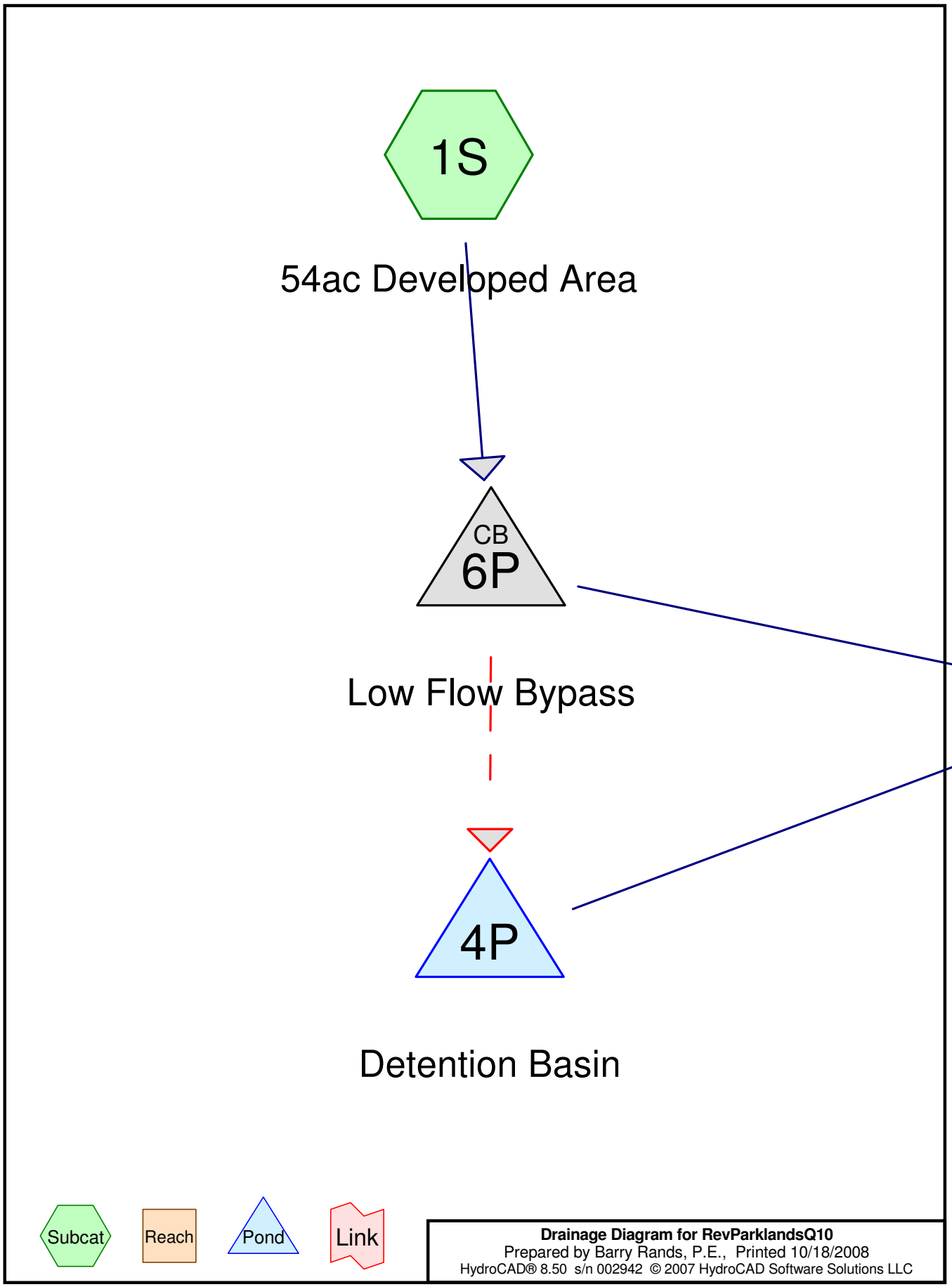
BYPASS DIVERSION STRUCTURE

Stage-Discharge for Pond 6P: Low Flow Bypass

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
182.00	0.00	0.00	0.00
182.10	0.06	0.06	0.00
182.20	0.25	0.25	0.00
182.30	0.55	0.55	0.00
182.40	0.96	0.96	0.00
182.50	1.48	1.48	0.00
182.60	2.09	2.09	0.00
182.70	2.79	2.79	0.00
182.80	3.57	3.57	0.00
182.90	4.43	4.43	0.00
183.00	5.35	5.35	0.00
183.10	6.32	6.32	0.00
183.20	7.34	7.34	0.00
183.30	8.39	8.39	0.00
183.40	9.46	9.46	0.00
183.50	10.54	10.54	0.00
183.60	11.60	11.60	0.00
183.70	12.63	12.63	0.00
183.80	13.60	13.60	0.00
183.90	14.47	14.47	0.00
184.00	15.13	15.13	0.00
184.10	15.87	15.87	0.00
184.20	16.57	16.57	0.00
184.30	17.25	17.25	0.00
184.40	17.90	17.90	0.00
184.50	18.53	18.53	0.00
184.60	19.13	19.13	0.00
184.70	19.72	19.72	0.00
184.80	20.29	20.29	0.00
184.90	20.85	20.85	0.00
185.00	21.39	21.39	0.00
185.10	22.75	21.92	0.83
185.20	24.78	22.44	2.35
185.30	27.26	22.94	4.32
185.40	30.09	23.43	6.66
185.50	33.24	23.92	9.32
185.60	36.66	24.39	12.27
185.70	40.34	24.86	15.48
185.80	44.25	25.31	18.94
185.90	48.39	25.76	22.63
186.00	52.75	26.20	26.55
186.10	57.30	26.63	30.67
186.20	62.05	27.06	34.99
186.30	66.98	27.48	39.50
186.40	72.10	27.89	44.20
186.50	77.39	28.30	49.09
186.60	82.84	28.70	54.14
186.70	88.47	29.10	59.37
186.80	94.25	29.49	64.76
186.90	100.19	29.87	70.31
187.00	106.28	30.25	76.02
187.10	112.52	30.63	81.89
187.20	118.91	31.00	87.90
187.30	125.44	31.37	94.07
187.40	132.11	31.73	100.38
187.50	138.91	32.09	106.83
187.60	145.86	32.44	113.41
187.70	152.93	32.79	120.14
187.80	160.14	33.14	127.00
187.90	167.48	33.48	133.99
188.00	174.94	33.82	141.12
188.10	182.53	34.16	148.37
188.20	190.24	34.49	155.74
188.30	198.07	34.82	163.25
188.40	206.02	35.15	170.87
188.50	214.09	35.48	178.61
188.60	222.27	35.80	186.47
188.70	230.57	36.11	194.45
188.80	238.98	36.43	202.55
188.90	247.50	36.74	210.75
189.00	256.12	37.05	219.07
189.10	264.86	37.36	227.50
189.20	273.71	37.67	236.04
189.30	282.65	37.97	244.69
189.40	291.71	38.27	253.44
189.50	300.86	38.57	262.29
189.60	310.11	38.86	271.25
189.70	319.47	39.15	280.31
189.80	328.92	39.45	289.48
189.90	338.47	39.73	298.74
190.00	348.11	40.02	308.09
190.10	357.85	40.31	317.55
190.20	367.68	40.59	327.10
190.30	377.61	40.87	336.74
190.40	387.62	41.15	346.47
190.50	397.73	41.43	356.30
190.60	407.92	41.70	366.22
190.70	418.19	41.97	376.22
190.80	428.56	42.25	386.31
190.90	439.01	42.52	396.49
191.00	**449.54**	**42.78**	**406.75**

A5

HYDROCAD DETENTION REPORT


1S
54ac Developed Area
CB
6P
Low Flow Bypass
4P
Detention Basin
Subcat
Reach
Pond
Link
Drainage Diagram for RevParklandsQ10
Prepared by Barry Rands, P.E., Printed 10/18/2008
HydroCAD® 8.50 s/n 002942 © 2007 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
54.000	89	1/8 acre lots, 65% imp, HSG C (1S)
54.000		**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
54.000	HSG C	1S
0.000	HSG D	
0.000	Other	
54.000		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: 54ac Developed Area Runoff Area=54.000 ac 65.00% Impervious Runoff Depth>4.23"
Tc=24.5 min CN=89 Runoff=119.57 cfs 19.022 af

Pond 4P: Detention Basin Peak Elev=184.91' Storage=2.235 af Inflow=88.53 cfs 3.722 af
Outflow=32.88 cfs 3.698 af

Pond 6P: Low Flow Bypass Peak Elev=187.21' Inflow=119.57 cfs 19.022 af
Primary=31.04 cfs 15.300 af Secondary=88.53 cfs 3.722 af Outflow=119.57 cfs 19.022 af

Total Runoff Area = 54.000 ac Runoff Volume = 19.022 af Average Runoff Depth = 4.23"
35.00% Pervious = 18.900 ac 65.00% Impervious = 35.100 ac

Summary for Subcatchment 1S: 54ac Developed Area

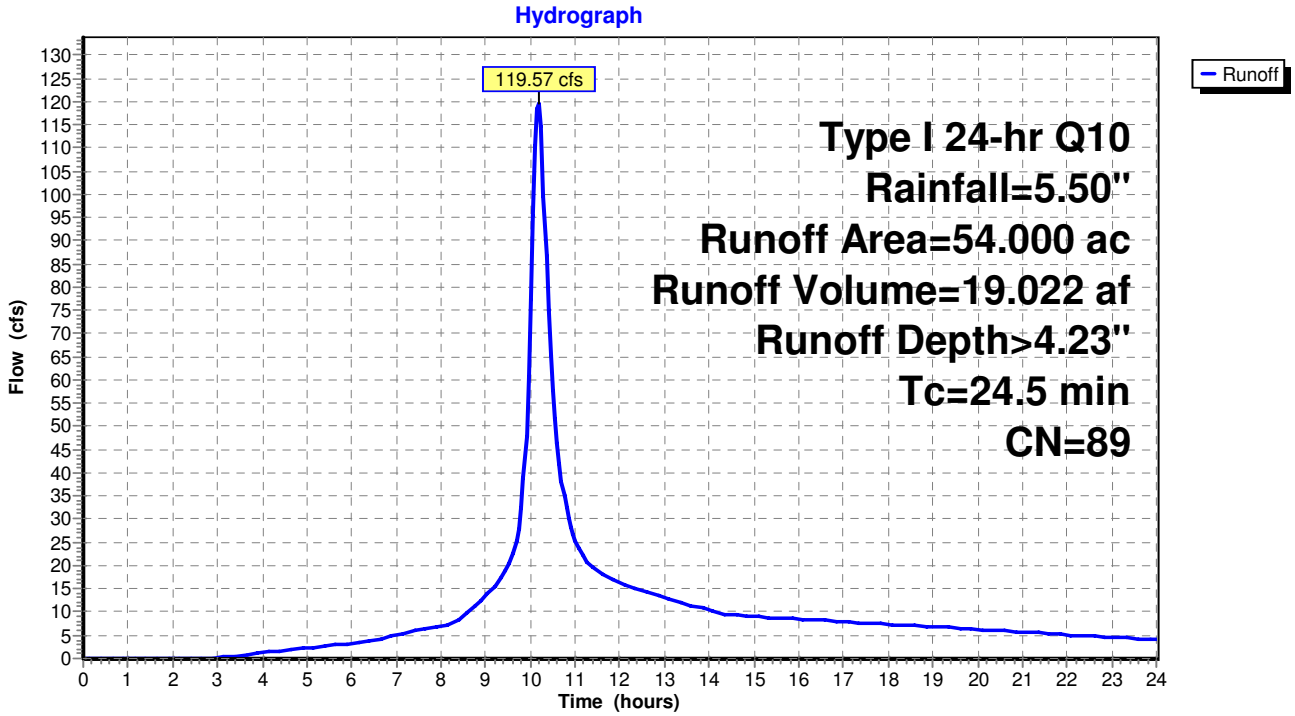
Runoff = 119.57 cfs @ 10.17 hrs, Volume= 19.022 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type I 24-hr Q10 Rainfall=5.50"

Area (ac)	CN	Description
54.000	89	1/8 acre lots, 65% imp, HSG C
18.900		Pervious Area
35.100		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.5					**Direct Entry,**

Subcatchment 1S: 54ac Developed Area



Summary for Pond 4P: Detention Basin

Inflow	=	88.53 cfs @	10.17 hrs,	Volume=	3.722 af
Outflow	=	32.88 cfs @	10.49 hrs,	Volume=	3.698 af, Atten= 63%, Lag= 19.0 min
Primary	=	32.88 cfs @	10.49 hrs,	Volume=	3.698 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 184.91' @ 10.49 hrs Surf.Area= 0.897 ac Storage= 2.235 af

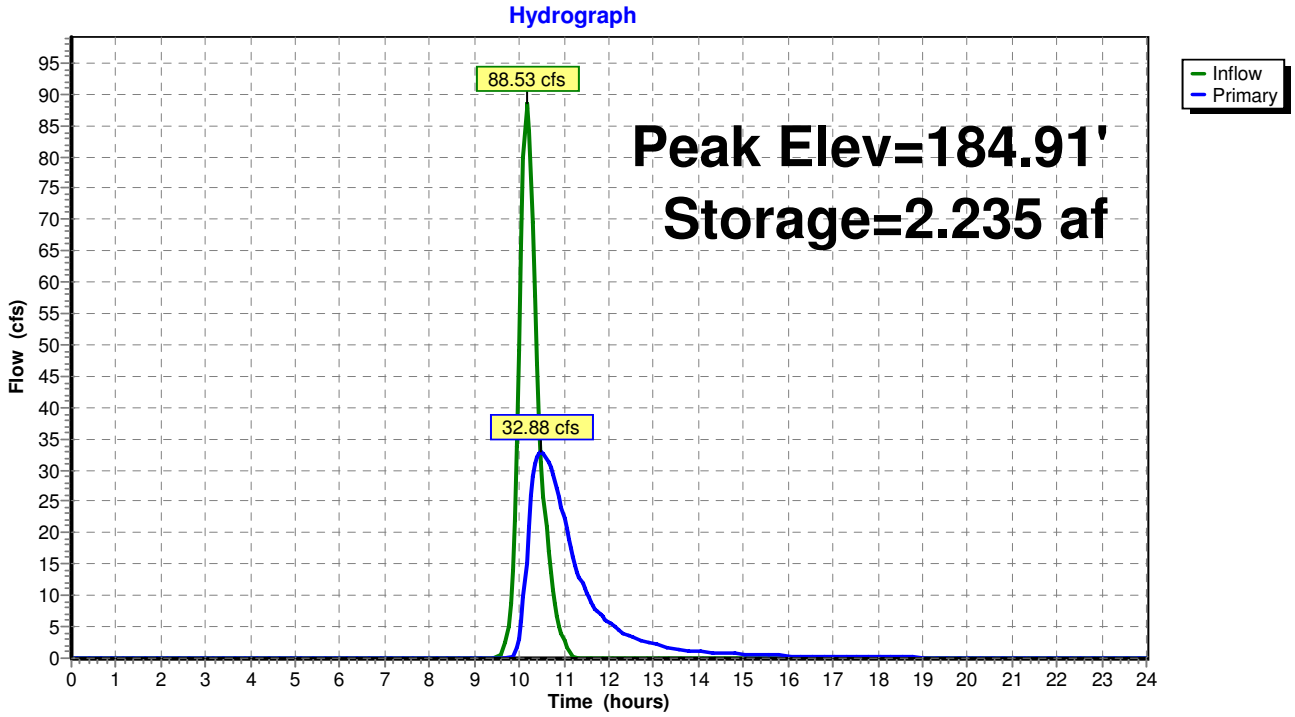
Plug-Flow detention time= 65.0 min calculated for 3.698 af (99% of inflow)
Center-of-Mass det. time= 64.7 min (679.9 - 615.2)

Volume	Invert	Avail.Storage	Storage Description
#1	182.00'	1.251 af	**148.00'W x 264.00'L x 7.00'H Prismatoid**
			6.279 af Overall - 3.152 af Embedded = 3.126 af x 40.0% Voids
#2	182.00'	2.744 af	**96.8"W x 58.0"H x 8.00'L CONSTORM 54** x 594 Inside #1
		3.994 af	Total Available Storage

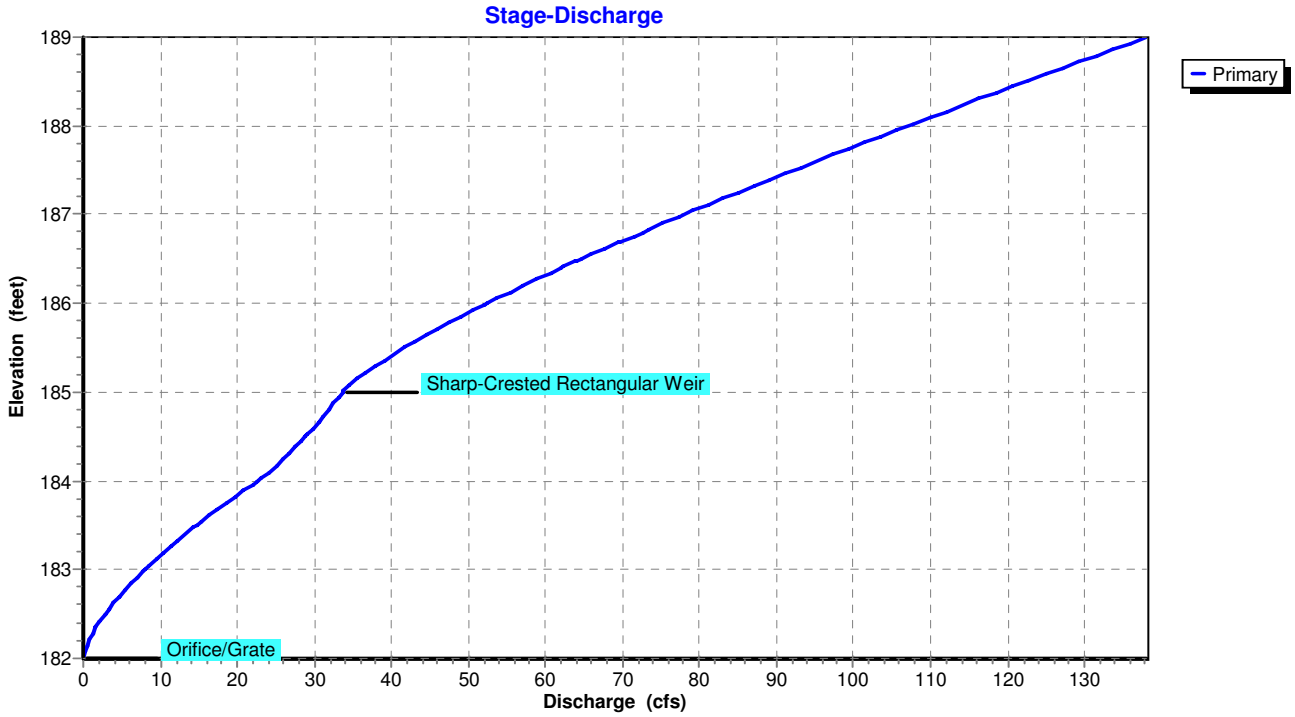
Device	Routing	Invert	Outlet Devices
#1	Primary	182.00'	**2.50' W x 2.00' H Vert. Orifice/Grate** C= 0.600
#2	Primary	185.00'	**3.4' long x 4.00' rise Sharp-Crested Rectangular Weir**
			2 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=32.85 cfs @ 10.49 hrs HW=184.91' TW=181.36' (Dynamic Tailwater)
└─**1=Orifice/Grate** (Orifice Controls 32.85 cfs @ 6.57 fps)
└─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Detention Basin



Pond 4P: Detention Basin



Summary for Pond 6P: Low Flow Bypass

[57] Hint: Peaked at 187.21' (Flood elevation advised)

Inflow Area =	54.000 ac,	65.00% Impervious,	Inflow Depth >	4.23"	for Q10 event
Inflow =	119.57 cfs @	10.17 hrs,	Volume=	19.022 af	
Outflow =	119.57 cfs @	10.17 hrs,	Volume=	19.022 af,	Atten= 0%, Lag= 0.0 min
Primary =	31.04 cfs @	10.17 hrs,	Volume=	15.300 af	
Secondary =	88.53 cfs @	10.17 hrs,	Volume=	3.722 af	

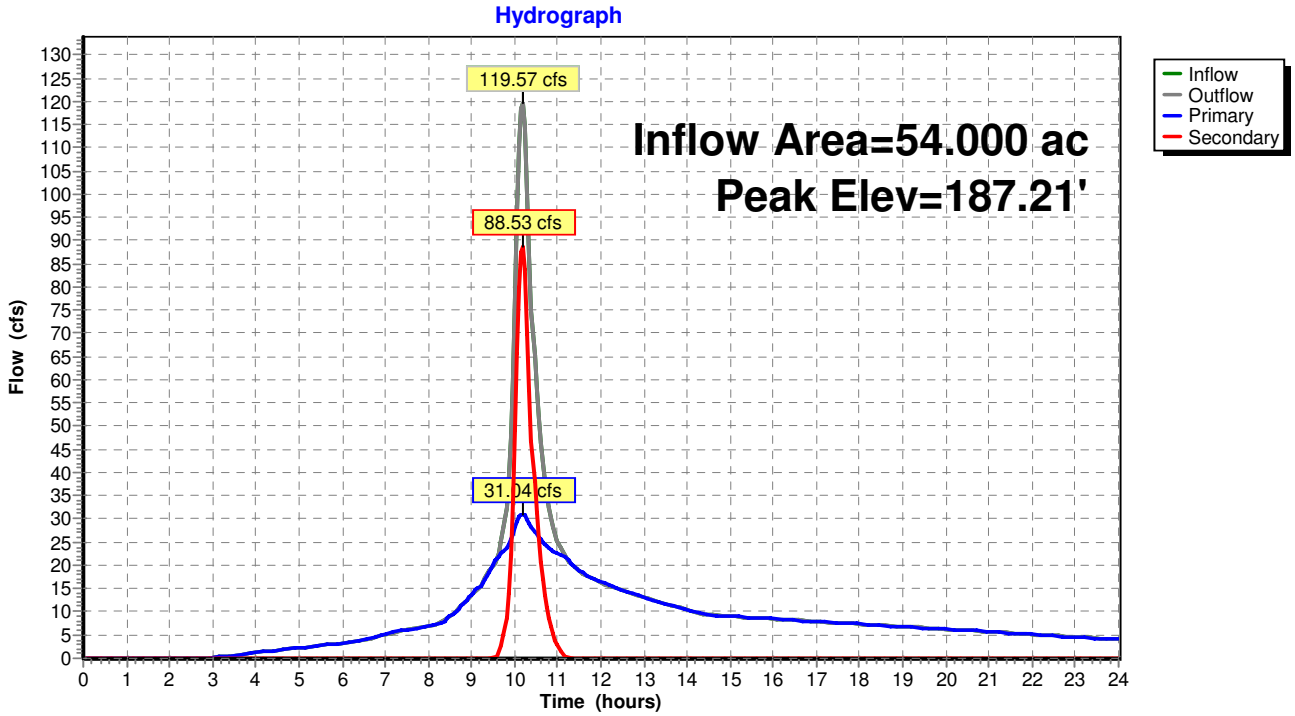
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 187.21' @ 10.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	185.00'	**8.0' long x 6.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height
#2	Primary	182.00'	**24.0" Vert. Orifice/Grate** C= 0.600

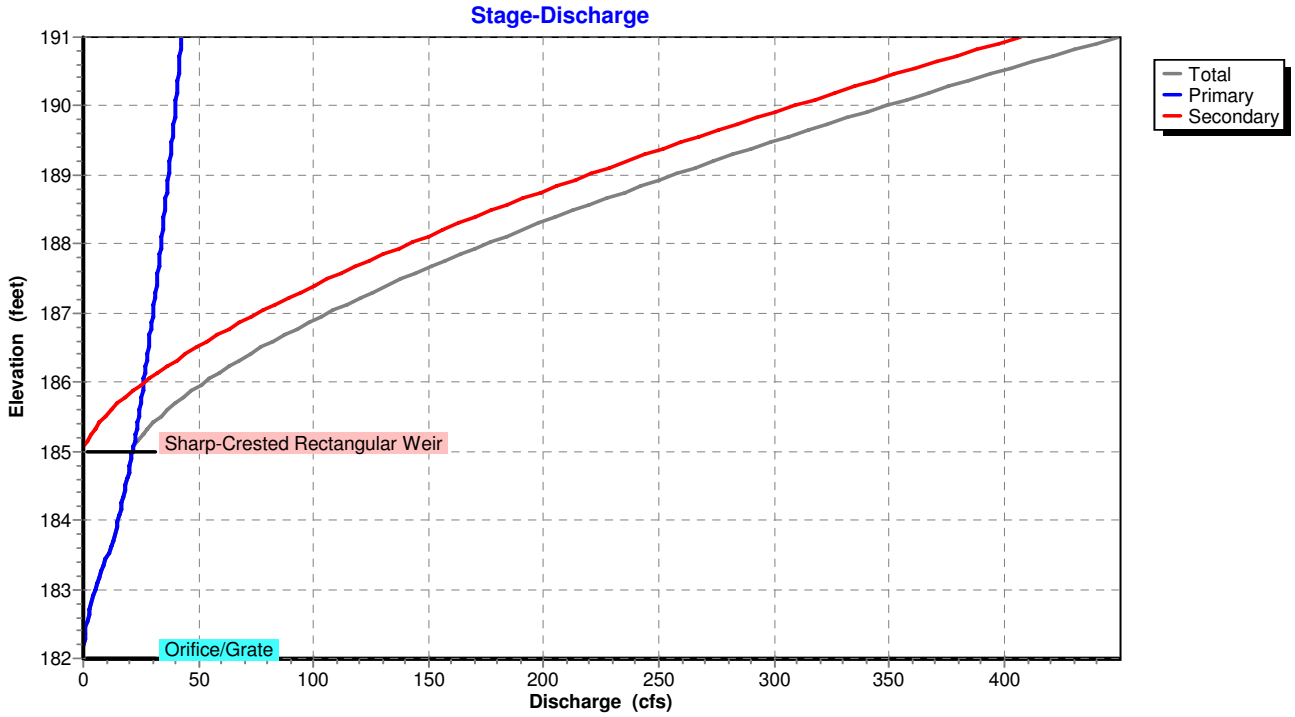
Primary OutFlow Max=30.98 cfs @ 10.17 hrs HW=187.19' TW=181.31' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 30.98 cfs @ 9.86 fps)

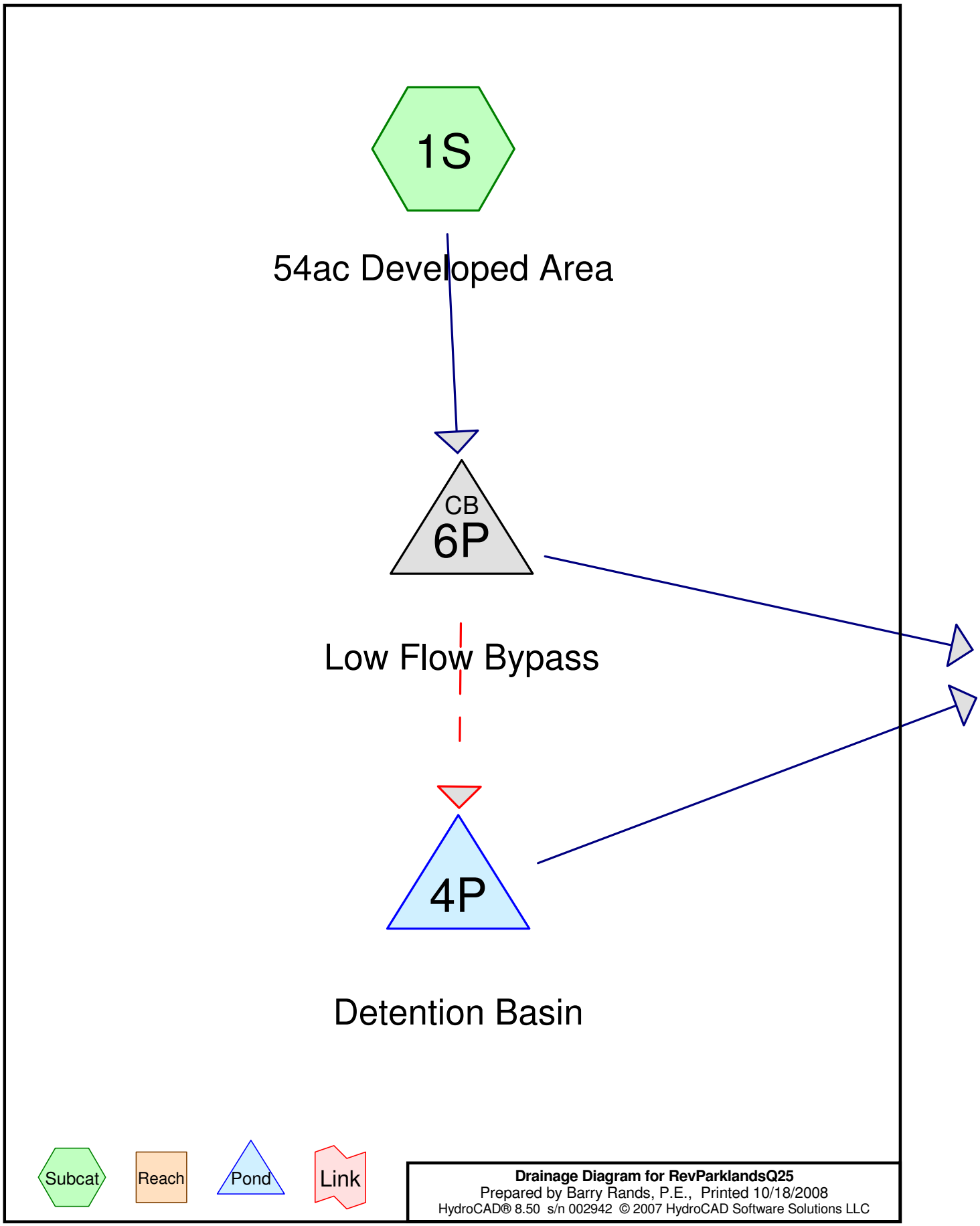
Secondary OutFlow Max=87.53 cfs @ 10.17 hrs HW=187.19' TW=183.70' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 87.53 cfs @ 5.28 fps)

Pond 6P: Low Flow Bypass



Pond 6P: Low Flow Bypass





Drainage Diagram for RevParklandsQ25
Prepared by Barry Rands, P.E., Printed 10/18/2008
HydroCAD® 8.50 s/n 002942 © 2007 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
54.000	89	1/8 acre lots, 65% imp, HSG C (1S)
54.000		**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
54.000	HSG C	1S
0.000	HSG D	
0.000	Other	
54.000		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: 54ac Developed Area Runoff Area=54.000 ac 65.00% Impervious Runoff Depth>5.28"
Tc=29.5 min CN=89 Runoff=135.01 cfs 23.763 af

Pond 4P: Detention Basin Peak Elev=185.87' Storage=2.833 af Inflow=103.12 cfs 5.376 af
Outflow=49.50 cfs 5.351 af

Pond 6P: Low Flow Bypass Peak Elev=187.44' Inflow=135.01 cfs 23.763 af
Primary=31.88 cfs 18.387 af Secondary=103.12 cfs 5.376 af Outflow=135.01 cfs 23.763 af

Total Runoff Area = 54.000 ac Runoff Volume = 23.763 af Average Runoff Depth = 5.28"
35.00% Pervious = 18.900 ac 65.00% Impervious = 35.100 ac

Summary for Subcatchment 1S: 54ac Developed Area

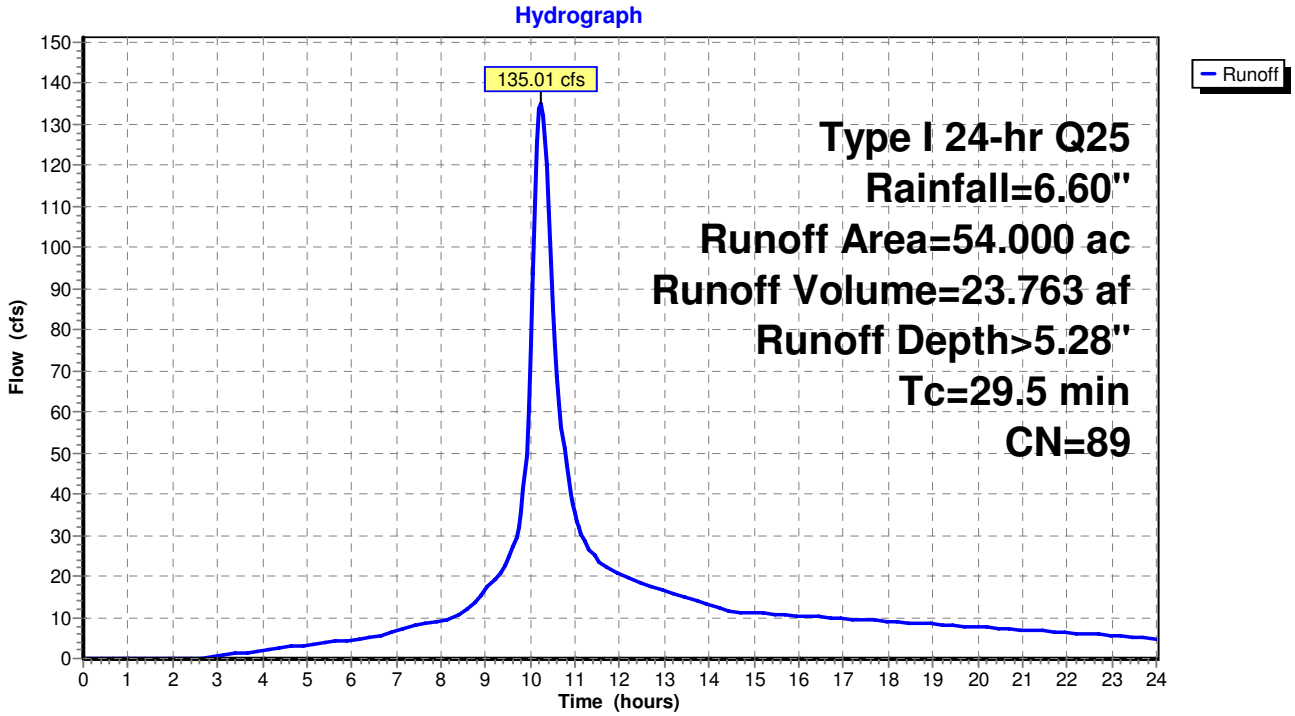
Runoff = 135.01 cfs @ 10.23 hrs, Volume= 23.763 af, Depth> 5.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type I 24-hr Q25 Rainfall=6.60"

Area (ac)	CN	Description
54.000	89	1/8 acre lots, 65% imp, HSG C
18.900		Pervious Area
35.100		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5					**Direct Entry,**

Subcatchment 1S: 54ac Developed Area



Summary for Pond 4P: Detention Basin

Inflow	=	103.12 cfs @	10.23 hrs,	Volume=	5.376 af
Outflow	=	49.50 cfs @	10.54 hrs,	Volume=	5.351 af, Atten= 52%, Lag= 18.5 min
Primary	=	49.50 cfs @	10.54 hrs,	Volume=	5.351 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 185.87' @ 10.54 hrs Surf.Area= 0.897 ac Storage= 2.833 af

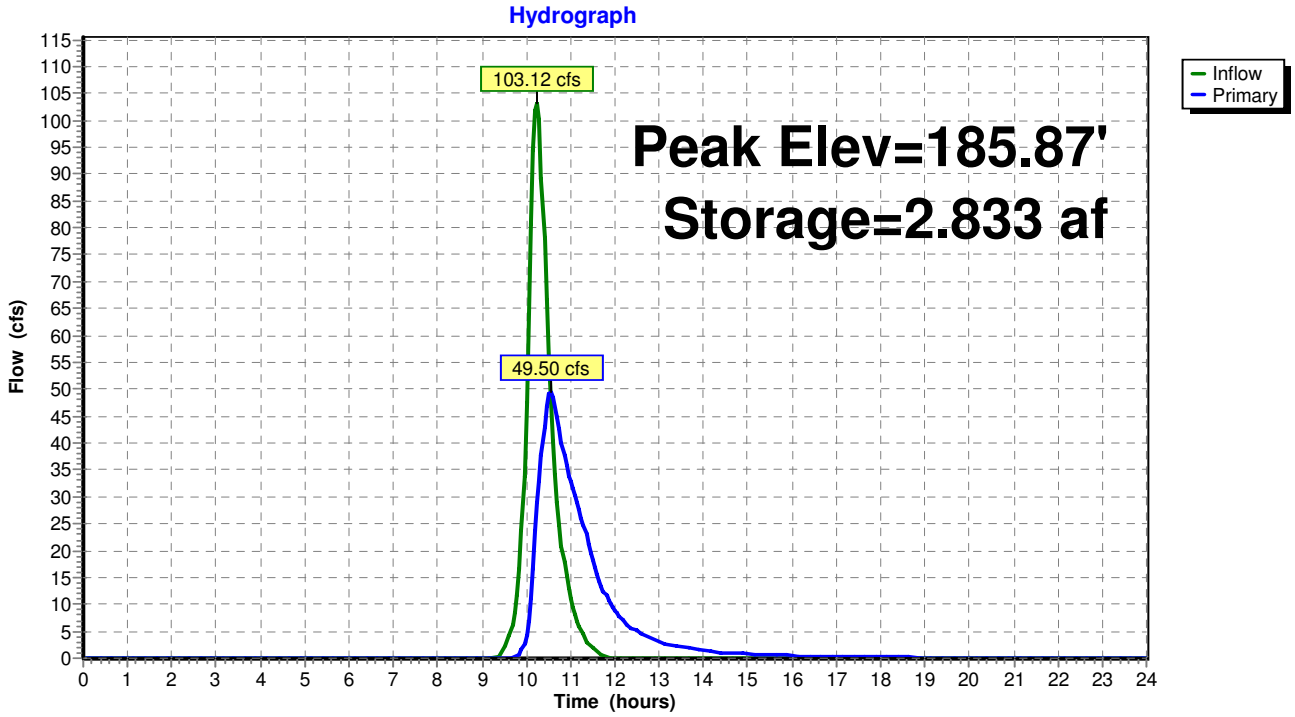
Plug-Flow detention time= 57.0 min calculated for 5.340 af (99% of inflow)
Center-of-Mass det. time= 57.9 min (678.6 - 620.7)

Volume	Invert	Avail.Storage	Storage Description
#1	182.00'	1.251 af	**148.00'W x 264.00'L x 7.00'H Prismatoid**
			6.279 af Overall - 3.152 af Embedded = 3.126 af x 40.0% Voids
#2	182.00'	2.744 af	**96.8"W x 58.0"H x 8.00'L CONSTORM 54** x 594 Inside #1
		3.994 af	Total Available Storage

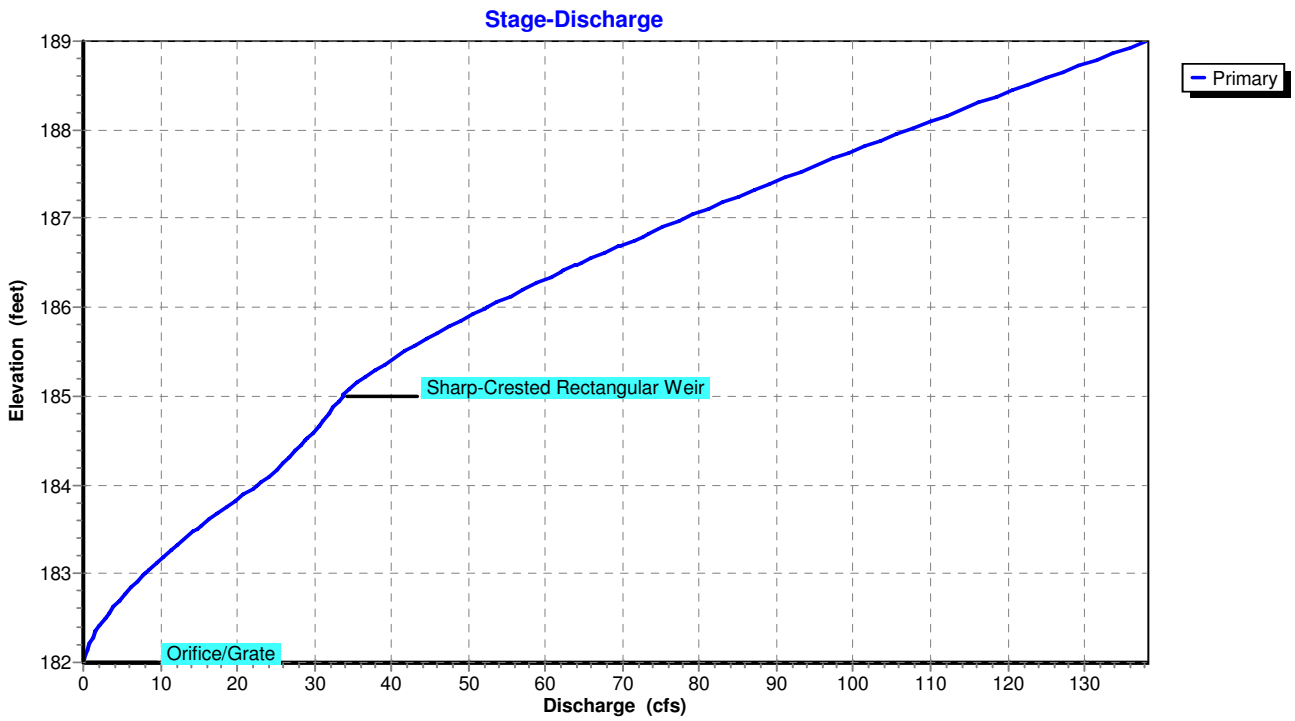
Device	Routing	Invert	Outlet Devices
#1	Primary	182.00'	**2.50' W x 2.00' H Vert. Orifice/Grate** C= 0.600
#2	Primary	185.00'	**3.4' long x 4.00' rise Sharp-Crested Rectangular Weir**
			2 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=49.40 cfs @ 10.54 hrs HW=185.87' TW=181.43' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 40.56 cfs @ 8.11 fps)
- **2=Sharp-Crested Rectangular Weir** (Weir Controls 8.84 cfs @ 3.16 fps)

Pond 4P: Detention Basin



Pond 4P: Detention Basin



Summary for Pond 6P: Low Flow Bypass

[57] Hint: Peaked at 187.44' (Flood elevation advised)

Inflow Area =	54.000 ac,	65.00% Impervious,	Inflow Depth >	5.28"	for Q25 event
Inflow =	135.01 cfs @	10.23 hrs,	Volume=	23.763 af	
Outflow =	135.01 cfs @	10.23 hrs,	Volume=	23.763 af,	Atten= 0%, Lag= 0.0 min
Primary =	31.88 cfs @	10.23 hrs,	Volume=	18.387 af	
Secondary =	103.12 cfs @	10.23 hrs,	Volume=	5.376 af	

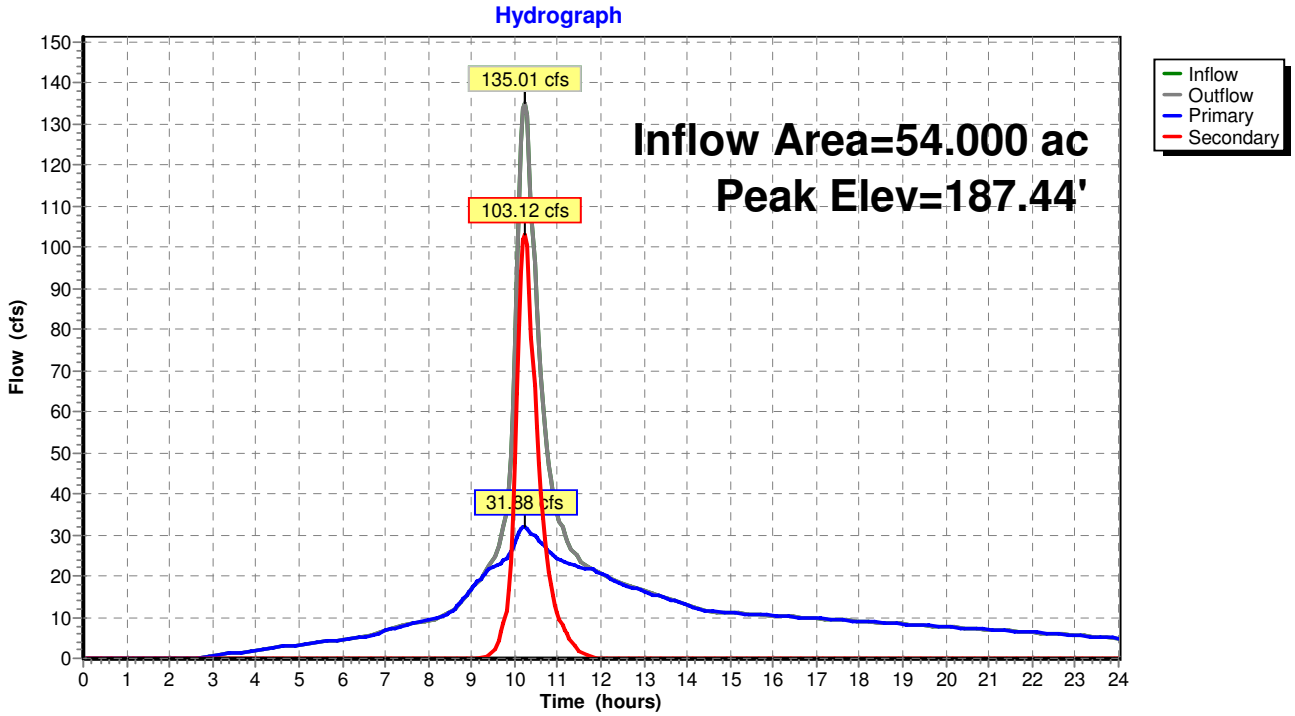
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 187.44' @ 10.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	185.00'	**8.0' long x 6.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height
#2	Primary	182.00'	**24.0" Vert. Orifice/Grate** C= 0.600

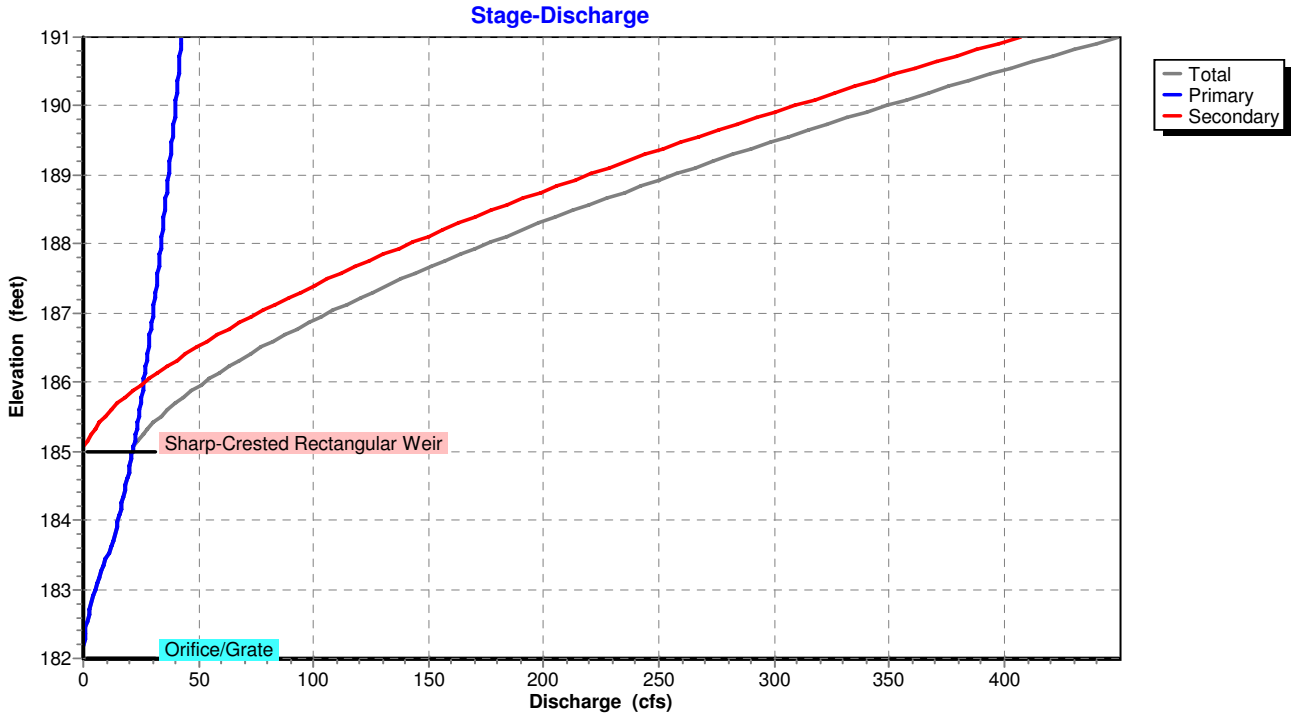
Primary OutFlow Max=31.85 cfs @ 10.23 hrs HW=187.43' TW=181.35' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 31.85 cfs @ 10.14 fps)

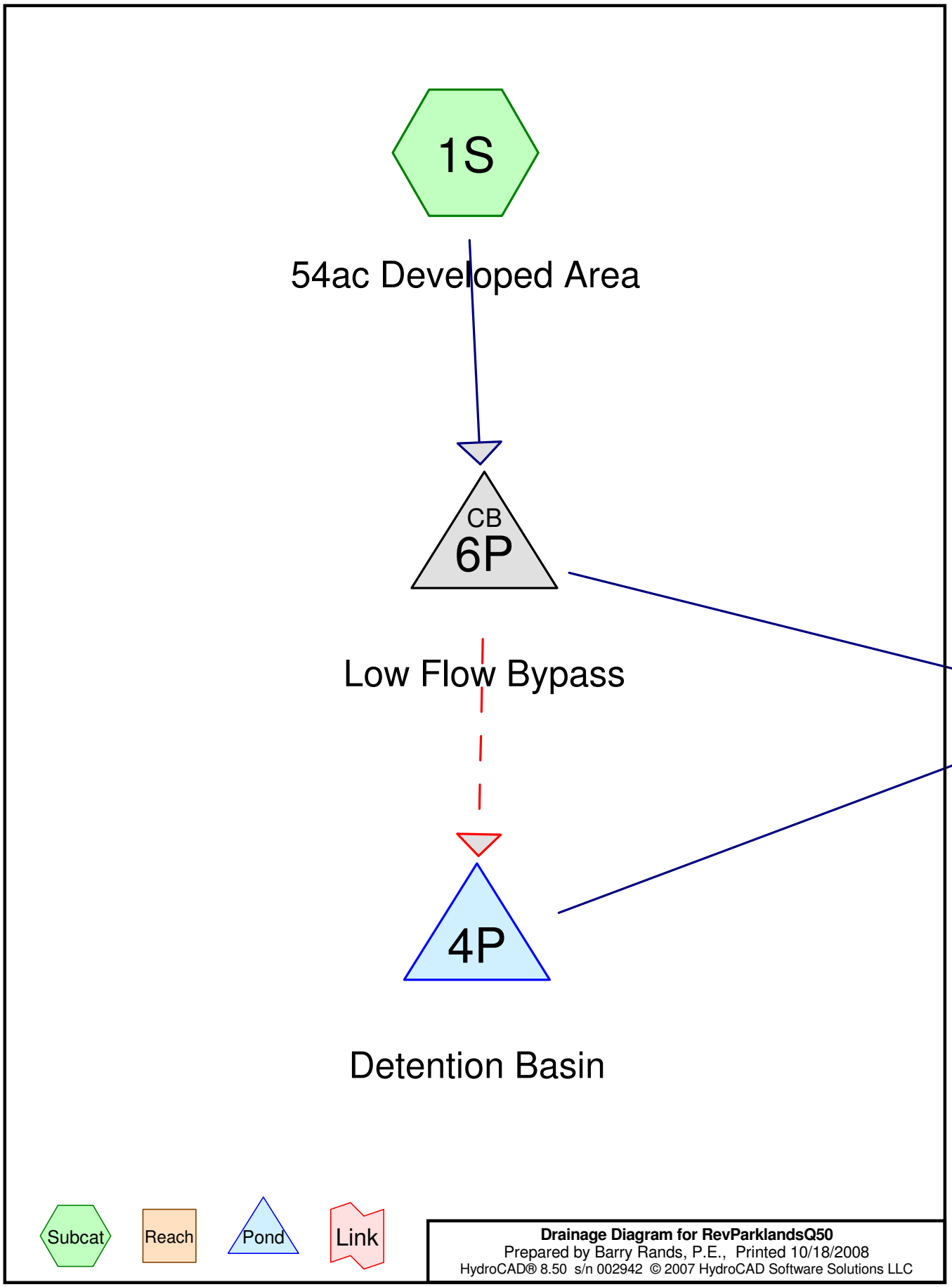
Secondary OutFlow Max=102.46 cfs @ 10.23 hrs HW=187.43' TW=184.34' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 102.46 cfs @ 5.61 fps)

Pond 6P: Low Flow Bypass



Pond 6P: Low Flow Bypass





Drainage Diagram for RevParklandsQ50
Prepared by Barry Rands, P.E., Printed 10/18/2008
HydroCAD® 8.50 s/n 002942 © 2007 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
54.000	89	1/8 acre lots, 65% imp, HSG C (1S)
54.000		**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
54.000	HSG C	1S
0.000	HSG D	
0.000	Other	
54.000		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: 54ac Developed Area Runoff Area=54.000 ac 65.00% Impervious Runoff Depth>6.16"
Tc=27.5 min CN=89 Runoff=162.71 cfs 27.707 af

Pond 4P: Detention Basin Peak Elev=186.96' Storage=3.263 af Inflow=129.45 cfs 6.929 af
Outflow=76.97 cfs 6.904 af

Pond 6P: Low Flow Bypass Peak Elev=187.84' Inflow=162.71 cfs 27.707 af
Primary=33.26 cfs 20.778 af Secondary=129.45 cfs 6.929 af Outflow=162.71 cfs 27.707 af

Total Runoff Area = 54.000 ac Runoff Volume = 27.707 af Average Runoff Depth = 6.16"
35.00% Pervious = 18.900 ac 65.00% Impervious = 35.100 ac

Summary for Subcatchment 1S: 54ac Developed Area

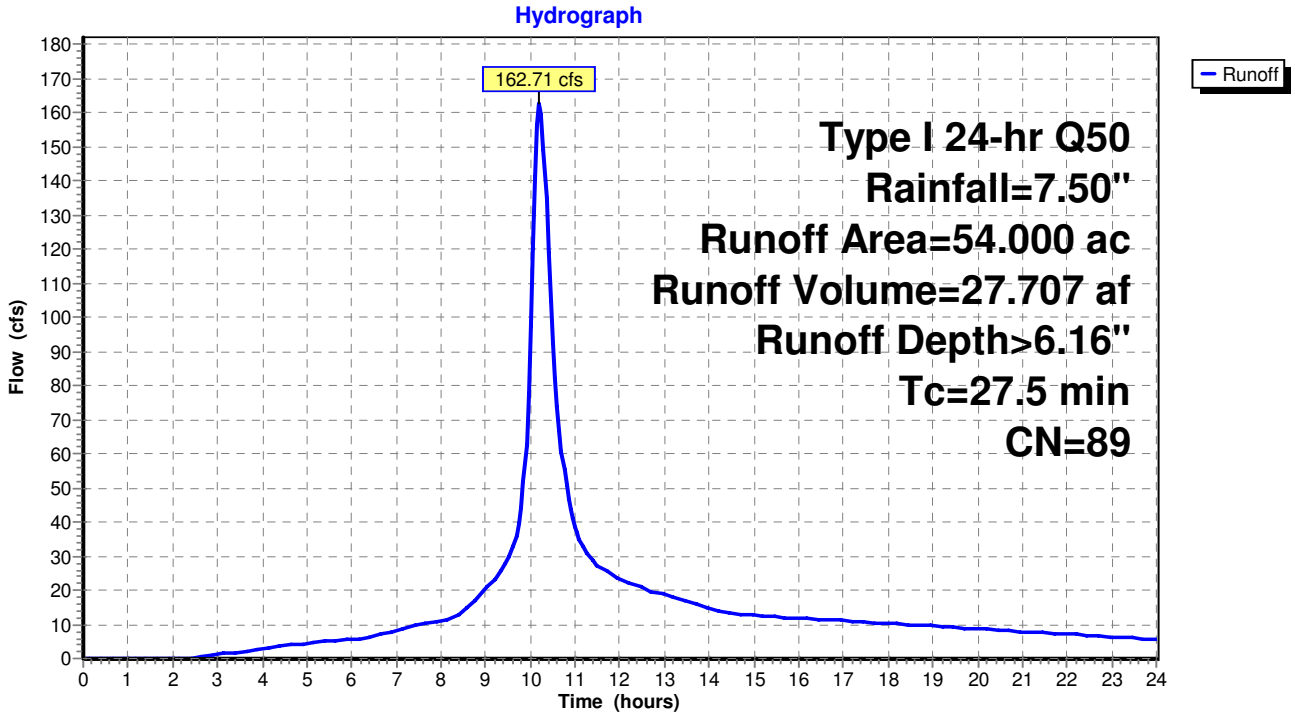
Runoff = 162.71 cfs @ 10.21 hrs, Volume= 27.707 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type I 24-hr Q50 Rainfall=7.50"

Area (ac)	CN	Description
54.000	89	1/8 acre lots, 65% imp, HSG C
18.900		Pervious Area
35.100		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.5					**Direct Entry,**

Subcatchment 1S: 54ac Developed Area



Summary for Pond 4P: Detention Basin

Inflow	=	129.45 cfs @	10.21 hrs,	Volume=	6.929 af
Outflow	=	76.97 cfs @	10.44 hrs,	Volume=	6.904 af, Atten= 41%, Lag= 13.9 min
Primary	=	76.97 cfs @	10.44 hrs,	Volume=	6.904 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 186.96' @ 10.44 hrs Surf.Area= 0.897 ac Storage= 3.263 af

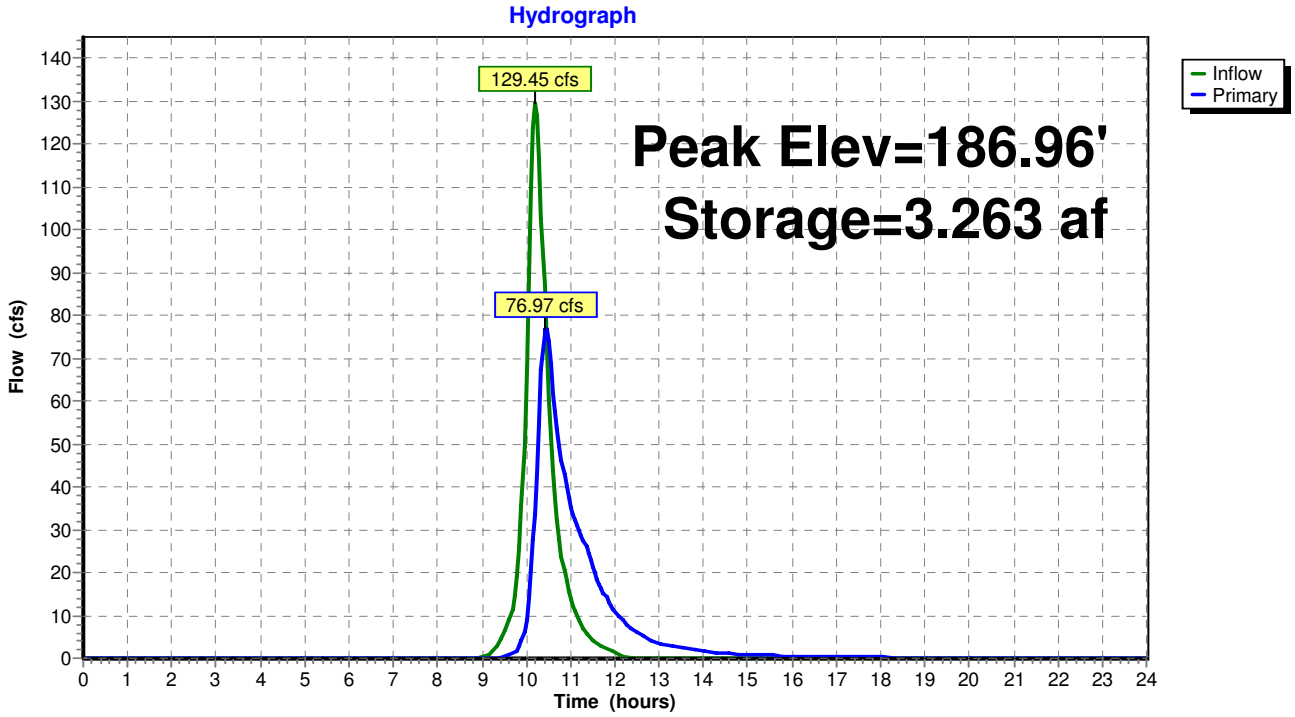
Plug-Flow detention time= 52.2 min calculated for 6.904 af (100% of inflow)
Center-of-Mass det. time= 51.8 min (671.9 - 620.0)

Volume	Invert	Avail.Storage	Storage Description
#1	182.00'	1.251 af	**148.00'W x 264.00'L x 7.00'H Prismatoid**
			6.279 af Overall - 3.152 af Embedded = 3.126 af x 40.0% Voids
#2	182.00'	2.744 af	**96.8"W x 58.0"H x 8.00'L CONSTORM 54** x 594 Inside #1
		3.994 af	Total Available Storage

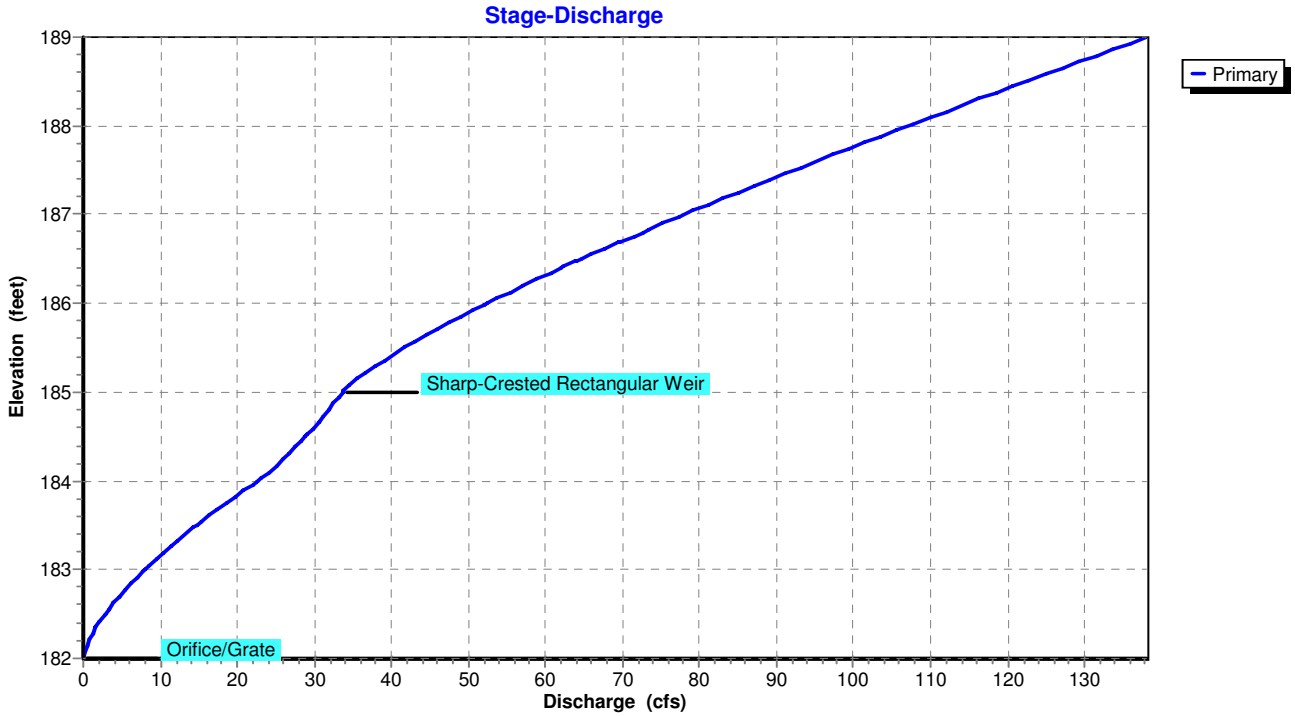
Device	Routing	Invert	Outlet Devices
#1	Primary	182.00'	**2.50' W x 2.00' H Vert. Orifice/Grate** C= 0.600
#2	Primary	185.00'	**3.4' long x 4.00' rise Sharp-Crested Rectangular Weir**
			2 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=76.64 cfs @ 10.44 hrs HW=186.95' TW=181.53' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 47.71 cfs @ 9.54 fps)
- **2=Sharp-Crested Rectangular Weir** (Weir Controls 28.92 cfs @ 4.93 fps)

Pond 4P: Detention Basin



Pond 4P: Detention Basin



Summary for Pond 6P: Low Flow Bypass

[57] Hint: Peaked at 187.84' (Flood elevation advised)

Inflow Area =	54.000 ac,	65.00% Impervious,	Inflow Depth >	6.16"	for Q50 event
Inflow =	162.71 cfs @	10.21 hrs,	Volume=	27.707 af	
Outflow =	162.71 cfs @	10.21 hrs,	Volume=	27.707 af,	Atten= 0%, Lag= 0.0 min
Primary =	33.26 cfs @	10.21 hrs,	Volume=	20.778 af	
Secondary =	129.45 cfs @	10.21 hrs,	Volume=	6.929 af	

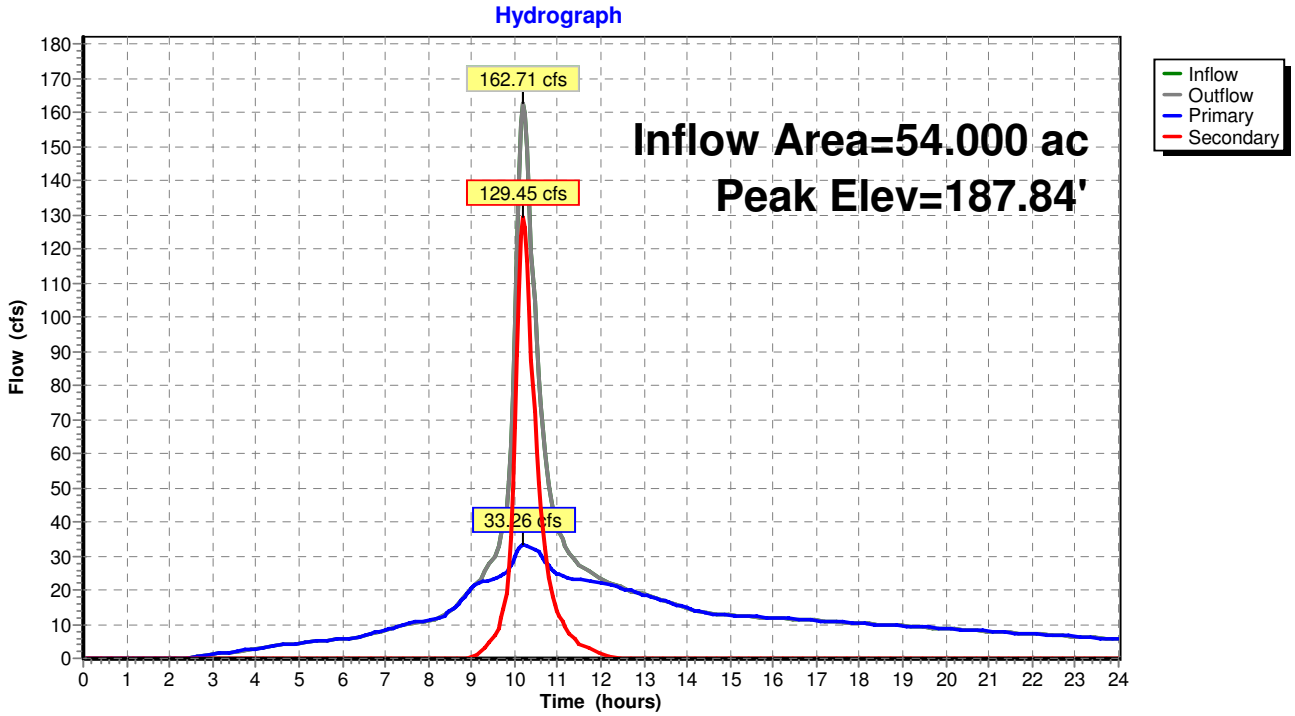
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 187.84' @ 10.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	185.00'	**8.0' long x 6.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height
#2	Primary	182.00'	**24.0" Vert. Orifice/Grate** C= 0.600

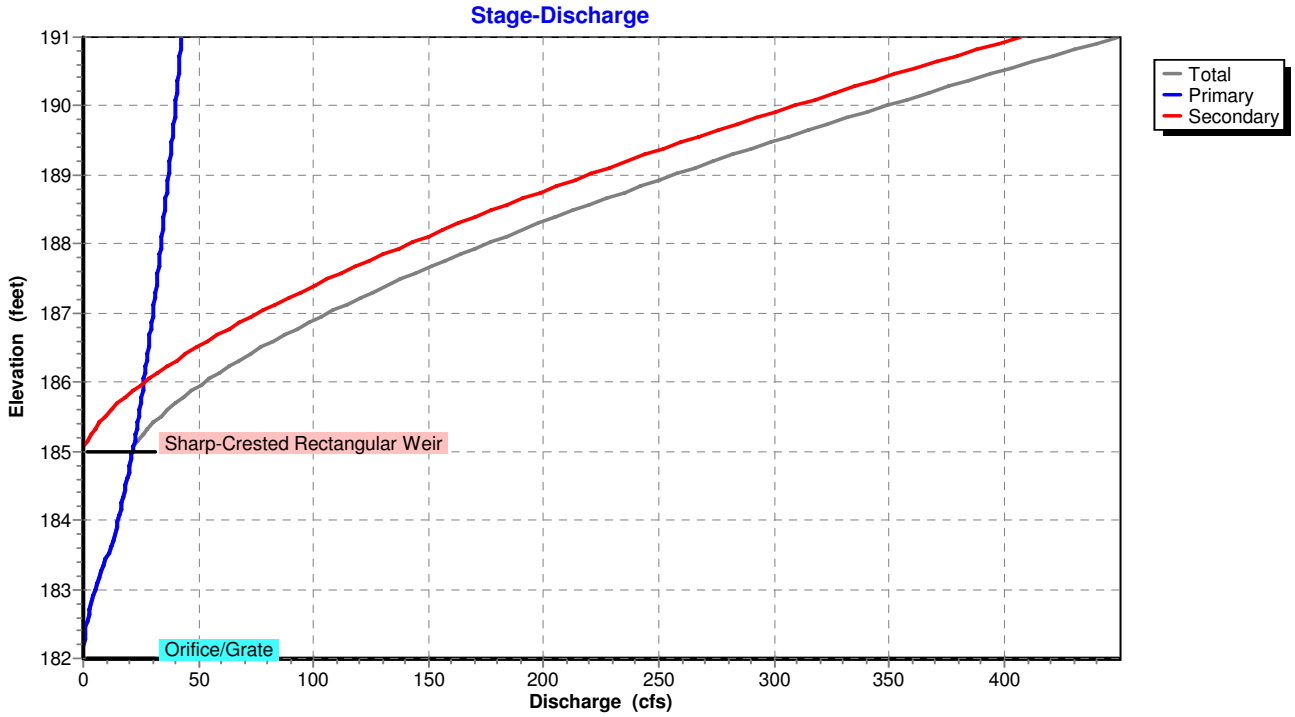
Primary OutFlow Max=33.23 cfs @ 10.21 hrs HW=187.83' TW=181.39' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 33.23 cfs @ 10.58 fps)

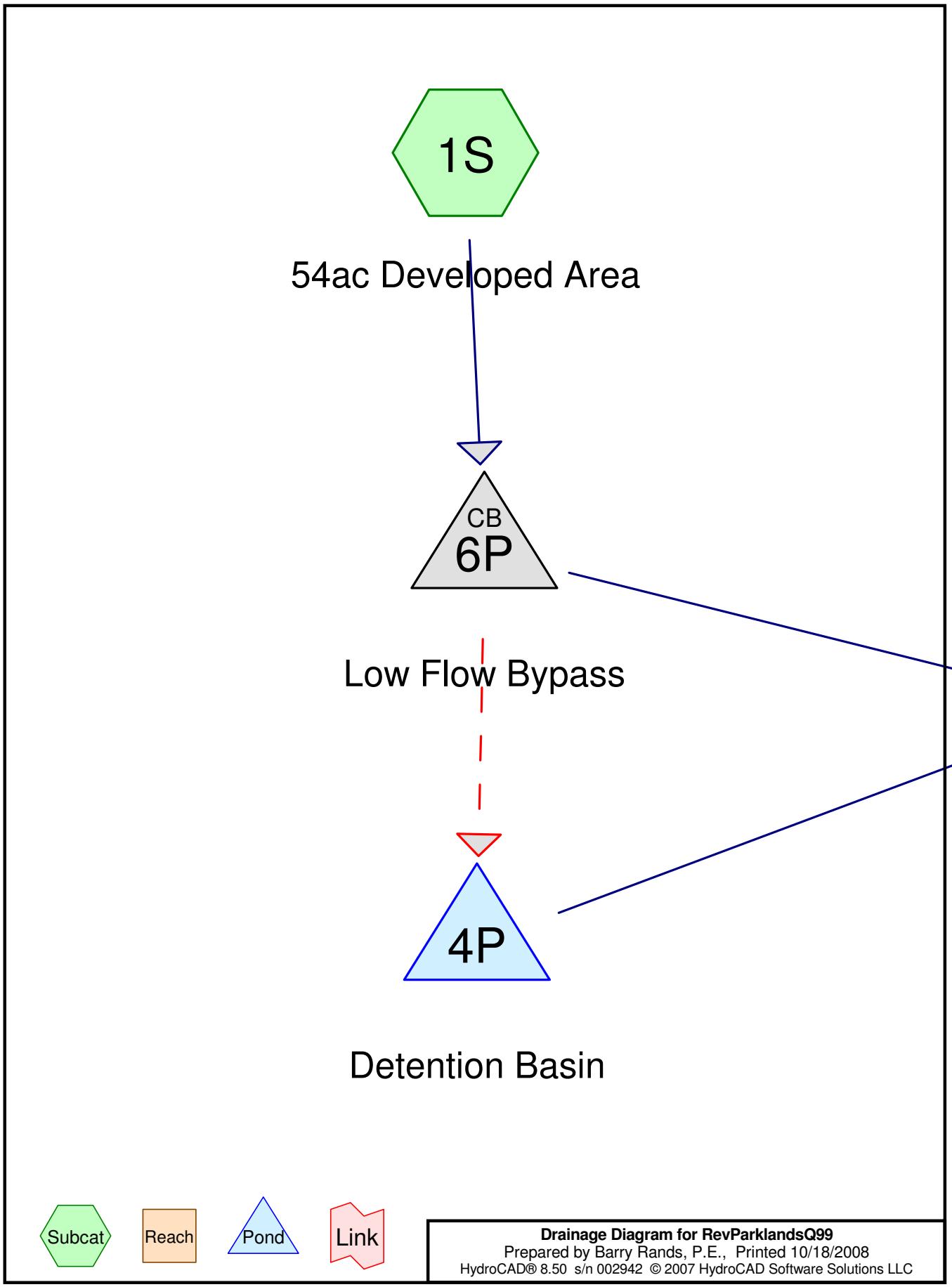
Secondary OutFlow Max=128.81 cfs @ 10.21 hrs HW=187.83' TW=185.07' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 128.81 cfs @ 6.13 fps)

Pond 6P: Low Flow Bypass



Pond 6P: Low Flow Bypass





Drainage Diagram for RevParklandsQ99
Prepared by Barry Rands, P.E., Printed 10/18/2008
HydroCAD® 8.50 s/n 002942 © 2007 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
54.000	89	1/8 acre lots, 65% imp, HSG C (1S)
54.000		**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
54.000	HSG C	1S
0.000	HSG D	
0.000	Other	
54.000		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: 54ac Developed Area Runoff Area=54.000 ac 65.00% Impervious Runoff Depth>6.94"
Tc=23.5 min CN=89 Runoff=198.32 cfs 31.249 af

Pond 4P: Detention Basin Peak Elev=187.97' Storage=3.624 af Inflow=163.47 cfs 8.443 af
Outflow=106.15 cfs 8.416 af

Pond 6P: Low Flow Bypass Peak Elev=188.46' Inflow=198.32 cfs 31.249 af
Primary=35.34 cfs 22.807 af Secondary=163.47 cfs 8.443 af Outflow=198.32 cfs 31.249 af

Total Runoff Area = 54.000 ac Runoff Volume = 31.249 af Average Runoff Depth = 6.94"
35.00% Pervious = 18.900 ac 65.00% Impervious = 35.100 ac

Summary for Subcatchment 1S: 54ac Developed Area

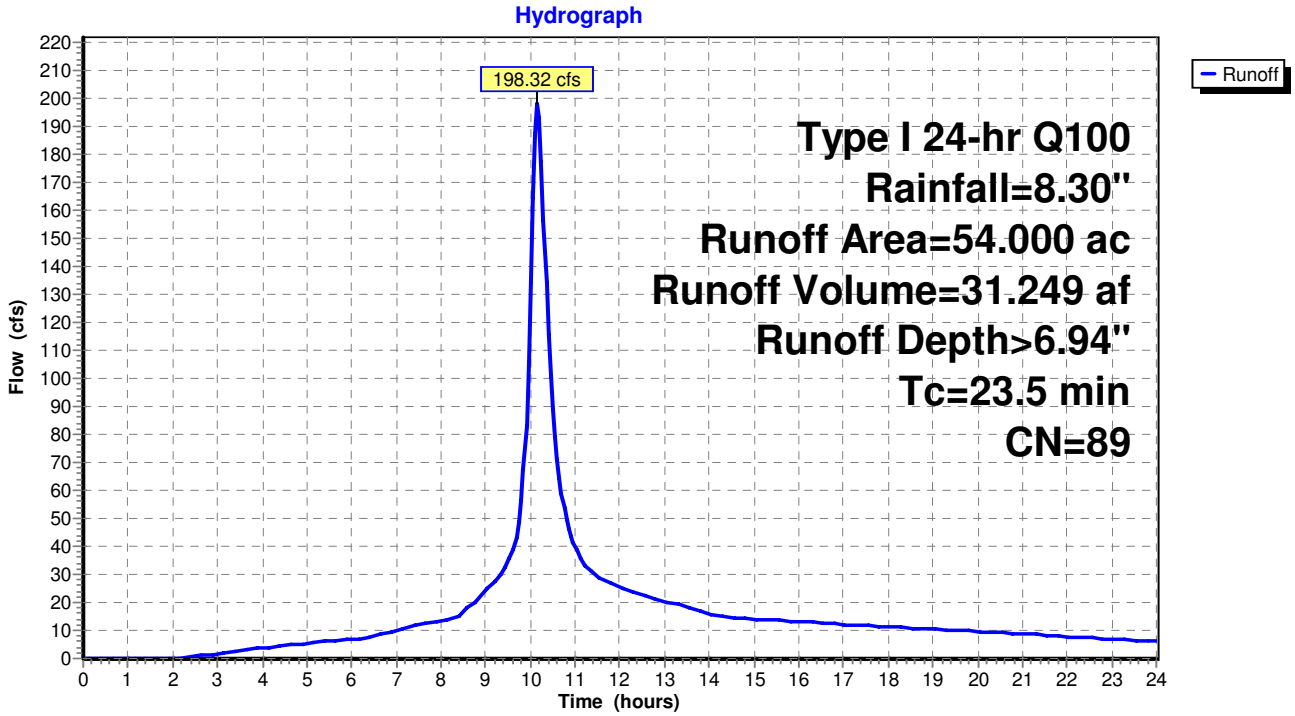
Runoff = 198.32 cfs @ 10.16 hrs, Volume= 31.249 af, Depth> 6.94"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type I 24-hr Q100 Rainfall=8.30"

Area (ac)	CN	Description
54.000	89	1/8 acre lots, 65% imp, HSG C
18.900		Pervious Area
35.100		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.5					**Direct Entry,**

Subcatchment 1S: 54ac Developed Area



Summary for Pond 4P: Detention Basin

Inflow	=	163.47 cfs @	10.16 hrs,	Volume=	8.443 af
Outflow	=	106.15 cfs @	10.34 hrs,	Volume=	8.416 af, Atten= 35%, Lag= 10.7 min
Primary	=	106.15 cfs @	10.34 hrs,	Volume=	8.416 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 187.97' @ 10.34 hrs Surf.Area= 0.897 ac Storage= 3.624 af

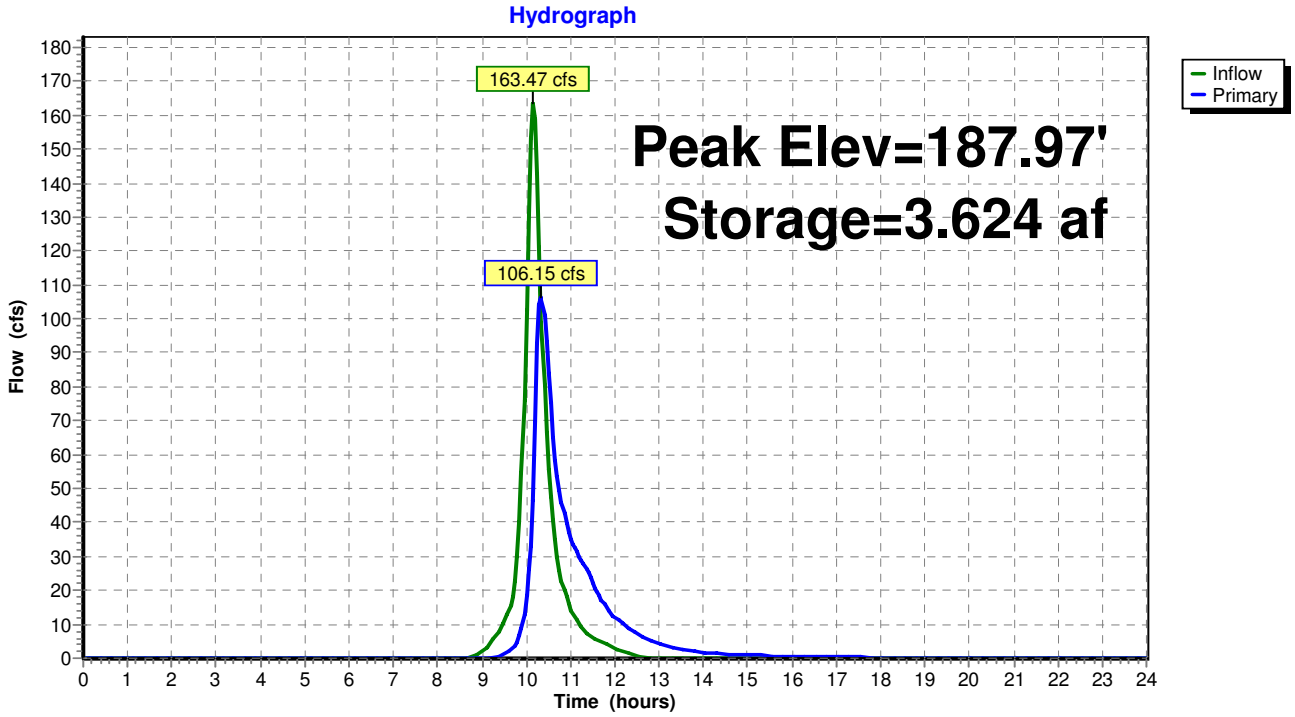
Plug-Flow detention time= 47.6 min calculated for 8.416 af (100% of inflow)
Center-of-Mass det. time= 47.2 min (664.8 - 617.7)

Volume	Invert	Avail.Storage	Storage Description
#1	182.00'	1.251 af	**148.00'W x 264.00'L x 7.00'H Prismatoid**
			6.279 af Overall - 3.152 af Embedded = 3.126 af x 40.0% Voids
#2	182.00'	2.744 af	**96.8"W x 58.0"H x 8.00'L CONSTORM 54** x 594 Inside #1
		3.994 af	Total Available Storage

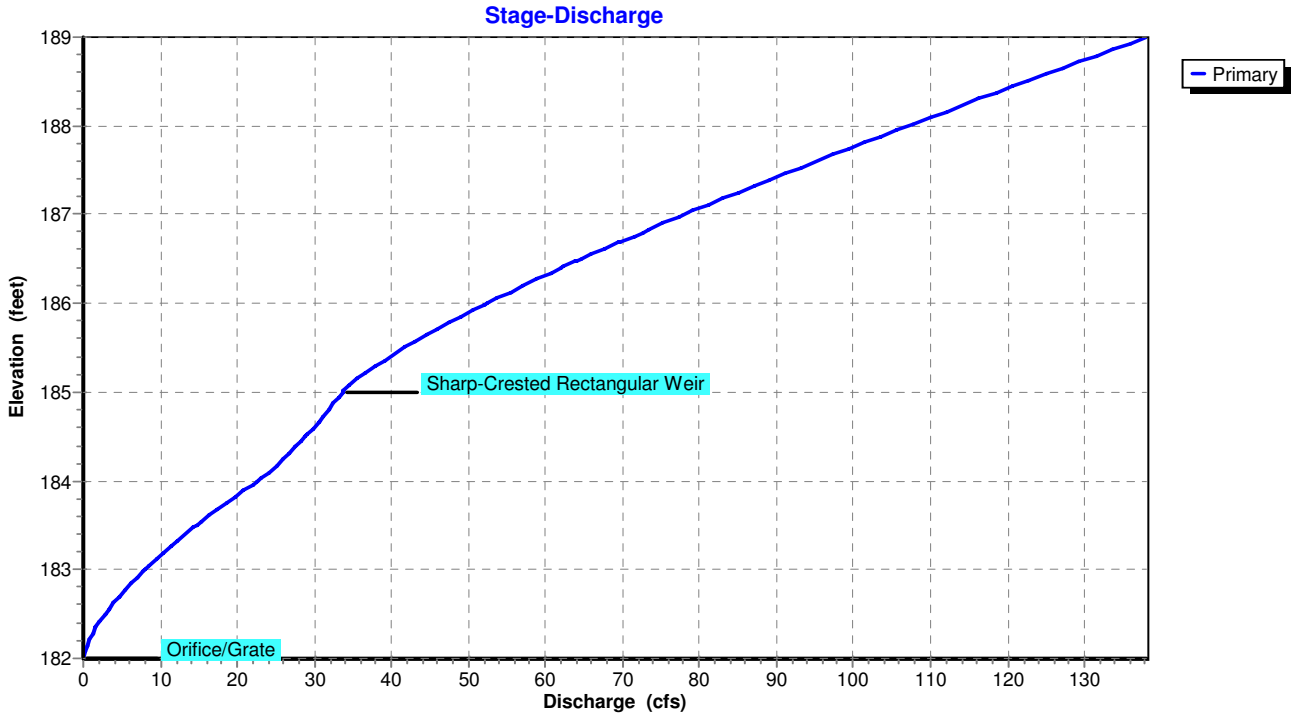
Device	Routing	Invert	Outlet Devices
#1	Primary	182.00'	**2.50' W x 2.00' H Vert. Orifice/Grate** C= 0.600
#2	Primary	185.00'	**3.4' long x 4.00' rise Sharp-Crested Rectangular Weir**
			2 End Contraction(s) 3.0' Crest Height

Primary OutFlow Max=105.57 cfs @ 10.34 hrs HW=187.95' TW=181.63' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 53.46 cfs @ 10.69 fps)
- **2=Sharp-Crested Rectangular Weir** (Weir Controls 52.11 cfs @ 6.29 fps)

Pond 4P: Detention Basin



Pond 4P: Detention Basin



Summary for Pond 6P: Low Flow Bypass

[57] Hint: Peaked at 188.46' (Flood elevation advised)

Inflow Area =	54.000 ac,	65.00% Impervious,	Inflow Depth >	6.94"	for Q100 event
Inflow =	198.32 cfs @	10.16 hrs,	Volume=	31.249 af	
Outflow =	198.32 cfs @	10.16 hrs,	Volume=	31.249 af,	Atten= 0%, Lag= 0.0 min
Primary =	35.34 cfs @	10.34 hrs,	Volume=	22.807 af	
Secondary =	163.47 cfs @	10.16 hrs,	Volume=	8.443 af	

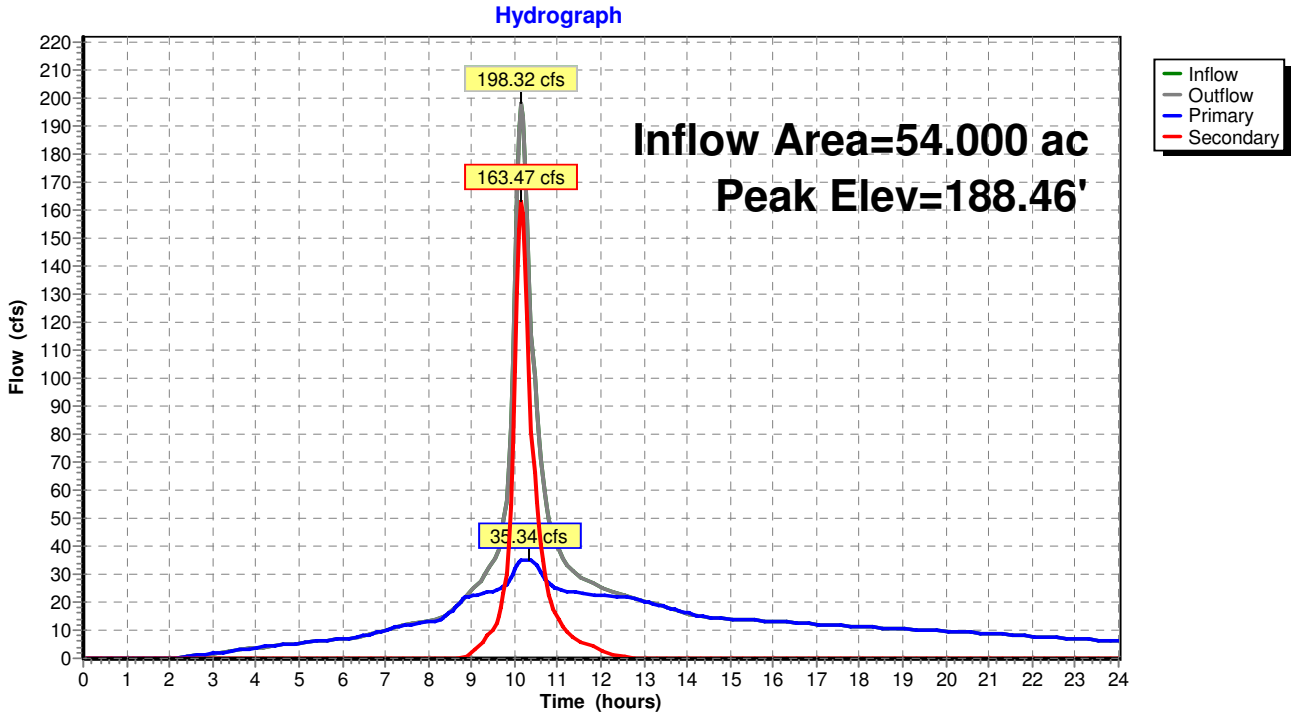
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 188.46' @ 10.34 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	185.00'	**8.0' long x 6.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 3.0' Crest Height
#2	Primary	182.00'	**24.0" Vert. Orifice/Grate** C= 0.600

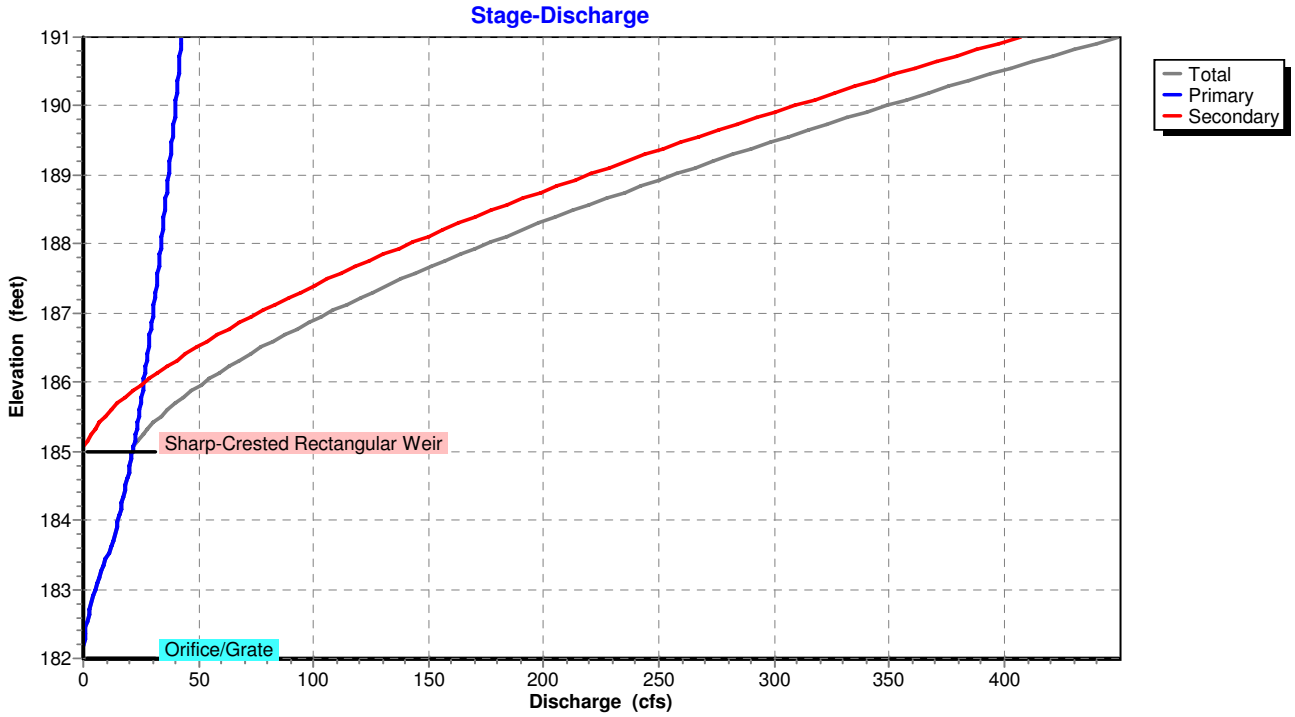
Primary OutFlow Max=35.29 cfs @ 10.34 hrs HW=188.44' TW=181.63' (Dynamic Tailwater)
└─**2=Orifice/Grate** (Orifice Controls 35.29 cfs @ 11.23 fps)

Secondary OutFlow Max=157.80 cfs @ 10.16 hrs HW=188.30' TW=185.91' (Dynamic Tailwater)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 157.80 cfs @ 6.52 fps)

Pond 6P: Low Flow Bypass



Pond 6P: Low Flow Bypass

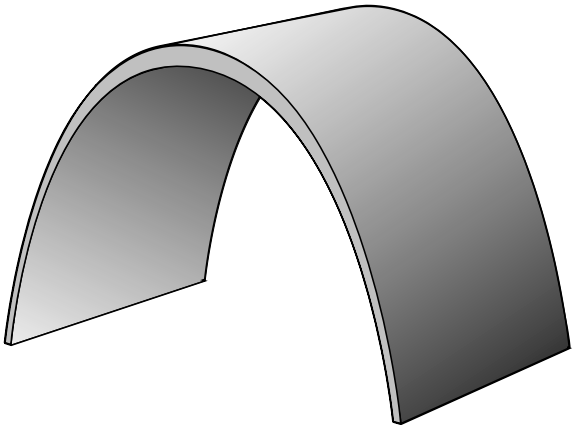


A6

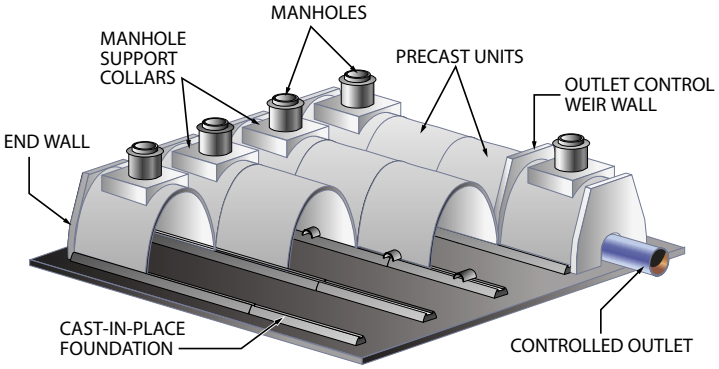
UNDERGROUND DETENTION MATERIALS

CON/STORM

CON/STORM™ is a modular precast system designed to provide economic concrete below-grade detention. The fundamental element of the system is the distinctive high-profile arch shaped unit. CON/STORM concrete detention facilities provide tremendous versatility in accommodating footprint needs. CON/STORM detention systems are designed for HS 20-44 and HS 25-44 loading with as little as 1′-0″ of cover to bottom of flexible pavement. Each element of the CON/STORM precast detention system weighs 2.65 tons or less. The lightweight units have been designed to minimize freight costs and can be set into place without heavy equipment thereby reducing installation costs. The system is most commonly used on sites in which the depth from finished grade to storm sewer outlet elevation is less than 10′. However, the system can be utilized in high cover situations as well. The arch shape of the unit also makes it a preferred solution when using stone backfill as part of the overall storage volume.



Typical Properties
- 8′-0″ span x 6′-0″ rise x 8′-0″ length
- Storage volume = 36.25 ft^3/ft
- Total weight = 2.65 tons/unit



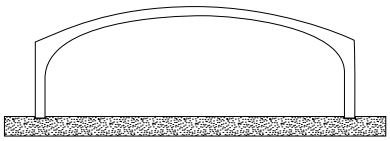
Span (ft-in)	Rise (ft-in)	Active Waterway Area (sf)	Unit Weight (tons)
7′-4 1/4″	4′-0″	20.80	2.11
7′-7 1/4″	4′-6″	24.52	2.25
7′-9 1/2″	5′-0″	28.35	2.39
7′-11 1/8″	5′-6″	32.27	2.52
8′-0″	6′-0″	36.25	2.65
* All active waterway areas assume a base slab foundation			

Modular Concrete Detention Systems

Foundation Versatility

The CON/SPAN and CON/STORM precast elements are three-sided arch units. In order to create a complete system and ensure structural integrity, both systems are installed on top of cast-in-place concrete foundations. These foundations provide continuous support beneath the unit legs and prevent the possibility of any differential settlement between adjacent precast units. Precast elements are set in a keyway that is cast into the foundation. CON/SPAN and CON/STORM systems can be installed on either a full structural base slab or strip foundations. Strip foundations, when utilized, extend around the perimeter of each cell of the vault system. In order to create additional vertical rise the CON/SPAN system can also be installed on top of a pedestal wall foundation. Engineers at CONTECH can assist with providing horizontal and vertical foundation reactions or can perform the complete foundation design upon request.

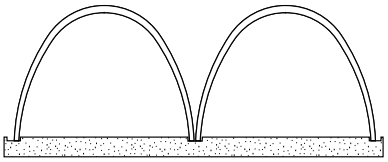
CON/SPAN

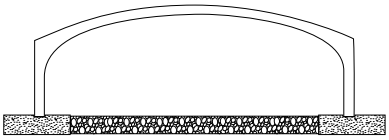


Base Slab Foundation

The base slab is the most common foundation for the CON/SPAN and CON/STORM detention systems. A base slab is the ideal solution when creating a water-tight system. It's also the most practical solution when dealing with high water table issues or sub grade soils sensitive to water infiltration.

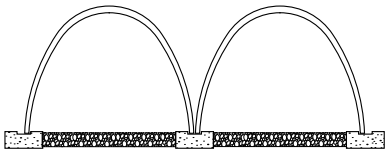
CON/STORM

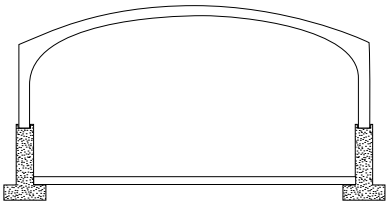




Strip Foundations

Construction of cast-in-place strip foundations beneath the unit legs and endwalls allows for a large open area in the center of each cell. This open area is typically filled with a crushed stone or granular material. The CON/SPAN or CON/STORM system can then be utilized for infiltration or recharge by percolating runoff through the granular material inside of the foundations.





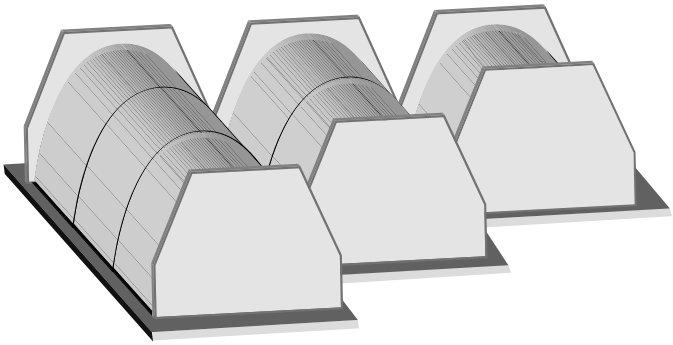
Pedestal Wall Foundation

Creating additional vertical rise through the use of a cast-in-place stem wall allows the CON/SPAN system to be designed for the most storage in the smallest possible footprint.

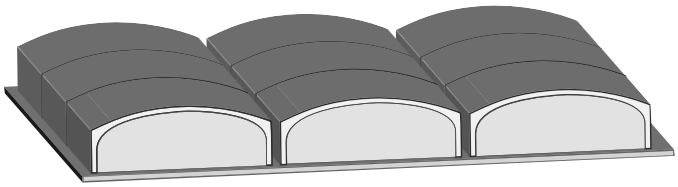
Layout Versatility

The modular nature of the CON/SPAN and CON/STORM system allows for tremendous versatility in layout. The systems can be installed in multiple cells and with staggered ends to accommodate nearly any footprint. Further versatility comes from the ability to create skewed or "pie-shaped" pieces. This provides the ability to construct a vault along a curved alignment to follow a roadway or other challenging location.

Staggered Ends



Multiple Cells

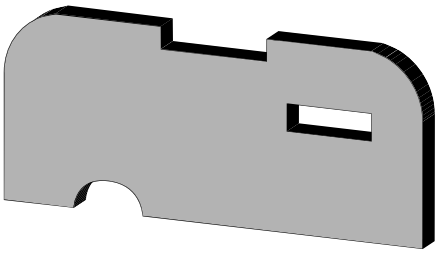


Outlet Control Versatility

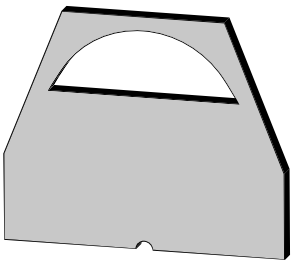
All CON/SPAN and CON/STORM detention structures come with precast end walls on all ends to create an enclosed vault. In addition, supplemental precast walls can be placed inside the structure to control flows. Placing a precast wall inside the structure provides the versatility to cast a wide variety of outlet openings into the system. Typical openings include a low-flow circular orifice, rectangular openings, multiple stage weirs, and overflow weirs. The number of openings that can be provided is essentially unlimited allowing for the ability to accommodate a large number of design storms. Using longer weirs in CON/SPAN structures minimizes the head that must be created over the weir to bypass larger flow rates. Integrating these walls into the overall system eliminates the need for downstream outlet controls.

Outlet control weir wall

Variable weirs to accommodate any flow rate and multiple design storms.



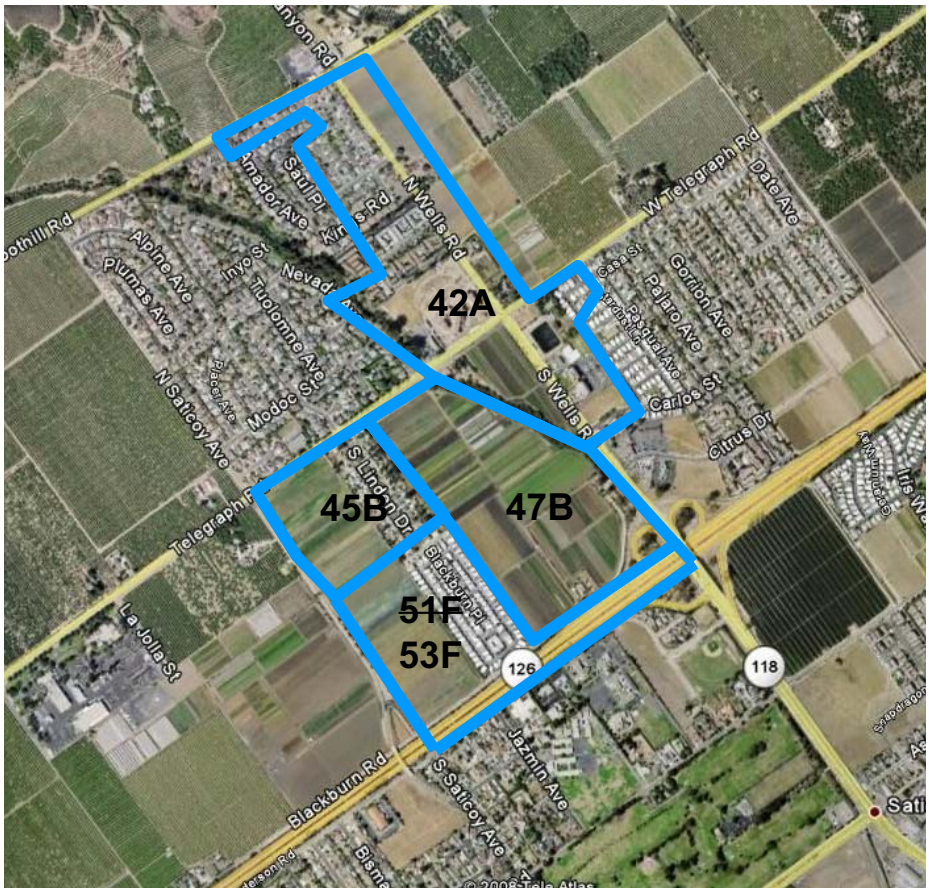
CON/SPAN



CON/STORM

A7

VCRAT Map and Files



VCRAT HYDROLOGY MAP

The top map shows the original subarea configuration in the WPD model
The lower version shows the subareas modified in this report. An explanation of the changes made to these subarea is given on the following page.

Modifications: Existing Conditions

42A: The 13-acre portion of Paklands north of the barranca are part of this sub-area. The impervious % was reduced from 34 to 28% to account for existing conditions (ag fields) in the Parklands site. The Tc was increased from 12 to 13 for the same reason.

45B: A 24-acre portion of the Parklands area was removed from this sub-area and made part of 47B. The Tc was reduced from 13 to 12.

47B: was created (formerly a place-holder) to represent the 54-acre portion of Parklands south of the barranca. Tc is 10 (from Tc calculator) and imp% is zero (ag fields)

48BD: For consistency with the other models, low flow bypass was added to the existing conditions as a B/D flow split (120/35)

49AD: The low flow in D is added to the main stem

50BC: The B line is fattened

51AB: Confluence of B and A

From this point on, the original numbering is changed by adding 2 to each node ID. Original numbering is indicated in *italics*.

53F: *51F* was enlarged by 10 acres of freeway taken from *52F*. The impervious % was increased from 24 to 40.

52F was deleted (30 acres to 47B and 10 acres to 53F/*51F*)

Modifications: Proposed Conditions (without detention)

42A: The 13-acre portion of Parklands north of the barranca is part of this sub-area. The impervious % was increased to 37% and Tc decreased to 12 to reflect proposed conditions. This adds 11 cfs to the flow from this subarea.

45B: same as existing

47B: The 54-acre portion of Parklands south of the barranca is changed to reflect proposed conditions. Tc is 7 (from Tc calculator) and imp% is 37

48BD: Modify B/D flow split (163/35)

From this point forward, all nodes are identical to Existing Conditions

Modifications: Proposed Conditions (with detention)

50BC: The detention basin was added to the node. This is the only change from the proposed conditions without detention.

Ventura County Watershed Protection District
Modified Rational Method Hydrology Program (VCRat v2.5)

Modified Rational Model Results Report

Job: 82510 Project: Brown Barranca Existing

Project Description

BROWN BARRANCA, Q100F DDT/DL 7/04
Modified 7/08 to model Parklands area in existing conditions
Node 42A modified to existing
SubAreas 45B, 47A, 51F modified, 52F deleted

VCRat version: 2.5.2008.7
VCRain version: 200703
DOS EXE version: PC 2.2-200604

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
1A : BROWN BARRANCA, Q100F DDT/DL 7/04																		
1A	030	K100	14	0	54	125	54	125	1154	MOUNTAIN	1150	0.04350	---	----	-----	-----	--	--
2A	020	K100	10	0	47	143	101	241	1158	MOUNTAIN	1750	0.04000	---	----	-----	-----	--	--
3A	030	K100	13	0	47	114	148	307	1161	MOUNTAIN	1600	0.04060	---	----	-----	-----	--	--
4B	030	K100	8	0	64	206	64	206	1154	MOUNTAIN	1100	0.04090	---	----	-----	-----	--	--
5B	030	K100	13	0	77	186	141	367	1157	MOUNTAIN	250	0.04090	---	----	-----	-----	--	--
6B	---	---	--	--	---	---	141	366	1158	-------	----	-------	---	----	-----	-----	--	--
7C	030	K100	14	0	67	155	67	155	1154	MOUNTAIN	1375	0.10000	---	----	-----	-----	--	--
8C	020	K100	17	0	22	48	89	198	1159	-------	----	-------	---	----	-----	-----	--	--
9BC	---	---	--	--	89	198	230	563	1158	MOUNTAIN	1100	0.05180	---	----	-----	-----	--	--
10B	030	K100	7	0	25	87	255	569	1160	-------	----	-------	---	----	-----	-----	--	--
11AB	---	---	--	--	255	569	403	812	1162	MOUNTAIN	1600	0.03940	---	----	-----	-----	--	--
12A	030	K100	13	2	87	212	490	909	1164	-------	----	-------	---	----	-----	-----	--	--
13D	030	K100	12	0	77	196	77	196	1154	-------	----	-------	---	----	-----	-----	--	--
14AD	---	---	--	--	77	196	567	1010	1161	MOUNTAIN	2125	0.03620	---	----	-----	-----	--	--
15A	030	K100	13	2	81	197	648	1057	1164	MOUNTAIN	2400	0.03540	---	----	-----	-----	--	--
16A	020	K100	11	0	50	143	698	1022	1169	MOUNTAIN	1300	0.03540	---	----	-----	-----	--	--
17A	020	K100	14	2	67	166	765	1037	1172	-------	----	-------	---	----	-----	-----	--	--
18E	030	K100	11	0	32	86	32	86	1154	MOUNTAIN	675	0.05000	---	----	-----	-----	--	--
19E	050	K100	14	7	78	161	110	240	1157	MOUNTAIN	300	0.04000	---	----	-----	-----	--	--
20E	030	K100	10	2	42	121	152	350	1157	#PIPE	1950	0.03200	4.50	----	-----	-----	--	--
21E	030	K100	11	5	61	166	213	492	1158	MOUNTAIN	3500	0.02570	---	----	-----	-----	--	--
22AE	---	---	--	--	213	379	978	1395	1171	CHANNEL	400	0.02900	3	2.00	0.035	0.035	--	--
23F	030	K100	14	0	55	128	55	128	1154	MOUNTAIN	2450	0.06120	---	----	-----	-----	--	--
24F	020	K100	12	2	54	147	109	225	1160	-------	----	-------	---	----	-----	-----	--	--
25AF: BROWN BARRANCA AT FOOTHILL RD.Q100F																		
25AF	**********																	
	* Peak in A: 1393 @ 1171 Q in F: 107 Combined Q: 1500 *																	
	* Peak in F: 225 @ 1160 Q in A: 900 Combined Q: 1125 *																	
	* Combined Peak: 1500 @ 1171 Q in A: 1393 Q in F: 107 *																	
	**********																	
25AF	---	---	--	--	109	225	1087	1500	1171	MOUNTAIN	1400	0.02920	---	----	-----	-----	--	--
26A	---	---	--	--	---	---	1087	1485	1173	-------	----	-------	---	----	-----	-----	--	--
27D	030	K100	14	5	55	129	55	129	1154	CHANNEL	800	0.03500	1	2.00	0.030	0.030	--	--
28D	040	K100	14	5	41	90	96	217	1156	CHANNEL	750	0.03467	1	2.00	0.030	0.030	--	--
29B	030	K100	7	23	39	140	39	140	1153	-------	----	-------	---	----	-----	-----	--	--
30AB	**********																	
	* Peak in A: 1485 @ 1173 Q in B: 11 Combined Q: 1496 *																	
	* Peak in B: 140 @ 1153 Q in A: 543 Combined Q: 683 *																	
	* Combined Peak: 1496 @ 1174 Q in A: 1485 Q in B: 11 *																	
	**********																	
30AB	---	---	--	--	39	140	1126	1496	1174	CHANNEL	1350	0.02920	3	2.00	0.035	0.035	--	--
31A : BROWN BARRANCA UPSTREAM OF TELEGRAPH RD. Q100F																		
31A	030	K100	9	20	32	100	1158	1499	1175	-------	----	-------	---	----	-----	-----	--	--
32C	040	K100	19	5	49	89	49	89	1156	CHANNEL	1050	0.02095	1	2.00	0.030	0.030	--	--
33C	040	K100	14	5	33	73	82	156	1158	CHANNEL	2450	0.01020	1	2.00	0.030	0.030	--	--
34C	040	K100	14	15	64	145	146	238	1162	-------	----	-------	---	----	-----	-----	--	--
35D	040	K100	12	5	26	63	122	274	1158	CHANNEL	200	0.03500	5	0.00	0.014	0.014	--	--

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
36CD	**********																	
	* Peak in C: 238 @ 1162 Q in D: 242 Combined Q: 480 *																	
	* Peak in D: 274 @ 1158 Q in C: 222 Combined Q: 496 *																	
	* Combined Peak: 500 @ 1160 Q in C: 233 Q in D: 268 *																	
	**********																	
36CD	---	---	--	--	122	274	268	500	1160	-------	----	-------	---	----	-----	-----	--	--
37CD:	Control/Diversion: Up to 260cfs to channel C																	
	**********																	
	* Combined Peak: 500 @ 1160 Q in C: 260 Q in D: 240 *																	
	* Peak in C: 260 @ 1151 Q in D: 14 Combined Q: 274 *																	
	* Peak in D: 240 @ 1160 Q in C: 260 Combined Q: 500 *																	
	**********																	
37CD	---	---	--	--	---	---	268	260	1151	PIPE	1800	0.01000	5.00	----	-----	-----	--	--
38D	---	---	--	--	---	---	0	240	1160	40' ROAD	800	0.01100	---	----	-----	-----	--	--
39AC	**********																	
	* Peak in A: 1499 @ 1175 Q in C: 192 Combined Q: 1691 *																	
	* Peak in C: 260 @ 1169 Q in A: 1345 Combined Q: 1605 *																	
	* Combined Peak: 1701 @ 1173 Q in A: 1471 Q in C: 230 *																	
	**********																	
39AC	---	---	--	--	268	260	1426	1701	1173	-------	----	-------	---	----	-----	-----	--	--
40D	030	K100	9	23	50	157	50	294	1160	#PIPE	950	0.01110	5.00	----	-----	-----	--	--
41AD:	BROWN BARRANCA AT TELEGRAPH RD. Q100F																	
41AD	**********																	
	* Peak in A: 1701 @ 1173 Q in D: 88 Combined Q: 1790 *																	
	* Peak in D: 278 @ 1162 Q in A: 1255 Combined Q: 1532 *																	
	* Combined Peak: 1812 @ 1171 Q in A: 1676 Q in D: 136 *																	
	**********																	
41AD	---	---	--	--	50	278	1476	1812	1171	CHANNEL	1350	0.03230	11	0.00	0.014	0.014	--	--
42A	030	K100	13	28	59	151	1535	1832	1172	CHANNEL	425	0.03230	11	0.00	0.014	0.014	--	--
43F	040	K100	9	50	37	118	37	118	1153	CHANNEL	1300	0.01615	1	2.00	0.030	0.030	--	--
44F	030	K100	10	50	38	119	75	217	1157	CHANNEL	1100	0.00818	2	2.00	0.030	0.030	--	--
45B :	Revised to exclude Parklands area (less 24 ac. and less 1 min. Tc add routing to barranca)																	
45B	030	K100	11	30	43	123	43	123	1154	40' ROAD	1400	0.02140	---	----	-----	-----	--	--
46AB	**********																	
	* Peak in A: 1832 @ 1172 Q in B: 36 Combined Q: 1868 *																	
	* Peak in B: 110 @ 1161 Q in A: 1594 Combined Q: 1704 *																	
	* Combined Peak: 1870 @ 1171 Q in A: 1829 Q in B: 41 *																	
	**********																	
46AB	---	---	--	--	43	110	1578	1870	1171	CHANNEL	820	0.01951	12	0.00	0.014	0.014	--	--
47B	030	K100	10	0	54	155	54	155	1154	-------	----	-------	---	----	-----	-----	--	--
48BD:	Bypass to Brown Barranca																	
48BD:	Control/Diversion: Above 120cfs to channel B																	
	**********																	
	* Combined Peak: 155 @ 1154 Q in B: 120 Q in D: 35 *																	
	* Peak in B: 120 @ 1154 Q in D: 35 Combined Q: 155 *																	
	* Peak in D: 35 @ 1140 Q in B: 1 Combined Q: 36 *																	
	**********																	
48BD	---	---	--	--	---	---	54	120	1154	-------	----	-------	---	----	-----	-----	--	--
48D :	Lateral Flow after Split/Diversion																	
48D	---	---	--	--	---	---	0	35	1140	PIPE	200	0.00500	2.75	----	-----	-----	--	--

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
49AD	**********																	
	* Peak in A: 1869 @ 1172 Q in D: 13 Combined Q: 1881 *																	
	* Peak in D: 35 @ 1142 Q in A: 546 Combined Q: 581 *																	
	* Combined Peak: 1881 @ 1172 Q in A: 1869 Q in D: 13 *																	
	**********																	
49AD	---	---	--	--	0	35	1578	1881	1172	-------	----	-------	---	----	-----	-----	--	--
50BC:	Parklands South Existing fattened																	
50BC	---	---	--	--	0	260	54	120	1154	-------	----	-------	---	----	-----	-----	--	--
	**********																	
	* INCOMING HYDROGRAPH PEAK (cfs): 120.00 VOLUME (acre-ft): 1.78 *																	
	* NO HYDROGRAPH ADJUSTMENT *																	
	* RUNOFF FACTOR(in): 5.67 TOTAL RAIN(in): 8.30 SCS Curve: 78 *																	
	* FATTENED HYDROGRAPH PEAK (cfs): 120.00 VOLUME (acre-ft): 25.51 *																	
	**********																	
50B	---	---	--	--	---	---	54	120	1154	PIPE	120	0.01000	3.75	----	-----	-----	--	--
51AB	**********																	
	* Peak in A: 1881 @ 1172 Q in B: 64 Combined Q: 1945 *																	
	* Peak in B: 120 @ 1154 Q in A: 1147 Combined Q: 1266 *																	
	* Combined Peak: 1945 @ 1171 Q in A: 1881 Q in B: 64 *																	
	**********																	
51AB	---	---	--	--	54	120	1632	1945	1171	CHANNEL	450	0.03200	10	0.00	0.014	0.014	--	--
52F	030	K100	12	20	34	90	109	283	1160	CHANNEL	1325	0.01595	4	0.00	0.014	0.014	--	--
53F :	Added 10 acres of roadway from 52F																	
53F	030	K100	12	40	39	107	148	363	1160	#CHANNEL	1000	0.03200	6	0.00	0.014	0.014	--	--
54A :	52F removed (10 ac. added to 51F and 30 added to 47A)																	
54A	---	---	--	--	---	---	1632	1945	1172	-------	----	-------	---	----	-----	-----	--	--
55AF:	BROWN BARRANCA AT SANTA PAULA FRWY (HWY 126) Q100F																	
55AF	**********																	
	* Peak in A: 1945 @ 1172 Q in F: 135 Combined Q: 2080 *																	
	* Peak in F: 359 @ 1161 Q in A: 1791 Combined Q: 2150 *																	
	* Combined Peak: 2179 @ 1162 Q in A: 1824 Q in F: 355 *																	
	**********																	
55AF	---	---	--	--	148	359	1780	2179	1162	CHANNEL	750	0.01143	10	0.00	0.014	0.014	--	--
56A	---	---	--	--	---	---	1780	2176	1163	CHANNEL	650	0.01143	20	2.00	0.030	0.030	--	--
57B	030	K100	11	15	36	100	36	100	1154	CHANNEL	1300	0.02231	1	2.00	0.030	0.030	--	--
58B	030	K100	11	30	50	143	86	224	1157	-------	----	-------	---	----	-----	-----	--	--
59AB	**********																	
	* Peak in A: 2172 @ 1165 Q in B: 95 Combined Q: 2267 *																	
	* Peak in B: 224 @ 1157 Q in A: 1612 Combined Q: 1837 *																	
	* Combined Peak: 2279 @ 1164 Q in A: 2168 Q in B: 111 *																	
	**********																	
59AB	---	---	--	--	86	224	1866	2279	1164	CHANNEL	1325	0.00830	21	0.00	0.035	0.035	--	--
60A	---	---	--	--	---	---	1866	2260	1166	-------	----	-------	---	----	-----	-----	--	--
61A	030	K100	20	10	70	133	1936	2373	1166	-------	----	-------	---	----	-----	-----	--	--
62C	040	K100	9	37	51	159	51	159	1153	40' ROAD	925	0.00865	---	----	-----	-----	--	--
63C	040	K100	9	50	30	96	81	216	1157	-------	----	-------	---	----	-----	-----	--	--
64C	040	K100	12	30	25	65	106	278	1157	CHANNEL	1425	0.00100	3	2.00	0.030	0.030	--	--
65C	040	K100	11	30	31	85	137	242	1162	-------	----	-------	---	----	-----	-----	--	--
66C	040	K100	8	45	41	138	178	313	1156	#CHANNEL	900	0.00280	9	0.00	0.014	0.014	--	--
67C	050	K100	12	50	23	61	201	364	1157	#CHANNEL	1550	0.03333	6	0.00	0.014	0.014	--	--

Model Results

SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
68C : BROWN BARR.EAST LAT.PRIOR TO JCT.W/BRN.AT TELEPHONE RD.Q100F																		
68C	040	K100	11	50	34	98	235	449	1159	#CHANNEL	150	0.03330	6	0.00	0.014	0.014	--	--
69AC	**********																	
	* Peak in A: 2373 @ 1166 Q in C: 310 Combined Q: 2683 *																	
	* Peak in C: 449 @ 1159 Q in A: 1856 Combined Q: 2305 *																	
	* Combined Peak: 2692 @ 1165 Q in A: 2363 Q in C: 329 *																	
	**********																	
69AC	---	---	--	--	235	449	2171	2692	1165	CHANNEL	150	0.00667	5	2.00	0.030	0.030	--	--
70B	030	K100	8	37	67	229	67	229	1154	-------	----	-------	---	----	-----	-----	--	--
71AB	---	---	--	--	67	229	2238	2727	1165	CHANNEL	2525	0.01000	3	2.00	0.014	0.014	--	--
72A : BROWN BARRANCA AT SANTA CLARA RIVER Q100F																		
72A	030	K100	10	10	18	53	2256	2715	1168	-------	----	-------	---	----	-----	-----	--	--

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE
Caution	Err1103	ROUTING	38D	Forcing all flows to remain in a 40' Road. May lead to unrealistic flows on road.
Caution	Err57	SUBAREA	40D	Using a subarea operation on same bank used for diversion. Consider clearing bank first. Diversion located at: 37CD
Caution	Err1103	ROUTING	62C	Forcing all flows to remain in a 40' Road. May lead to unrealistic flows on road.

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
1A : BROWN BARRANCA, Q100F DDT/DL 7/04																		
1A	030	K100	14	0	54	125	54	125	1154	MOUNTAIN	1150	0.04350	---	----	-----	-----	--	--
2A	020	K100	10	0	47	143	101	241	1158	MOUNTAIN	1750	0.04000	---	----	-----	-----	--	--
3A	030	K100	13	0	47	114	148	307	1161	MOUNTAIN	1600	0.04060	---	----	-----	-----	--	--
4B	030	K100	8	0	64	206	64	206	1154	MOUNTAIN	1100	0.04090	---	----	-----	-----	--	--
5B	030	K100	13	0	77	186	141	367	1157	MOUNTAIN	250	0.04090	---	----	-----	-----	--	--
6B	---	---	--	--	---	---	141	366	1158	-------	----	-------	---	----	-----	-----	--	--
7C	030	K100	14	0	67	155	67	155	1154	MOUNTAIN	1375	0.10000	---	----	-----	-----	--	--
8C	020	K100	17	0	22	48	89	198	1159	-------	----	-------	---	----	-----	-----	--	--
9BC	---	---	--	--	89	198	230	563	1158	MOUNTAIN	1100	0.05180	---	----	-----	-----	--	--
10B	030	K100	7	0	25	87	255	569	1160	-------	----	-------	---	----	-----	-----	--	--
11AB	---	---	--	--	255	569	403	812	1162	MOUNTAIN	1600	0.03940	---	----	-----	-----	--	--
12A	030	K100	13	2	87	212	490	909	1164	-------	----	-------	---	----	-----	-----	--	--
13D	030	K100	12	0	77	196	77	196	1154	-------	----	-------	---	----	-----	-----	--	--
14AD	---	---	--	--	77	196	567	1010	1161	MOUNTAIN	2125	0.03620	---	----	-----	-----	--	--
15A	030	K100	13	2	81	197	648	1057	1164	MOUNTAIN	2400	0.03540	---	----	-----	-----	--	--
16A	020	K100	11	0	50	143	698	1022	1169	MOUNTAIN	1300	0.03540	---	----	-----	-----	--	--
17A	020	K100	14	2	67	166	765	1037	1172	-------	----	-------	---	----	-----	-----	--	--
18E	030	K100	11	0	32	86	32	86	1154	MOUNTAIN	675	0.05000	---	----	-----	-----	--	--
19E	050	K100	14	7	78	161	110	240	1157	MOUNTAIN	300	0.04000	---	----	-----	-----	--	--
20E	030	K100	10	2	42	121	152	350	1157	#PIPE	1950	0.03200	4.50	----	-----	-----	--	--
21E	030	K100	11	5	61	166	213	492	1158	MOUNTAIN	3500	0.02570	---	----	-----	-----	--	--
22AE	---	---	--	--	213	379	978	1395	1171	CHANNEL	400	0.02900	3	2.00	0.035	0.035	--	--
23F	030	K100	14	0	55	128	55	128	1154	MOUNTAIN	2450	0.06120	---	----	-----	-----	--	--
24F	020	K100	12	2	54	147	109	225	1160	-------	----	-------	---	----	-----	-----	--	--
25AF: BROWN BARRANCA AT FOOTHILL RD.Q100F																		
25AF																		
* Peak in A: 1393 @ 1171 Q in F: 107 Combined Q: 1500 *																		
* Peak in F: 225 @ 1160 Q in A: 900 Combined Q: 1125 *																		
* Combined Peak: 1500 @ 1171 Q in A: 1393 Q in F: 107 *																		
25AF	---	---	--	--	109	225	1087	1500	1171	MOUNTAIN	1400	0.02920	---	----	-----	-----	--	--
26A	---	---	--	--	---	---	1087	1485	1173	-------	----	-------	---	----	-----	-----	--	--
27D	030	K100	14	5	55	129	55	129	1154	CHANNEL	800	0.03500	1	2.00	0.030	0.030	--	--
28D	040	K100	14	5	41	90	96	217	1156	CHANNEL	750	0.03467	1	2.00	0.030	0.030	--	--
29B	030	K100	7	23	39	140	39	140	1153	-------	----	-------	---	----	-----	-----	--	--
30AB																		
* Peak in A: 1485 @ 1173 Q in B: 11 Combined Q: 1496 *																		
* Peak in B: 140 @ 1153 Q in A: 543 Combined Q: 683 *																		
* Combined Peak: 1496 @ 1174 Q in A: 1485 Q in B: 11 *																		
30AB	---	---	--	--	39	140	1126	1496	1174	CHANNEL	1350	0.02920	3	2.00	0.035	0.035	--	--
31A : BROWN BARRANCA UPSTREAM OF TELEGRAPH RD. Q100F																		
31A	030	K100	9	20	32	100	1158	1499	1175	-------	----	-------	---	----	-----	-----	--	--
32C	040	K100	19	5	49	89	49	89	1156	CHANNEL	1050	0.02095	1	2.00	0.030	0.030	--	--
33C	040	K100	14	5	33	73	82	156	1158	CHANNEL	2450	0.01020	1	2.00	0.030	0.030	--	--
34C	040	K100	14	15	64	145	146	238	1162	-------	----	-------	---	----	-----	-----	--	--
35D	040	K100	12	5	26	63	122	274	1158	CHANNEL	200	0.03500	5	0.00	0.014	0.014	--	--

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
36CD	**********																	
	* Peak in C:				238 @ 1162		Q in D:	242		Combined Q:	480	*						
	* Peak in D:				274 @ 1158		Q in C:	222		Combined Q:	496	*						
	* Combined Peak:				500 @ 1160		Q in C:	233		Q in D:	268	*						
	**********																	
36CD	---	---	--	--	122	274	268	500	1160	-------	----	-------	---	----	-----	-----	--	--
37CD:	Control/Diversion: Up to 260cfs to channel C																	
	**********																	
	* Combined Peak:				500 @ 1160		Q in C:	260		Q in D:	240	*						
	* Peak in C:				260 @ 1151		Q in D:	14		Combined Q:	274	*						
	* Peak in D:				240 @ 1160		Q in C:	260		Combined Q:	500	*						
	**********																	
37CD	---	---	--	--	---	---	268	260	1151	PIPE	1800	0.01000	5.00	----	-----	-----	--	--
38D	---	---	--	--	---	---	0	240	1160	40' ROAD	800	0.01100	---	----	-----	-----	--	--
39AC	**********																	
	* Peak in A:				1499 @ 1175		Q in C:	192		Combined Q:	1691	*						
	* Peak in C:				260 @ 1169		Q in A:	1345		Combined Q:	1605	*						
	* Combined Peak:				1701 @ 1173		Q in A:	1471		Q in C:	230	*						
	**********																	
39AC	---	---	--	--	268	260	1426	1701	1173	-------	----	-------	---	----	-----	-----	--	--
40D	030	K100	9	23	50	157	50	294	1160	#PIPE	950	0.01110	5.00	----	-----	-----	--	--
41AD:	BROWN BARRANCA AT TELEGRAPH RD. Q100F																	
41AD	**********																	
	* Peak in A:				1701 @ 1173		Q in D:	88		Combined Q:	1790	*						
	* Peak in D:				278 @ 1162		Q in A:	1255		Combined Q:	1532	*						
	* Combined Peak:				1812 @ 1171		Q in A:	1676		Q in D:	136	*						
	**********																	
41AD	---	---	--	--	50	278	1476	1812	1171	CHANNEL	1350	0.03230	11	0.00	0.014	0.014	--	--
42A	030	K100	12	37	59	162	1535	1833	1172	CHANNEL	425	0.03230	11	0.00	0.014	0.014	--	--
43F	040	K100	9	50	37	118	37	118	1153	CHANNEL	1300	0.01615	1	2.00	0.030	0.030	--	--
44F	030	K100	10	50	38	119	75	217	1157	CHANNEL	1100	0.00818	2	2.00	0.030	0.030	--	--
45B :	Revised to exclude Parklands area (less 24 ac. and less 1 min. Tc add routing to barranca)																	
45B	030	K100	11	30	43	123	43	123	1154	40' ROAD	1400	0.02140	---	----	-----	-----	--	--
46AB	**********																	
	* Peak in A:				1833 @ 1172		Q in B:	36		Combined Q:	1869	*						
	* Peak in B:				110 @ 1161		Q in A:	1590		Combined Q:	1701	*						
	* Combined Peak:				1871 @ 1171		Q in A:	1830		Q in B:	41	*						
	**********																	
46AB	---	---	--	--	43	110	1578	1871	1171	CHANNEL	820	0.01951	12	0.00	0.014	0.014	--	--
47B	030	K100	7	37	54	198	54	198	1153	-------	----	-------	---	----	-----	-----	--	--
48BD:	Bypass to Brown Barrance																	
48BD:	Control/Diversion: Up to 163cfs to channel B																	
	**********																	
	* Combined Peak:				198 @ 1153		Q in B:	163		Q in D:	35	*						
	* Peak in B:				163 @ 1152		Q in D:	13		Combined Q:	176	*						
	* Peak in D:				35 @ 1153		Q in B:	163		Combined Q:	198	*						
	**********																	
48BD	---	---	--	--	---	---	54	163	1152	-------	----	-------	---	----	-----	-----	--	--
48D :	Lateral Flow after Split/Diversion																	
48D	---	---	--	--	---	---	0	35	1153	PIPE	200	0.00500	2.75	----	-----	-----	--	--

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
49AD	**********																	
	* Peak in A: 1870 @ 1172 Q in D: 0 Combined Q: 1871 *																	
	* Peak in D: 35 @ 1155 Q in A: 1227 Combined Q: 1262 *																	
	* Combined Peak: 1871 @ 1172 Q in A: 1870 Q in D: 0 *																	
	**********																	
49AD	---	---	--	--	0	35	1578	1871	1172	-------	----	-------	---	----	-----	-----	--	--
50BC:	Parklands South Proposed fattened but not detained																	
50BC	---	---	--	--	0	260	54	163	1152	-------	----	-------	---	----	-----	-----	--	--
	**********																	
	* INCOMING HYDROGRAPH PEAK (cfs): 163.00 VOLUME (acre-ft): 19.12 *																	
	* NO HYDROGRAPH ADJUSTMENT *																	
	* RUNOFF FACTOR(in): 6.98 TOTAL RAIN(in): 8.30 SCS Curve: 89 *																	
	* FATTENED HYDROGRAPH PEAK (cfs): 163.00 VOLUME (acre-ft): 31.55 *																	
	**********																	
50B	---	---	--	--	---	---	54	163	1152	PIPE	120	0.01000	4.25	----	-----	-----	--	--
51AB	**********																	
	* Peak in A: 1871 @ 1172 Q in B: 54 Combined Q: 1925 *																	
	* Peak in B: 163 @ 1153 Q in A: 1028 Combined Q: 1191 *																	
	* Combined Peak: 1925 @ 1172 Q in A: 1871 Q in B: 54 *																	
	**********																	
51AB	---	---	--	--	54	163	1632	1925	1172	CHANNEL	450	0.03200	10	0.00	0.014	0.014	--	--
52F	030	K100	12	20	34	90	109	283	1160	CHANNEL	1325	0.01595	4	0.00	0.014	0.014	--	--
53F :	Added 10 acres of roadway from 52F																	
53F	030	K100	12	40	39	107	148	363	1160	#CHANNEL	1000	0.03200	6	0.00	0.014	0.014	--	--
54A :	52F removed (10 ac. added to 51F and 30 added to 47A)																	
54A	---	---	--	--	---	---	1632	1924	1172	-------	----	-------	---	----	-----	-----	--	--
55AF:	BROWN BARRANCA AT SANTA PAULA FRWY (HWY 126) Q100F																	
55AF	**********																	
	* Peak in A: 1924 @ 1172 Q in F: 135 Combined Q: 2060 *																	
	* Peak in F: 359 @ 1161 Q in A: 1743 Combined Q: 2102 *																	
	* Combined Peak: 2132 @ 1163 Q in A: 1788 Q in F: 345 *																	
	**********																	
55AF	---	---	--	--	148	359	1780	2132	1163	CHANNEL	750	0.01143	10	0.00	0.014	0.014	--	--
56A	---	---	--	--	---	---	1780	2131	1164	CHANNEL	650	0.01143	20	2.00	0.030	0.030	--	--
57B	030	K100	11	15	36	100	36	100	1154	CHANNEL	1300	0.02231	1	2.00	0.030	0.030	--	--
58B	030	K100	11	30	50	143	86	224	1157	-------	----	-------	---	----	-----	-----	--	--
59AB	**********																	
	* Peak in A: 2127 @ 1165 Q in B: 95 Combined Q: 2222 *																	
	* Peak in B: 224 @ 1157 Q in A: 1659 Combined Q: 1884 *																	
	* Combined Peak: 2240 @ 1162 Q in A: 2064 Q in B: 176 *																	
	**********																	
59AB	---	---	--	--	86	224	1866	2240	1162	CHANNEL	1325	0.00830	20	0.00	0.035	0.035	--	--
60A	---	---	--	--	---	---	1866	2220	1166	-------	----	-------	---	----	-----	-----	--	--
61A	030	K100	20	10	70	133	1936	2333	1166	-------	----	-------	---	----	-----	-----	--	--
62C	040	K100	9	37	51	159	51	159	1153	40' ROAD	925	0.00865	---	----	-----	-----	--	--
63C	040	K100	9	50	30	96	81	216	1157	-------	----	-------	---	----	-----	-----	--	--
64C	040	K100	12	30	25	65	106	278	1157	CHANNEL	1425	0.00100	3	2.00	0.030	0.030	--	--
65C	040	K100	11	30	31	85	137	242	1162	-------	----	-------	---	----	-----	-----	--	--
66C	040	K100	8	45	41	138	178	313	1156	#CHANNEL	900	0.00280	9	0.00	0.014	0.014	--	--
67C	050	K100	12	50	23	61	201	364	1157	#CHANNEL	1550	0.03333	6	0.00	0.014	0.014	--	--

Model Results

SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
68C : BROWN BARR.EAST LAT.PRIOR TO JCT.W/BRN.AT TELEPHONE RD.Q100F																		
68C	040	K100	11	50	34	98	235	449	1159	#CHANNEL	150	0.03330	6	0.00	0.014	0.014	--	--
69AC	**********																	
	* Peak in A: 2333 @ 1166 Q in C: 310 Combined Q: 2643 *																	
	* Peak in C: 449 @ 1159 Q in A: 1895 Combined Q: 2344 *																	
	* Combined Peak: 2660 @ 1164 Q in A: 2313 Q in C: 347 *																	
	**********																	
69AC	---	---	--	--	235	449	2171	2660	1164	CHANNEL	150	0.00667	5	2.00	0.030	0.030	--	--
70B	030	K100	8	37	67	229	67	229	1154	-------	----	-------	---	----	-----	-----	--	--
71AB	---	---	--	--	67	229	2238	2699	1164	CHANNEL	2525	0.01000	3	2.00	0.014	0.014	--	--
72A : BROWN BARRANCA AT SANTA CLARA RIVER Q100F																		
72A	030	K100	10	10	18	53	2256	2690	1167	-------	----	-------	---	----	-----	-----	--	--

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE
Caution	Err1103	ROUTING	38D	Forcing all flows to remain in a 40' Road. May lead to unrealistic flows on road.
Caution	Err57	SUBAREA	40D	Using a subarea operation on same bank used for diversion. Consider clearing bank first. Diversion located at: 37CD
Caution	Err1103	ROUTING	62C	Forcing all flows to remain in a 40' Road. May lead to unrealistic flows on road.

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
SUBAREA DATA AND RESULTS							ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
1A : BROWN BARRANCA, Q100F DDT/DL 7/04																		
1A	030	K100	14	0	54	125	54	125	1154	MOUNTAIN	1150	0.04350	---	----	-----	-----	--	--
2A	020	K100	10	0	47	143	101	241	1158	MOUNTAIN	1750	0.04000	---	----	-----	-----	--	--
3A	030	K100	13	0	47	114	148	307	1161	MOUNTAIN	1600	0.04060	---	----	-----	-----	--	--
4B	030	K100	8	0	64	206	64	206	1154	MOUNTAIN	1100	0.04090	---	----	-----	-----	--	--
5B	030	K100	13	0	77	186	141	367	1157	MOUNTAIN	250	0.04090	---	----	-----	-----	--	--
6B	---	---	--	--	---	---	141	366	1158	-------	----	-------	---	----	-----	-----	--	--
7C	030	K100	14	0	67	155	67	155	1154	MOUNTAIN	1375	0.10000	---	----	-----	-----	--	--
8C	020	K100	17	0	22	48	89	198	1159	-------	----	-------	---	----	-----	-----	--	--
9BC	---	---	--	--	89	198	230	563	1158	MOUNTAIN	1100	0.05180	---	----	-----	-----	--	--
10B	030	K100	7	0	25	87	255	569	1160	-------	----	-------	---	----	-----	-----	--	--
11AB	---	---	--	--	255	569	403	812	1162	MOUNTAIN	1600	0.03940	---	----	-----	-----	--	--
12A	030	K100	13	2	87	212	490	909	1164	-------	----	-------	---	----	-----	-----	--	--
13D	030	K100	12	0	77	196	77	196	1154	-------	----	-------	---	----	-----	-----	--	--
14AD	---	---	--	--	77	196	567	1010	1161	MOUNTAIN	2125	0.03620	---	----	-----	-----	--	--
15A	030	K100	13	2	81	197	648	1057	1164	MOUNTAIN	2400	0.03540	---	----	-----	-----	--	--
16A	020	K100	11	0	50	143	698	1022	1169	MOUNTAIN	1300	0.03540	---	----	-----	-----	--	--
17A	020	K100	14	2	67	166	765	1037	1172	-------	----	-------	---	----	-----	-----	--	--
18E	030	K100	11	0	32	86	32	86	1154	MOUNTAIN	675	0.05000	---	----	-----	-----	--	--
19E	050	K100	14	7	78	161	110	240	1157	MOUNTAIN	300	0.04000	---	----	-----	-----	--	--
20E	030	K100	10	2	42	121	152	350	1157	#PIPE	1950	0.03200	4.50	----	-----	-----	--	--
21E	030	K100	11	5	61	166	213	492	1158	MOUNTAIN	3500	0.02570	---	----	-----	-----	--	--
22AE	---	---	--	--	213	379	978	1395	1171	CHANNEL	400	0.02900	3	2.00	0.035	0.035	--	--
23F	030	K100	14	0	55	128	55	128	1154	MOUNTAIN	2450	0.06120	---	----	-----	-----	--	--
24F	020	K100	12	2	54	147	109	225	1160	-------	----	-------	---	----	-----	-----	--	--
25AF: BROWN BARRANCA AT FOOTHILL RD.Q100F																		
25AF	**********																	
	* Peak in A: 1393 @ 1171 Q in F: 107 Combined Q: 1500 *																	
	* Peak in F: 225 @ 1160 Q in A: 900 Combined Q: 1125 *																	
	* Combined Peak: 1500 @ 1171 Q in A: 1393 Q in F: 107 *																	
	**********																	
25AF	---	---	--	--	109	225	1087	1500	1171	MOUNTAIN	1400	0.02920	---	----	-----	-----	--	--
26A	---	---	--	--	---	---	1087	1485	1173	-------	----	-------	---	----	-----	-----	--	--
27D	030	K100	14	5	55	129	55	129	1154	CHANNEL	800	0.03500	1	2.00	0.030	0.030	--	--
28D	040	K100	14	5	41	90	96	217	1156	CHANNEL	750	0.03467	1	2.00	0.030	0.030	--	--
29B	030	K100	7	23	39	140	39	140	1153	-------	----	-------	---	----	-----	-----	--	--
30AB	**********																	
	* Peak in A: 1485 @ 1173 Q in B: 11 Combined Q: 1496 *																	
	* Peak in B: 140 @ 1153 Q in A: 543 Combined Q: 683 *																	
	* Combined Peak: 1496 @ 1174 Q in A: 1485 Q in B: 11 *																	
	**********																	
30AB	---	---	--	--	39	140	1126	1496	1174	CHANNEL	1350	0.02920	3	2.00	0.035	0.035	--	--
31A : BROWN BARRANCA UPSTREAM OF TELEGRAPH RD. Q100F																		
31A	030	K100	9	20	32	100	1158	1499	1175	-------	----	-------	---	----	-----	-----	--	--
32C	040	K100	19	5	49	89	49	89	1156	CHANNEL	1050	0.02095	1	2.00	0.030	0.030	--	--
33C	040	K100	14	5	33	73	82	156	1158	CHANNEL	2450	0.01020	1	2.00	0.030	0.030	--	--
34C	040	K100	14	15	64	145	146	238	1162	-------	----	-------	---	----	-----	-----	--	--
35D	040	K100	12	5	26	63	122	274	1158	CHANNEL	200	0.03500	5	0.00	0.014	0.014	--	--

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
	SUBAREA DATA AND RESULTS						ACCUMULATED DATA			ROUTING AFTER ACCUMULATION								
36CD	**********																	
	* Peak in C:				238 @ 1162		Q in D:	242		Combined Q:	480	*						
	* Peak in D:				274 @ 1158		Q in C:	222		Combined Q:	496	*						
	* Combined Peak:				500 @ 1160		Q in C:	233		Q in D:	268	*						
	**********																	
36CD	---	---	--	--	122	274	268	500	1160	-------	----	-------	---	----	-----	-----	--	--
37CD:	Control/Diversion: Up to 260cfs to channel C																	
	**********																	
	* Combined Peak:				500 @ 1160		Q in C:	260		Q in D:	240	*						
	* Peak in C:				260 @ 1151		Q in D:	14		Combined Q:	274	*						
	* Peak in D:				240 @ 1160		Q in C:	260		Combined Q:	500	*						
	**********																	
37CD	---	---	--	--	---	---	268	260	1151	PIPE	1800	0.01000	5.00	----	-----	-----	--	--
38D	---	---	--	--	---	---	0	240	1160	40' ROAD	800	0.01100	---	----	-----	-----	--	--
39AC	**********																	
	* Peak in A:				1499 @ 1175		Q in C:	192		Combined Q:	1691	*						
	* Peak in C:				260 @ 1169		Q in A:	1345		Combined Q:	1605	*						
	* Combined Peak:				1701 @ 1173		Q in A:	1471		Q in C:	230	*						
	**********																	
39AC	---	---	--	--	268	260	1426	1701	1173	-------	----	-------	---	----	-----	-----	--	--
40D	030	K100	9	23	50	157	50	294	1160	#PIPE	950	0.01110	5.00	----	-----	-----	--	--
41AD:	BROWN BARRANCA AT TELEGRAPH RD. Q100F																	
41AD	**********																	
	* Peak in A:				1701 @ 1173		Q in D:	88		Combined Q:	1790	*						
	* Peak in D:				278 @ 1162		Q in A:	1255		Combined Q:	1532	*						
	* Combined Peak:				1812 @ 1171		Q in A:	1676		Q in D:	136	*						
	**********																	
41AD	---	---	--	--	50	278	1476	1812	1171	CHANNEL	1350	0.03230	11	0.00	0.014	0.014	--	--
42A	030	K100	12	37	59	162	1535	1833	1172	CHANNEL	425	0.03230	11	0.00	0.014	0.014	--	--
43F	040	K100	9	50	37	118	37	118	1153	CHANNEL	1300	0.01615	1	2.00	0.030	0.030	--	--
44F	030	K100	10	50	38	119	75	217	1157	CHANNEL	1100	0.00818	2	2.00	0.030	0.030	--	--
45B :	Revised to exclude Parklands area (less 24 ac. and less 1 min. Tc add routing to barranca)																	
45B	030	K100	11	30	43	123	43	123	1154	40' ROAD	1400	0.02140	---	----	-----	-----	--	--
46AB	**********																	
	* Peak in A:				1833 @ 1172		Q in B:	36		Combined Q:	1869	*						
	* Peak in B:				110 @ 1161		Q in A:	1590		Combined Q:	1701	*						
	* Combined Peak:				1871 @ 1171		Q in A:	1830		Q in B:	41	*						
	**********																	
46AB	---	---	--	--	43	110	1578	1871	1171	CHANNEL	820	0.01951	12	0.00	0.014	0.014	--	--
47B	030	K100	7	37	54	198	54	198	1153	-------	----	-------	---	----	-----	-----	--	--
48BD:	Bypass to Brown Barrance																	
48BD:	Control/Diversion: Up to 163cfs to channel B																	
	**********																	
	* Combined Peak:				198 @ 1153		Q in B:	163		Q in D:	35	*						
	* Peak in B:				163 @ 1152		Q in D:	13		Combined Q:	176	*						
	* Peak in D:				35 @ 1153		Q in B:	163		Combined Q:	198	*						
	**********																	
48BD	---	---	--	--	---	---	54	163	1152	-------	----	-------	---	----	-----	-----	--	--
48D :	Lateral Flow after Split/Diversion																	
48D	---	---	--	--	---	---	0	35	1153	PIPE	200	0.00500	2.75	----	-----	-----	--	--

Model Results

```
|---------- SUBAREA DATA AND RESULTS --------|-- ACCUMULATED DATA --|------------ ROUTING AFTER ACCUMULATION ---------------------------------|
| NODE   SOIL  RAIN   TC    %    AREA  FLOW  |  AREA    FLOW   TIME |  CHANNEL  LENGTH   SLOPE     SIZE    H:V       N VALUES      VEL  DEPTH |
|  ID    TYPE  ZONE (MIN)  IMP   (AC)  (CFS) |  (AC)    (CFS)  (MIN)|    TYPE    (FT)   (FT/FT)    (FT)    (Z)     CHNL   SIDES  (FT/S)  (FT) |
|-------------------------------------------|----------------------|-----------------------------------------------------------------------------|
   49AD  ******************************************************************************
         *          Peak in A:     1870 @ 1172  Q in D:        0  Combined Q:     1871     *
         *          Peak in D:       35 @ 1155  Q in A:     1227  Combined Q:     1262     *
         *      Combined Peak:     1871 @ 1172  Q in A:     1870      Q in D:        0     *
         ******************************************************************************
   49AD  ---   ---    --   --      0     35     1578    1871   1172    -------    ----  -------    ---     ----    -----  -----    --     --
   50BC:  Parklands South Proposed and Detained
   50BC  ---   ---    --   --      0    260       54     163   1152    -------    ----  -------    ---     ----    -----  -----    --     --
    50B :  Underground Detention
         ******************************************************************************************
         *      INCOMING HYDROGRAPH  PEAK (cfs):    163.00         VOLUME (acre-ft):     19.12      *
         *      NO HYDROGRAPH ADJUSTMENT                                                            *
         *      RUNOFF FACTOR(in):   6.98      TOTAL RAIN(in):   8.30      SCS Curve: 89            *
         *      FATTENED HYDROGRAPH  PEAK (cfs):    163.00         VOLUME (acre-ft):     31.55      *
         *      RESERVOIR INFLOW:    PEAK (cfs):    163.00 @ 1152  VOLUME (acre-ft):     31.55      *
         *      MAXIMUM ELEVATION:   STAGE (ft):    188.62 @ 1158  VOLUME (acre-ft):      3.86      *
         *      EMERGENCY SPILLWAY:   ELEV (ft):    189.00         VOLUME (acre-ft):      4.00      *
         *          DIFFERENCE:   IN STAGE (ft):     -0.38      IN VOLUME (acre-ft):      0.14      *
         *          NO SPILL EXPECTED.       PERCNT OF VOLUME REMAINING TO SPILLWAY:      3.4%      *
         *      TOP OF DAM:           ELEV (ft):    190.00         VOLUME (acre-ft):      4.36      *
         *          DIFFERENCE    IN STAGE (ft):     -1.38      IN VOLUME (acre-ft):      0.50      *
         *          NO OVERTOP EXPECTED.   PERCNT OF VOLUME REMAINING TO TOP OF DAM:     11.4%      *
         *      RESERVOIR OUTFLOW:   PEAK (cfs):    126.22 @ 1158  VOLUME (acre-ft):     29.71      *
         ******************************************************************************************
   50B   ---   ---    --   --    ---    ---       54     126   1158    PIPE        120  0.01000      3.75  ----    -----  -----    --     --
   51AB  ******************************************************************************
         *          Peak in A:     1871 @ 1172  Q in B:       78  Combined Q:     1949     *
         *          Peak in B:      126 @ 1159  Q in A:     1568  Combined Q:     1694     *
         *      Combined Peak:     1950 @ 1171  Q in A:     1869      Q in B:       81     *
         ******************************************************************************
   51AB  ---   ---    --   --     54    126     1632    1950   1171    CHANNEL     450  0.03200     10     0.00    0.014  0.014    --     --
   52F   030   K100   12   20     34     90      109     283   1160    CHANNEL    1325  0.01595      4     0.00    0.014  0.014    --     --
   53F :  Added 10 acres of roadway from 52F
   53F   030   K100   12   40     39    107      148     363   1160   #CHANNEL    1000  0.03200      6     0.00    0.014  0.014    --     --
   54A :  52F removed (10 ac. added to 51F and 30 added to 47A)
   54A   ---   ---    --   --    ---    ---     1632    1949   1172    -------    ----  -------    ---     ----    -----  -----    --     --
   55AF:  BROWN BARRANCA AT SANTA PAULA FRWY (HWY 126) Q100F
   55AF  ******************************************************************************
         *          Peak in A:     1949 @ 1172  Q in F:      135  Combined Q:     2084     *
         *          Peak in F:      359 @ 1161  Q in A:     1784  Combined Q:     2143     *
         *      Combined Peak:     2173 @ 1163  Q in A:     1828      Q in F:      345     *
         ******************************************************************************
   55AF  ---   ---    --   --    148    359     1780    2173   1163    CHANNEL     750  0.01143     10     0.00    0.014  0.014    --     --
   56A   ---   ---    --   --    ---    ---     1780    2171   1164    CHANNEL     650  0.01143     20     2.00    0.030  0.030    --     --
   57B   030   K100   11   15     36    100       36     100   1154    CHANNEL    1300  0.02231      1     2.00    0.030  0.030    --     --
   58B   030   K100   11   30     50    143       86     224   1157    -------    ----  -------    ---     ----    -----  -----    --     --
```

Model Results

NODE ID	SOIL TYPE	RAIN ZONE	TC (MIN)	% IMP	AREA (AC)	FLOW (CFS)	AREA (AC)	FLOW (CFS)	TIME (MIN)	CHANNEL TYPE	LENGTH (FT)	SLOPE (FT/FT)	SIZE (FT)	H:V (Z)	N VALUES CHNL	N VALUES SIDES	VEL (FT/S)	DEPTH (FT)
59AB	**********																	
	* Peak in A:				2167	@ 1165	Q in B:	95	Combined Q:		2262	*						
	* Peak in B:				224	@ 1157	Q in A:	1607	Combined Q:		1831	*						
	* Combined Peak:				2272	@ 1164	Q in A:	2161	Q in B:		111	*						
	**********																	
59AB	---	---	--	--	86	224	1866	2272	1164	CHANNEL	1325	0.00830	21	0.00	0.035	0.035	--	--
60A	---	---	--	--	---	---	1866	2254	1167	-------	----	-------	---	----	-----	-----	--	--
61A	030	K100	20	10	70	133	1936	2366	1166	-------	----	-------	---	----	-----	-----	--	--
62C	040	K100	9	37	51	159	51	159	1153	40' ROAD	925	0.00865	---	----	-----	-----	--	--
63C	040	K100	9	50	30	96	81	216	1157	-------	----	-------	---	----	-----	-----	--	--
64C	040	K100	12	30	25	65	106	278	1157	CHANNEL	1425	0.00100	3	2.00	0.030	0.030	--	--
65C	040	K100	11	30	31	85	137	242	1162	-------	----	-------	---	----	-----	-----	--	--
66C	040	K100	8	45	41	138	178	313	1156	#CHANNEL	900	0.00280	9	0.00	0.014	0.014	--	--
67C	050	K100	12	50	23	61	201	364	1157	#CHANNEL	1550	0.03333	6	0.00	0.014	0.014	--	--
68C : BROWN BARR.EAST LAT.PRIOR TO JCT.W/BRN.AT TELEPHONE RD.Q100F																		
68C	040	K100	11	50	34	98	235	449	1159	#CHANNEL	150	0.03330	6	0.00	0.014	0.014	--	--
69AC	**********																	
	* Peak in A:				2366	@ 1166	Q in C:	310	Combined Q:		2676	*						
	* Peak in C:				449	@ 1159	Q in A:	1839	Combined Q:		2288	*						
	* Combined Peak:				2684	@ 1165	Q in A:	2355	Q in C:		329	*						
	**********																	
69AC	---	---	--	--	235	449	2171	2684	1165	CHANNEL	150	0.00667	5	2.00	0.030	0.030	--	--
70B	030	K100	8	37	67	229	67	229	1154	-------	----	-------	---	----	-----	-----	--	--
71AB	---	---	--	--	67	229	2238	2719	1165	CHANNEL	2525	0.01000	3	2.00	0.014	0.014	--	--
72A : BROWN BARRANCA AT SANTA CLARA RIVER Q100F																		
72A	030	K100	10	10	18	53	2256	2708	1168	-------	----	-------	---	----	-----	-----	--	--

Issue/Warning Messages

TYPE	ERR NO	PROCEDURE	LOCATION	MESSAGE
Caution	Err1103	ROUTING	38D	Forcing all flows to remain in a 40' Road. May lead to unrealistic flows on road.
Caution	Err57	SUBAREA	40D	Using a subarea operation on same bank used for diversion. Consider clearing bank first. Diversion located at: 37CD
Caution	Err1103	ROUTING	62C	Forcing all flows to remain in a 40' Road. May lead to unrealistic flows on road.

Appendix F

Phase I Environmental Site Assessment Maps

APPENDIX F
PHASE II SUMMARY and CONCLUSIONS

(Copied from Phase II ESA by Earthsystems Southwest, November 22, 2006)

4.0 SUMMARY OF FINDINGS

The findings of this investigation are summarized below by topic of concern. Figures depicting the sample locations are presented in Appendix A. Tables of the laboratory results are presented in Appendix B. Methods are presented in Appendix C. The laboratory reports are presented in Appendix D.

4.1 Pesticide Residues in Agricultural Field Areas

Five OCP residues were detected in the composite surface soil samples collected in the former agricultural areas, including DDT, DDD, DDE, Endosulfan Sulfate, and Toxaphene. DDD and DDE are breakdown by-products of DDT. All eight composite samples and the ten individual samples analyzed contained residues of DDE and DDD. No single composite sample contained all five detected OCPs. Other OCPs were not detected above laboratory reporting limits. Most detected OCPs in the field areas were at concentrations less than their respective TTLC, PRG-r, and PRG-i values, and were consistent with residues from farming application.

Eight of ten surface samples collected in the field area at the northwestern part of the site [NW Field Area] contained concentrations of TDE (the combination of the values of DDT, DDD, and DDE) that slightly exceeded the TTLC value of 1.0 mg/kg (maximum value of 2.34 mg/kg in SS-111). A boring to 5 feet below ground surface [bgs] was completed at the location of SS-111 and samples were collected at 1 foot, 3 feet, and 5 feet bgs. DDE and DDT residues were detected at 1 foot bgs at 0.018 and 0.003 mg/kg, respectively. Other OCPs were not detected above laboratory reporting limits at 1 foot. OCPs were not detected above laboratory reporting limits for samples collected at 3 and 5 feet bgs. The uniform concentration of these residues in the NW Field Area is consistent with farming application.

One composite sample from the southeastern field area (SS-105-106) contained Toxaphene at a concentration of 0.44 mg/kg, equivalent to the PRG-r for Toxaphene. Toxaphene was not detected in excess of the PRG-r in other samples from the field portions of the site, including areas with elevated TDE values. Therefore, this single marginally elevated Toxaphene value is not considered to be representative of site conditions. Considering that the highest Toxaphene value is only equal to the PRG-r value, Toxaphene is not considered to be a contaminant of concern for the field portions of the site.

4.2 Pesticide Residues in the Existing and Former Building and Storage Areas

Eight OCP residues were detected in the composite and individual surface soil samples collected in the existing and former building and storage areas, including DDT, DDD, DDE, Dieldrin, Endosulfan Sulfate, Heptachlor Epoxide, Technical Chlordane, and Toxaphene. No single composite sample contained all eight detected OCPs. Other OCPs were not detected. Most detected concentrations of OCPs in the building areas were less than their respective TTLC, PRG-r, and PRG-i values.

Three of four surface samples collected in the western half of the NW Storage area contained detected concentrations of TDE (the combination o' the values of DDT, DDD, and DDE) that slightly exceeded the TTLC value of 1.0 mg/kg (maximum concentration of 1.69 mg/kg TDE in SS-213). The concentration did not exceed the respective PRG-r and RPG-i values. A boring to 5 feet bgs was completed at the location of SS-213 and samples were collected at 1 foot, 3 feet, and 5 feet bgs. OCPs were not detected above laboratory reporting limits in the subsurface samples.

One of six surface samples collected the southern part of the Address Location contained detected concentrations of TDE (the combination of the values of DDT, DDD, and DDE) that slightly exceeded the TTLC value of 1.0 mg/kg (maximum concentration of 1.1 mg/kg TDE in SS-220). The concentrations did not exceed the respective PRG-r and PRG-i values. Sample SS-220 also contained residues of Toxaphene at 1.1 mg/kg and Dieldrin at 0.050 mg/kg, which exceeded the PRG-r values of 0.44 mglkg and 0.03 mg/kg (respectively) but do not exceed the PRG-i values of 1.6 and 0.1 1 mg/kg (respectively). This sample did not exceed the TTLC values for either Toxaphene or Dieldrin. A boring to 5 feet bgs was completed at the location of SS-220 and samples were collected at 1 foot, 3 feet, and 5 feet bgs. Toxaphene was detected at 1 and 3 feet bgs at concentrations of 0.047 and 0.021 mg/kg, respectively. Other OCPs were not detected above laboratory reporting limits in the subsurface samples at 1 and 3 feet bgs. OCPs were not detected above laboratory reporting limits in the sample collected at 5 feet bgs. The presence of OCP residues in the existing and former building and storages areas is likely the result of spillage from mixing and storage.

4.3 Geophysical Investigation for USTs

Geophysical surveys involving TCM and GPR were conducted at seven separate localities on-site, and four objects were detected (OB-l through OB-4). OB-1, located near the gate of the enclosed area in the NW Storage area, had a geophysical signature that suggested a flat conductive (likely metallic) object about 3 feet by 2 feet in size. OB-2 and OB-3 were located in the south storage area of the Address Location, where the ESA indicated a UST was suspected to have historically existed. OB-2 was about 5 feet by **3** feet in size and OB-3 was about 10 feet by 3 feet in size. Both anomalies had a geophysical signature suggestive of a buried drum or UST. OB-4, located at the SE building location, was about 2 feet by 4 feet in size and is about % foot below the

surface. The geophysical survey did not detect conductivity anomalies in the other existing and former building and storage locations on-site.

4.4 Borings at AST and Suspected UST Locations

Soils were observed to consist of silty clay and clayey sand (Unified Soil Classification System symbols CL and SC) in the upper 10 feet and clayey sand and silty sand (SC and SM) below 10 feet. Groundwater was not encountered in the borings. PID readings above background were not encountered. Evidence of petroleum staining and odors were encountered in each of the borings drilled at observed surface staining adjacent to ASTs (B-l@l, B-2@1, B-3@1, B-4@1, and B-4@5). Evidence of petroleum staining and odors were not observed in the borings completed at suspected UST locations (B-5 through B-8). Trace amounts of TPH-diesel was detected in soil samples B-l@l (670 mg/kg), B-2@1 (56 mg/kg), and B-4@1 (34 mg/kg). TPH-extractable hydrocarbons were not detected in the samples above laboratory reporting limits. The detected concentrations of TPH-fs are less than typical clean-up levels.

4.5 Excavation Activities

A back hoe was used to excavate the four geophysical anomalies OB-1 through OB-4. OB-1, OB-2, and OB-4 were found to be non-hazardous metallic debris. OB-3 was found to be a UST that was approximately 12 feet long and 4 feet in diameter (Photo 5). The UST was buried about 2.5 feet below the surface and the long axis on the UST was oriented in a north-south direction. Four subsurface samples were collected near the base of the UST at approximately 4.5 feet bgs at the north, south, west, and east sides of the UST (OB-3@4.5N through OB-3@4.5E, respectively). The four samples were analyzed for TPH-fs, and OB-3@4.5N and OB-3@4.5S were additionally analyzed for VOCs. TPM-fs was not detected above laboratory reporting limits for all four samples. Trace concentrations of Toluene were detected in OB-3@4.5N (0.005 mg/kg) and OB-3@4.5S (0.007 mg/kg). The detected concentrations of Toluene are less than typical clean-up levels.

4.6 Other Observations

Brown Barranca is a steep-sided gully that cuts through the northeast corner of the site. It is estimated to be between 25 to 50 feet deep and is extensively overgrown with brush, reeds, small trees, and poison oak. It was observed that the Barranca is currently and has historically been used as a local disposal site for agricultural and domestic debris. Debris as large as a refrigerator was observed dumped in the Barranca (Photo 7). While drums or hazardous material were not observed, due to the extensive overgrowth in the Barranca it was not possible to observe large portions of the banks and bottom during this investigation.

A piece of asbestos-cement [AC] approximate 5 feet long and 6 inches in diameter was observed in a pile of agricultural debris at the west end of the row of small sheds in the southern field area (Photo 8). A precursory inspection of other debris piles in the existing and former building and storage sites did not reveal other pieces of AC pipe. It is possible that the AC pipe was part of a vent pipe. Vent pipes are typically used in gravity (non-pressurized) systems, while AC pipe is normally used underground only in irrigation systems that are moderately pressurized. The topography of the site slopes to the southeast, with surface elevations ranging from about 260 feet above mean sea level in the northwestern corner to about 190 feet above mean sea level in the southeastern corner, for a topographic change of about 65 feet. AC pipe was historically installed in irrigation systems expected to have moderate water pressures, which would exceed the strength of concrete pipe (about 20 feet of hydrostatic head) but be less than the design strength of AC pipe (about 120 feet of hydrostatic head). The topography of the subject site falls within that range, so it is possible that AC pipe was used in the on-site irrigation system, particularly in the southern portion of the site. The site is currently irrigated by an aboveground sprinkler system and not by a subsurface irrigation system. This piece of AC piping, and any other AC piping discovered during construction, should be removed and disposed of properly by a licensed asbestos contractor.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the activities and findings summarized above, the following conclusions and recommendations are presented:

1. Soil samples collected in the agricultural field portion of the site were found to contain low concentrations of DDT, DDD, DDE, Endosulfan Sulfate, and Toxaphene. Other OCPs were not detected.

- Toxaphene was detected at a concentration equal to the PRG-r in one sample from the field areas, but was not detected in most of the other samples from the field areas. The average concentration of Toxaphene was well below the PRG-r value. Therefore, the detection of Toxaphene at a concentration equivalent to the RPG-r value is not considered significant.

- DDT and the breakdown byproducts DDE and DDD (collectively referred to as TDE) were detected in eight of ten surface soil samples from the northwest portion of the site at concentrations that exceeded the TTLC value of 1.0 mg/kg. The concentrations were relatively consistent across this portion of the site, suggesting the material is a residue from historical agricultural activities. A boring completed at the sample with the highest detected concentration (SS-111 at 2.34 mg/kg) found that the concentrations decreased rapidly with depth, such that at 1 foot bgs the concentration of TDE was 0.021 mg/kg. The DDT, DDE, and DDD concentrations do not exceed the PRG-r values individually,

but the combined risk from all three would exceed the PRG-r goal in some of the samples. The combined risk from all three would be well below the PRG-i. **Consequently, it appears that the upper % foot of soil in the NW Field area is marginally above preferred values for use in a residential setting, and would be classified as a hazardous waste if the material were to be disposed of off-site. Therefore, we recommend that the uppermost soil be sequestered on-site to avoid exposure to these soils by future residents, such as placing the soil as fill in the Barranca area or under the proposed commercial portion of the site. The quantity of soil in question is approximately 11,200 cubic yards. It is recommended that the on-site mitigation options be coordinated with the Ventura County Environmental Health Division [VCEHD].**

- Pesticide residues were not found at elevated concentrations in other portions of the field areas. Further investigations in these areas regarding this issue do not appear warranted.

2. Soil samples collected in the existing and former building and storage locations of the site were found to contain trace amounts of DDT, DDD, DDE, Endosulfan Sulfate, and Toxaphene. Other OCPs were not detected. With the exception of samples collected in the west part of the NW Storage Location and the storage area directly south of the Address Location, the concentrations of OCPs were less than Residential PRG and TTLC values. Further investigations regarding this issue do not appear warranted in the building areas except as follows:

- In the west part of the NW Storage Location, three of the four soil samples contained TDE residues that were slightly over the TTLC limit of 1.0 mglkg. A boring completed at the sample with the highest detected concentration (SS-213 at 1.69 mg/kg) found that the residues of pesticides decreased rapidly with depth, and that TDE was not detected above laboratory reporting limits at a depth of 1 foot bgs. The volume of affected soil totals about 270 cubic yards. **These soils should be handled in the same manner as the surface soil in the northwestern portion of the site, with the concurrence of the VCEHD.**

- In the storage area directly south of the Address Location, Sample SS-220 contained TDE residues that were slightly over the TTLC limit of 1.0 mglkg, as well as residues of Dieldrin and Toxaphene that were over the PRG-r's. A boring completed at SS-220 found that pesticide concentrations decreased rapidly to less than the PRG-r's by a depth of 1 foot bgs. The volume of affected soil in this location is very small (about 2 cubic yards). **We recommend soils within a 10-foot radius of SS-220 to a depth of 0.5 feet be handled in the same manner as the surface soil in the northwestern portion of the site, with the concurrence of the VCEHD.**

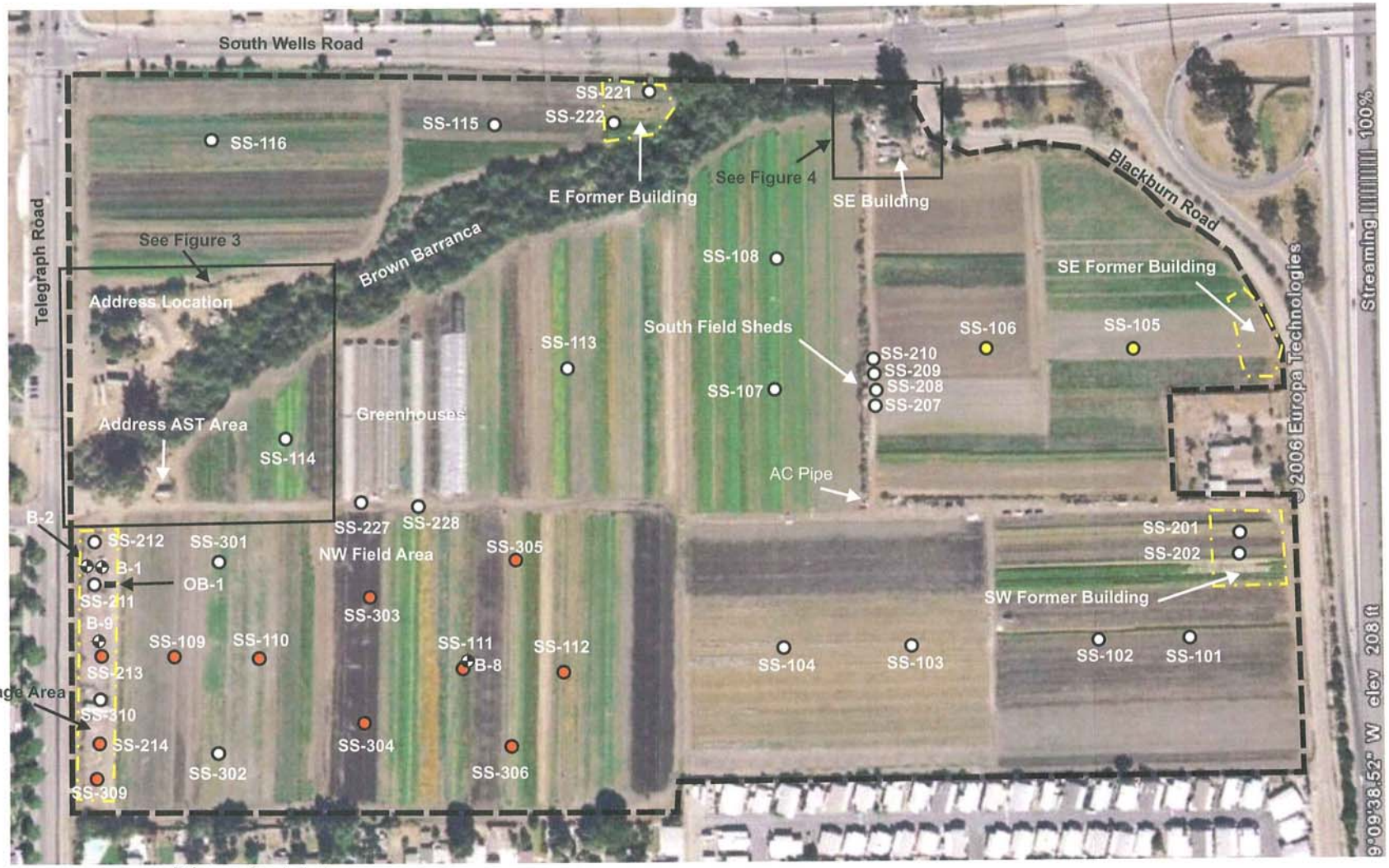
3. Soil samples collected from the borings completed at the suspected AST locations contain low concentrations of TPH-diesel at depths of about 1 to 2 feet bgs. Evidence

of subsurface contamination by leakage of petroleum products from ASTs deeper than 5 feet bgs was not observed. The amount of observed hydrocarbon contamination of the soils is considered to be minor and should be disposed of properly during any construction activities. Further investigations of the stained soils associated with the ASTs do not appear warranted.

4. Geophysical anomalies OB-1 through OB-4 were investigated with borings and excavations. OB-1, OB-2, and OB-4 were found to be non-hazardous metallic junk. Residues of TFH-fs were not detected in subsurface samples from these areas. A 12-foot long and 4-foot diameter UST was found at the OB-3 location. Residues of TPH-fs were not detected near the base of the UST and only trace amounts of Toluene were detected. **We recommend that the UST be properly excavated and disposed of according to the guidelines of the Ventura County Fire Department and the VCEHD.**

5. Brown Barranca apparently has been used as a local disposal site for agricultural and domestic debris for a considerable period of time. Debris as large as a refrigerator can be seen in the Barranca. Brown Barranca is extensively overgrown and very steep-sided, so observations of the banks and bottom of the Barranca are severely limited. It is recommended that during construction activities involving clearing of the banks and bottom of Brown Barranca, care be taken to look for potentially hazardous material such as drums, tanks, stained soils, pesticide and other poison containers, and similar materials. If these materials are found, they should be segregated from the other material and disposed of properly. Further investigation may be warranted if significant potentially-hazardous materials are encountered during clearing activities.

6. A piece of asbestos-cement [AC] approximate 5 feet long and 6 inches in diameter was observed in the southern field area in a pile of agricultural debris. Historically, AC pipe was typically installed in irrigation systems expected to have moderate water pressures, which would exceed the strength of concrete pipe (about 20 feet of hydrostatic head) but be less than the design strength of AC pipe (about 120 feet of hydrostatic head). The topography of the subject site falls within that range, so it is possible that AC pipe was used in the on-site irrigation system, particularly in the southern portion of the site. This piece of AC piping, and any other AC piping discovered during construction, should be removed and disposed of properly by a licensed asbestos contractor. We understand that AC pipe removal and disposal can cost between $1,000 and $2,000 per hundred lineal feet of pipe to be removed, and that hundreds to thousands of feet of irrigation pipe can be installed on some farms (depending on the layout of the fields). Since this cost can be significant, you may want to conduct further evaluations regarding the potential presence of AC pipe in the former irrigation system.



Reference: Google Earth

LEGEND

- Site Boundary
- Limits Geophysical Survey
- B-1 Boring Location
- OB-1 Geophysical Object
- SS-1 Surface Sample Location
- Exceeds TTLC Guideline for TDE (DDT+DDD+DDE)
- Exceeds Residential PRG Guideline for Toxaphene

Approximate Scale: 1" = 120'

0 200' 400'

Figure 2 Sample and Boring Locations	
TT 5632 Parklands, SWC Telegraph Rd & Wells Rd. Ventura, California	
Earth Systems Southwest	
11/22/06	10832-01

Reference: Google Earth

LEGEND

Limits Geophysical Survey

OB-1 Geophysical Object

B-1 Boring

SS-1 Surface Sample

Exceeds TTLC Guideline for TDE

Approximate Scale: 1" = 60'

0 60' 120'

Figure 3
Address Location and Vicinity

TT5632 Parklands, SWC Telegraph Rd and Wells Rd
Ventura,California

Earth Systems
Southwest

11/22/06	10832-01

Reference: Google Earth

LEGEND

Limits Geophysical Survey

OB-1 Geophysical Object

B-1 Boring

SS-1 Surface Sample Location

Approximate Scale: 1" = 35'

0 35' 70'

Figure 4
East Building Locarion

TT5632 Parklands, SWC Telegraph Rd and Wells Rd
Ventura,California

Earth Systems Southwest

11/22/06	10832-01

Appendix G

Noise Reports

Rincon Consultants, Inc.
790 East Santa Clara Street
Ventura, California 93001

805 641 1000
FAX 641 1072

info@rinconconsultants.com
www.rinconconsultants.com

November 11, 2008
Job No. 05-58810

Iain Holt, Acting Senior Planner
City of Ventura
501 Poli Street
Ventura, CA 93001

Subject: Noise Barrier Analysis for Parklands Specific Plan Residential Development Ventura, California

Dear Mr. Holt:

This barrier analysis was prepared for the Parklands Specific Plan EIR to evaluate options that would keep the proposed soundwall out of the floodplain. Three different types/combinations of walls were modeled, all of which achieve modeled noise levels of less than 65 dBA for exterior usable spaces assuming 2025 traffic conditions.

Methodology

Field Measurements. Field measurements were conducted using a Larson-Davis Model 720 (ANSI Type 2) integrating sound level meter and statistical data logger. Instantaneous sound levels were measured, integrated, and recorded by the sound level meter in 0.1-second intervals. Six (6) 20 minute field measurements were taken at or near the site; three along the site boundary adjacent to Blackburn Road including one near the Country Estates Mobil Home Park, and three along Wells Road including one near Bonaventure Senior Housing at Telegraph Road and one near Las Clinicas medical building. Figures 1-3 show the location of each measurement and the measurement data is attached. The sound level data collected included date, time, duration of measurement (in seconds), L_{eq}, SEL, statistical sound levels (L_{90}, L_{50}, L_{33} and L_{10}), L_{max}, L_{min}, and peak (A-weighted). Noise pass-by events exceeding 70 dBA and time history (current sound power level every 10 seconds) were also logged by the sound level meter. The sound level meter logs the data, which is then transferred to a computer. The set-up consisted of mounting the sound level meter on a tripod with the microphone top approximately three feet above the ground surface level as measured with a tape measure. Calibration of the sound level meter prior to measurements was performed using a Larson-Davis Acoustic Calibrator CAL150 using a sound power level of 94 dBA at a frequency of 1,000 Hz. Calibration level was also checked at the end of the measurement period to ensure accurate results.

Forecast meteorological conditions were checked prior to the field measurement to determine if acceptable conditions would prevail throughout the measurement period, with the measurement conducted on a day without measurable precipitation and wind speeds

generally below 3 miles per hour. Wind speeds were checked prior to field set-up with a Kestrel 1000 hand-held anemometer.

Data Collection. Six (6) 20-minute noise measurements were taken at and near the project site on July 29, 2008 between the hours of 9:30 AM and 12:30 PM for the purpose of documenting existing sound levels associated with traffic on Wells Road, Blackburn Road and State Route 126 (SR 126), which would be utilized to calibrate the TNM® model. Measurements were taken at the ground level of the project site and roadways. Three of the measurements were taken on site along the southeast site boundary. The first of these measurements was taken near the proposed lot 178 adjacent to the existing Country Estates Mobile Home park; the second onsite measurement was taken at the proposed location of the Road J entrance off Blackburn Road; the third onsite measurement was taken at the proposed location of the airspace condominium units at lot 145. All the measurements were taken approximately 50 feet from centerline of Blackburn Road. Onsite conditions were favorable for noise measurements, with the temperature at about 72°F with negligible wind and clear skies.

Traffic Sound Level Modeling. Traffic was modeled using the Federal Highway Administration Traffic Noise Model® (TNM, ver 2.5) based on data provided by Associated Transportation Engineers (ATE) in the approved traffic report for the project and freeway data provided by Caltrans. Peak hour traffic estimates for the segment of Highway 101 near the project site, Wells Road, and Blackburn Road, including the proposed project generated traffic combined with the existing traffic and future traffic generated by cumulative development in the area were used for the TNM® modeling. The future modeled year is 2025.

The TNM® uses algorithms based on speed to calculate the average sound level produced by the three vehicle types of concern (autos, medium-duty trucks, and heavy-duty trucks). The analysis used average speeds of 70 mph for cars 65 mph for medium trucks and 60 mph for heavy trucks on the freeway, 45 to 50 mph for vehicles on the on-and off-ramps, 40 mph for vehicles on Wells Road, and 35 mph for vehicles on Blackburn.

The location of road lanes, existing barriers, and houses were digitized into the TNM® from the AUTOCAD site plans (DTR Engineering, July 2008). Topographical elevations were also taken from the site plans. The results of the noise model and the basic input data files required are attached.

The noise model was checked for calibration based on the field noise measurements conducted at the site. The field measurements yielded values that varied from the TNM® calculated level for peak hour by approximately 3.1 to 3.3 dBA. The difference in the measured sound levels and the modeled sound levels can be attributed to the variability of traffic volumes. It is noted that a difference of 3 dBA is just audible, whereas increases of less than 3dBA are not audible to the human ear.

The field measurements and the TNM® are subject to various errors. Field measurements are essentially a "snapshot" in time and are indicative of the environmental conditions and travel patterns that existed on the day of the measurements, and these can vary substantially from day to day and season to season. The noise model is subject to the limitations of the data readily available, including the accuracy of elevations taken from the digital and paper maps as compared to actual field conditions, and the inaccuracies created

by digitizing from paper sources. Therefore, the accuracy of the sound levels reported in this study is considered to be in the ± 2 dB range.

Noise Conditions. The primary noise sources at the project site are traffic on SR 126 and the Wells Road/SR 126 interchange. Secondary noise sources at the project site are traffic on Wells Road and Blackburn Road. Based on modeling exercises, it was determined that the combination of Wells Road, the interchange ramps and Blackburn Road contribute nearly as much noise to the ambient environment as SR 126 by itself. These multiple noise sources in association with site topography, which is about seven feet higher at the southwestern end of the plan area all contribute to resultant noise levels.

Based on the TNM® results (attached) exterior noise levels at the residences closest to the noise sources (traffic on US 101, the on ramp and Blackburn Road) would be approximately 73 dBA CNEL with out the incorporation of noise barriers. Results of the TNM® show that noise levels at all the residences adjacent to Blackburn Road near the on ramp would be range between approximately 70 and 73 dBA CNEL without noise barriers. Noise levels at exterior living space of residences at the Parklands Specific Plan area adjacent to Blackburn Road, Highway 101 and the on ramp would exceed the City's threshold of 65 dBA CNEL for exterior residential uses. Therefore, given standard construction materials, it is possible that interior noise levels with windows facing the freeway would have unacceptably high sound levels (exceed 45 dBA CNEL for interior uses).

Barriers. The model was run for three different potential sound barrier scenarios. These included: (1) modeling the proposed garden wall along the site boundary adjacent to Blackburn Road at various heights; (2) incorporation of a previously proposed soundwall along the southeastern side of Blackburn, across the road from the project site, while maintaining the proposed "garden wall" at 6-feet in height; (3) modeling the soundwall at various heights without the inclusion of the proposed "garden wall". These barriers and the resultant noise levels under 2025 conditions are shown on Figures 1 -3.

Garden Wall Only. This wall is shown on Figure 1. The model results show that the proposed "garden wall" along the Blackburn Road boundary would serve to reduce sound levels from nearby traffic; however at six feet the wall would not be sufficient to reduce the levels below 65 dBA CNEL. The model further indicates that increasing the height of the "garden wall" to seven feet would be sufficient to reduce noise levels below the threshold for all the residences except for the proposed residences located on lot 146 near the proposed Road I entrance. At this location an eight foot wall would be required to reduce sound levels below the threshold. It is also noted that this configuration lies entirely outside of the proposed 100-year flood boundary. Please see Figure 1.

Six Foot Tall Garden Wall Plus Variable Height Soundwall. These walls are shown on Figure 2. The model results indicate that maintaining the proposed 6-foot "garden wall" and constructing a soundwall along the southeastern side of Blackburn road would also achieve sufficient noise reduction. The soundwall would need to be constructed to seven feet tall along the majority of the roadway, with one section adjacent to lot 146 near the proposed Road I entrance requiring an eight foot tall wall to achieve sufficient noise reduction. This option shows that a portion of the soundwall (about 150 feet on the eastern end as shown in Figure 2) overlaps with the boundary of the 100-year flood zone. Please

see Figure 2.

SR 126 Soundwall Only. This wall is shown in Figure 3. The model results indicate that constructing a soundwall along the southeastern boundary of Blackburn Road, across the road from the project site, without constructing the proposed garden wall could achieve sufficient noise reduction. However, the size of the wall required would be larger then the other two options. As illustrated in Figure 3, the wall would have to be 14 feet opposite the condominium lot 145, and would need to progressively increase in height as it extends farther from the Wells Road interchange. Wall heights would need to be 16 feet and 18 feet opposite residential lot 146 and would need to be 19 feet opposite the existing residence, with a 21 foot wall for the remainder of the plan area frontage to the Country Estates Mobile Home Park lot line (see Figure 3). It is noted that the wall height under this scenario is required to be taller due to the distance between the noise source and the receptor, whereas the garden walls as proposed above attenuate noise at the ground level within proposed exterior spaces at a lower height because they would be constructed much closer to the receptors. Additionally, this configuration would result in about 200 feet of wall within the 100 year flood zone, while about 150 additional linear feet overlap with the boundary of the 100-year flood zone. Figure 3 shows the flood zone boundary in relationship to the soundwall.

Recommendations. Under 2025 conditions, the exterior spaces and side yards of the nearest residences would be exposed to Blackburn Road, SR 126 on ramp and through-traffic sound levels of about 70-73 dBA CNEL; therefore, to meet the City's exterior standard of 65 dBA CNEL, adequate noise attenuation is needed. Construction of any one of the mitigation scenarios shown on Figures 1 through 3 would result in noise levels that are below the exterior 65 dBA CNEL standard at exterior usable spaces within the Parklands project.

The second floor of residences that face southeast and are exposed to noise generated along Blackburn Road, the on ramp, and the freeway will also require attenuation. Second floor elevations may not be afforded attenuation by a sound wall if the line of sight between windows and the noise source is not interrupted. Noise from local freeway traffic would be disturbing to the future occupants. Therefore, the following measures are recommended to reduce exterior and interior noise levels.

> **Interior Noise Attenuation.** Plans submitted to the Inspection Services Division for purposes of obtaining building permits shall illustrate that residences fronting Blackburn Road/SR 126 shall ultimately be constructed to include the following:
>
> a) Windows facing the street shall be dual pane, laminated with a Sound Transmission Class (STC) rating of at least 40;
>
> b) Windows facing the street on multiple-family structures shall be minimized and non-opening.
>
> c) Exterior walls facing the street shall be constructed of staggered wood studs, or equipped with a resilient channel between the studs and

wallboard, or any other wall system with an STC rating of at least 50;

d) Exterior doors facing the street shall be of a sound insulating design with a STC rating of at least 38; and

e) All exterior doors and windows shall be installed with proper weather stripping.

f) Roof construction of concrete tile with 15/32-inch plywood, R-30 batt insulation in the attic, and a layer of ½-inch thick gypsum board separating the attic from living areas;

With construction of walls such as those shown on Figures 1 through 3 and incorporation of the above design features to reduce interior second story noise levels to 45 dBA, future residences fronting Blackburn Road and SR 126 would not experience noise levels in excess of the allowable residential noise standards.

The analysis herein is based on the existing topography of the site and site plans prepared for the site and provided to Rincon Consultants. Changes in the final grading and pad elevations would alter the model predicted results contained herein.

If you have any questions about this analysis, please call Patrick Nichols at 805-641-1000 ext 16.

Sincerely,

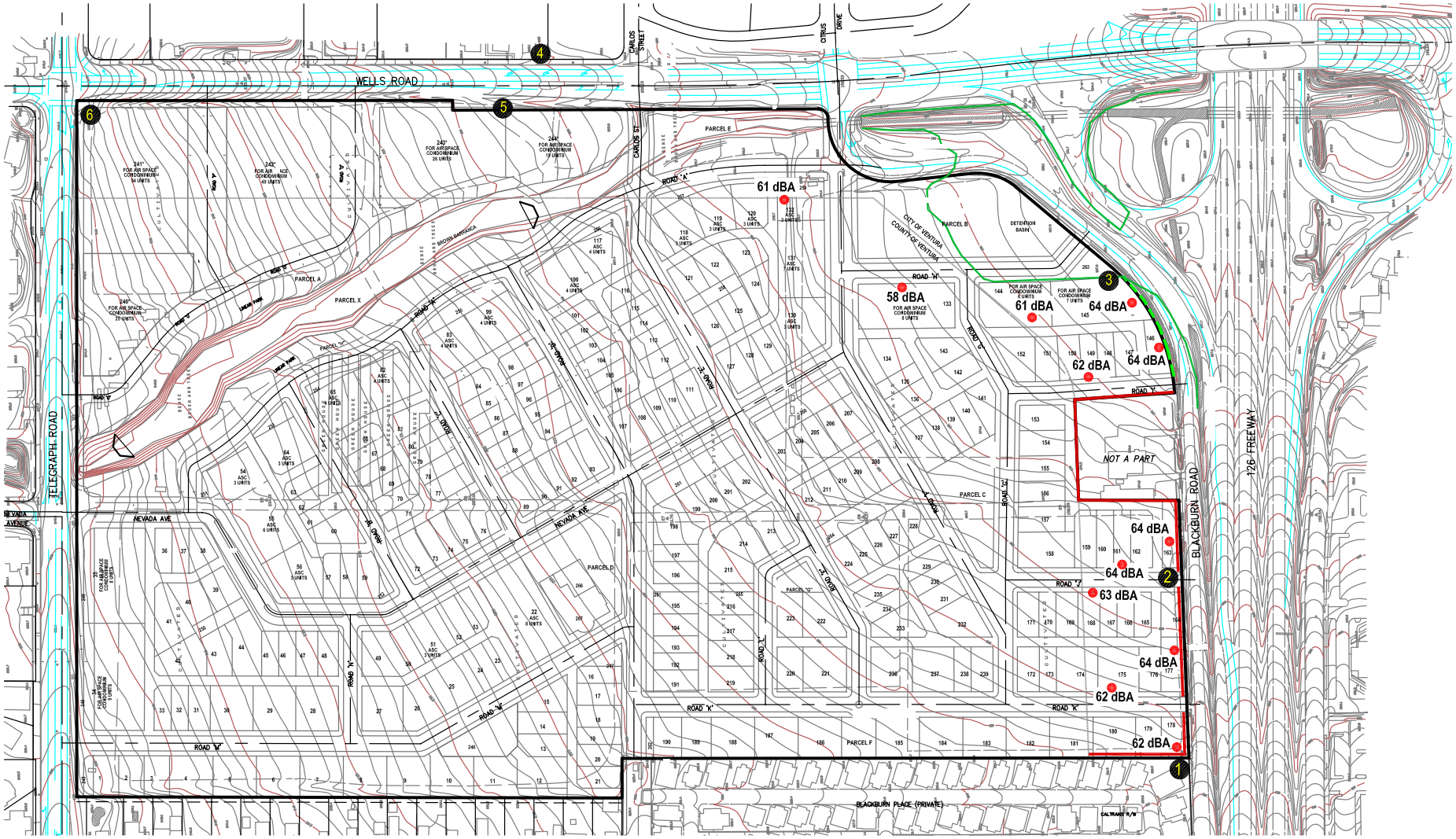
RINCON CONSULTANTS, INC.

Patrick Nichols
Environmental Planner

Cori Thomas
Project Manager

Attachment A

Figures



LEGEND

- PROPOSED 7 FOOT GARDEN WALL
- PROPOSED 8 FOOT GARDEN WALL
- PROPOSED 100 YEAR FLOOD ZONE
- dBA NOISE LEVEL AT RECEPTOR
- 1 NOISE MAESUREMENT LOCATION

N

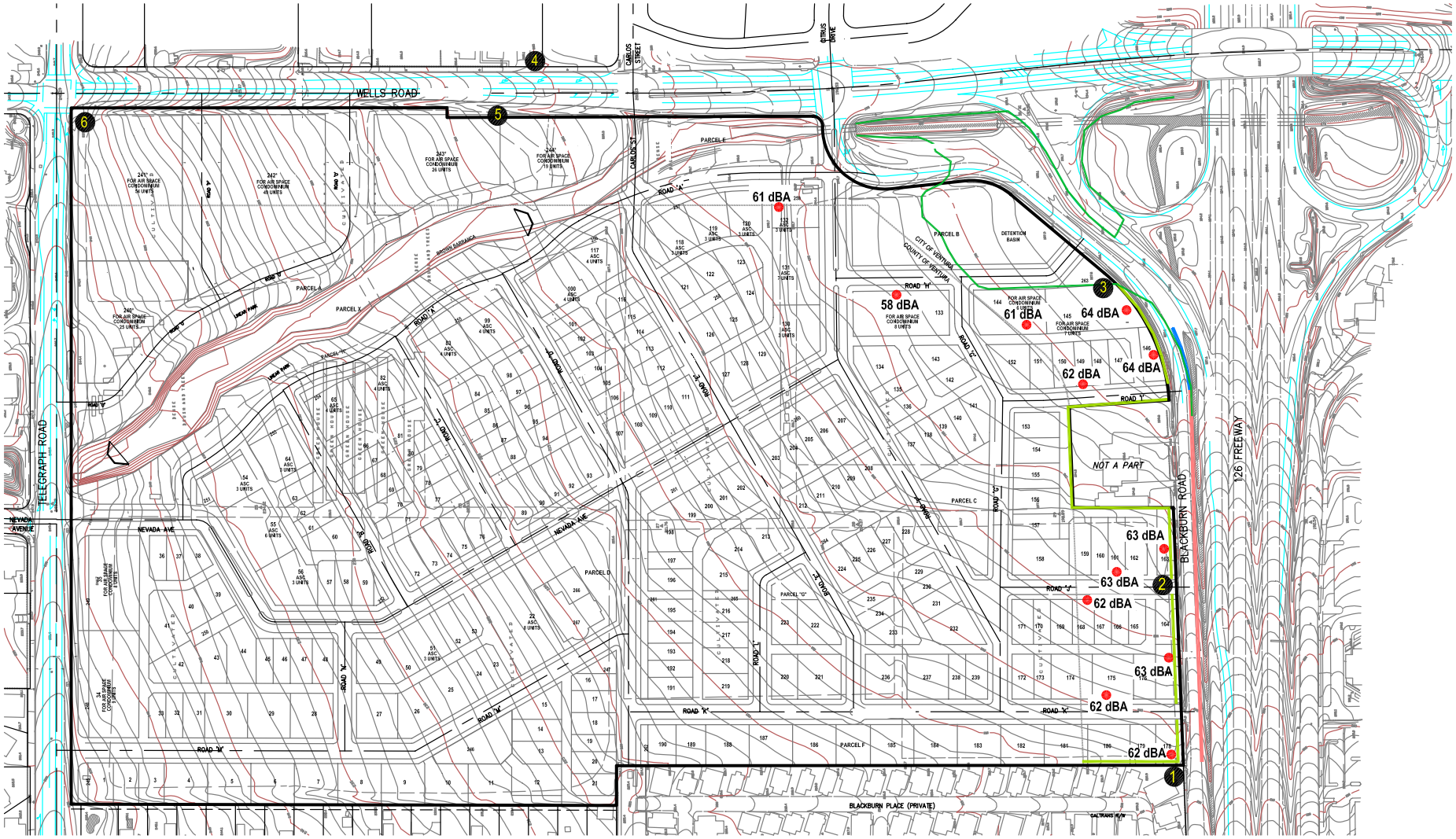
0 100 200 Feet

2025 Modeled Noise Levels
Variable Height Garden Wall

Basemap Source: Padre Associates, Inc., April 2007.

Figure 1

City of Ventura



LEGEND

- PROPOSED 6 FOOT GARDEN WALL
- PROPOSED 7 FOOT SOUNDWALLL
- PROPOSED 8 FOOT SOUNDWALL
- PROPOSED 100 YEAR FLOOD ZONE
- dBA NOISE LEVEL AT RECEPTOR
- 1 NOISE MEASUREMENT LOCATION

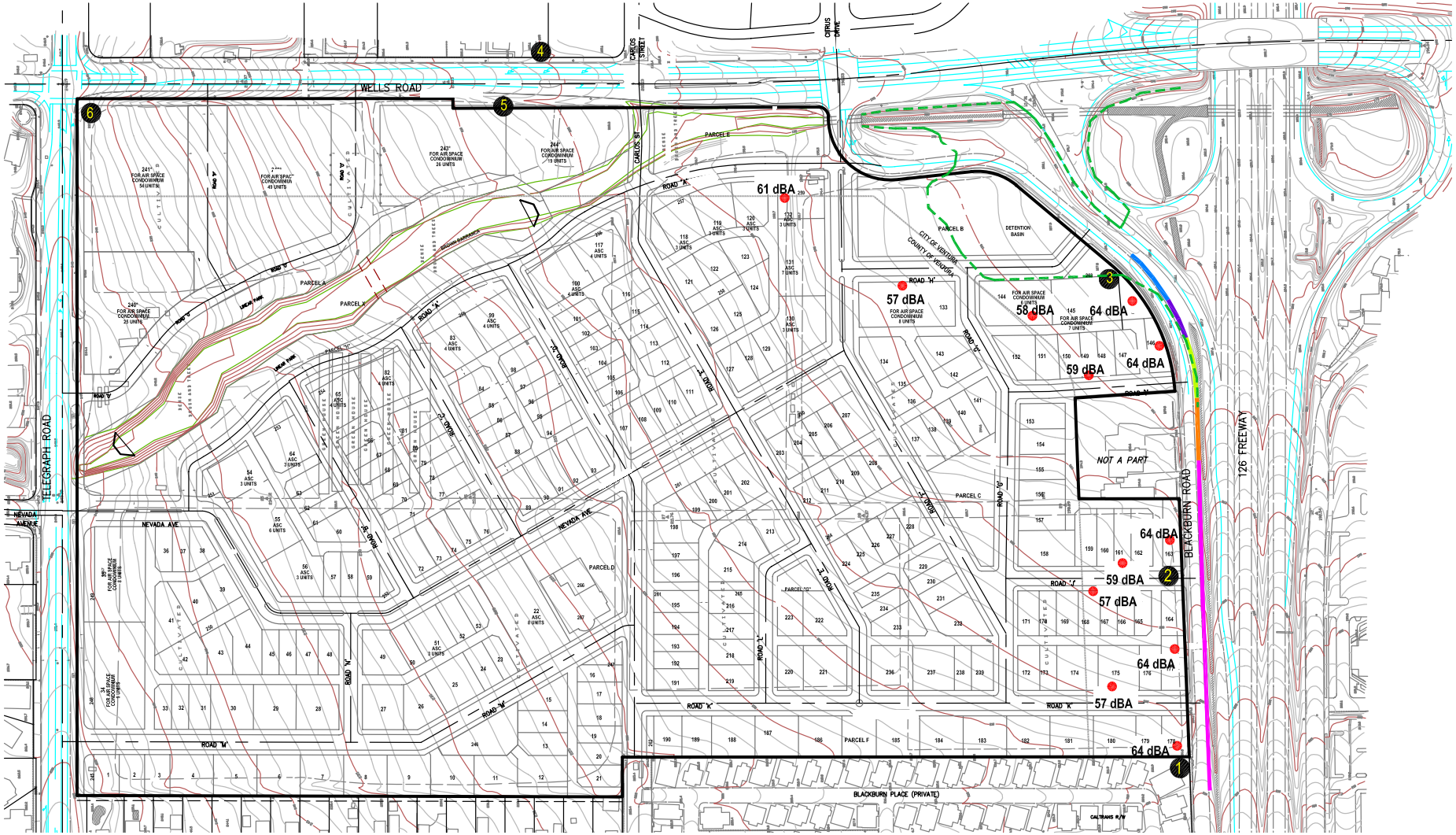
N

0 100 200 Feet

2025 Modeled Noise Levels
Six Foot Garden Wall and
Variable Height Soundwall

Figure 2

Basemap Source: Padre Associates, Inc., April 2007.



LEGEND

PROPOSED SOUND WALLS
- 14 FOOT HEIGHT
- 16 FOOT HEIGHT
- 18 FOOT HEIGHT
- 19 FOOT HEIGHT
- 21 FOOT HEIGHT
- PROPOSED 100 YEAR FLOOD ZONE
- **dBA** NOISE LEVEL AT RECEPTOR
- (1) NOISE MEASUREMENT LOCATION

N

0 100 200 Feet

2025 Modeled Noise Levels
Variable Height Soundwall

Figure 3

Basemap Source: Padre Associates, Inc., April 2007.

City of Ventura

Attachment B

TNM® Model Results

Rincon Consultants, Inc
P. K. Nichols

18 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(7ft grdn wall) w/8ft section
BARRIER DESIGN: unsaved

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.6	66	61.6	10	----	61.4	0.2	8	-7.8
Road H pad 133	11	1	0.0	59.2	66	59.2	10	----	58.4	0.8	8	-7.2
Road G pad 144	12	1	0.0	62.4	66	62.4	10	----	61.3	1.1	8	-6.9
Road G pad 145	13	1	0.0	69.7	66	69.7	10	Snd Lvl	63.7	6.0	8	-2.0
Road I pad 146	14	1	0.0	70.4	66	70.4	10	Snd Lvl	64.0	6.4	8	-1.6
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	63.8	8.8	8	0.8
Road K pad 177	16	1	0.0	72.5	66	72.5	10	Snd Lvl	63.8	8.7	8	0.7
Road K pad 178	17	1	0.0	71.0	66	71.0	10	Snd Lvl	63.2	7.8	8	-0.2
Measurment location2	18	1	0.0	72.3	66	72.3	10	Snd Lvl	72.1	0.2	8	-7.8
Road T front of pad 149	22	1	0.0	66.0	66	66.0	10	Snd Lvl	62.3	3.7	8	-4.3
Road J front of pad 161	23	1	0.0	67.0	66	67.0	10	Snd Lvl	64.0	3.0	8	-5.0
Road J front of pad 168	24	1	0.0	65.2	66	65.2	10	----	63.0	2.2	8	-5.8
Road K front of pad 175	25	1	0.0	65.1	66	65.1	10	----	62.9	2.2	8	-5.8

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.2	3.9	8.8
All Impacted	8	0.2	5.6	8.8
All that meet NR Goal	2	8.7	8.8	8.8

Rincon Consultants, Inc
P. K. Nichols

13 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(6ft grdn wall)
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.6	66	61.6	10	----	61.4	0.2	8	-7.8
Road H pad 133	11	1	0.0	59.2	66	59.2	10	----	58.5	0.7	8	-7.3
Road G pad 144	12	1	0.0	62.4	66	62.4	10	----	61.5	0.9	8	-7.1
Road G pad 145	13	1	0.0	69.7	66	69.7	10	Snd Lvl	64.8	4.9	8	-3.1
Road I pad 146	14	1	0.0	70.4	66	70.4	10	Snd Lvl	65.7	4.7	8	-3.3
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	65.6	7.0	8	-1.0
Road K pad 177	16	1	0.0	72.5	66	72.5	10	Snd Lvl	65.7	6.8	8	-1.2
Road K pad 178	17	1	0.0	71.0	66	71.0	10	Snd Lvl	64.8	6.2	8	-1.8
Measurment location2	18	1	0.0	72.3	66	72.3	10	Snd Lvl	72.1	0.2	8	-7.8
Road T front of pad 149	22	1	0.0	66.0	66	66.0	10	Snd Lvl	63.1	2.9	8	-5.1
Road J front of pad 161	23	1	0.0	67.0	66	67.0	10	Snd Lvl	64.4	2.6	8	-5.4
Road J front of pad 168	24	1	0.0	65.2	66	65.2	10	----	63.4	1.8	8	-6.2
Road K front of pad 175	25	1	0.0	65.1	66	65.1	10	----	63.3	1.8	8	-6.2

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.2	3.1	7.0
All Impacted	8	0.2	4.4	7.0
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants, Inc
P. K. Nichols

13 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(7ft grdn wall)
BARRIER DESIGN: unsaved
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road G pad 145	13	1	0.0	69.7	66	69.7	10	Snd Lvl	63.8	5.9	8	-2.1
Road I pad 146	14	1	0.0	70.4	66	70.4	10	Snd Lvl	64.6	5.8	8	-2.2
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	63.8	8.8	8	0.8
Road K pad 177	16	1	0.0	72.5	66	72.5	10	Snd Lvl	63.8	8.7	8	0.7
Road K pad 178	17	1	0.0	71.0	66	71.0	10	Snd Lvl	63.2	7.8	8	-0.2

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	5	5.8	7.4	8.8
All Impacted	5	5.8	7.4	8.8
All that meet NR Goal	2	8.7	8.8	8.8

Rincon Consultants, Inc
P. K. Nichols

13 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(8ft grdn wall)
BARRIER DESIGN: unsaved
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road G pad 145	13	1	0.0	69.7	66	69.7	10	Snd Lvl	62.9	6.8	8	-1.2
Road I pad 146	14	1	0.0	70.4	66	70.4	10	Snd Lvl	63.9	6.5	8	-1.5
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	62.6	10.0	8	2.0
Road K pad 177	16	1	0.0	72.5	66	72.5	10	Snd Lvl	62.4	10.1	8	2.1
Road K pad 178	17	1	0.0	71.0	66	71.0	10	Snd Lvl	62.0	9.0	8	1.0
Measurment location2	18	1	0.0	72.3	66	72.3	10	Snd Lvl	72.0	0.3	8	-7.7

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	6	0.3	7.1	10.1
All Impacted	6	0.3	7.1	10.1
All that meet NR Goal	3	9.0	9.7	10.1

Rincon Consultants, Inc
P. K. Nichols

13 August 2008
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(8ft grdn wall)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Wells Rd Southbound N of Blackburn	12.0	point1	1	1,282.2	2,454.6	201.00				Average	
		point232	232	1,331.8	2,453.7	200.00				Average	
		point2	2	1,402.8	2,453.7	199.00				Average	
		point3	3	1,527.8	2,454.0	198.00				Average	
		point4	4	1,587.4	2,456.9	197.00				Average	
		point5	5	1,644.1	2,460.8	196.50					
Wells Rd Southbound S of Blackburn	12.0	point6	6	1,674.5	2,462.7	195.50	Signal	0.00	100	Average	
		point7	7	1,743.6	2,467.7	195.00				Average	
		point8	8	1,858.0	2,475.6	194.00				Average	
		point9	9	1,949.1	2,483.2	193.00				Average	
		point495	495	2,000.9	2,488.3	192.00				Average	
		point10	10	2,052.7	2,493.5	193.00				Average	
		point11	11	2,124.1	2,500.0	194.00				Average	
		point12	12	2,198.1	2,507.8	195.00				Average	
		point13	13	2,324.6	2,518.5	200.00				Average	
		point14	14	2,387.6	2,524.4	201.00				Average	Y
		point15	15	2,454.9	2,528.0	202.00				Average	Y
		point16	16	2,609.2	2,529.9	202.00				Average	Y
		point17	17	2,684.5	2,533.5	201.00				Average	
		point18	18	2,713.6	2,533.7	200.00				Average	
		point19	19	2,762.3	2,534.4	199.00				Average	
		point20	20	2,796.4	2,534.8	198.00				Average	
		point21	21	2,821.4	2,535.3	197.00				Average	
		point22	22	2,873.7	2,535.8	195.00					
SR 126 Westbound On Ramp	12.0	point23	23	1,849.5	2,461.2	194.00				Average	

		point24	24	1,937.8	2,459.5	193.00				Average	
		point25	25	2,009.9	2,435.7	192.00				Average	
		point26	26	2,049.1	2,412.6	191.70				Average	
		point27	27	2,074.6	2,376.6	191.20				Average	
		point28	28	2,112.8	2,315.4	191.00				Average	
		point29	29	2,134.7	2,270.7	190.50				Average	
		point30	30	2,168.0	2,225.9	190.00				Average	
		point31	31	2,205.0	2,194.3	189.50				Average	
		point32	32	2,248.5	2,159.9	189.00				Average	
		point33	33	2,289.9	2,125.5	188.20				Average	
		point34	34	2,338.2	2,073.6	188.00				Average	
		point35	35	2,372.0	2,021.4	187.80				Average	
		point36	36	2,388.2	1,987.3	187.70				Average	
		point37	37	2,409.5	1,916.3	187.60				Average	
		point38	38	2,418.0	1,876.2	187.00				Average	
		point39	39	2,420.1	1,845.6	188.00					
SR 126 Westbound On Ramp2	12.0	point40	40	2,420.7	1,844.3	188.00				Average	
		point41	41	2,419.4	1,802.5	190.00				Average	
		point42	42	2,421.1	1,771.1	191.00				Average	
		point43	43	2,422.1	1,729.1	192.00				Average	
		point44	44	2,424.3	1,688.4	193.00				Average	
		point45	45	2,427.0	1,650.8	194.00				Average	
		point46	46	2,429.9	1,615.1	195.00				Average	
		point47	47	2,431.5	1,584.0	196.00				Average	
		point48	48	2,432.0	1,550.6	197.00				Average	
		point49	49	2,432.2	1,504.8	198.00				Average	
		point50	50	2,430.5	1,459.6	199.00				Average	
		point51	51	2,431.3	1,403.7	200.00				Average	
		point52	52	2,439.4	1,337.3	201.00				Average	
		point53	53	2,447.7	1,297.6	202.00				Average	
		point54	54	2,451.4	1,268.4	203.00				Average	
		point55	55	2,455.1	1,229.8	204.00				Average	
		point56	56	2,457.9	1,194.5	205.00				Average	
		point57	57	2,459.2	1,163.9	206.00				Average	
		point58	58	2,461.3	1,122.3	207.00				Average	
		point59	59	2,463.6	1,085.0	208.00					
Blackburn Rd Westbound	12.0	point60	60	1,646.7	2,443.3	196.50	Signal	0.00	100	Average	
		point61	61	1,648.5	2,375.8	195.50				Average	

		point62	62	1,663.1	2,344.2	195.00				Average	
		point63	63	1,677.4	2,324.5	194.50				Average	
		point64	64	1,701.6	2,308.1	194.00				Average	
		point65	65	1,725.7	2,298.8	193.50				Average	
		point66	66	1,745.7	2,294.0	193.00				Average	
		point67	67	1,783.3	2,293.2	192.50				Average	
		point68	68	1,824.1	2,299.7	192.00				Average	
		point69	69	1,874.9	2,305.0	191.00				Average	
		point70	70	1,923.7	2,308.9	190.50				Average	
		point71	71	1,953.8	2,309.4	190.00				Average	
		point72	72	1,993.2	2,297.2	189.50				Average	
		point73	73	2,014.4	2,288.4	189.00				Average	
		point74	74	2,098.6	2,219.2	188.00				Average	
		point75	75	2,156.9	2,171.3	187.00				Average	
		point76	76	2,255.8	2,083.7	187.40				Average	
		point77	77	2,306.5	2,022.1	187.60				Average	
		point78	78	2,322.2	1,988.9	187.10				Average	
		point79	79	2,339.5	1,944.1	188.00				Average	
		point81	81	2,349.3	1,909.2	188.50				Average	
		point82	82	2,357.3	1,848.6	189.00				Average	
		point83	83	2,359.5	1,795.2	190.00				Average	
		point84	84	2,359.8	1,774.8	191.00				Average	
		point85	85	2,362.2	1,730.7	192.00				Average	
		point86	86	2,362.8	1,693.0	193.00				Average	
		point87	87	2,366.3	1,647.4	194.00				Average	
		point88	88	2,366.6	1,613.2	195.00				Average	
		point89	89	2,368.7	1,574.9	196.00				Average	
		point90	90	2,371.2	1,533.0	197.00				Average	
		point91	91	2,372.5	1,489.0	198.00				Average	
		point92	92	2,373.5	1,444.5	199.00				Average	
		point93	93	2,374.6	1,403.5	200.00				Average	
		point94	94	2,374.4	1,364.0	201.00				Average	
		point95	95	2,377.6	1,289.8	203.00				Average	
		point96	96	2,379.1	1,247.4	204.00				Average	
		point97	97	2,382.7	1,209.8	205.00				Average	
		point98	98	2,384.5	1,154.5	206.00				Average	
		point99	99	2,383.8	1,128.6	207.00				Average	
		point100	100	2,384.8	1,084.0	208.00				Average	

		point101	101	2,383.5	1,038.2	208.50					
Blackburn Rd Eastbound	12.0	point102	102	2,394.5	1,043.9	208.50				Average	
		point103	103	2,396.9	1,089.1	208.00				Average	
		point104	104	2,394.4	1,128.8	207.00				Average	
		point105	105	2,394.5	1,159.4	206.00				Average	
		point106	106	2,393.8	1,208.5	205.00				Average	
		point107	107	2,389.4	1,248.2	204.00				Average	
		point108	108	2,389.4	1,290.0	203.00				Average	
		point110	110	2,385.9	1,365.6	201.00				Average	
		point111	111	2,385.0	1,405.4	200.00				Average	
		point112	112	2,384.4	1,448.5	199.00				Average	
		point113	113	2,382.3	1,489.5	198.00				Average	
		point114	114	2,381.1	1,535.6	197.00				Average	
		point115	115	2,378.7	1,576.2	196.00				Average	
		point116	116	2,375.4	1,614.9	195.00				Average	
		point117	117	2,376.1	1,651.3	194.00				Average	
		point118	118	2,373.3	1,699.0	193.00				Average	
		point119	119	2,373.9	1,734.4	192.00				Average	
		point120	120	2,372.0	1,778.6	191.00				Average	
		point121	121	2,370.7	1,801.6	190.00				Average	
		point122	122	2,368.2	1,858.8	189.00				Average	
		point123	123	2,359.3	1,919.8	188.50				Average	
		point124	124	2,349.4	1,951.8	188.00				Average	
		point125	125	2,330.2	1,998.1	187.10				Average	
		point126	126	2,315.4	2,028.6	187.60				Average	
		point128	128	2,262.7	2,091.9	187.40				Average	
		point130	130	2,160.4	2,183.6	187.00				Average	
		point131	131	2,102.5	2,233.1	188.00				Average	
		point132	132	2,037.4	2,289.3	189.00				Average	
		point133	133	2,008.5	2,306.3	189.50				Average	
		point134	134	1,974.9	2,316.2	190.00				Average	
		point135	135	1,945.2	2,320.0	190.50				Average	
		point136	136	1,899.8	2,320.1	191.00				Average	
		point137	137	1,819.0	2,311.2	192.00				Average	
		point138	138	1,742.6	2,308.4	193.00				Average	
		point139	139	1,713.3	2,317.2	193.50				Average	
		point140	140	1,695.6	2,328.2	194.00				Average	
		194.5	141	1,676.8	2,352.0	194.50				Average	

		point142	142	1,666.9	2,373.6	195.00				Average	
		point143	143	1,661.8	2,392.9	195.40				Average	
		point144	144	1,660.9	2,443.4	196.30					
Wells Rd Northbound S of Blackburn	12.0	point148	148	2,908.2	2,584.8	191.00				Average	
		point149	149	2,852.3	2,584.3	195.00				Average	
		point150	150	2,724.8	2,582.2	200.00				Average	
		point151	151	2,695.5	2,581.3	201.00				Average	
		point152	152	2,660.8	2,580.1	202.00				Average	Y
		point153	153	2,590.9	2,576.8	203.00				Average	Y
		point154	154	2,484.0	2,572.5	204.00				Average	Y
		point155	155	2,370.0	2,561.9	203.00				Average	Y
		point156	156	2,337.3	2,559.4	202.00				Average	
		point157	157	2,303.3	2,555.6	204.00				Average	
		point158	158	2,276.6	2,554.3	205.00				Average	
		point159	159	2,234.8	2,550.0	198.00				Average	
		point160	160	2,196.7	2,546.2	197.00				Average	
		point161	161	2,166.3	2,544.0	196.00				Average	
		point162	162	2,131.6	2,540.8	195.00				Average	
		point163	163	2,081.6	2,537.0	194.00				Average	
		point164	164	2,031.0	2,531.7	193.00				Average	
		point496	496	1,973.9	2,525.5	192.00				Average	
		point165	165	1,933.7	2,521.1	193.00				Average	
		point166	166	1,845.8	2,515.0	194.00				Average	
		point167	167	1,778.8	2,510.2	195.00				Average	
		point168	168	1,673.7	2,502.5	195.50					
Wells Rd Southbound S of Blackburn2	12.0	point169	169	2,873.8	2,535.8	195.00				Average	
		point170	170	2,891.0	2,536.5	194.00				Average	
		point171	171	2,904.9	2,536.9	193.00					
SR 126 Westbound Off Ramp	12.0	point174	174	2,423.9	2,620.9	182.20				Average	
		point175	175	2,422.5	2,484.1	182.50				Average	
		point176	176	2,423.0	2,447.0	183.00				Average	
		point177	177	2,419.9	2,322.1	183.10				Average	
		point178	178	2,405.1	2,282.8	184.00				Average	
		point179	179	2,367.6	2,241.3	185.00				Average	
		point180	180	2,319.2	2,219.3	186.00				Average	
		point181	181	2,249.4	2,219.0	187.00				Average	
		point182	156	2,191.2	2,250.7	188.00				Average	
		point183	183	2,158.2	2,295.4	189.00				Average	

		point184	184	2,149.4	2,334.0	190.00				Average	
		point185	185	2,149.8	2,374.8	191.00				Average	
		point186	186	2,166.1	2,420.5	192.00				Average	
		point187	187	2,191.5	2,452.0	193.20				Average	
		point188	188	2,214.2	2,470.3	194.00				Average	
		point189	189	2,252.0	2,485.2	195.00				Average	
		point190	190	2,267.6	2,488.5	196.00				Average	
		point191	191	2,281.6	2,491.5	197.00				Average	
		point192	192	2,309.0	2,497.5	198.00				Average	
		point193	193	2,327.4	2,501.7	199.00				Average	
		point194	194	2,352.4	2,507.8	200.00				Average	
		point195	195	2,386.9	2,518.6	201.00				Average	Y
		point196	196	2,454.6	2,527.4	202.00					
Wells Rd Northbound N of Blackburn	12.0	point226	226	1,648.3	2,502.1	196.00	Signal	0.00	100	Average	
		point227	227	1,565.4	2,496.7	197.00				Average	
		point228	228	1,483.2	2,498.5	198.00				Average	
		point229	229	1,412.1	2,498.0	199.00				Average	
		point230	230	1,326.0	2,498.6	200.00				Average	
		point231	231	1,279.7	2,498.4	201.30					
126 West On/Off Lane	12.0	point321	321	2,432.7	2,628.0	182.20				Average	
		point322	322	2,434.6	2,358.5	183.70				Average	
		point323	323	2,433.7	2,069.3	185.00				Average	
		point324	324	2,433.3	1,980.9	186.00				Average	
		point325	325	2,432.9	1,895.4	188.00				Average	
		point326	326	2,432.9	1,852.1	189.00				Average	
		point327	327	2,433.6	1,805.6	190.00				Average	
		point328	328	2,432.1	1,776.0	191.00				Average	
		point329	329	2,431.5	1,732.5	192.00				Average	
		point330	330	2,431.3	1,694.8	193.00				Average	
		point331	331	2,430.4	1,657.2	194.00					
SR 126 West Lane 1	12.0	point332	332	2,472.3	2,638.2	182.90				Average	
		point333	333	2,471.5	2,477.3	183.00				Average	
		point334	334	2,470.6	2,233.1	184.00				Average	
		point335	335	2,470.6	2,032.1	185.00				Average	
		point336	336	2,469.7	1,970.6	186.00				Average	
		point337	337	2,469.7	1,921.3	187.00				Average	
		point338	338	2,469.9	1,880.5	188.00				Average	
		point339	339	2,469.8	1,831.4	189.00				Average	

		point340	340	2,469.9	1,794.9	190.00				Average	
		point341	341	2,469.7	1,755.1	191.00				Average	
		point342	342	2,470.1	1,711.2	192.00				Average	
		point343	343	2,469.2	1,673.7	193.00				Average	
		point344	344	2,469.7	1,636.3	194.00				Average	
		point345	345	2,469.3	1,594.3	195.00				Average	
		point346	346	2,468.9	1,553.4	196.00				Average	
		point347	347	2,468.5	1,516.6	197.00				Average	
		point348	348	2,468.9	1,474.7	198.00				Average	
		point349	349	2,468.0	1,435.5	199.00				Average	
		point350	350	2,468.3	1,399.8	200.00				Average	
		point351	351	2,467.2	1,355.0	201.00				Average	
		point352	352	2,467.4	1,314.8	202.00				Average	
		point353	353	2,467.3	1,280.5	203.00				Average	
		point354	354	2,466.4	1,239.6	204.00				Average	
		point355	355	2,466.8	1,212.3	205.00				Average	
		point356	356	2,467.1	1,168.8	206.00				Average	
		point357	357	2,466.1	1,128.6	207.00				Average	
		point358	358	2,466.4	1,084.1	208.00				Average	
		point359	359	2,466.7	1,048.9	208.50					
SR 126 West Lane 2	12.0	point360	360	2,498.4	2,638.9	182.30				Average	
		point361	361	2,496.7	2,462.7	183.00				Average	
		point362	362	2,494.9	2,205.3	184.00				Average	
		point363	363	2,493.7	2,010.9	185.00				Average	
		point364	364	2,494.6	1,948.9	186.00				Average	
		point365	365	2,493.3	1,905.0	187.00				Average	
		point366	366	2,491.9	1,870.6	188.00				Average	
		point367	367	2,491.6	1,828.8	189.00				Average	
		point368	368	2,492.2	1,794.5	190.00				Average	
		point369	369	2,492.2	1,754.6	191.00				Average	
		point370	370	2,491.0	1,710.1	192.00				Average	
		point371	371	2,491.9	1,673.0	193.00				Average	
		point372	372	2,492.4	1,629.4	194.00				Average	
		point373	373	2,491.7	1,600.1	195.00				Average	
		point374	374	2,491.1	1,556.9	196.00				Average	
		point375	375	2,491.4	1,522.7	197.00				Average	
		point376	376	2,490.9	1,471.8	198.00				Average	
		point377	377	2,490.6	1,430.7	199.00				Average	

		point378	378	2,490.7	1,401.9	200.00				Average	
		point379	379	2,489.7	1,348.6	201.00				Average	
		point380	380	2,490.1	1,304.7	202.00				Average	
		point381	381	2,490.6	1,275.7	203.00				Average	
		point382	382	2,489.7	1,231.7	204.00				Average	
		point383	383	2,490.4	1,209.8	205.00				Average	
		point384	384	2,489.1	1,158.4	206.00				Average	
		point385	385	2,489.1	1,122.3	207.00				Average	
		point386	386	2,488.6	1,084.2	208.00				Average	
		point387	387	2,487.8	1,047.3	209.00					
SR 126 East Lane 2	12.0	point388	388	2,536.2	1,059.6	208.50				Average	
		point389	389	2,536.8	1,103.4	208.00				Average	
		point390	390	2,536.1	1,128.8	207.00				Average	
		point391	391	2,536.9	1,169.9	206.00				Average	
		point392	392	2,537.2	1,257.1	204.00				Average	
		point393	393	2,537.3	1,291.5	203.00				Average	
		point394	394	2,537.9	1,324.4	202.00				Average	
		point395	395	2,537.6	1,365.8	201.00				Average	
		point396	396	2,537.5	1,404.9	200.00				Average	
		point397	397	2,538.2	1,438.9	199.00				Average	
		point398	398	2,538.1	1,469.6	198.00				Average	
		point399	399	2,538.4	1,512.9	197.00				Average	
		point400	400	2,538.0	1,554.1	196.00				Average	
		point401	401	2,538.4	1,588.5	195.00				Average	
		point402	402	2,538.5	1,631.2	194.00				Average	
		point403	403	2,538.9	1,667.7	193.00				Average	
		point404	404	2,538.8	1,703.0	192.00				Average	
		point405	405	2,538.8	1,750.9	191.00				Average	
		point406	406	2,538.6	1,792.1	190.00				Average	
		point407	407	2,538.7	1,838.7	189.00				Average	
		point408	408	2,539.1	1,878.6	188.00				Average	
		point409	409	2,538.5	1,933.8	187.00				Average	
		point410	410	2,539.0	1,997.3	186.00				Average	
		point411	411	2,538.9	2,066.5	185.00				Average	
		point412	412	2,540.6	2,253.2	184.00				Average	
		point413	413	2,541.6	2,475.7	183.00				Average	
		point414	414	2,542.0	2,642.0	182.40					
SR 126 East Lane 1	12.0	point415	415	2,560.7	1,059.7	208.50				Average	

		point416	416	2,560.5	1,102.2	208.00				Average	
		point417	417	2,559.9	1,124.9	207.00				Average	
		point418	418	2,560.7	1,164.7	206.00				Average	
		point419	419	2,561.2	1,204.0	205.00				Average	
		point420	420	2,561.1	1,249.2	204.00				Average	
		point421	421	2,561.0	1,284.8	203.00				Average	
		point422	422	2,560.7	1,317.0	202.00				Average	
		point423	423	2,561.3	1,352.6	201.00				Average	
		point424	424	2,562.0	1,389.7	200.00				Average	
		point425	425	2,562.4	1,427.3	199.00				Average	
		point426	426	2,562.6	1,469.2	198.00				Average	
		point427	427	2,562.5	1,511.7	197.00				Average	
		point428	428	2,562.5	1,558.7	196.00				Average	
		point429	429	2,562.8	1,587.9	195.00				Average	
		point430	430	2,563.2	1,627.1	194.00				Average	
		point431	431	2,562.5	1,666.1	193.00				Average	
		point432	432	2,562.9	1,706.0	192.00				Average	
		point433	433	2,563.5	1,752.8	191.00				Average	
		point434	434	2,564.5	1,785.1	190.00				Average	
		point435	435	2,564.4	1,841.1	189.00				Average	
		point436	436	2,565.5	1,867.2	188.00				Average	
		point437	437	2,566.0	1,898.8	187.00				Average	
		point438	438	2,565.5	1,956.6	186.00				Average	
		point439	439	2,566.0	1,999.4	185.00				Average	
		point440	440	2,565.9	2,115.7	184.00				Average	
		point441	441	2,568.2	2,438.1	183.00				Average	
		point442	442	2,569.4	2,641.0	182.40					
SR 126 East Off Ramp	12.0	point444	444	2,562.7	1,446.2	198.50				Average	
		point445	445	2,563.6	1,467.2	198.00				Average	
		point446	446	2,566.9	1,506.4	197.00				Average	
		point447	447	2,569.6	1,544.3	196.00				Average	
		point448	448	2,572.0	1,576.5	195.00				Average	
		point449	449	2,575.5	1,613.6	194.00				Average	
		point450	450	2,577.7	1,652.4	193.00				Average	
		point451	451	2,580.9	1,683.7	192.00				Average	
		point452	452	2,583.8	1,719.8	191.00				Average	
		point453	453	2,586.2	1,754.4	190.00				Average	
		point454	454	2,589.3	1,807.3	189.00				Average	

		point455	455	2,592.2	1,843.4	188.00				Average	
		point456	456	2,596.6	1,875.7	187.00				Average	
		point457	457	2,604.3	1,947.2	186.60				Average	
		point458	458	2,620.4	1,989.9	186.00				Average	
		point459	459	2,646.6	2,049.3	185.50				Average	
		point460	460	2,686.3	2,106.9	185.00				Average	
		point461	461	2,733.0	2,154.5	184.00				Average	
		point462	462	2,777.5	2,187.7	184.00				Average	
		point463	463	2,852.0	2,241.6	185.00				Average	
		point464	464	2,877.5	2,273.7	186.00				Average	
		point465	465	2,899.4	2,316.8	187.00				Average	
		point466	466	2,906.4	2,361.1	188.00				Average	
		point467	467	2,905.1	2,401.2	189.00				Average	
		point468	468	2,907.0	2,453.0	190.00				Average	
		point469	469	2,908.4	2,530.4	193.00					
SR 126 East On Ramp	12.0	point470	470	2,610.7	2,528.6	202.00				Average	Y
		point471	471	2,680.9	2,515.5	201.00				Average	
		point472	472	2,707.0	2,512.3	200.00				Average	
		point473	473	2,746.7	2,508.4	199.00				Average	
		point474	474	2,772.7	2,503.6	198.00				Average	
		point475	475	2,797.2	2,496.0	197.00				Average	
		point476	476	2,806.8	2,490.1	196.00				Average	
		point477	477	2,823.6	2,481.7	195.00				Average	
		point478	478	2,833.5	2,473.5	194.00				Average	
		point479	479	2,846.8	2,458.5	193.00				Average	
		point480	480	2,857.5	2,448.6	192.00				Average	
		point481	481	2,864.0	2,436.8	191.00				Average	
		point482	482	2,871.5	2,415.7	190.00				Average	
		point483	483	2,877.0	2,394.0	189.00				Average	
		point484	484	2,879.5	2,374.5	188.00				Average	
		point485	485	2,874.3	2,328.7	187.00				Average	
		point486	486	2,865.5	2,297.9	186.00				Average	
		point487	487	2,844.2	2,265.0	185.00				Average	
		point488	488	2,800.9	2,229.3	184.40				Average	
		point489	489	2,718.5	2,215.0	184.00				Average	
		point490	490	2,649.2	2,239.3	183.60				Average	
		point491	491	2,598.6	2,301.5	183.60				Average	
		point492	492	2,591.2	2,433.4	183.00				Average	

		point493	493	2,594.2	2,639.7	182.40					

Rincon Consultants, Inc 13 August 2008
P. K. Nichols TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(8ft grdn wall)

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Wells Rd Southbound N of Blackburn	point1	1	994	40	31	40	21	40	0	0	0	0
	point232	232	994	40	31	40	21	40	0	0	0	0
	point2	2	994	40	31	40	21	40	0	0	0	0
	point3	3	994	40	31	40	21	40	0	0	0	0
	point4	4	994	40	31	40	21	40	0	0	0	0
	point5	5										
Wells Rd Southbound S of Blackburn	point6	6	1393	40	44	40	29	40	0	0	0	0
	point7	7	1393	40	44	40	29	40	0	0	0	0
	point8	8	998	40	32	40	21	40	0	0	0	0
	point9	9	998	40	32	40	21	40	0	0	0	0
	point495	495	998	40	32	40	21	40	0	0	0	0
	point10	10	998	40	32	40	21	40	0	0	0	0
	point11	11	998	40	32	40	21	40	0	0	0	0
	point12	12	998	40	00	40	21	40	0	0	0	0
	point13	13	998	40	32	40	21	40	0	0	0	0
	point14	14	998	40	32	40	21	40	0	0	0	0
	point15	15	2603	40	82	40	55	40	0	0	0	0
	point16	16	2527	40	80	40	53	40	0	0	0	0
	point17	17	2527	40	80	40	53	40	0	0	0	0
	point18	18	2527	40	80	40	53	40	0	0	0	0
	point19	19	2527	40	80	40	53	40	0	0	0	0
	point20	20	2527	40	80	40	53	40	0	0	0	0

	point21	21	2527	40	80	40	53	40	0	0	0	0
	point22	22										
SR 126 Westbound On Ramp	point23	23	399	50	13	45	8	45	0	0	0	0
	point24	24	399	50	13	45	8	45	0	0	0	0
	point25	25	399	50	13	45	8	45	0	0	0	0
	point26	26	399	50	13	45	8	45	0	0	0	0
	point27	27	399	50	13	45	8	45	0	0	0	0
	point28	28	399	50	13	45	8	45	0	0	0	0
	point29	29	399	50	13	45	8	45	0	0	0	0
	point30	30	399	50	13	45	8	45	0	0	0	0
	point31	31	399	50	13	45	8	45	0	0	0	0
	point32	32	399	50	13	45	8	45	0	0	0	0
	point33	33	399	50	13	45	8	45	0	0	0	0
	point34	34	399	50	13	45	8	45	0	0	0	0
	point35	39	399	50	13	45	8	45	0	0	0	0
	point36	36	399	50	13	45	8	45	0	0	0	0
	point37	37	399	50	13	45	8	45	0	0	0	0
	point38	38	399	50	13	45	8	45	0	0	0	0
	point39	39										
SR 126 Westbound On Ramp2	point40	40	399	65	13	65	8	65	0	0	0	0
	point41	41	399	65	13	65	8	65	0	0	0	0
	point42	42	399	65	13	65	8	65	0	0	0	0
	point43	43	399	65	13	65	8	65	0	0	0	0
	point44	44	399	65	13	65	8	65	0	0	0	0
	point45	45	789	65	25	65	17	65	0	0	0	0
	point46	46	789	65	25	65	17	65	0	0	0	0
	point47	47	789	65	25	65	17	65	0	0	0	0
	point48	48	789	65	25	65	17	65	0	0	0	0
	point49	49	789	65	25	65	17	65	0	0	0	0
	point50	50	789	65	25	65	17	65	0	0	0	0
	point51	51	789	65	25	65	17	65	0	0	0	0
	point52	52	789	65	25	65	17	65	0	0	0	0
	point53	53	789	65	25	65	17	65	0	0	0	0
	point54	54	789	65	25	65	17	65	0	0	0	0

	point55	55	789	65	25	65	17	65	0	0	0	0
	point56	56	789	65	25	65	17	65	0	0	0	0
	point57	57	789	65	25	65	17	65	0	0	0	0
	point58	58	789	65	25	65	17	65	0	0	0	0
	point59	59										
Blackburn Rd Westbound	point60	60	166	35	5	35	4	35	0	0	0	0
	point61	61	166	35	5	35	4	35	0	0	0	0
	point62	62	166	35	5	35	4	35	0	0	0	0
	point63	63	166	35	5	35	4	35	0	0	0	0
	point64	64	166	35	5	35	4	35	0	0	0	0
	point65	65	166	35	5	35	4	35	0	0	0	0
	point66	66	166	35	5	35	4	35	0	0	0	0
	point67	67	166	35	5	35	4	35	0	0	0	0
	point68	68	166	35	5	35	4	35	0	0	0	0
	point69	69	166	35	5	35	4	35	0	0	0	0
	point70	70	166	35	5	35	4	35	0	0	0	0
	point71	71	166	35	5	35	4	35	0	0	0	0
	point72	72	166	35	5	35	4	35	0	0	0	0
	point73	73	166	35	5	35	4	35	0	0	0	0
	point74	74	166	35	5	35	4	35	0	0	0	0
	point75	75	166	35	5	35	4	35	0	0	0	0
	point76	76	166	35	5	35	4	35	0	0	0	0
	point77	77	166	35	5	35	4	35	0	0	0	0
	point78	05	166	35	5	35	4	35	0	0	0	0
	point79	79	166	35	5	35	4	35	0	0	0	0
	point81	81	166	35	5	35	4	35	0	0	0	0
	point82	82	166	35	5	35	4	35	0	0	0	0
	point83	83	166	35	5	35	4	35	0	0	0	0
	point84	84	166	35	5	35	4	35	0	0	0	0
	point85	85	166	35	5	35	4	35	0	0	0	0
	point86	86	166	35	5	35	4	35	0	0	0	0
	point87	87	166	35	5	35	4	35	0	0	0	0
	point88	88	166	35	5	35	4	35	0	0	0	0
	point89	89	166	35	5	35	4	35	0	0	0	0

	point90	90	166	35	5	35	4	35	0	0	0	0
	point91	91	166	35	5	35	4	35	0	0	0	0
	point92	92	166	35	5	35	4	35	0	0	0	0
	point93	93	166	35	5	35	4	35	0	0	0	0
	point94	94	166	35	5	35	4	35	0	0	0	0
	point95	95	166	35	5	35	4	35	0	0	0	0
	point96	96	166	35	5	35	4	35	0	0	0	0
	point97	97	166	35	5	35	4	35	0	0	0	0
	point98	98	166	35	5	35	4	35	0	0	0	0
	point99	99	166	35	5	35	4	35	0	0	0	0
	point100	100	166	35	5	35	4	35	0	0	0	0
	point101	101										
Blackburn Rd Eastbound	point102	102	165	35	5	35	3	35	0	0	0	0
	point103	103	165	35	5	35	3	35	0	0	0	0
	point104	104	165	35	5	35	3	35	0	0	0	0
	point105	105	165	35	5	35	3	35	0	0	0	0
	point106	106	165	35	5	35	3	35	0	0	0	0
	point107	0□[	165	35	5	35	3	35	0	0	0	0
	point108	108	165	35	5	35	3	35	0	0	0	0
	point110	110	165	35	5	35	3	35	0	0	0	0
	point111	111	165	35	5	35	3	35	0	0	0	0
	point112	112	165	35	5	35	3	35	0	0	0	0
	point113	113	165	35	5	35	3	35	0	0	0	0
	point114	114	165	35	5	35	3	35	0	0	0	0
	point115	115	165	35	5	35	3	35	0	0	0	0
	point116	116	165	35	5	35	3	35	0	0	0	0
	point117	117	165	35	5	35	3	35	0	0	0	0
	point118	118	165	35	5	35	3	35	0	0	0	0
	point119	119	165	35	5	35	3	35	0	0	0	0
	point120	120	165	35	5	35	3	35	0	0	0	0
	point121	121	165	35	5	35	3	35	0	0	0	0
	point122	122	165	35	5	35	3	35	0	0	0	0
	point123	123	165	35	5	35	3	35	0	0	0	0
	point124	124	165	35	5	35	3	35	0	0	0	0

	point125	125	165	35	5	35	3	35	0	0	0	0
	point126	126	165	35	5	35	3	35	0	0	0	0
	point128	128	165	35	5	35	3	35	0	0	0	0
	point130	130	165	35	5	35	3	35	0	0	0	0
	point131	131	165	35	5	35	3	35	0	0	0	0
	point132	132	165	35	5	35	3	35	0	0	0	0
	point133	133	165	35	5	35	3	35	0	0	0	0
	point134	134	165	35	5	35	3	35	0	0	0	0
	point135	135	165	35	5	35	3	35	0	0	0	0
	point136	136	165	35	5	35	3	35	0	0	0	0
	point137	137	165	35	5	35	3	35	0	0	0	0
	point138	138	165	35	5	35	3	35	0	0	0	0
	point139	139	165	35	5	35	3	35	0	0	0	0
	point140	140	165	35	5	35	3	35	0	0	0	0
	194.5	141	165	35	5	35	3	35	0	0	0	0
	point142	142	165	35	5	35	3	35	0	0	0	0
	point143	143	165	35	5	35	3	35	0	0	0	0
	point144	144										
Wells Rd Northbound S of Blackburn	point148	148	893	40	28	40	19	40	0	0	0	0
	point149	149	893	40	28	40	19	40	0	0	0	0
	point150	150	893	40	28	40	19	40	0	0	0	0
	point151	151	893	40	28	40	19	40	0	0	0	0
	point152	152	893	40	28	40	19	40	0	0	0	0
	point153	153	893	40	28	40	19	40	0	0	0	0
	point154	154	893	40	28	40	19	40	0	0	0	0
	point155	155	893	40	28	40	19	40	0	0	0	0
	point156	156	504	40	16	40	11	40	0	0	0	0
	point157	157	504	40	16	40	11	40	0	0	0	0
	point158	158	504	40	16	40	11	40	0	0	0	0
	point159	159	504	40	16	40	11	40	0	0	0	0
	point160	160	504	40	16	40	11	40	0	0	0	0
	point161	161	504	40	16	40	11	40	0	0	0	0
	point162	162	504	40	16	40	11	40	0	0	0	0
	point163	163	504	40	16	40	11	40	0	0	0	0

	point164	164	504	40	16	40	11	40	0	0	0	0
	point496	496	504	40	16	40	11	40	0	0	0	0
	point165	165	696	40	22	40	15	40	0	0	0	0
	point166	166	696	40	22	40	15	40	0	0	0	0
	point167	167	696	40	22	40	15	40	0	0	0	0
	point168	168										
Wells Rd Southbound S of Blackburn2	point169	169	2527	40	80	40	53	40	0	0	0	0
	point170	170	2527	40	80	40	53	40	0	0	0	0
	point171	171										
SR 126 Westbound Off Ramp	point174	174	1606	45	51	45	34	45	0	0	0	0
	point175	175	1606	45	51	45	34	45	0	0	0	0
	point176	176	1606	45	51	45	34	45	0	0	0	0
	point177	177	1606	45	51	45	34	45	0	0	0	0
	point178	178	1606	45	51	45	34	45	0	0	0	0
	point179	179	1606	45	51	45	34	45	0	0	0	0
	point180	180	1606	45	51	45	34	45	0	0	0	0
	point181	181	1606	45	51	45	34	45	0	0	0	0
	point182	182	1606	45	51	45	34	45	0	0	0	0
	point183	183	1606	45	51	45	34	45	0	0	0	0
	point184	184	1606	45	51	45	34	45	0	0	0	0
	point185	185	1606	45	51	45	34	45	0	0	0	0
	point186	186	1606	45	51	45	34	45	0	0	0	0
	point187	187	1606	45	51	45	34	45	0	0	0	0
	point188	188	1606	45	51	45	34	45	0	0	0	0
	point189	189	1606	45	51	45	34	45	0	0	0	0
	point190	190	1606	45	51	45	34	45	0	0	0	0
	point191	191	1606	45	51	45	34	45	0	0	0	0
	point192	192	1606	45	51	45	34	45	0	0	0	0
	point193	193	1606	45	51	45	34	45	0	0	0	0
	point194	194	1606	45	51	45	34	45	0	0	0	0
	point195	195	1606	45	51	45	34	45	0	0	0	0
	point196	196										
Wells Rd Northbound N of Blackburn	point226	226	414	40	13	40	9	40	0	0	0	0
	point227	227	414	40	13	40	9	40	0	0	0	0

	point228	228	414	40	13	40	9	40	0	0	0	0
	point229	229	414	40	13	40	9	40	0	0	0	0
	point230	230	414	40	13	40	9	40	0	0	0	0
	point231	231										
126 West On/Off Lane	point321	321	390	55	12	55	8	55	0	0	0	0
	point322	322	390	55	12	55	8	55	0	0	0	0
	point323	323	390	55	12	55	8	55	0	0	0	0
	point324	324	390	55	12	55	8	55	0	0	0	0
	point325	325	390	55	12	55	8	55	0	0	0	0
	point326	326	390	55	12	55	8	55	0	0	0	0
	point327	327	390	55	12	55	8	55	0	0	0	0
	point328	328	390	55	12	55	8	55	0	0	0	0
	point329	329	390	55	12	55	8	55	0	0	0	0
	point330	330	390	55	12	55	8	55	0	0	0	0
	point331	331										
SR 126 West Lane 1	point332	332	1161	70	65	65	65	60	0	0	0	0
	point333	333	1161	70	65	65	65	60	0	0	0	0
	point334	334	03 4	70	65	65	65	60	0	0	0	0
	point335	335	1161	70	65	65	65	60	0	0	0	0
	point336	336	1161	70	65	65	65	60	0	0	0	0
	point337	337	1161	70	65	65	65	60	0	0	0	0
	point338	338	1161	70	65	65	65	60	0	0	0	0
	point339	339	1161	70	65	65	65	60	0	0	0	0
	point340	340	1161	70	65	65	65	60	0	0	0	0
	point341	341	1161	70	65	65	65	60	0	0	0	0
	point342	342	1161	70	65	65	65	60	0	0	0	0
	point343	343	1161	70	65	65	65	60	0	0	0	0
	point344	344	1161	70	65	65	65	60	0	0	0	0
	point345	345	1161	70	65	65	65	60	0	0	0	0
	point346	346	1161	70	65	65	65	60	0	0	0	0
	point347	347	1161	70	65	65	65	60	0	0	0	0
	point348	348	1161	70	65	65	65	60	0	0	0	0
	point349	349	1161	70	65	65	65	60	0	0	0	0
	point350	350	1161	70	65	65	65	60	0	0	0	0

	point351	351	1161	70	65	65	65	60	0	0	0	0
	point352	352	1161	70	65	65	65	60	0	0	0	0
	point353	353	1161	70	65	65	65	60	0	0	0	0
	point354	354	1161	70	65	65	65	60	0	0	0	0
	point355	355	1161	70	65	65	65	60	0	0	0	0
	point356	356	1161	70	65	65	65	60	0	0	0	0
	point357	357	1161	70	65	65	65	60	0	0	0	0
	point358	358	1161	70	65	65	65	60	0	0	0	0
	point359	359										
SR 126 West Lane 2	point360	360	1161	70	65	65	65	60	0	0	0	0
	point361	361	1161	70	65	65	65	60	0	0	0	0
	point362	362	1161	70	65	65	65	60	0	0	0	0
	point363	363	1161	70	65	65	65	60	0	0	0	0
	point364	364	1161	70	65	65	65	60	0	0	0	0
	point365	365	1161	70	65	65	65	60	0	0	0	0
	point366	366	1161	70	65	65	65	60	0	0	0	0
	point367	367	1161	70	65	65	65	60	0	0	0	0
	point368	368	1161	70	65	65	65	60	0	0	0	0
	point369	369	1161	70	65	65	65	60	0	0	0	0
	point370	370	1161	70	65	65	65	60	0	0	0	0
	point371	371	1161	70	65	65	65	60	0	0	0	0
	point372	372	1161	70	65	65	65	60	0	0	0	0
	point373	373	1161	70	65	65	65	60	0	0	0	0
	point374	374	1161	70	65	65	65	60	0	0	0	0
	point375	375	1161	70	65	65	65	60	0	0	0	0
	point376	376	1161	70	65	65	65	60	0	0	0	0
	point377	377	1161	70	65	65	65	60	0	0	0	0
	point378	378	1161	70	65	65	65	60	0	0	0	0
	point379	379	1161	70	65	65	65	60	0	0	0	0
	point380	380	1161	70	65	65	65	60	0	0	0	0
	point381	381	1161	70	65	65	65	60	0	0	0	0
	point382	382	1161	70	65	65	65	60	0	0	0	0
	point383	383	1161	70	65	65	65	60	0	0	0	0
	point384	384	1161	70	65	65	65	60	0	0	0	0

	point385	385	1161	70	65	65	65	60	0	0	0	0
	point386	386	1161	70	65	65	65	60	0	0	0	0
	point387	387										
SR 126 East Lane 2	point388	388	1161	70	65	65	65	60	0	0	0	0
	point389	389	1161	70	65	65	65	60	0	0	0	0
	point390	390	1161	70	65	65	65	60	0	0	0	0
	point391	391	1161	70	65	65	65	60	0	0	0	0
	point392	392	1161	70	65	65	65	60	0	0	0	0
	point393	393	1161	70	65	65	65	60	0	0	0	0
	point394	394	1161	70	65	65	65	60	0	0	0	0
	point395	395	1161	70	65	65	65	60	0	0	0	0
	point396	396	1161	70	65	65	65	60	0	0	0	0
	point397	397	1161	70	65	65	65	60	0	0	0	0
	point398	398	1161	70	65	65	65	60	0	0	0	0
	point399	399	1161	70	65	65	65	60	0	0	0	0
	point400	400	1161	70	65	65	65	60	0	0	0	0
	point401	401	1161	70	65	65	65	60	0	0	0	0
	point402	402	1161	70	65	65	65	60	0	0	0	0
	point403	403	1161	70	65	65	65	60	0	0	0	0
	point404	404	1161	70	65	65	65	60	0	0	0	0
	point405	405	1161	70	65	65	65	60	0	0	0	0
	point406	406	1161	70	65	65	65	60	0	0	0	0
	point407	407	1161	70	65	65	65	60	0	0	0	0
	point408	408	1161	70	65	65	65	60	0	0	0	0
	point409	409	1161	70	65	65	65	60	0	0	0	0
	point410	410	1161	70	65	65	65	60	0	0	0	0
	point411	411	1161	70	65	65	65	60	0	0	0	0
	point412	412	1161	70	65	65	65	60	0	0	0	0
	point413	413	1161	70	65	65	65	60	0	0	0	0
	point414	414										
SR 126 East Lane 1	point415	415	1161	70	65	65	65	60	0	0	0	0
	point416	416	1161	70	65	65	65	60	0	0	0	0
	point417	417	1161	70	65	65	65	60	0	0	0	0
	point418	418	1161	70	65	65	65	60	0	0	0	0

	point419	419	1161	70	65	65	65	60	0	0	0	0
	point420	420	1161	70	65	65	65	60	0	0	0	0
	point421	421	1161	70	65	65	65	60	0	0	0	0
	point422	422	1161	70	65	65	65	60	0	0	0	0
	point423	423	1161	70	65	65	65	60	0	0	0	0
	point424	424	1161	70	65	65	65	60	0	0	0	0
	point425	425	1161	70	65	65	65	60	0	0	0	0
	point426	426	1161	70	65	65	65	60	0	0	0	0
	point427	427	1161	70	65	65	65	60	0	0	0	0
	point428	428	1161	70	65	65	65	60	0	0	0	0
	point429	429	1161	70	65	65	65	60	0	0	0	0
	point430	430	1161	70	65	65	65	60	0	0	0	0
	point431	431	1161	70	65	65	65	60	0	0	0	0
	point432	432	1161	70	65	65	65	60	0	0	0	0
	point433	433	1161	70	65	65	65	60	0	0	0	0
	point434	434	1161	70	65	65	65	60	0	0	0	0
	point435	435	1161	70	65	65	65	60	0	0	0	0
	point436	436	1161	70	65	65	65	60	0	0	0	0
	point437	437	1161	70	65	65	65	60	0	0	0	0
	point438	438	1161	70	65	65	65	60	0	0	0	0
	point439	439	1161	70	65	65	65	60	0	0	0	0
	point440	440	1161	70	65	65	65	60	0	0	0	0
	point441	441	1161	70	65	65	65	60	0	0	0	0
	point442	442										
SR 126 East Off Ramp	point444	444	238	45	8	45	5	45	0	0	0	0
	point445	445	238	45	8	45	5	45	0	0	0	0
	point446	446	238	45	8	45	5	45	0	0	0	0
	point447	447	238	45	8	45	5	45	0	0	0	0
	point448	448	238	45	8	45	5	45	0	0	0	0
	point449	449	238	45	8	45	5	45	0	0	0	0
	point450	450	238	45	8	45	5	45	0	0	0	0
	point451	451	238	45	8	45	5	45	0	0	0	0
	point452	452	238	45	8	45	5	45	0	0	0	0
	point453	453	238	45	8	45	5	45	0	0	0	0

	point454	454	238	45	8	45	5	45	0	0	0	0
	point455	455	238	45	8	45	5	45	0	0	0	0
	point456	456	238	45	8	45	5	45	0	0	0	0
	point457	457	238	45	8	45	5	45	0	0	0	0
	point458	458	238	45	8	45	5	45	0	0	0	0
	point459	459	238	45	8	45	5	05	0	0	0	0
	point460	460	238	45	8	45	5	45	0	0	0	0
	point461	461	238	45	8	45	5	45	0	0	0	0
	point462	462	238	45	8	45	5	45	0	0	0	0
	point463	463	238	45	8	45	5	45	0	0	0	0
	point464	464	238	45	8	45	5	45	0	0	0	0
	point465	465	238	45	8	45	5	45	0	0	0	0
	point466	466	238	45	8	45	5	45	0	0	0	0
	point467	467	238	45	8	45	5	45	0	0	0	0
	point468	468	238	45	8	45	5	45	0	0	0	0
	point469	469										
SR 126 East On Ramp	point470	470	76	45	2	45	2	45	0	0	0	0
	point471	471	76	45	2	45	2	45	0	0	0	0
	point472	472	76	45	2	45	2	45	0	0	0	0
	point473	473	76	45	2	45	2	45	0	0	0	0
	point474	474	76	45	2	45	2	45	0	0	0	0
	point475	475	76	45	2	45	2	45	0	0	0	0
	point476	476	76	45	2	45	2	45	0	0	0	0
	point477	477	76	45	2	45	2	45	0	0	0	0
	point478	478	76	45	2	45	2	45	0	0	0	0
	point479	479	76	45	2	45	2	45	0	0	0	0
	point480	480	76	45	2	45	2	45	0	0	0	0
	point481	481	76	45	2	45	2	45	0	0	0	0
	point482	482	76	45	2	45	2	45	0	0	0	0
	point483	483	76	45	2	45	2	45	0	0	0	0
	point484	484	76	45	2	45	2	45	0	0	0	0
	point485	485	76	45	2	45	2	45	0	0	0	0
	point486	486	76	45	2	45	2	45	0	0	0	0
	point487	487	76	45	2	45	2	45	0	0	0	0

	point488	488	76	45	2	45	2	45	0	0	0	0
	point489	489	76	45	2	45	2	45	0	0	0	0
	point490	490	76	45	2	45	2	45	0	0	0	0
	point491	491	76	45	2	45	2	45	0	0	0	0
	point492	492	76	45	2	45	2	45	0	0	0	0
	point493	493										

Rincon Consultants, Inc
P. K. Nichols

13 August 2008
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(8ft grdn wall)

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Road A pad 132	10	1	1,563.8	2,249.2	201.60	4.92	0.00	66	10.0	8.0	Y
Road H pad 133	11	1	1,702.3	2,058.8	194.60	4.92	0.00	66	10.0	8.0	Y
Road G pad 144	12	1	1,947.3	2,054.4	192.80	4.92	0.00	66	10.0	8.0	Y
Road G pad 145	13	1	2,253.5	2,026.5	190.90	4.92	0.00	66	10.0	8.0	Y
Road I pad 146	14	1	2,296.5	1,946.8	190.70	4.92	0.00	66	10.0	8.0	Y
Raod J pad 163	15	1	2,343.3	1,546.8	198.50	4.92	0.00	66	10.0	8.0	Y
Road K pad 177	16	1	2,352.0	1,329.2	201.50	4.92	0.00	66	10.0	8.0	Y
Road K pad 178	17	1	2,355.4	1,117.1	207.30	4.92	0.00	66	10.0	8.0	Y
Measurment location2	18	1	2,346.9	1,462.0	198.00	4.92	0.00	66	10.0	8.0	Y
Road T front of pad 149	22	1	2,184.2	1,873.5	191.40	4.92	0.00	66	10.0	8.0	Y
Road J front of pad 161	23	1	2,227.5	1,497.8	199.60	4.92	0.00	66	10.0	8.0	Y
Road J front of pad 168	24	1	2,159.2	1,438.1	203.60	4.92	0.00	66	10.0	8.0	Y
Road K front of pad 175	25	1	2,207.6	1,236.6	203.50	4.92	0.00	66	10.0	8.0	Y

Rincon Consultants, Inc
P. K. Nichols

13 August 2008
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP No Soundwall(8ft grdn wall)

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	$ per Unit Area	$ per Unit Vol.	Top Width	Run:Rise	$ per Unit Length			X	Y	Z	at Point	Seg Ht Incre-ment	Perturbs #Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Garden Wall 1	W	0.00	99.99	0.00				0.00	point10	10	2,166.2	2,146.0	187.80	6.00	1.00	8	6		
									point11	11	2,235.3	2,083.0	190.90	6.00	1.00	8	6		
									point12	12	2,280.2	2,029.4	190.90	6.00	1.00	8	6		
									point13	13	2,306.3	1,982.3	190.70	6.00	1.00	8	6		
									point14	14	2,327.4	1,919.9	190.70	6.00	1.00	8	6		
									point15	15	2,336.1	1,883.3	190.70	6.00					
Garden Wall 2	W	0.00	99.99	0.00				0.00	point16	16	2,336.0	1,847.1	190.70	6.00	1.00	8	6		
									point17	17	2,131.8	1,832.7	194.50	6.00	1.00	8	6		
									point18	18	2,141.0	1,626.9	200.00	6.00	1.00	8	6		
									point19	19	2,347.5	1,625.5	198.50	6.00	1.00	8	6		
									point20	20	2,352.4	1,487.3	198.50	6.00					
Garden Wall 3	W	0.00	99.99	0.00				0.00	point21	21	2,355.0	1,447.1	201.50	6.00	1.00	8	6		
									point22	22	2,362.8	1,231.0	201.50	6.00					
Garden Wall 4	W	0.00	99.99	0.00				0.00	point23	23	2,362.4	1,190.1	207.30	6.00	1.00	8	6		
									point24	24	2,366.6	1,101.6	207.30	6.00	1.00	8	6		
									point25	25	2,170.7	1,101.0	206.40	6.00					

Rincon Consultants, Inc
P. K. Nichols

18 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP 7ft w/8ft section
RUN: Parklands SP Soundwall (6ft garden wall)
BARRIER DESIGN: unsaved

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.5	66	61.5	10	----	61.2	0.3	8	-7.7
Road H pad 133	11	1	0.0	58.5	66	58.5	10	----	57.8	0.7	8	-7.3
Road G pad 144	12	1	0.0	61.5	66	61.5	10	----	60.5	1.0	8	-7.0
Road G pad 145	13	1	0.0	64.8	66	64.8	10	----	63.7	1.1	8	-6.9
Road I pad 146	14	1	0.0	65.8	66	65.8	10	----	64.1	1.7	8	-6.3
Raod J pad 163	15	1	0.0	65.6	66	65.6	10	----	63.3	2.3	8	-5.7
Road K pad 177	16	1	0.0	65.7	66	65.7	10	----	62.9	2.8	8	-5.2
Road K pad 178	17	1	0.0	64.6	66	64.6	10	----	62.4	2.2	8	-5.8
Measurment location2	18	1	0.0	72.1	66	72.1	10	Snd Lvl	67.7	4.4	8	-3.6
Road T front of pad 149	22	1	0.0	63.1	66	63.1	10	----	61.5	1.6	8	-6.4
Road J front of pad 161	23	1	0.0	64.3	66	64.3	10	----	62.8	1.5	8	-6.5
Road J front of pad 168	24	1	0.0	63.3	66	63.3	10	----	62.2	1.1	8	-6.9
Road K front of pad 175	25	1	0.0	63.2	66	63.2	10	----	61.7	1.5	8	-6.5

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.3	1.7	4.4
All Impacted	1	4.4	4.4	4.4
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants, Inc
P. K. Nichols

12 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP 7A+
RUN: Parklands SP Soundwall (6ft garden wall)
BARRIER DESIGN: unsaved
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.5	66	61.5	10	----	61.2	0.3	8	-7.7
Road H pad 133	11	1	0.0	58.5	66	58.5	10	----	57.8	0.7	8	-7.3
Road G pad 144	12	1	0.0	61.5	66	61.5	10	----	60.6	0.9	8	-7.1
Road G pad 145	13	1	0.0	64.8	66	64.8	10	----	64.1	0.7	8	-7.3
Road I pad 146	14	1	0.0	65.8	66	65.8	10	----	64.6	1.2	8	-6.8
Raod J pad 163	15	1	0.0	65.6	66	65.6	10	----	63.3	2.3	8	-5.7
Road K pad 177	16	1	0.0	65.7	66	65.7	10	----	62.9	2.8	8	-5.2
Road K pad 178	17	1	0.0	64.6	66	64.6	10	----	62.4	2.2	8	-5.8
Measurment location2	18	1	0.0	72.1	66	72.1	10	Snd Lvl	67.7	4.4	8	-3.6
Road T front of pad 149	22	1	0.0	63.1	66	63.1	10	----	61.7	1.4	8	-6.6
Road J front of pad 161	23	1	0.0	64.3	66	64.3	10	----	62.8	1.5	8	-6.5
Road J front of pad 168	24	1	0.0	63.3	66	63.3	10	----	62.2	1.1	8	-6.9
Road K front of pad 175	25	1	0.0	63.2	66	63.2	10	----	61.7	1.5	8	-6.5

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	13	0.3	1.6	4.4
All Impacted	1	4.4	4.4	4.4
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants, Inc
P. K. Nichols

12 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (6ft garden wall)
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.5	66	61.5	10	----	61.0	0.5	8	-7.5
Road H pad 133	11	1	0.0	58.5	66	58.5	10	----	57.7	0.8	8	-7.2
Road G pad 144	12	1	0.0	61.5	66	61.5	10	----	60.1	1.4	8	-6.6
Road G pad 145	13	1	0.0	64.8	66	64.8	10	----	62.7	2.1	8	-5.9
Road I pad 146	14	1	0.0	65.8	66	65.8	10	----	63.0	2.8	8	-5.2
Raod J pad 163	15	1	0.0	65.6	66	65.6	10	----	61.4	4.2	8	-3.8
Road K pad 177	16	1	0.0	65.7	66	65.7	10	----	61.2	4.5	8	-3.5
Road K pad 178	17	1	0.0	64.6	66	64.6	10	----	60.9	3.7	8	-4.3
Measurment location2	18	1	0.0	72.1	66	72.1	10	Snd Lvl	65.6	6.5	8	-1.5
Road T front of pad 149	22	1	0.0	63.1	66	63.1	10	----	61.6	1.5	8	-6.5
Road J front of pad 161	23	1	0.0	64.3	66	64.3	10	----	62.3	2.0	8	-6.0
Road J front of pad 168	24	1	0.0	63.3	66	63.3	10	----	62.1	1.2	8	-6.8
Road K front of pad 175	25	1	0.0	63.2	66	63.2	10	----	60.6	2.6	8	-5.4

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.5	2.6	6.5
All Impacted	1	6.5	6.5	6.5
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants, Inc
P. K. Nichols

12 August 2008
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (6ft garden wall)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement) X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Wells Rd Southbound N of Blackburn	12.0	point1	1	1,282.2	2,454.6	201.00				Average	
		point232	232	1,331.8	2,453.7	200.00				Average	
		point2	2	1,402.8	2,453.7	199.00				Average	
		point3	3	1,527.8	2,454.0	198.00				Average	
		point4	4	1,587.4	2,456.9	197.00				Average	
		point5	5	1,644.1	2,460.8	196.50					
Wells Rd Southbound S of Blackburn	12.0	point6	6	1,674.5	2,462.7	195.50	Signal	0.00	100	Average	
		point7	7	1,743.6	2,467.7	195.00				Average	
		point8	8	1,858.0	2,475.6	194.00				Average	
		point9	9	1,949.1	2,483.2	193.00				Average	
		point495	495	2,000.9	2,488.3	192.00				Average	
		point10	10	2,052.7	2,493.5	193.00				Average	
		point11	11	2,124.1	2,500.0	194.00				Average	
		point12	12	2,198.1	2,507.8	195.00				Average	
		point13	13	2,324.6	2,518.5	200.00				Average	
		point14	14	2,387.6	2,524.4	201.00				Average	Y
		point15	15	2,454.9	2,528.0	202.00				Average	Y
		point16	16	2,609.2	2,529.9	202.00				Average	Y
		point17	17	2,684.5	2,533.5	201.00				Average	
		point18	18	2,713.6	2,533.7	200.00				Average	
		point19	19	2,762.3	2,534.4	199.00				Average	
		point20	20	2,796.4	2,534.8	198.00				Average	
		point21	21	2,821.4	2,535.3	197.00				Average	
		point22	22	2,873.7	2,535.8	195.00					
SR 126 Westbound On Ramp	12.0	point23	23	1,849.5	2,461.2	194.00				Average	

		point24	24	1,937.8	2,459.5	193.00				Average	
		point25	25	2,009.9	2,435.7	192.00				Average	
		point26	26	2,049.1	2,412.6	191.70				Average	
		point27	27	2,074.6	2,376.6	191.20				Average	
		point28	28	2,112.8	2,315.4	191.00				Average	
		point29	29	2,134.7	2,270.7	190.50				Average	
		point30	30	2,168.0	2,225.9	190.00				Average	
		point31	31	2,205.0	2,194.3	189.50				Average	
		point32	32	2,248.5	2,159.9	189.00				Average	
		point33	33	2,289.9	2,125.5	188.20				Average	
		point34	34	2,338.2	2,073.6	188.00				Average	
		point35	35	2,372.0	2,021.4	187.80				Average	
		point36	36	2,388.2	1,987.3	187.70				Average	
		point37	37	2,409.5	1,916.3	187.60				Average	
		point38	38	2,418.0	1,876.2	187.00				Average	
		point39	39	2,420.1	1,845.6	188.00					
SR 126 Westbound On Ramp2	12.0	point40	40	2,420.7	1,844.3	188.00				Average	
		point41	41	2,419.4	1,802.5	190.00				Average	
		point42	42	2,421.1	1,771.1	191.00				Average	
		point43	43	2,422.1	1,729.1	192.00				Average	
		point44	44	2,424.3	1,688.4	193.00				Average	
		point45	45	2,427.0	1,650.8	194.00				Average	
		point46	46	2,429.9	1,615.1	195.00				Average	
		point47	47	2,431.5	1,584.0	196.00				Average	
		point48	48	2,432.0	1,534.1	197.00				Average	
		point49	49	2,432.2	1,498.5	198.00				Average	
		point50	50	2,430.5	1,453.3	199.00				Average	
		point51	51	2,431.3	1,403.7	200.00				Average	
		point52	52	2,436.6	1,350.4	201.00				Average	
		point53	53	2,443.1	1,318.7	202.00				Average	
		point54	54	2,448.0	1,287.7	203.00				Average	
		point55	55	2,455.1	1,229.8	204.00				Average	
		point56	56	2,457.9	1,194.5	205.00				Average	
		point57	57	2,459.2	1,170.7	206.00				Average	
		point58	58	2,461.3	1,129.1	206.50				Average	
		point59	59	2,464.2	1,103.8	207.00					
Blackburn Rd Westbound	12.0	point60	60	1,646.7	2,443.3	196.50	Signal	0.00	100	Average	
		point61	61	1,648.5	2,375.8	195.50				Average	

		point62	62	1,663.1	2,344.2	195.00				Average	
		point63	63	1,677.4	2,324.5	194.50				Average	
		point64	64	1,701.6	2,308.1	194.00				Average	
		point65	65	1,725.7	2,298.8	193.50				Average	
		point66	66	1,745.7	2,294.0	193.00				Average	
		point67	67	1,783.3	2,293.2	192.50				Average	
		point68	68	1,824.1	2,299.7	192.00				Average	
		point69	69	1,902.8	2,307.3	191.00				Average	
		point70	70	1,927.7	2,308.9	190.50				Average	
		point71	71	1,954.4	2,307.1	190.00				Average	
		point72	72	1,985.2	2,301.2	190.00				Average	
		point73	73	2,028.6	2,278.7	189.00				Average	
		point74	74	2,098.6	2,219.2	188.00				Average	
		point75	75	2,156.9	2,171.3	187.00				Average	
		point76	76	2,243.9	2,097.9	187.00				Average	
		point77	77	2,303.1	2,027.8	187.60				Average	
		point78	78	2,322.2	1,988.9	187.60				Average	
		point80	80	2,342.8	1,929.7	188.00				Average	
		point81	81	2,353.9	1,887.1	188.50				Average	
		point82	82	2,357.3	1,848.6	189.00				Average	
		point83	83	2,359.5	1,795.2	190.00				Average	
		point84	84	2,359.8	1,774.8	191.00				Average	
		point85	85	2,362.2	1,730.7	192.00				Average	
		point86	86	2,362.8	1,693.0	193.00				Average	
		point87	87	2,366.3	1,647.4	194.00				Average	
		point88	88	2,366.6	1,613.2	195.00				Average	
		point89	89	2,368.7	1,574.9	196.00				Average	
		point90	90	2,371.2	1,533.0	197.00				Average	
		point91	91	2,372.5	1,489.0	198.00				Average	
		point92	92	2,373.5	1,444.5	199.00				Average	
		point93	93	2,374.6	1,403.5	200.00				Average	
		point94	94	2,374.4	1,364.0	201.00				Average	
		point95	95	2,377.6	1,289.8	203.00				Average	
		point96	96	2,379.1	1,247.4	204.00				Average	
		point97	97	2,382.7	1,209.8	205.00				Average	
		point98	98	2,384.5	1,154.5	206.00				Average	
		point99	99	2,383.8	1,104.7	207.00				Average	
		point100	100	2,384.8	1,074.9	208.00				Average	

		point101	101	2,383.5	1,038.2	209.00					
Blackburn Rd Eastbound	12.0	point102	102	2,394.5	1,038.2	209.00				Average	
		point103	103	2,396.9	1,083.0	208.00				Average	
		point104	104	2,394.4	1,111.2	207.00				Average	
		point105	105	2,394.5	1,159.4	206.00				Average	
		point106	106	2,393.8	1,208.5	205.00				Average	
		point107	107	2,389.4	1,248.2	204.00				Average	
		point108	108	2,389.4	1,290.0	203.00				Average	
		point109	109	2,386.3	1,329.4	202.00				Average	
		point110	110	2,385.9	1,365.6	201.00				Average	
		point111	111	2,385.0	1,405.4	200.00				Average	
		point112	112	2,384.4	1,448.5	199.00				Average	
		point113	113	2,382.3	1,489.5	198.00				Average	
		point114	114	2,381.1	1,535.6	197.00				Average	
		point115	115	2,378.7	1,576.2	196.00				Average	
		point116	116	2,375.4	1,614.9	195.00				Average	
		point117	117	2,376.1	1,651.3	194.00				Average	
		point118	118	2,373.3	1,699.0	193.00				Average	
		point119	119	2,373.9	1,734.4	192.00				Average	
		point120	120	2,370.9	1,779.2	191.00				Average	
		point121	121	2,370.7	1,801.6	190.00				Average	
		point122	122	2,371.0	1,847.3	189.00				Average	
		point123	123	2,364.4	1,895.3	188.50				Average	
		point124	124	2,354.0	1,941.0	188.00				Average	
		point125	125	2,331.3	1,998.1	187.60				Average	
		point126	126	2,312.0	2,037.7	187.60				Average	
		187	129	2,248.7	2,108.9	187.00				Average	
		point130	130	2,160.4	2,183.6	187.00				Average	
		point131	131	2,102.5	2,233.1	188.00				Average	
		point132	132	2,037.4	2,289.3	189.00				Average	
		point133	133	2,008.5	2,306.3	189.50				Average	
		point134	134	1,984.0	2,315.1	190.00				Average	
		point135	135	1,945.2	2,320.0	190.50				Average	
		point136	136	1,899.8	2,320.1	191.00				Average	
		point137	137	1,819.0	2,311.2	192.00				Average	
		point138	138	1,742.6	2,308.4	193.00				Average	
		point139	139	1,713.3	2,317.2	193.50				Average	
		point140	140	1,695.6	2,328.2	194.00				Average	

		194.5	141	1,676.8	2,352.0	194.50				Average	
		point142	142	1,666.9	2,373.6	195.00				Average	
		point143	143	1,661.8	2,392.9	195.40				Average	
		point144	144	1,660.9	2,443.4	196.30					
Wells Rd Northbound S of Blackburn	12.0	point148	148	2,908.2	2,584.8	191.00				Average	
		point149	149	2,852.3	2,584.3	195.00				Average	
		point150	150	2,724.8	2,582.2	200.00				Average	
		point151	151	2,695.5	2,581.3	201.00				Average	
		point152	152	2,660.8	2,580.1	202.00				Average	Y
		point153	153	2,590.9	2,576.8	203.00				Average	Y
		point154	154	2,484.0	2,572.5	204.00				Average	Y
		point155	155	2,370.0	2,561.9	203.00				Average	Y
		point156	156	2,337.3	2,559.4	202.00				Average	
		point157	157	2,303.3	2,555.6	204.00				Average	
		point158	158	2,276.6	2,554.3	205.00				Average	
		point159	159	2,234.8	2,550.0	198.00				Average	
		point160	160	2,196.7	2,546.2	197.00				Average	
		point161	161	2,166.3	2,544.0	196.00				Average	
		point162	162	2,131.6	2,540.8	195.00				Average	
		point163	163	2,081.6	2,537.0	194.00				Average	
		point164	164	2,031.0	2,531.7	193.00				Average	
		point496	496	1,973.9	2,525.5	192.00				Average	
		point165	165	1,933.7	2,521.1	193.00				Average	
		point166	166	1,845.8	2,515.0	194.00				Average	
		point167	167	1,778.8	2,510.2	195.00				Average	
		point168	168	1,673.7	2,502.5	195.50					
Wells Rd Southbound S of Blackburn2	12.0	point169	169	2,873.8	2,535.8	195.00				Average	
		point170	170	2,891.0	2,536.5	194.00				Average	
		point171	171	2,904.9	2,536.9	193.00					
SR 126 Westbound Off Ramp	12.0	point174	174	2,423.9	2,620.9	182.20				Average	
		point175	175	2,422.5	2,484.1	182.50				Average	
		point176	176	2,423.0	2,447.0	183.00				Average	
		point177	177	2,419.9	2,322.1	183.10				Average	
		point178	178	2,405.1	2,282.8	184.00				Average	
		point179	179	2,367.6	2,241.3	185.00				Average	
		point180	180	2,319.2	2,219.3	186.00				Average	
		point181	181	2,249.4	2,219.0	187.00				Average	
		point182	182	2,191.2	2,250.7	188.00				Average	

		point183	183	2,158.2	2,295.4	189.00				Average	
		point184	184	2,149.4	2,334.0	190.00				Average	
		point185	185	2,149.8	2,374.8	191.00				Average	
		point186	186	2,166.1	2,420.5	192.00				Average	
		point187	187	2,191.5	2,452.0	193.20				Average	
		point188	188	2,214.2	2,470.3	194.00				Average	
		point189	189	2,252.0	2,485.2	195.00				Average	
		point190	190	2,267.6	2,488.5	196.00				Average	
		point191	191	2,281.6	2,491.5	197.00				Average	
		point192	192	2,309.0	2,497.5	198.00				Average	
		point193	193	2,327.4	2,501.7	199.00				Average	
		point194	194	2,352.4	2,507.8	200.00				Average	
		point195	195	2,386.9	2,518.6	201.00				Average	Y
		point196	196	2,454.6	2,527.4	202.00					
Wells Rd Northbound N of Blackburn	12.0	point226	226	1,648.3	2,502.1	196.00	Signal	0.00	100	Average	
		point227	227	1,565.4	2,496.7	197.00				Average	
		point228	228	1,483.2	2,498.5	198.00				Average	
		point229	229	1,412.1	2,498.0	199.00				Average	
		point230	230	1,326.0	2,498.6	200.00				Average	
		point231	231	1,279.7	2,498.4	201.30					
126 West On/Off Lane	12.0	point321	321	2,432.7	2,628.0	182.20				Average	
		point322	322	2,434.6	2,358.5	183.70				Average	
		point323	323	2,433.7	2,069.3	185.00				Average	
		point324	324	2,433.3	1,980.9	186.00				Average	
		point325	325	2,432.9	1,895.4	188.00				Average	
		point326	326	2,432.9	1,852.1	189.00				Average	
		point327	327	2,433.6	1,805.6	190.00				Average	
		point328	328	2,432.1	1,776.0	191.00				Average	
		point329	329	2,431.5	1,732.5	192.00				Average	
		point330	330	2,431.3	1,694.8	193.00				Average	
		point331	331	2,430.4	1,657.2	194.00					
SR 126 West Lane 1	12.0	point332	332	2,472.3	2,638.2	182.90				Average	
		point333	333	2,471.5	2,477.3	183.00				Average	
		point334	334	2,470.6	2,233.1	184.00				Average	
		point335	335	2,470.6	2,032.1	185.00				Average	
		point336	336	2,469.7	1,970.6	186.00				Average	
		point337	337	2,469.7	1,921.3	187.00				Average	
		point338	338	2,469.9	1,889.6	188.00				Average	

		point339	339	2,469.8	1,840.5	189.00				Average	
		point340	340	2,469.9	1,794.9	190.00				Average	
		point341	341	2,469.7	1,755.1	191.00				Average	
		point342	342	2,470.1	1,711.2	192.00				Average	
		point343	343	2,469.2	1,673.7	193.00				Average	
		point344	344	2,469.7	1,636.3	194.00				Average	
		point345	345	2,469.3	1,594.3	195.00				Average	
		point346	346	2,467.2	1,572.2	196.00				Average	
		point347	347	2,467.9	1,528.5	197.00				Average	
		point348	348	2,468.9	1,474.7	198.00				Average	
		point349	349	2,468.0	1,441.2	199.00				Average	
		point350	350	2,468.3	1,399.8	200.00				Average	
		point351	351	2,467.2	1,355.0	201.00				Average	
		point352	352	2,467.4	1,314.8	202.00				Average	
		point353	353	2,467.3	1,280.5	203.00				Average	
		point354	354	2,466.4	1,239.6	204.00				Average	
		point355	355	2,466.8	1,212.3	205.00				Average	
		point356	356	2,467.1	1,168.8	206.00				Average	
		point357	357	2,466.1	1,128.6	206.50				Average	
		point358	358	2,466.4	1,101.6	207.00				Average	
		point359	359	2,466.7	1,064.1	208.50					
SR 126 West Lane 2	12.0	point360	360	2,498.4	2,638.9	182.30				Average	
		point361	361	2,496.7	2,462.7	183.00				Average	
		point362	362	2,494.9	2,205.3	184.00				Average	
		point363	363	2,493.7	2,010.9	185.00				Average	
		point364	364	2,494.6	1,962.0	186.00				Average	
		point365	365	2,493.3	1,915.2	187.00				Average	
		point366	366	2,491.9	1,884.8	188.00				Average	
		point367	367	2,491.6	1,836.8	189.00				Average	
		point368	368	2,492.2	1,794.5	190.00				Average	
		point369	369	2,492.2	1,754.6	191.00				Average	
		point370	370	2,491.0	1,710.1	192.00				Average	
		point371	371	2,491.9	1,673.0	193.00				Average	
		point372	372	2,492.4	1,629.4	194.00				Average	
		point373	373	2,491.7	1,600.1	195.00				Average	
		point374	374	2,491.1	1,556.9	196.00				Average	
		point375	375	2,491.4	1,522.7	197.00				Average	
		point376	376	2,490.9	1,471.8	198.00				Average	

		point377	377	2,491.2	1,441.5	199.00				Average	
		point378	378	2,491.3	1,412.7	200.00				Average	
		point379	379	2,489.7	1,348.6	201.00				Average	
		point380	380	2,490.1	1,304.7	202.00				Average	
		point381	381	2,490.6	1,275.7	203.00				Average	
		point382	382	2,489.7	1,231.7	204.00				Average	
		point383	383	2,490.4	1,209.8	205.00				Average	
		point384	384	2,489.1	1,158.4	206.00				Average	
		point385	385	2,489.1	1,130.8	206.50				Average	
		point386	386	2,488.0	1,100.7	207.00				Average	
		point387	387	2,488.6	1,062.5	208.50					
SR 126 East Lane 2	12.0	point388	388	2,536.2	1,059.6	208.50				Average	
		point389	389	2,536.8	1,103.4	207.00				Average	
		point390	390	2,536.1	1,128.8	206.50				Average	
		point391	391	2,536.9	1,161.9	206.00				Average	
		point392	392	2,537.2	1,249.1	204.00				Average	
		point393	393	2,537.3	1,284.1	203.00				Average	
		point394	394	2,537.9	1,324.4	202.00				Average	
		point395	395	2,537.6	1,365.8	201.00				Average	
		point396	396	2,537.5	1,404.9	200.00				Average	
		point397	397	2,538.2	1,438.9	199.00				Average	
		point398	398	2,538.1	1,469.6	198.00				Average	
		point399	399	2,538.4	1,512.9	197.00				Average	
		point400	400	2,538.0	1,554.1	196.00				Average	
		point401	401	2,538.4	1,588.5	195.00				Average	
		point402	402	2,538.5	1,631.2	194.00				Average	
		point403	403	2,538.9	1,667.7	193.00				Average	
		point404	404	2,538.8	1,703.0	192.00				Average	
		point405	405	2,538.8	1,750.9	191.00				Average	
		point406	406	2,538.6	1,792.1	190.00				Average	
		point407	407	2,538.7	1,838.7	189.00				Average	
		point408	408	2,539.1	1,878.6	188.00				Average	
		point409	409	2,538.5	1,933.8	187.00				Average	
		point410	410	2,539.0	1,997.3	186.00				Average	
		point411	411	2,538.9	2,066.5	185.00				Average	
		point412	412	2,540.6	2,253.2	184.00				Average	
		point413	413	2,541.6	2,475.7	183.00				Average	
		point414	414	2,542.0	2,642.0	182.40					

SR 126 East Lane 1	12.0	point415	415	2,560.7	1,059.7	208.50				Average	
		point416	416	2,560.5	1,099.1	207.00				Average	
		point417	417	2,560.7	1,129.7	206.50				Average	
		point418	418	2,560.7	1,154.1	206.00				Average	
		point419	419	2,561.2	1,204.0	205.00				Average	
		point420	420	2,561.1	1,239.3	204.00				Average	
		point421	421	2,561.0	1,285.3	203.00				Average	
		point422	422	2,560.7	1,314.7	202.00				Average	
		point423	423	2,561.3	1,352.6	201.00				Average	
		point424	424	2,562.0	1,389.7	200.00				Average	
		point425	425	2,562.4	1,427.3	199.00				Average	
		point426	426	2,562.6	1,469.2	198.00				Average	
		point427	427	2,562.5	1,511.7	197.00				Average	
		point428	428	2,562.5	1,558.7	196.00				Average	
		point429	429	2,562.8	1,587.9	195.00				Average	
		point430	430	2,563.2	1,627.1	194.00				Average	
		point431	431	2,562.5	1,666.1	193.00				Average	
		point432	432	2,562.9	1,706.0	192.00				Average	
		point433	433	2,563.5	1,752.8	191.00				Average	
		point434	434	2,564.5	1,785.1	190.00				Average	
		point435	435	2,564.4	1,841.1	189.00				Average	
		point436	436	2,564.4	1,878.0	188.00				Average	
		point437	437	2,564.3	1,921.0	187.00				Average	
		point438	438	2,565.5	1,956.6	186.00				Average	
		point439	439	2,566.0	1,999.4	185.00				Average	
		point440	440	2,565.9	2,115.7	184.00				Average	
		point441	441	2,568.2	2,438.1	183.00				Average	
		point442	442	2,569.4	2,641.0	182.40					
SR 126 East Off Ramp	12.0	point444	444	2,562.7	1,446.2	198.50				Average	
		point445	445	2,563.6	1,467.2	198.00				Average	
		point446	446	2,566.9	1,506.4	197.00				Average	
		point447	447	2,569.6	1,544.3	196.00				Average	
		point448	448	2,572.0	1,576.5	195.00				Average	
		point449	449	2,575.5	1,613.6	194.00				Average	
		point450	450	2,577.7	1,652.4	193.00				Average	
		point451	451	2,580.9	1,683.7	192.00				Average	
		point452	452	2,583.8	1,719.8	191.00				Average	
		point453	453	2,586.2	1,754.4	190.00				Average	

		point454	454	2,589.3	1,807.3	189.00				Average	
		point455	455	2,592.2	1,843.4	188.00				Average	
		point456	456	2,596.6	1,875.7	187.00				Average	
		point457	457	2,604.3	1,947.2	186.60				Average	
		point458	458	2,620.4	1,989.9	186.00				Average	
		point459	459	2,646.6	2,049.3	185.50				Average	
		point460	460	2,686.3	2,106.9	185.00				Average	
		point461	461	2,733.0	2,154.5	184.00				Average	
		point462	462	2,777.5	2,187.7	184.00				Average	
		point463	463	2,852.0	2,241.6	185.00				Average	
		point464	464	2,877.5	2,273.7	186.00				Average	
		point465	465	2,899.4	2,316.8	187.00				Average	
		point466	466	2,906.4	2,361.1	188.00				Average	
		point467	467	2,905.1	2,401.2	189.00				Average	
		point468	468	2,907.0	2,453.0	190.00				Average	
		point469	469	2,908.4	2,530.4	193.00					
SR 126 East On Ramp	12.0	point470	470	2,610.7	2,528.6	202.00				Average	Y
		point471	471	2,680.9	2,515.5	201.00				Average	
		point472	472	2,707.0	2,512.3	200.00				Average	
		point473	473	2,746.7	2,508.4	199.00				Average	
		point474	474	2,772.7	2,503.6	198.00				Average	
		point475	475	2,797.2	2,496.0	197.00				Average	
		point476	476	2,806.8	2,490.1	196.00				Average	
		point477	477	2,823.6	2,481.7	195.00				Average	
		point478	478	2,833.5	2,473.5	194.00				Average	
		point479	479	2,846.8	2,458.5	193.00				Average	
		point480	480	2,857.5	2,448.6	192.00				Average	
		point481	481	2,864.0	2,436.8	191.00				Average	
		point482	482	2,871.5	2,415.7	190.00				Average	
		point483	483	2,877.0	2,394.0	189.00				Average	
		point484	484	2,879.5	2,374.5	188.00				Average	
		point485	485	2,874.3	2,328.7	187.00				Average	
		point486	486	2,865.5	2,297.9	186.00				Average	
		point487	487	2,844.2	2,265.0	185.00				Average	
		point488	488	2,800.9	2,229.3	184.40				Average	
		point489	489	2,718.5	2,215.0	184.00				Average	
		point490	490	2,649.2	2,239.3	183.60				Average	
		point491	491	2,598.6	2,301.5	183.60				Average	

		point492	492	2,591.2	2,433.4	183.00				Average	
		point493	493	2,594.2	2,639.7	182.40					

Rincon Consultants, Inc 12 August 2008
P. K. Nichols TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (6ft garden wall)

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Wells Rd Southbound N of Blackburn	point1	1	994	40	31	40	21	40	0	0	0	0
	point232	232	994	40	31	40	21	40	0	0	0	0
	point2	2	994	40	31	40	21	40	0	0	0	0
	point3	3	994	40	31	40	21	40	0	0	0	0
	point4	4	994	40	31	40	21	40	0	0	0	0
	point5	5										
Wells Rd Southbound S of Blackburn	point6	6	1393	40	44	40	29	40	0	0	0	0
	point7	7	1393	40	44	40	29	40	0	0	0	0
	point8	8	998	40	32	40	21	40	0	0	0	0
	point9	9	998	40	32	40	21	40	0	0	0	0
	point495	495	998	40	32	40	21	40	0	0	0	0
	point10	10	998	40	32	40	21	40	0	0	0	0
	point11	11	998	40	32	40	21	40	0	0	0	0
	point12	12	998	40	32	40	21	40	0	0	0	0
	point13	13	998	40	32	40	21	40	0	0	0	0
	point14	14	998	40	32	40	21	40	0	0	0	0
	point15	15	2603	40	82	40	55	40	0	0	0	0
	point16	16	2527	40	80	40	53	40	0	0	0	0
	point17	17	2527	40	80	40	53	40	0	0	0	0
	point18	18	2527	40	80	40	53	40	0	0	0	0
	point19	19	2527	40	80	40	53	40	0	0	0	0
	point20	20	2527	40	80	40	53	40	0	0	0	0

	point21	21	2527	40	80	40	53	40	0	0	0	0
	point22	22										
SR 126 Westbound On Ramp	point23	23	399	50	13	45	8	45	0	0	0	0
	point24	24	399	50	13	45	8	45	0	0	0	0
	point25	25	399	50	13	45	8	45	0	0	0	0
	point26	26	399	50	13	45	8	45	0	0	0	0
	point27	27	399	50	13	45	8	45	0	0	0	0
	point28	28	399	50	13	45	8	45	0	0	0	0
	point29	29	399	50	13	45	8	45	0	0	0	0
	point30	30	399	50	13	45	8	45	0	0	0	0
	point31	31	399	50	13	45	8	45	0	0	0	0
	point32	32	399	50	13	45	8	45	0	0	0	0
	point33	33	399	50	13	45	8	45	0	0	0	0
	point34	34	399	50	13	45	8	45	0	0	0	0
	point35	35	399	50	13	45	8	45	0	0	0	0
	point36	36	399	50	00	45	8	45	0	0	0	0
	point37	37	399	50	13	45	8	45	0	0	0	0
	point38	38	399	50	13	45	8	45	0	0	0	0
	point39	39										
SR 126 Westbound On Ramp2	point40	40	399	65	13	65	8	65	0	0	0	0
	point41	41	399	65	13	65	8	65	0	0	0	0
	point42	42	399	65	13	65	8	65	0	0	0	0
	point43	43	399	65	13	65	8	65	0	0	0	0
	point44	44	399	65	13	65	8	65	0	0	0	0
	point45	45	789	65	25	65	17	65	0	0	0	0
	point46	46	789	65	25	65	17	65	0	0	0	0
	point47	47	789	65	25	65	17	65	0	0	0	0
	point48	48	789	65	25	65	17	65	0	0	0	0
	point49	49	789	65	25	65	17	65	0	0	0	0
	point50	50	789	65	25	65	17	65	0	0	0	0
	point51	51	789	65	25	65	17	65	0	0	0	0
	point52	52	789	65	25	65	17	65	0	0	0	0
	point53	53	789	65	25	65	17	65	0	0	0	0
	point54	54	789	65	25	65	17	65	0	0	0	0

	point55	55	789	65	25	65	17	65	0	0	0	0
	point56	56	789	65	25	65	17	65	0	0	0	0
	point57	57	789	65	25	65	17	65	0	0	0	0
	point58	58	789	65	25	65	17	65	0	0	0	0
	point59	59										
Blackburn Rd Westbound	point60	60	166	35	5	35	4	35	0	0	0	0
	point61	61	166	35	5	35	4	35	0	0	0	0
	point62	62	166	35	5	35	4	35	0	0	0	0
	point63	63	166	35	5	35	4	35	0	0	0	0
	point64	64	166	35	5	35	4	35	0	0	0	0
	point65	65	166	35	5	35	4	35	0	0	0	0
	point66	66	166	35	5	35	4	35	0	0	0	0
	point67	67	166	35	5	35	4	35	0	0	0	0
	point68	68	166	35	5	35	4	35	0	0	0	0
	point69	69	166	35	5	35	4	35	0	0	0	0
	point70	70	166	35	5	35	4	35	0	0	0	0
	point71	71	166	35	5	35	4	35	0	0	0	0
	point72	72	166	35	5	35	4	35	0	0	0	0
	point73	73	166	35	5	35	4	35	0	0	0	0
	point74	74	166	35	5	35	4	35	0	0	0	0
	point75	75	166	35	5	35	4	35	0	0	0	0
	point76	76	166	35	5	35	4	35	0	0	0	0
	point77	77	166	35	5	35	4	35	0	0	0	0
	point78	78	166	35	5	35	4	35	0	0	0	0
	point80	80	166	35	5	35	4	35	0	0	0	0
	point81	81	166	35	5	35	4	35	0	0	0	0
	point82	82	166	35	5	35	4	35	0	0	0	0
	point83	83	166	35	5	35	4	35	0	0	0	0
	point84	84	166	35	5	35	4	35	0	0	0	0
	point85	85	166	35	5	35	4	35	0	0	0	0
	point86	86	166	35	5	35	4	35	0	0	0	0
	point87	87	166	35	5	35	4	35	0	0	0	0
	point88	88	166	35	5	35	4	35	0	0	0	0
	point89	89	166	35	5	35	4	35	0	0	0	0

	point90	90	166	35	5	35	4	35	0	0	0	0
	point91	91	166	35	5	35	4	35	0	0	0	0
	point92	92	166	35	5	35	4	35	0	0	0	0
	point93	93	166	35	5	35	4	35	0	0	0	0
	point94	94	166	35	5	35	4	35	0	0	0	0
	point95	95	166	35	5	35	4	35	0	0	0	0
	point96	96	166	35	5	35	4	35	0	0	0	0
	point97	97	166	35	5	35	4	35	0	0	0	0
	point98	98	166	35	5	35	4	35	0	0	0	0
	point99	99	166	35	5	35	4	35	0	0	0	0
	point100	100	166	35	5	35	4	35	0	0	0	0
	point101	101										
Blackburn Rd Eastbound	point102	102	165	35	5	35	3	35	0	0	0	0
	point103	103	165	35	5	35	3	35	0	0	0	0
	point104	104	165	35	5	35	3	35	0	0	0	0
	point105	105	165	35	5	35	3	35	0	0	0	0
	point106	106	165	35	5	35	3	35	0	0	0	0
	point107	107	165	35	5	35	3	35	0	0	0	0
	point108	108	165	35	5	35	3	35	0	0	0	0
	point109	109	165	35	5	35	3	35	0	0	0	0
	point110	110	165	35	5	35	3	35	0	0	0	0
	point111	111	165	35	5	35	3	35	0	0	0	0
	point112	112	165	35	5	35	3	35	0	0	0	0
	point113	113	165	35	5	35	3	35	0	0	0	0
	point114	114	165	35	5	35	3	35	0	0	0	0
	point115	115	165	35	5	35	3	35	0	0	0	0
	point116	116	165	35	5	35	3	35	0	0	0	0
	point117	117	165	35	5	35	3	35	0	0	0	0
	point118	118	165	35	5	35	3	35	0	0	0	0
	point119	119	165	35	5	35	3	35	0	0	0	0
	point120	120	165	35	5	35	3	35	0	0	0	0
	point121	121	165	35	5	35	3	35	0	0	0	0
	point122	122	165	35	5	35	3	35	0	0	0	0
	point123	123	165	35	5	35	3	35	0	0	0	0

	point124	124	165	35	5	35	3	35	0	0	0	0
	point125	125	165	35	5	35	3	35	0	0	0	0
	point126	126	165	35	5	35	3	35	0	0	0	0
	187	129	165	35	5	35	3	35	0	0	0	0
	point130	130	165	35	5	35	3	35	0	0	0	0
	point131	131	165	35	5	35	3	35	0	0	0	0
	point132	132	165	35	5	35	3	35	0	0	0	0
	point133	133	165	35	5	35	3	35	0	0	0	0
	point134	134	165	35	5	35	3	35	0	0	0	0
	point135	135	165	35	5	35	3	35	0	0	0	0
	point136	136	165	35	5	35	3	35	0	0	0	0
	point137	137	165	35	5	35	3	35	0	0	0	0
	point138	138	165	35	5	35	3	35	0	0	0	0
	point139	139	165	35	5	35	3	35	0	0	0	0
	point140	140	165	35	5	35	3	35	0	0	0	0
	194.5	141	165	35	5	35	3	35	0	0	0	0
	point142	142	165	35	5	35	3	35	0	0	0	0
	point143	143	165	35	5	35	3	35	0	0	0	0
	point144	144										
Wells Rd Northbound S of Blackburn	point148	148	893	40	28	40	19	40	0	0	0	0
	point149	149	893	40	28	40	19	40	0	0	0	0
	point150	150	893	40	28	40	19	40	0	0	0	0
	point151	151	893	40	28	40	19	40	0	0	0	0
	point152	152	893	40	28	40	19	40	0	0	0	0
	point153	153	893	40	28	40	19	40	0	0	0	0
	point154	154	893	40	28	40	19	40	0	0	0	0
	point155	155	893	40	28	40	19	40	0	0	0	0
	point156	156	504	40	16	40	11	40	0	0	0	0
	point157	157	504	40	16	40	11	40	0	0	0	0
	point158	158	504	40	16	40	11	40	0	0	0	0
	point159	159	504	40	16	40	11	40	0	0	0	0
	point160	160	504	40	16	40	11	40	0	0	0	0
	point161	161	504	40	16	40	11	40	0	0	0	0
	point162	162	504	40	16	40	11	40	0	0	0	0

	point163	163	504	40	16	40	11	40	0	0	0	0
	point164	164	504	40	16	40	11	40	0	0	0	0
	point496	496	504	40	16	40	11	40	0	0	0	0
	point165	165	696	40	22	40	15	40	0	0	0	0
	point166	166	696	40	22	40	15	40	0	0	0	0
	point167	167	696	40	22	40	15	40	0	0	0	0
	point168	168										
Wells Rd Southbound S of Blackburn2	point169	169	2527	40	80	40	53	40	0	0	0	0
	point170	170	2527	40	80	40	53	40	0	0	0	0
	point171	171										
SR 126 Westbound Off Ramp	point174	174	1606	45	51	45	34	45	0	0	0	0
	point175	175	1606	45	51	45	34	45	0	0	0	0
	point176	176	1606	45	51	45	34	45	0	0	0	0
	point177	177	1606	45	51	45	34	45	0	0	0	0
	point178	178	1606	45	51	45	34	45	0	0	0	0
	point179	179	1606	45	51	45	34	45	0	0	0	0
	point180	180	1606	45	51	45	34	45	0	0	0	0
	point181	181	1606	45	51	45	34	45	0	0	0	0
	point182	182	1606	45	51	45	34	45	0	0	0	0
	point183	183	1606	45	51	45	34	45	0	0	0	0
	point184	184	1606	45	51	45	05	45	0	0	0	0
	point185	185	1606	45	51	45	34	45	0	0	0	0
	point186	186	1606	45	51	45	34	45	0	0	0	0
	point187	187	1606	45	51	45	34	45	0	0	0	0
	point188	188	1606	45	51	45	34	45	0	0	0	0
	point189	189	1606	45	51	45	34	45	0	0	0	0
	point190	190	1606	45	51	45	34	45	0	0	0	0
	point191	191	1606	45	51	45	34	45	0	0	0	0
	point192	192	1606	45	51	45	34	45	0	0	0	0
	point193	193	1606	45	51	45	34	45	0	0	0	0
	point194	194	1606	45	51	45	34	45	0	0	0	0
	point195	195	1606	45	51	45	34	45	0	0	0	0
	point196	196										
Wells Rd Northbound N of Blackburn	point226	226	414	40	13	40	9	40	0	0	0	0

	point227	227	414	40	13	40	9	40	0	0	0	0
	point228	228	414	40	13	40	9	40	0	0	0	0
	point229	229	414	40	13	40	9	40	0	0	0	0
	point230	230	414	40	13	40	9	40	0	0	0	0
	point231	231										
126 West On/Off Lane	point321	321	390	55	12	55	8	55	0	0	0	0
	point322	322	390	55	12	55	8	55	0	0	0	0
	point323	323	390	55	12	55	8	55	0	0	0	0
	point324	324	390	55	12	55	8	55	0	0	0	0
	point325	325	390	55	12	55	8	55	0	0	0	0
	point326	326	390	55	12	55	8	55	0	0	0	0
	point327	327	390	55	12	55	8	55	0	0	0	0
	point328	328	390	55	12	55	8	55	0	0	0	0
	point329	329	390	55	12	55	8	55	0	0	0	0
	point330	330	390	55	12	55	8	55	0	0	0	0
	point331	331										
SR 126 West Lane 1	point332	332	1161	70	65	65	65	60	0	0	0	0
	point333	333	1161	70	65	65	65	60	0	0	0	0
	point334	334	1161	70	65	65	65	60	0	0	0	0
	point335	335	1161	70	65	65	65	60	0	0	0	0
	point336	336	1161	70	65	65	65	60	0	0	0	0
	point337	337	1161	70	65	65	65	60	0	0	0	0
	point338	338	1161	70	65	65	65	60	0	0	0	0
	point339	339	1161	70	65	65	65	60	0	0	0	0
	point340	340	1161	70	65	65	65	05	0	0	0	0
	point341	341	1161	70	65	65	65	60	0	0	0	0
	point342	342	1161	70	65	65	65	60	0	0	0	0
	point343	343	1161	70	65	65	65	60	0	0	0	0
	point344	344	1161	70	65	65	65	60	0	0	0	0
	point345	345	1161	70	65	65	65	60	0	0	0	0
	point346	346	1161	70	65	65	65	60	0	0	0	0
	point347	347	1161	70	65	65	65	60	0	0	0	0
	point348	348	1161	70	65	65	65	60	0	0	0	0
	point349	349	1161	70	65	65	65	60	0	0	0	0

	point350	350	1161	70	65	65	65	60	0	0	0	0
	point351	351	1161	70	65	65	65	60	0	0	0	0
	point352	352	1161	70	65	65	65	60	0	0	0	0
	point353	353	1161	70	65	65	65	60	0	0	0	0
	point354	354	1161	70	65	65	65	60	0	0	0	0
	point355	355	1161	70	65	65	65	60	0	0	0	0
	point356	356	1161	70	65	65	65	60	0	0	0	0
	point357	357	1161	70	65	65	65	60	0	0	0	0
	point358	358	1161	70	65	65	65	60	0	0	0	0
	point359	359										
SR 126 West Lane 2	point360	360	1161	70	65	65	65	60	0	0	0	0
	point361	361	1161	70	65	65	65	60	0	0	0	0
	point362	362	1161	70	65	65	65	60	0	0	0	0
	point363	363	1161	70	65	65	65	60	0	0	0	0
	point364	364	1161	70	65	65	65	60	0	0	0	0
	point365	365	1161	70	65	65	65	60	0	0	0	0
	point366	366	1161	70	65	65	65	60	0	0	0	0
	point367	367	1161	70	65	65	65	60	0	0	0	0
	point368	368	1161	70	65	65	65	60	0	0	0	0
	point369	369	1161	70	65	65	65	60	0	0	0	0
	point370	370	1161	70	65	65	65	60	0	0	0	0
	point371	371	1161	70	65	65	65	60	0	0	0	0
	point372	372	1161	70	65	65	65	60	0	0	0	0
	point373	373	1161	70	65	65	65	60	0	0	0	0
	point374	374	1161	70	65	65	65	60	0	0	0	0
	point375	375	1161	70	65	65	65	60	0	0	0	0
	point376	376	1161	70	65	65	65	60	0	0	0	0
	point377	377	1161	70	65	65	65	60	0	0	0	0
	point378	378	1161	70	65	65	65	60	0	0	0	0
	point379	379	1161	70	65	65	65	60	0	0	0	0
	point380	380	1161	70	65	65	65	60	0	0	0	0
	point381	381	1161	70	65	65	65	60	0	0	0	0
	point382	382	1161	70	65	65	65	60	0	0	0	0
	point383	383	1161	70	65	65	65	60	0	0	0	0

	point384	384	1161	70	65	65	65	60	0	0	0	0
	point385	385	1161	70	65	65	65	60	0	0	0	0
	point386	386	1161	70	65	65	65	60	0	0	0	0
	point387	387										
SR 126 East Lane 2	point388	388	1161	70	65	65	65	60	0	0	0	0
	point389	389	1161	70	65	65	65	60	0	0	0	0
	point390	390	1161	70	65	65	65	60	0	0	0	0
	point391	391	1161	70	65	65	65	60	0	0	0	0
	point392	392	1161	70	65	65	65	60	0	0	0	0
	point393	393	1161	70	65	65	65	60	0	0	0	0
	point394	394	1161	70	65	65	65	60	0	0	0	0
	point395	395	1161	70	65	65	65	60	0	0	0	0
	point396	396	1161	70	65	65	65	60	0	0	0	0
	point397	397	1161	70	65	65	65	60	0	0	0	0
	point398	398	1161	70	65	65	65	60	0	0	0	0
	point399	399	1161	70	65	65	65	60	0	0	0	0
	point400	400	1161	70	65	65	65	60	0	0	0	0
	point401	401	1161	70	65	65	65	60	0	0	0	0
	point402	402	1161	70	65	65	65	60	0	0	0	0
	point403	403	1161	70	65	65	65	60	0	0	0	0
	point404	404	1161	70	65	65	65	60	0	0	0	0
	point405	405	1161	70	65	65	65	60	0	0	0	0
	point406	406	1161	70	65	65	65	60	0	0	0	0
	point407	407	1161	70	65	65	65	60	0	0	0	0
	point408	408	1161	70	65	65	65	60	0	0	0	0
	point409	409	1161	70	65	65	65	60	0	0	0	0
	point410	410	1161	70	65	65	65	60	0	0	0	0
	point411	411	1161	70	65	65	65	60	0	0	0	0
	point412	412	1161	70	65	65	65	60	0	0	0	0
	point413	413	1161	70	65	65	65	60	0	0	0	0
	point414	414										
SR 126 East Lane 1	point415	415	1161	70	65	65	65	60	0	0	0	0
	point416	416	1161	70	65	65	65	60	0	0	0	0
	point417	417	1161	70	65	65	65	60	0	0	0	0

	point418	418	1161	70	65	65	65	60	0	0	0	0
	point419	419	1161	70	65	65	65	60	0	0	0	0
	point420	420	1161	70	65	65	65	60	0	0	0	0
	point421	421	1161	70	65	65	65	60	0	0	0	0
	point422	422	1161	70	65	65	65	60	0	0	0	0
	point423	423	1161	70	65	65	65	60	0	0	0	0
	point424	424	1161	70	65	65	65	60	0	0	0	0
	point425	425	1161	70	65	65	65	60	0	0	0	0
	point426	426	1161	70	65	65	65	60	0	0	0	0
	point427	427	1161	70	65	65	65	60	0	0	0	0
	point428	428	1161	70	65	65	65	60	0	0	0	0
	point429	429	1161	70	65	65	65	60	0	0	0	0
	point430	430	1161	70	65	65	65	60	0	0	0	0
	point431	431	1161	70	65	65	65	60	0	0	0	0
	point432	432	1161	70	65	65	65	60	0	0	0	0
	point433	433	1161	70	65	65	65	60	0	0	0	0
	point434	434	1161	70	65	65	65	60	0	0	0	0
	point435	435	1161	70	65	65	65	60	0	0	0	0
	point436	436	1161	70	65	65	65	60	0	0	0	0
	point437	437	1161	70	65	65	65	60	0	0	0	0
	point438	438	1161	70	65	65	65	60	0	0	0	0
	point439	439	1161	70	65	65	65	60	0	0	0	0
	point440	440	1161	70	65	65	65	60	0	0	0	0
	point441	441	1161	70	65	65	65	60	0	0	0	0
	point442	442										
SR 126 East Off Ramp	point444	444	238	45	8	45	5	45	0	0	0	0
	point445	445	238	45	8	45	5	45	0	0	0	0
	point446	446	238	45	8	45	5	45	0	0	0	0
	point447	447	238	45	8	45	5	45	0	0	0	0
	point448	448	238	45	8	45	5	45	0	0	0	0
	point449	449	238	45	8	45	5	45	0	0	0	0
	point450	450	238	45	8	45	5	45	0	0	0	0
	point451	451	238	45	8	45	5	45	0	0	0	0
	point452	452	238	45	8	45	5	45	0	0	0	0

	point453	453	238	45	8	45	5	45	0	0	0	0
	point454	454	238	45	8	45	5	45	0	0	0	0
	point455	455	238	45	8	45	5	45	0	0	0	0
	point456	456	238	45	8	45	5	45	0	0	0	0
	point457	457	238	45	8	45	5	45	0	0	0	0
	point458	458	238	45	8	45	5	45	0	0	0	0
	point459	459	238	45	8	45	5	45	0	0	0	0
	point460	460	238	45	8	45	5	45	0	0	0	0
	point461	461	238	45	8	45	5	45	0	0	0	0
	point462	462	238	45	8	45	5	45	0	0	0	0
	point463	463	238	45	8	45	5	45	0	0	0	0
	point464	464	238	45	8	45	5	45	0	0	0	0
	point465	465	238	45	8	45	5	45	0	0	0	0
	point466	466	238	45	8	45	5	45	0	0	0	0
	point467	467	238	45	8	45	5	45	0	0	0	0
	point468	468	238	45	8	45	5	45	0	0	0	0
	point469	469										
SR 126 East On Ramp	point470	470	76	45	2	45	2	45	0	0	0	0
	point471	471	76	45	2	45	2	45	0	0	0	0
	point472	472	76	45	2	45	2	45	0	0	0	0
	point473	473	76	45	2	45	2	45	0	0	0	0
	point474	474	76	45	2	45	2	45	0	0	0	0
	point475	475	76	45	2	45	2	45	0	0	0	0
	point476	476	76	45	2	45	2	45	0	0	0	0
	point477	477	76	45	2	45	2	45	0	0	0	0
	point478	478	76	45	2	45	2	45	0	0	0	0
	point479	479	76	45	2	45	2	45	0	0	0	0
	point480	480	76	45	2	45	2	45	0	0	0	0
	point481	481	76	45	2	45	2	45	0	0	0	0
	point482	482	76	45	2	45	2	45	0	0	0	0
	point483	483	76	45	2	45	2	45	0	0	0	0
	point484	484	76	45	2	45	2	45	0	0	0	0
	point485	485	76	45	2	45	2	45	0	0	0	0
	point486	486	76	45	2	45	2	45	0	0	0	0

	point487	487	76	45	2	45	2	45	0	0	0	0
	point488	488	76	45	2	45	2	45	0	0	0	0
	point489	489	76	45	2	45	2	45	0	0	0	0
	point490	490	76	45	2	45	2	45	0	0	0	0
	point491	491	76	45	2	45	2	45	0	0	0	0
	point492	492	76	45	2	45	2	45	0	0	0	0
	point493	493										

Rincon Consultants, Inc
P. K. Nichols

12 August 2008
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (6ft garden wall)

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Road A pad 132	10	1	1,563.8	2,249.2	201.60	4.92	0.00	66	10.0	8.0	Y
Road H pad 133	11	1	1,702.3	2,058.8	194.60	4.92	0.00	66	10.0	8.0	Y
Road G pad 144	12	1	1,947.3	2,054.4	192.80	4.92	0.00	66	10.0	8.0	Y
Road G pad 145	13	1	2,253.5	2,026.5	190.90	4.92	0.00	66	10.0	8.0	Y
Road I pad 146	14	1	2,296.5	1,946.8	190.70	4.92	0.00	66	10.0	8.0	Y
Raod J pad 163	15	1	2,343.3	1,546.8	198.50	4.92	0.00	66	10.0	8.0	Y
Road K pad 177	16	1	2,352.0	1,329.2	201.50	4.92	0.00	66	10.0	8.0	Y
Road K pad 178	17	1	2,355.4	1,117.1	207.30	4.92	0.00	66	10.0	8.0	Y
Measurment location2	18	1	2,346.9	1,462.0	198.00	4.92	0.00	66	10.0	8.0	Y
Road T front of pad 149	22	1	2,184.2	1,873.5	191.40	4.92	0.00	66	10.0	8.0	Y
Road J front of pad 161	23	1	2,227.5	1,497.8	199.60	4.92	0.00	66	10.0	8.0	Y
Road J front of pad 168	24	1	2,159.2	1,438.1	203.60	4.92	0.00	66	10.0	8.0	Y
Road K front of pad 175	25	1	2,207.6	1,236.6	203.50	4.92	0.00	66	10.0	8.0	Y

Rincon Consultants, Inc 12 August 2008
P. K. Nichols TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (6ft garden wall)

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	If Berm Top Width	If Berm Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Garden Wall 1	W	0.00	99.99	0.00				0.00	point10	10	2,166.2	2,146.0	187.80	6.00	0.00	0	0		
									point11	11	2,235.3	2,083.0	190.90	6.00	0.00	0	0		
									point12	12	2,280.2	2,029.4	190.90	6.00	0.00	0	0		
									point13	13	2,306.3	1,982.3	190.70	6.00	0.00	0	0		
									point14	14	2,327.4	1,919.9	190.70	6.00	0.00	0	0		
									point15	15	2,336.1	1,883.3	190.70	6.00					
Garden Wall 2	W	0.00	99.99	0.00				0.00	point16	16	2,336.0	1,847.1	190.70	6.00	0.00	0	0		
									point17	17	2,131.8	1,832.7	194.50	6.00	0.00	0	0		
									point18	18	2,141.0	1,626.9	200.00	6.00	0.00	0	0		
									point19	19	2,347.5	1,625.5	198.50	6.00	0.00	0	0		
									point20	20	2,352.4	1,487.3	198.50	6.00					
Garden Wall 3	W	0.00	99.99	0.00				0.00	point21	21	2,355.0	1,447.1	201.50	6.00	0.00	0	0		
									point22	22	2,362.8	1,231.0	201.50	6.00					
Garden Wall 4	W	0.00	99.99	0.00				0.00	point23	23	2,362.4	1,190.1	207.30	6.00	0.00	0	0		
									point24	24	2,366.6	1,101.6	207.30	6.00	0.00	0	0		
									point25	25	2,170.7	1,101.0	206.40	6.00					
Barrier13	W	0.00	99.99	0.00				0.00	point26	26	1,681.2	2,420.5	195.00	10.00	1.00	10	10		
									point27	27	1,682.6	2,379.1	194.00	10.00	1.00	10	10		
									point28	28	1,697.7	2,354.6	193.00	10.00	1.00	10	10		
									point29	29	1,725.8	2,328.7	192.00	10.00	1.00	10	10		
									point30	30	1,766.6	2,319.6	192.00	10.00	1.00	10	10		
									point31	31	1,821.9	2,323.7	192.00	10.00	1.00	10	10		
									point32	32	1,908.6	2,331.8	191.00	10.00	1.00	10	10		
									point33	33	1,992.9	2,326.8	190.00	10.00	1.00	10	10		
									point34	34	2,046.1	2,298.1	189.00	10.00	1.00	10	10		
									point35	35	2,111.9	2,239.0	188.00	10.00	1.00	10	10		
									point36	36	2,261.9	2,112.4	187.00	10.00	1.00	10	10		
									point37	37	2,323.1	2,039.3	187.60	10.00	1.00	10	10		
									point38	38	2,344.6	1,994.9	187.60	10.00	1.00	10	10		
									point39	39	2,367.4	1,947.6	188.00	10.00	1.00	10	10		
									point40	40	2,384.7	1,899.6	188.50	10.00	1.00	10	10		
									point41	41	2,386.9	1,856.7	189.00	10.00	1.00	10	10		
									point42	42	2,392.0	1,774.2	191.00	10.00	1.00	10	10		
									point43	43	2,398.5	1,533.2	197.00	10.00	1.00	10	10		
									point44	44	2,406.6	1,286.2	203.00	10.00	1.00	10	10		

									point45	45	2,414.2	1,101.3	207.00	10.00					

Rincon Consultants, Inc
P. K. Nichols

18 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)
BARRIER DESIGN: unsaved
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.7	66	61.7	10	----	60.8	0.9	8	-7.1
Road H pad 133	11	1	0.0	59.4	66	59.4	10	----	56.5	2.9	8	-5.1
Road G pad 144	12	1	0.0	62.7	66	62.7	10	----	57.8	4.9	8	-3.1
Road G pad 145	13	1	0.0	69.8	66	69.8	10	Snd Lvl	64.0	5.8	8	-2.2
Road I pad 146	14	1	0.0	70.6	66	70.6	10	Snd Lvl	64.0	6.6	8	-1.4
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	64.4	8.2	8	0.2
Road K pad 177	16	1	0.0	72.4	66	72.4	10	Snd Lvl	64.1	8.3	8	0.3
Road K pad 178	17	1	0.0	70.9	66	70.9	10	Snd Lvl	63.5	7.4	8	-0.6
Measurment location2	18	1	0.0	72.4	66	72.4	10	Snd Lvl	63.9	8.5	8	0.5
Road T front of pad 149	22	1	0.0	66.4	66	66.4	10	Snd Lvl	59.3	7.1	8	-0.9
Road J front of pad 161	23	1	0.0	67.2	66	67.2	10	Snd Lvl	58.5	8.7	8	0.7
Road J front of pad 168	24	1	0.0	65.2	66	65.2	10	----	57.3	7.9	8	-0.1
Road K front of pad 175	25	1	0.0	65.1	66	65.1	10	----	57.1	8.0	8	0.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.9	6.6	8.7
All Impacted	8	5.8	7.6	8.7
All that meet NR Goal	5	8.0	8.3	8.7

Rincon Consultants, Inc
P. K. Nichols

14 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)
BARRIER DESIGN: unsaved
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
7ft Road A pad 132	10	1	0.0	61.7	66	61.7	10	----	60.8	0.9	8	-7.1
12-13ft Road H pad 133	11	1	0.0	59.4	66	59.4	10	----	56.5	2.9	8	-5.1
14ft Road G pad 144	12	1	0.0	62.7	66	62.7	10	----	57.9	4.8	8	-3.2
Road G pad 145	13	1	0.0	69.8	66	69.8	10	Snd Lvl	64.2	5.6	8	-2.4
14-16ft Road I pad 146	14	1	0.0	70.6	66	70.6	10	Snd Lvl	64.2	6.4	8	-1.6
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	64.4	8.2	8	0.2
Road K pad 177	16	1	0.0	72.4	66	72.4	10	Snd Lvl	64.1	8.3	8	0.3
21ft Road K pad 178	17	1	0.0	70.9	66	70.9	10	Snd Lvl	65.4	5.5	8	-2.5
Measurment location2	18	1	0.0	72.4	66	72.4	10	Snd Lvl	63.9	8.5	8	0.5
Road T front of pad 149	22	1	0.0	66.4	66	66.4	10	Snd Lvl	59.5	6.9	8	-1.1
Road J front of pad 161	23	1	0.0	67.2	66	67.2	10	Snd Lvl	58.6	8.6	8	0.6
Road J front of pad 168	24	1	0.0	65.2	66	65.2	10	-----	57.5	7.7	8	-0.3
Road K front of pad 175	25	1	0.0	65.1	66	65.1	10	----	57.0	8.1	8	0.1

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.9	6.3	8.6
All Impacted	8	5.5	7.3	8.6
All that meet NR Goal	5	8.1	8.3	8.6

Rincon Consultants, Inc
P. K. Nichols

11 August 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	61.7	66	61.7	10	----	60.9	0.8	8	-7.2
Road H pad 133	11	1	0.0	59.4	66	59.4	10	----	57.7	1.7	8	-6.3
Road G pad 144	12	1	0.0	62.7	66	62.7	10	----	60.1	2.6	8	-5.4
Road G pad 145	13	1	0.0	69.8	66	69.8	10	Snd Lvl	66.0	3.8	8	-4.2
Road I pad 146	14	1	0.0	70.6	66	70.6	10	Snd Lvl	66.2	4.4	8	-3.6
Raod J pad 163	15	1	0.0	72.6	66	72.6	10	Snd Lvl	67.3	5.3	8	-2.7
Road K pad 177	16	1	0.0	72.4	66	72.4	10	Snd Lvl	66.3	6.1	8	-1.9
Road K pad 178	17	1	0.0	70.9	66	70.9	10	Snd Lvl	66.9	4.0	8	-4.0
Measurment location2	18	1	0.0	72.4	66	72.4	10	Snd Lvl	66.2	6.2	8	-1.8
Road T front of pad 149	22	1	0.0	66.4	66	66.4	10	Snd Lvl	62.6	3.8	8	-4.2
Road J front of pad 161	23	1	0.0	67.2	66	67.2	10	Snd Lvl	63.2	4.0	8	-4.0
Road J front of pad 168	24	1	0.0	65.2	66	65.2	10	----	62.4	2.8	8	-5.2
Road K front of pad 175	25	1	0.0	65.1	66	65.1	10	----	61.1	4.0	8	-4.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.8	3.8	6.2
All Impacted	8	3.8	4.7	6.2
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants, Inc
P. K. Nichols

11 August 2008
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points					Flow Control			Segment	
Name	Width	Name	No.	Coordinates (pavement)			Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
				X	Y	Z					
	ft			ft	ft	ft		mph	%		
Wells Rd Southbound N of Blackburn	12.0	point1	1	1,282.2	2,454.6	201.00				Average	
		point232	232	1,331.8	2,453.7	200.00				Average	
		point2	2	1,402.8	2,453.7	199.00				Average	
		point3	3	1,527.8	2,454.0	198.00				Average	
		point4	4	1,587.4	2,456.9	197.00				Average	
		point5	5	1,644.1	2,460.8	196.50					
Wells Rd Southbound S of Blackburn	12.0	point6	6	1,674.5	2,462.7	195.50	Signal	0.00	100	Average	
		point7	7	1,743.6	2,467.7	195.00				Average	
		point8	8	1,858.0	2,475.6	194.00				Average	
		point9	9	1,949.1	2,483.2	193.00				Average	
		point495	495	2,000.9	2,488.3	192.00				Average	
		point10	10	2,052.7	2,493.5	193.00				Average	
		point11	11	2,124.1	2,500.0	194.00				Average	
		point12	12	2,198.1	2,507.8	195.00				Average	
		point13	13	2,324.6	2,518.5	200.00				Average	
		point14	14	2,387.6	2,524.4	201.00				Average	Y
		point15	15	2,454.9	2,528.0	202.00				Average	Y
		point16	16	2,609.2	2,529.9	202.00				Average	Y
		point17	17	2,684.5	2,533.5	201.00				Average	
		point18	18	2,713.6	2,533.7	200.00				Average	
		point19	19	2,762.3	2,534.4	199.00				Average	
		point20	20	2,796.4	2,534.8	198.00				Average	
		point21	21	2,821.4	2,535.3	197.00				Average	
		point22	22	2,873.7	2,535.8	195.00					
SR 126 Westbound On Ramp	12.0	point23	23	1,849.5	2,461.2	194.00				Average	

		point24	24	1,937.8	2,459.5	193.00				Average	
		point25	25	2,009.9	2,435.7	192.00				Average	
		point26	26	2,049.1	2,412.6	191.70				Average	
		point27	27	2,074.6	2,376.6	191.20				Average	
		point28	28	2,112.8	2,315.4	191.00				Average	
		point29	29	2,134.7	2,270.7	190.50				Average	
		point30	30	2,168.0	2,225.9	190.00				Average	
		point31	31	2,205.0	2,194.3	189.50				Average	
		point32	32	2,248.5	2,159.9	189.00				Average	
		point33	33	2,289.9	2,125.5	188.20				Average	
		point34	34	2,338.2	2,073.6	188.00				Average	
		point35	35	2,372.0	2,021.4	187.80				Average	
		point36	36	2,388.2	1,987.3	187.70				Average	
		point37	37	2,409.5	1,916.3	187.60				Average	
		point38	38	2,418.0	1,876.2	187.00				Average	
		point39	39	2,420.1	1,845.6	188.00					
SR 126 Westbound On Ramp2	12.0	point40	40	2,420.7	1,844.3	188.00				Average	
		point41	41	2,419.4	1,802.5	190.00				Average	
		point42	42	2,421.1	1,771.1	191.00				Average	
		point43	43	2,422.1	1,729.1	192.00				Average	
		point44	44	2,424.3	1,688.4	193.00				Average	
		point45	45	2,427.0	1,650.8	194.00				Average	
		point46	46	2,429.9	1,615.1	195.00				Average	
		point47	47	2,431.5	1,584.0	196.00				Average	
		point48	48	2,432.0	1,534.1	197.00				Average	
		point49	49	2,432.2	1,498.5	198.00				Average	
		point50	50	2,430.5	1,453.3	199.00				Average	
		point51	51	2,431.3	1,403.7	200.00				Average	
		point52	52	2,436.6	1,350.4	201.00				Average	
		point53	53	2,443.1	1,318.7	202.00				Average	
		point54	54	2,448.0	1,287.7	203.00				Average	
		point55	55	2,455.1	1,229.8	204.00				Average	
		point56	56	2,457.9	1,194.5	205.00				Average	
		point57	57	2,459.2	1,170.7	206.00				Average	
		point58	58	2,461.3	1,129.1	206.50				Average	
		point59	59	2,464.2	1,103.8	207.00					
Blackburn Rd Westbound	12.0	point60	60	1,646.7	2,443.3	196.50	Signal	0.00	100	Average	
		point61	61	1,648.5	2,375.8	195.50				Average	

		point62	62	1,663.1	2,344.2	195.00				Average	
		point63	63	1,677.4	2,324.5	194.50				Average	
		point64	64	1,701.6	2,308.1	194.00				Average	
		point65	65	1,725.7	2,298.8	193.50				Average	
		point66	66	1,745.7	2,294.0	193.00				Average	
		point67	67	1,783.3	2,293.2	192.50				Average	
		point68	68	1,824.1	2,299.7	192.00				Average	
		point69	69	1,902.8	2,307.3	191.00				Average	
		point70	70	1,927.7	2,308.9	190.50				Average	
		point71	71	1,954.4	2,307.1	190.00				Average	
		point72	72	1,985.2	2,301.2	190.00				Average	
		point73	73	2,028.6	2,278.7	189.00				Average	
		point74	74	2,098.6	2,219.2	188.00				Average	
		point75	75	2,156.9	2,171.3	187.00				Average	
		point76	76	2,243.9	2,097.9	187.00				Average	
		point77	77	2,303.1	2,027.8	187.60				Average	
		point78	78	2,322.2	1,988.9	187.60				Average	
		point80	80	2,342.8	1,929.7	188.00				Average	
		point81	81	2,353.9	1,887.1	188.50				Average	
		point82	82	2,357.3	1,848.6	189.00				Average	
		point83	83	2,359.5	1,795.2	190.00				Average	
		point84	84	2,359.8	1,774.8	191.00				Average	
		point85	85	2,362.2	1,730.7	192.00				Average	
		point86	86	2,362.8	1,693.0	193.00				Average	
		point87	87	2,366.3	1,647.4	194.00				Average	
		point88	88	2,366.6	1,613.2	195.00				Average	
		point89	89	2,368.7	1,574.9	196.00				Average	
		point90	90	2,371.2	1,533.0	197.00				Average	
		point91	91	2,372.5	1,489.0	198.00				Average	
		point92	92	2,373.5	1,444.5	199.00				Average	
		point93	93	2,374.6	1,403.5	200.00				Average	
		point94	94	2,374.4	1,364.0	201.00				Average	
		point95	95	2,377.6	1,289.8	203.00				Average	
		point96	96	2,379.1	1,247.4	204.00				Average	
		point97	97	2,382.7	1,209.8	205.00				Average	
		point98	98	2,384.5	1,154.5	206.00				Average	
		point99	99	2,383.8	1,104.7	207.00				Average	
		point100	100	2,384.8	1,074.9	208.00				Average	

		point101	101	2,383.5	1,038.2	209.00					
Blackburn Rd Eastbound	12.0	point102	102	2,394.5	1,038.2	209.00				Average	
		point103	103	2,396.9	1,083.0	208.00				Average	
		point104	104	2,394.4	1,111.2	207.00				Average	
		point105	105	2,394.5	1,159.4	206.00				Average	
		point106	106	2,393.8	1,208.5	205.00				Average	
		point107	107	2,389.4	1,248.2	204.00				Average	
		point108	108	2,389.4	1,290.0	203.00				Average	
		point109	109	2,386.3	1,329.4	202.00				Average	
		point110	110	2,385.9	1,365.6	201.00				Average	
		point111	111	2,385.0	1,405.4	200.00				Average	
		point112	112	2,384.4	1,448.5	199.00				Average	
		point113	113	2,382.3	1,489.5	198.00				Average	
		point114	114	2,381.1	1,535.6	197.00				Average	
		point115	115	2,378.7	1,576.2	196.00				Average	
		point116	116	2,375.4	1,614.9	195.00				Average	
		point117	117	2,376.1	1,651.3	194.00				Average	
		point118	118	2,373.3	1,699.0	193.00				Average	
		point119	119	2,373.9	1,734.4	192.00				Average	
		point120	120	2,370.9	1,779.2	191.00				Average	
		point121	121	2,370.7	1,801.6	190.00				Average	
		point122	122	2,371.0	1,847.3	189.00				Average	
		point123	123	2,364.4	1,895.3	188.50				Average	
		point124	124	2,354.0	1,941.0	188.00				Average	
		point125	125	2,331.3	1,998.1	187.60				Average	
		point126	126	2,312.0	2,037.7	187.60				Average	
		187	129	2,248.7	2,108.9	187.00				Average	
		point130	130	2,160.4	2,183.6	187.00				Average	
		point131	131	2,102.5	2,233.1	188.00				Average	
		point132	132	2,037.4	2,289.3	189.00				Average	
		point133	133	2,008.5	2,306.3	189.50				Average	
		point134	134	1,984.0	2,315.1	190.00				Average	
		point135	135	1,945.2	2,320.0	190.50				Average	
		point136	136	1,899.8	2,320.1	191.00				Average	
		point137	137	1,819.0	2,311.2	192.00				Average	
		point138	138	1,742.6	2,308.4	193.00				Average	
		point139	139	1,713.3	2,317.2	193.50				Average	
		point140	140	1,695.6	2,328.2	194.00				Average	

		194.5	141	1,676.8	2,352.0	194.50				Average	
		point142	142	1,666.9	2,373.6	195.00				Average	
		point143	143	1,661.8	2,392.9	195.40				Average	
		point144	144	1,660.9	2,443.4	196.30					
Wells Rd Northbound S of Blackburn	12.0	point148	148	2,908.2	2,584.8	191.00				Average	
		point149	149	2,852.3	2,584.3	195.00				Average	
		point150	150	2,724.8	2,582.2	200.00				Average	
		point151	151	2,695.5	2,581.3	201.00				Average	
		point152	152	2,660.8	2,580.1	202.00				Average	Y
		point153	153	2,590.9	2,576.8	203.00				Average	Y
		point154	154	2,484.0	2,572.5	204.00				Average	Y
		point155	155	2,370.0	2,561.9	203.00				Average	Y
		point156	156	2,337.3	2,559.4	202.00				Average	
		point157	157	2,303.3	2,555.6	204.00				Average	
		point158	158	2,276.6	2,554.3	205.00				Average	
		point159	159	2,234.8	2,550.0	198.00				Average	
		point160	160	2,196.7	2,546.2	197.00				Average	
		point161	161	2,166.3	2,544.0	196.00				Average	
		point162	162	2,131.6	2,540.8	195.00				Average	
		point163	163	2,081.6	2,537.0	194.00				Average	
		point164	164	2,031.0	2,531.7	193.00				Average	
		point496	496	1,973.9	2,525.5	192.00				Average	
		point165	165	1,933.7	2,521.1	193.00				Average	
		point166	166	1,845.8	2,515.0	194.00				Average	
		point167	167	1,778.8	2,510.2	195.00				Average	
		point168	168	1,673.7	2,502.5	195.50					
Wells Rd Southbound S of Blackburn2	12.0	point169	169	2,873.8	2,535.8	195.00				Average	
		point170	170	2,891.0	2,536.5	194.00				Average	
		point171	171	2,904.9	2,536.9	193.00					
SR 126 Westbound Off Ramp	12.0	point174	174	2,423.9	2,620.9	182.20				Average	
		point175	175	2,422.5	2,484.1	182.50				Average	
		point176	176	2,423.0	2,447.0	183.00				Average	
		point177	177	2,419.9	2,322.1	183.10				Average	
		point178	178	2,405.1	2,282.8	184.00				Average	
		point179	179	2,367.6	2,241.3	185.00				Average	
		point180	180	2,319.2	2,219.3	186.00				Average	
		point181	181	2,249.4	2,219.0	187.00				Average	
		point182	182	2,191.2	2,250.7	188.00				Average	

		point183	183	2,158.2	2,295.4	189.00				Average	
		point184	184	2,149.4	2,334.0	190.00				Average	
		point185	185	2,149.8	2,374.8	191.00				Average	
		point186	186	2,166.1	2,420.5	192.00				Average	
		point187	187	2,191.5	2,452.0	193.20				Average	
		point188	188	2,214.2	2,470.3	194.00				Average	
		point189	189	2,252.0	2,485.2	195.00				Average	
		point190	190	2,267.6	2,488.5	196.00				Average	
		point191	191	2,281.6	2,491.5	197.00				Average	
		point192	192	2,309.0	2,497.5	198.00				Average	
		point193	193	2,327.4	2,501.7	199.00				Average	
		point194	194	2,352.4	2,507.8	200.00				Average	
		point195	195	2,386.9	2,518.6	201.00				Average	Y
		point196	196	2,454.6	2,527.4	202.00					
Wells Rd Northbound N of Blackburn	12.0	point226	226	1,648.3	2,502.1	196.00	Signal	0.00	100	Average	
		point227	227	1,565.4	2,496.7	197.00				Average	
		point228	228	1,483.2	2,498.5	198.00				Average	
		point229	229	1,412.1	2,498.0	199.00				Average	
		point230	230	1,326.0	2,498.6	200.00				Average	
		point231	231	1,279.7	2,498.4	201.30					
126 West On/Off Lane	12.0	point321	321	2,432.7	2,628.0	182.20				Average	
		point322	322	2,434.6	2,358.5	183.70				Average	
		point323	323	2,433.7	2,069.3	185.00				Average	
		point324	324	2,433.3	1,980.9	186.00				Average	
		point325	325	2,432.9	1,895.4	188.00				Average	
		point326	326	2,432.9	1,852.1	189.00				Average	
		point327	327	2,433.6	1,805.6	190.00				Average	
		point328	328	2,432.1	1,776.0	191.00				Average	
		point329	329	2,431.5	1,732.5	192.00				Average	
		point330	330	2,431.3	1,694.8	193.00				Average	
		point331	331	2,430.4	1,657.2	194.00					
SR 126 West Lane 1	12.0	point332	332	2,472.3	2,638.2	182.90				Average	
		point333	333	2,471.5	2,477.3	183.00				Average	
		point334	334	2,470.6	2,233.1	184.00				Average	
		point335	335	2,470.6	2,032.1	185.00				Average	
		point336	336	2,469.7	1,970.6	186.00				Average	
		point337	337	2,469.7	1,921.3	187.00				Average	
		point338	338	2,469.9	1,889.6	188.00				Average	

		point339	339	2,469.8	1,840.5	189.00				Average	
		point340	340	2,469.9	1,794.9	190.00				Average	
		point341	341	2,469.7	1,755.1	191.00				Average	
		point342	342	2,470.1	1,711.2	192.00				Average	
		point343	343	2,469.2	1,673.7	193.00				Average	
		point344	344	2,469.7	1,636.3	194.00				Average	
		point345	345	2,469.3	1,594.3	195.00				Average	
		point346	346	2,467.2	1,572.2	196.00				Average	
		point347	347	2,467.9	1,528.5	197.00				Average	
		point348	348	2,468.9	1,474.7	198.00				Average	
		point349	349	2,468.0	1,441.2	199.00				Average	
		point350	350	2,468.3	1,399.8	200.00				Average	
		point351	351	2,467.2	1,355.0	201.00				Average	
		point352	352	2,467.4	1,314.8	202.00				Average	
		point353	353	2,467.3	1,280.5	203.00				Average	
		point354	354	2,466.4	1,239.6	204.00				Average	
		point355	355	2,466.8	1,212.3	205.00				Average	
		point356	356	2,467.1	1,168.8	206.00				Average	
		point357	357	2,466.1	1,128.6	206.50				Average	
		point358	358	2,466.4	1,101.6	207.00				Average	
		point359	359	2,466.7	1,064.1	208.50					
SR 126 West Lane 2	12.0	point360	360	2,498.4	2,638.9	182.30				Average	
		point361	361	2,496.7	2,462.7	183.00				Average	
		point362	362	2,494.9	2,205.3	184.00				Average	
		point363	363	2,493.7	2,010.9	185.00				Average	
		point364	364	2,494.6	1,962.0	186.00				Average	
		point365	365	2,493.3	1,915.2	187.00				Average	
		point366	366	2,491.9	1,884.8	188.00				Average	
		point367	367	2,491.6	1,836.8	189.00				Average	
		point368	368	2,492.2	1,794.5	190.00				Average	
		point369	369	2,492.2	1,754.6	191.00				Average	
		point370	370	2,491.0	1,710.1	192.00				Average	
		point371	371	2,491.9	1,673.0	193.00				Average	
		point372	372	2,492.4	1,629.4	194.00				Average	
		point373	373	2,491.7	1,600.1	195.00				Average	
		point374	374	2,491.1	1,556.9	196.00				Average	
		point375	375	2,491.4	1,522.7	197.00				Average	
		point376	376	2,490.9	1,471.8	198.00				Average	

		point377	377	2,491.2	1,441.5	199.00				Average	
		point378	378	2,491.3	1,412.7	200.00				Average	
		point379	379	2,489.7	1,348.6	201.00				Average	
		point380	380	2,490.1	1,304.7	202.00				Average	
		point381	381	2,490.6	1,275.7	203.00				Average	
		point382	382	2,489.7	1,231.7	204.00				Average	
		point383	383	2,490.4	1,209.8	205.00				Average	
		point384	384	2,489.1	1,158.4	206.00				Average	
		point385	385	2,489.1	1,130.8	206.50				Average	
		point386	386	2,488.0	1,100.7	207.00				Average	
		point387	387	2,488.6	1,062.5	208.50					
SR 126 East Lane 2	12.0	point388	388	2,536.2	1,059.6	208.50				Average	
		point389	389	2,536.8	1,103.4	207.00				Average	
		point390	390	2,536.1	1,128.8	206.50				Average	
		point391	391	2,536.9	1,161.9	206.00				Average	
		point392	392	2,537.2	1,249.1	204.00				Average	
		point393	393	2,537.3	1,284.1	203.00				Average	
		point394	394	2,537.9	1,324.4	202.00				Average	
		point395	395	2,537.6	1,365.8	201.00				Average	
		point396	396	2,537.5	1,404.9	200.00				Average	
		point397	397	2,538.2	1,438.9	199.00				Average	
		point398	398	2,538.1	1,469.6	198.00				Average	
		point399	399	2,538.4	1,512.9	197.00				Average	
		point400	400	2,538.0	1,554.1	196.00				Average	
		point401	401	2,538.4	1,588.5	195.00				Average	
		point402	402	2,538.5	1,631.2	194.00				Average	
		point403	403	2,538.9	1,667.7	193.00				Average	
		point404	404	2,538.8	1,703.0	192.00				Average	
		point405	405	2,538.8	1,750.9	191.00				Average	
		point406	406	2,538.6	1,792.1	190.00				Average	
		point407	407	2,538.7	1,838.7	189.00				Average	
		point408	408	2,539.1	1,878.6	188.00				Average	
		point409	409	2,538.5	1,933.8	187.00				Average	
		point410	410	2,539.0	1,997.3	186.00				Average	
		point411	411	2,538.9	2,066.5	185.00				Average	
		point412	412	2,540.6	2,253.2	184.00				Average	
		point413	413	2,541.6	2,475.7	183.00				Average	
		point414	414	2,542.0	2,642.0	182.40					

SR 126 East Lane 1	12.0	point415	415	2,560.7	1,059.7	208.50				Average	
		point416	416	2,560.5	1,099.1	207.00				Average	
		point417	417	2,560.7	1,129.7	206.50				Average	
		point418	418	2,560.7	1,154.1	206.00				Average	
		point419	419	2,561.2	1,204.0	205.00				Average	
		point420	420	2,561.1	1,239.3	204.00				Average	
		point421	421	2,561.0	1,285.3	203.00				Average	
		point422	422	2,560.7	1,314.7	202.00				Average	
		point423	423	2,561.3	1,352.6	201.00				Average	
		point424	424	2,562.0	1,389.7	200.00				Average	
		point425	425	2,562.4	1,427.3	199.00				Average	
		point426	426	2,562.6	1,469.2	198.00				Average	
		point427	427	2,562.5	1,511.7	197.00				Average	
		point428	428	2,562.5	1,558.7	196.00				Average	
		point429	429	2,562.8	1,587.9	195.00				Average	
		point430	430	2,563.2	1,627.1	194.00				Average	
		point431	431	2,562.5	1,666.1	193.00				Average	
		point432	432	2,562.9	1,706.0	192.00				Average	
		point433	433	2,563.5	1,752.8	191.00				Average	
		point434	434	2,564.5	1,785.1	190.00				Average	
		point435	435	2,564.4	1,841.1	189.00				Average	
		point436	436	2,564.4	1,878.0	188.00				Average	
		point437	437	2,564.3	1,921.0	187.00				Average	
		point438	438	2,565.5	1,956.6	186.00				Average	
		point439	439	2,566.0	1,999.4	185.00				Average	
		point440	440	2,565.9	2,115.7	184.00				Average	
		point441	441	2,568.2	2,438.1	183.00				Average	
		point442	442	2,569.4	2,641.0	182.40					
SR 126 East Off Ramp	12.0	point444	444	2,562.7	1,446.2	198.50				Average	
		point445	445	2,563.6	1,467.2	198.00				Average	
		point446	446	2,566.9	1,506.4	197.00				Average	
		point447	447	2,569.6	1,544.3	196.00				Average	
		point448	448	2,572.0	1,576.5	195.00				Average	
		point449	449	2,575.5	1,613.6	194.00				Average	
		point450	450	2,577.7	1,652.4	193.00				Average	
		point451	451	2,580.9	1,683.7	192.00				Average	
		point452	452	2,583.8	1,719.8	191.00				Average	
		point453	453	2,586.2	1,754.4	190.00				Average	

		point454	454	2,589.3	1,807.3	189.00				Average	
		point455	455	2,592.2	1,843.4	188.00				Average	
		point456	456	2,596.6	1,875.7	187.00				Average	
		point457	457	2,604.3	1,947.2	186.60				Average	
		point458	458	2,620.4	1,989.9	186.00				Average	
		point459	459	2,646.6	2,049.3	185.50				Average	
		point460	460	2,686.3	2,106.9	185.00				Average	
		point461	461	2,733.0	2,154.5	184.00				Average	
		point462	462	2,777.5	2,187.7	184.00				Average	
		point463	463	2,852.0	2,241.6	185.00				Average	
		point464	464	2,877.5	2,273.7	186.00				Average	
		point465	465	2,899.4	2,316.8	187.00				Average	
		point466	466	2,906.4	2,361.1	188.00				Average	
		point467	467	2,905.1	2,401.2	189.00				Average	
		point468	468	2,907.0	2,453.0	190.00				Average	
		point469	469	2,908.4	2,530.4	193.00					
SR 126 East On Ramp	12.0	point470	470	2,610.7	2,528.6	202.00				Average	Y
		point471	471	2,680.9	2,515.5	201.00				Average	
		point472	472	2,707.0	2,512.3	200.00				Average	
		point473	473	2,746.7	2,508.4	199.00				Average	
		point474	474	2,772.7	2,503.6	198.00				Average	
		point475	475	2,797.2	2,496.0	197.00				Average	
		point476	476	2,806.8	2,490.1	196.00				Average	
		point477	477	2,823.6	2,481.7	195.00				Average	
		point478	478	2,833.5	2,473.5	194.00				Average	
		point479	479	2,846.8	2,458.5	193.00				Average	
		point480	480	2,857.5	2,448.6	192.00				Average	
		point481	481	2,864.0	2,436.8	191.00				Average	
		point482	482	2,871.5	2,415.7	190.00				Average	
		point483	483	2,877.0	2,394.0	189.00				Average	
		point484	484	2,879.5	2,374.5	188.00				Average	
		point485	485	2,874.3	2,328.7	187.00				Average	
		point486	486	2,865.5	2,297.9	186.00				Average	
		point487	487	2,844.2	2,265.0	185.00				Average	
		point488	488	2,800.9	2,229.3	184.40				Average	
		point489	489	2,718.5	2,215.0	184.00				Average	
		point490	490	2,649.2	2,239.3	183.60				Average	
		point491	465	2,598.6	2,301.5	183.60				Average	

		point492	492	2,591.2	2,433.4	183.00				Average	
		point493	493	2,594.2	2,639.7	182.40					

Rincon Consultants, Inc
P. K. Nichols

11 August 2008
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Wells Rd Southbound N of Blackburn	point1	1	994	40	31	40	21	40	0	0	0	0
	point232	232	994	40	31	40	21	40	0	0	0	0
	point2	2	994	40	31	40	21	40	0	0	0	0
	point3	3	994	40	31	40	21	40	0	0	0	0
	point4	4	994	40	31	40	21	40	0	0	0	0
	point5	5										
Wells Rd Southbound S of Blackburn	point6	6	1393	40	44	40	29	40	0	0	0	0
	point7	7	1393	40	44	40	29	40	0	0	0	0
	point8	8	998	40	32	40	21	40	0	0	0	0
	point9	9	998	40	32	40	21	40	0	0	0	0
	point495	495	998	40	32	40	21	40	0	0	0	0
	point10	10	998	40	32	40	21	40	0	0	0	0
	point11	11	998	40	32	40	21	40	0	0	0	0
	point12	12	998	40	32	40	21	40	0	0	0	0
	point13	13	998	40	32	40	21	40	0	0	0	0
	point14	14	998	40	32	40	21	40	0	0	0	0
	point15	15	2603	40	82	40	55	40	0	0	0	0
	point16	16	2527	40	80	40	53	40	0	0	0	0
	point17	17	2527	40	80	40	53	40	0	0	0	0
	point18	18	2527	40	80	40	53	40	0	0	0	0
	point19	19	2527	40	80	40	53	40	0	0	0	0
	point20	20	2527	40	80	40	53	40	0	0	0	0

	point21	21	2527	40	80	40	53	40	0	0	0	0
	point22	22										
SR 126 Westbound On Ramp	point23	23	399	50	13	45	8	45	0	0	0	0
	point24	24	399	50	13	45	8	45	0	0	0	0
	point25	25	399	50	13	45	8	45	0	0	0	0
	point26	26	399	50	13	45	8	45	0	0	0	0
	point27	27	399	50	13	45	8	45	0	0	0	0
	point28	28	399	50	13	45	8	45	0	0	0	0
	point29	29	399	50	13	45	8	45	0	0	0	0
	point30	30	399	50	13	45	8	45	0	0	0	0
	point31	31	399	50	13	45	8	45	0	0	0	0
	point32	32	399	50	13	45	8	45	0	0	0	0
	point33	33	399	50	13	45	8	45	0	0	0	0
	point34	34	399	50	13	45	8	45	0	0	0	0
	point35	35	399	50	13	45	8	45	0	0	0	0
	point36	36	399	50	13	45	8	45	0	0	0	0
	point37	37	399	50	13	45	8	45	0	0	0	0
	point38	38	399	50	13	45	8	45	0	0	0	0
	point39	39										
SR 126 Westbound On Ramp2	point40	40	399	65	13	65	8	65	0	0	0	0
	point41	41	399	65	13	65	8	65	0	0	0	0
	point42	42	399	65	13	65	8	65	0	0	0	0
	point43	43	399	65	13	65	8	65	0	0	0	0
	point44	44	399	65	13	65	8	65	0	0	0	0
	point45	45	789	65	25	65	17	65	0	0	0	0
	point46	46	789	06	25	65	17	65	0	0	0	0
	point47	47	789	65	25	65	17	65	0	0	0	0
	point48	48	789	65	25	65	17	65	0	0	0	0
	point49	49	789	65	25	65	17	65	0	0	0	0
	point50	50	789	65	25	65	17	65	0	0	0	0
	point51	51	789	65	25	65	17	65	0	0	0	0
	point52	52	789	65	25	65	17	65	0	0	0	0
	point53	53	789	65	25	65	17	65	0	0	0	0
	point54	54	789	65	25	65	17	65	0	0	0	0

	point55	55	789	65	25	65	17	65	0	0	0	0
	point56	56	789	65	25	65	17	65	0	0	0	0
	point57	57	789	65	25	65	17	65	0	0	0	0
	point58	58	789	65	25	65	17	65	0	0	0	0
	point59	59										
Blackburn Rd Westbound	point60	60	166	35	5	35	4	35	0	0	0	0
	point61	61	166	35	5	35	4	35	0	0	0	0
	point62	62	166	35	5	35	4	35	0	0	0	0
	point63	63	166	35	5	35	4	35	0	0	0	0
	point64	64	166	35	5	35	4	35	0	0	0	0
	point65	65	166	35	5	35	4	35	0	0	0	0
	point66	66	166	35	5	35	4	35	0	0	0	0
	point67	67	166	35	5	35	4	35	0	0	0	0
	point68	68	166	35	5	35	4	35	0	0	0	0
	point69	69	166	35	5	35	4	35	0	0	0	0
	point70	70	166	35	5	35	4	35	0	0	0	0
	point71	71	166	35	5	35	4	35	0	0	0	0
	point72	72	166	35	5	35	4	35	0	0	0	0
	point73	73	166	35	5	35	4	35	0	0	0	0
	point74	74	166	35	5	35	4	35	0	0	0	0
	point75	75	166	35	5	35	4	35	0	0	0	0
	point76	76	166	35	5	35	4	35	0	0	0	0
	point77	77	166	35	5	35	4	35	0	0	0	0
	point78	78	166	35	5	35	4	35	0	0	0	0
	point80	80	166	35	5	35	4	35	0	0	0	0
	point81	81	166	35	5	35	4	35	0	0	0	0
	point82	82	166	35	5	35	4	35	0	0	0	0
	point83	83	166	35	5	35	4	35	0	0	0	0
	point84	84	166	35	5	35	4	35	0	0	0	0
	point85	85	166	35	5	35	4	35	0	0	0	0
	point86	86	166	35	5	35	4	35	0	0	0	0
	point87	87	166	35	5	35	4	35	0	0	0	0
	point88	88	166	35	5	35	4	35	0	0	0	0
	point89	89	166	35	5	35	4	35	0	0	0	0

	point90	90	166	35	5	35	4	35	0	0	0	0
	point91	91	166	35	5	35	4	35	0	0	0	0
	point92	92	166	35	5	35	4	35	0	0	0	0
	point93	93	166	35	5	35	4	35	0	0	0	0
	point94	94	166	35	5	35	4	35	0	0	0	0
	point95	95	166	35	5	35	4	35	0	0	0	0
	point96	96	166	35	5	35	4	35	0	0	0	0
	point97	97	166	35	5	35	4	35	0	0	0	0
	point98	98	166	35	5	35	4	35	0	0	0	0
	point99	99	166	35	5	35	4	35	0	0	0	0
	point100	100	166	35	5	35	4	35	0	0	0	0
	point101	101										
Blackburn Rd Eastbound	point102	102	165	35	5	35	3	35	0	0	0	0
	point103	103	165	35	5	35	3	35	0	0	0	0
	point104	104	165	35	5	35	3	35	0	0	0	0
	point105	105	165	35	5	35	3	35	0	0	0	0
	point106	106	165	35	5	35	3	35	0	0	0	0
	point107	107	165	35	5	35	3	35	0	0	0	0
	point108	108	165	35	5	35	3	35	0	0	0	0
	point109	109	165	35	5	35	3	35	0	0	0	0
	point110	110	165	35	5	35	3	35	0	0	0	0
	point111	111	165	35	5	35	3	35	0	0	0	0
	point112	112	165	35	5	35	3	35	0	0	0	0
	point113	113	165	35	5	35	3	35	0	0	0	0
	point114	114	165	35	5	35	3	35	0	0	0	0
	point115	115	165	35	5	35	3	35	0	0	0	0
	point116	116	165	35	5	35	3	35	0	0	0	0
	point117	117	165	35	5	35	3	35	0	0	0	0
	point118	118	165	35	5	35	3	35	0	0	0	0
	point119	119	165	35	5	35	3	35	0	0	0	0
	point120	120	165	35	5	35	3	35	0	0	0	0
	point121	121	165	35	5	35	3	35	0	0	0	0
	point122	122	165	35	5	35	3	35	0	0	0	0
	point123	123	165	35	5	35	3	35	0	0	0	0

	point124	124	165	35	5	35	3	35	0	0	0	0
	point125	125	165	35	5	35	3	35	0	0	0	0
	point126	126	165	35	5	35	3	35	0	0	0	0
	187	129	165	35	5	35	3	35	0	0	0	0
	point130	130	165	35	5	35	3	35	0	0	0	0
	point131	131	165	35	5	35	3	35	0	0	0	0
	point132	132	165	35	5	35	3	35	0	0	0	0
	point133	133	165	35	5	35	3	35	0	0	0	0
	point134	134	165	35	5	35	3	35	0	0	0	0
	point135	135	165	35	5	35	3	35	0	0	0	0
	point136	136	165	35	5	35	3	35	0	0	0	0
	point137	137	165	35	5	35	3	35	0	0	0	0
	point138	138	165	35	5	35	3	35	0	0	0	0
	point139	139	165	35	5	35	3	35	0	0	0	0
	point140	140	165	35	5	35	3	35	0	0	0	0
	194.5	141	165	35	5	35	3	35	0	0	0	0
	point142	142	165	35	5	35	3	35	0	0	0	0
	point143	143	165	35	5	35	3	35	0	0	0	0
	point144	144										
Wells Rd Northbound S of Blackburn	point148	148	893	40	28	40	19	40	0	0	0	0
	point149	149	893	40	28	40	19	40	0	0	0	0
	point150	150	893	40	28	40	19	40	0	0	0	0
	point151	151	893	40	28	40	19	40	0	0	0	0
	point152	152	893	40	28	40	19	40	0	0	0	0
	point153	153	893	40	28	40	19	40	0	0	0	0
	point154	154	893	40	28	40	19	40	0	0	0	0
	point155	155	893	40	28	40	19	40	0	0	0	0
	point156	156	504	40	16	40	11	40	0	0	0	0
	point157	157	504	40	16	40	11	40	0	0	0	0
	point158	158	504	40	16	40	11	40	0	0	0	0
	point159	159	504	40	16	40	11	40	0	0	0	0
	point160	160	504	40	16	40	11	40	0	0	0	0
	point161	161	504	40	16	40	11	40	0	0	0	0
	point162	162	504	40	16	40	11	40	0	0	0	0

	point163	163	504	40	16	40	11	40	0	0	0	0
	point164	164	504	40	16	40	11	40	0	0	0	0
	point496	496	504	40	16	40	11	40	0	0	0	0
	point165	165	696	40	22	40	15	40	0	0	0	0
	point166	166	696	40	22	40	15	40	0	0	0	0
	point167	167	696	40	22	40	15	40	0	0	0	0
	point168	168										
Wells Rd Southbound S of Blackburn2	point169	169	2527	40	80	40	53	40	0	0	0	0
	point170	170	2527	40	80	40	53	40	0	0	0	0
	point171	171										
SR 126 Westbound Off Ramp	point174	174	1606	45	51	45	34	45	0	0	0	0
	point175	175	1606	45	51	45	34	45	0	0	0	0
	point176	176	1606	45	51	45	34	45	0	0	0	0
	point177	177	1606	45	51	45	34	45	0	0	0	0
	point178	178	1606	45	51	45	34	45	0	0	0	0
	point179	179	1606	45	51	45	34	45	0	0	0	0
	point180	180	1606	45	51	45	34	45	0	0	0	0
	point181	181	1606	45	51	45	34	45	0	0	0	0
	point182	182	1606	45	51	45	34	45	0	0	0	0
	point183	183	1606	45	51	45	34	45	0	0	0	0
	point184	184	1606	45	51	45	34	45	0	0	0	0
	point185	185	1606	45	51	45	34	45	0	0	0	0
	point186	186	1606	45	51	45	34	45	0	0	0	0
	point187	187	1606	45	51	45	34	45	0	0	0	0
	point188	188	1606	45	51	45	34	45	0	0	0	0
	point189	189	1606	45	51	45	34	45	0	0	0	0
	point190	190	1606	45	51	45	34	45	0	0	0	0
	point191	191	1606	45	51	45	34	45	0	0	0	0
	point192	192	1606	45	51	45	34	45	0	0	0	0
	point193	193	1606	45	51	45	34	45	0	0	0	0
	point194	194	1606	45	51	45	34	45	0	0	0	0
	point195	195	1606	45	51	45	34	45	0	0	0	0
	point196	196										
Wells Rd Northbound N of Blackburn	point226	226	414	40	13	40	9	40	0	0	0	0

	point227	227	414	40	13	40	9	40	0	0	0	0
	point228	228	414	40	13	40	9	40	0	0	0	0
	point229	229	414	40	13	40	9	40	0	0	0	0
	point230	230	414	40	13	40	9	40	0	0	0	0
	point231	231										
126 West On/Off Lane	point321	321	390	55	12	55	8	55	0	0	0	0
	point322	322	390	55	12	55	8	55	0	0	0	0
	point323	323	390	55	12	55	8	55	0	0	0	0
	point324	324	390	55	12	55	8	55	0	0	0	0
	point325	325	390	55	12	55	8	55	0	0	0	0
	point326	326	390	55	12	55	8	55	0	0	0	0
	point327	327	390	55	12	55	8	55	0	0	0	0
	point328	328	390	55	12	55	8	55	0	0	0	0
	point329	329	390	55	12	55	8	55	0	0	0	0
	point330	330	390	55	12	55	8	55	0	0	0	0
	point331	331										
SR 126 West Lane 1	point332	332	1161	70	65	65	65	60	0	0	0	0
	point333	333	1161	70	65	65	65	60	0	0	0	0
	point334	334	1161	70	65	65	65	60	0	0	0	0
	point335	335	1161	70	65	65	65	60	0	0	0	0
	point336	336	1161	70	65	65	65	60	0	0	0	0
	point337	337	1161	70	65	65	65	60	0	0	0	0
	point338	338	1161	70	65	65	65	60	0	0	0	0
	point339	339	1161	70	65	65	65	60	0	0	0	0
	point340	340	1161	70	65	65	65	60	0	0	0	0
	point341	341	1161	70	65	65	65	60	0	0	0	0
	point342	342	1161	70	65	65	65	60	0	0	0	0
	point343	343	1161	70	65	65	65	60	0	0	0	0
	point344	344	1161	70	65	65	65	60	0	0	0	0
	point345	345	1161	70	65	65	65	60	0	0	0	0
	point346	346	1161	70	65	65	65	60	0	0	0	0
	point347	347	1161	70	65	65	65	60	0	0	0	0
	point348	348	1161	70	65	65	65	60	0	0	0	0
	point349	349	1161	70	65	65	65	60	0	0	0	0

	point350	350	1161	70	65	65	65	60	0	0	0	0
	point351	351	1161	70	65	65	65	60	0	0	0	0
	point352	352	1161	70	65	65	65	60	0	0	0	0
	point353	353	1161	70	65	65	65	60	0	0	0	0
	point354	354	1161	70	65	65	65	60	0	0	0	0
	point355	355	1161	70	65	65	65	60	0	0	0	0
	point356	356	1161	70	65	65	65	60	0	0	0	0
	point357	357	1161	70	65	65	65	60	0	0	0	0
	point358	358	1161	70	65	65	65	60	0	0	0	0
	point359	359										
SR 126 West Lane 2	point360	360	1161	70	65	65	65	60	0	0	0	0
	point361	361	1161	70	65	65	65	60	0	0	0	0
	point362	362	1161	70	65	65	65	60	0	0	0	0
	point363	363	1161	70	65	65	65	60	0	0	0	0
	point364	364	1161	70	65	65	65	60	0	0	0	0
	point365	365	1161	70	65	65	65	60	0	0	0	0
	point366	366	1161	70	65	65	65	60	0	0	0	0
	point367	367	1161	70	65	65	65	60	0	0	0	0
	point368	368	1161	70	65	65	65	60	0	0	0	0
	point369	369	1161	70	65	65	65	60	0	0	0	0
	point370	370	1161	70	65	65	65	60	0	0	0	0
	point371	371	1161	70	65	65	65	60	0	0	0	0
	point372	372	1161	70	65	65	65	60	0	0	0	0
	point373	373	1161	70	65	65	65	60	0	0	0	0
	point374	374	1161	70	65	65	65	60	0	0	0	0
	point375	375	1161	70	65	65	65	60	0	0	0	0
	point376	376	1161	70	65	65	65	60	0	0	0	0
	point377	377	1161	70	65	65	65	60	0	0	0	0
	point378	378	1161	70	65	65	65	60	0	0	0	0
	point379	379	1161	70	65	65	65	60	0	0	0	0
	point380	380	1161	70	65	65	65	60	0	0	0	0
	point381	381	1161	70	65	65	65	60	0	0	0	0
	point382	382	1161	70	65	65	65	60	0	0	0	0
	point383	383	1161	70	65	65	65	60	0	0	0	0

	point384	384	1161	70	65	65	65	60	0	0	0	0
	point385	385	1161	70	65	65	65	60	0	0	0	0
	point386	386	1161	70	65	65	65	60	0	0	0	0
	point387	387										
SR 126 East Lane 2	point388	388	1161	70	65	65	65	60	0	0	0	0
	point389	389	1161	70	65	65	65	60	0	0	0	0
	point390	390	1161	70	65	65	65	60	0	0	0	0
	point391	391	1161	70	65	65	65	60	0	0	0	0
	point392	392	1161	70	65	65	65	60	0	0	0	0
	point393	393	1161	70	65	65	65	60	0	0	0	0
	point394	394	1161	70	65	65	65	60	0	0	0	0
	point395	395	1161	70	65	65	65	60	0	0	0	0
	point396	396	1161	70	65	65	65	60	0	0	0	0
	point397	397	1161	70	65	65	65	60	0	0	0	0
	point398	398	1161	70	65	65	65	60	0	0	0	0
	point399	399	1161	70	65	65	65	60	0	0	0	0
	point400	400	1161	70	65	65	65	60	0	0	0	0
	point401	401	1161	70	65	65	65	60	0	0	0	0
	point402	402	1161	70	65	65	65	60	0	0	0	0
	point403	403	1161	70	65	65	65	60	0	0	0	0
	point404	404	1161	70	65	65	65	60	0	0	0	0
	point405	405	1161	70	65	65	65	60	0	0	0	0
	point406	406	1161	70	65	65	65	60	0	0	0	0
	point407	407	1161	70	65	65	65	60	0	0	0	0
	point408	408	1161	70	65	65	65	60	0	0	0	0
	point409	409	1161	70	65	65	65	60	0	0	0	0
	point410	410	1161	70	65	65	65	60	0	0	0	0
	point411	411	1161	70	65	65	65	60	0	0	0	0
	point412	412	1161	70	65	65	65	60	0	0	0	0
	point413	413	1161	70	65	65	65	60	0	0	0	0
	point414	414										
SR 126 East Lane 1	point415	415	1161	70	65	65	65	60	0	0	0	0
	point416	416	1161	70	65	65	65	60	0	0	0	0
	point417	417	1161	70	65	65	65	60	0	0	0	0

	point418	418	1161	70	65	65	65	60	0	0	0	0
	point419	419	1161	70	65	65	65	60	0	0	0	0
	point420	420	1161	70	65	65	65	60	0	0	0	0
	point421	421	1161	70	65	65	65	60	0	0	0	0
	point422	422	1161	70	65	65	65	60	0	0	0	0
	point423	423	1161	70	65	65	65	60	0	0	0	0
	point424	424	1161	70	65	65	65	60	0	0	0	0
	point425	425	1161	70	65	65	65	60	0	0	0	0
	point426	426	1161	70	65	65	65	60	0	0	0	0
	point427	427	1161	70	65	65	65	60	0	0	0	0
	point428	428	1161	70	65	65	65	60	0	0	0	0
	point429	429	1161	70	65	65	65	60	0	0	0	0
	point430	430	1161	70	65	65	65	60	0	0	0	0
	point431	431	1161	70	65	65	65	60	0	0	0	0
	point432	432	1161	70	65	65	65	60	0	0	0	0
	point433	433	1161	70	65	65	65	60	0	0	0	0
	point434	434	1161	70	65	65	65	60	0	0	0	0
	point435	435	1161	70	65	65	65	60	0	0	0	0
	point436	436	1161	70	65	65	65	60	0	0	0	0
	point437	437	1161	70	65	65	65	60	0	0	0	0
	point438	438	1161	70	65	65	65	60	0	0	0	0
	point439	439	1161	70	65	65	65	60	0	0	0	0
	point440	440	1161	70	65	65	65	60	0	0	0	0
	point441	441	1161	70	65	65	65	60	0	0	0	0
	point442	442										
SR 126 East Off Ramp	point444	444	238	45	8	45	5	45	0	0	0	0
	point445	445	238	45	8	45	5	45	0	0	0	0
	point446	446	238	45	8	45	5	45	0	0	0	0
	point447	447	238	45	8	45	5	45	0	0	0	0
	point448	448	238	45	8	45	5	45	0	0	0	0
	point449	449	238	45	8	45	5	45	0	0	0	0
	point450	450	238	45	8	45	5	45	0	0	0	0
	point451	451	238	45	8	45	5	45	0	0	0	0
	point452	452	238	45	8	45	5	45	0	0	0	0

	point453	453	238	45	8	45	5	45	0	0	0	0
	point454	454	238	45	8	45	5	45	0	0	0	0
	point455	455	238	45	8	45	5	45	0	0	0	0
	point456	456	238	45	8	45	5	45	0	0	0	0
	point457	457	238	45	8	45	5	45	0	0	0	0
	point458	458	238	45	8	45	5	45	0	0	0	0
	point459	459	238	45	8	45	5	45	0	0	0	0
	point460	460	238	45	8	45	5	45	0	0	0	0
	point461	461	238	45	8	45	5	45	0	0	0	0
	point462	462	238	45	8	45	5	45	0	0	0	0
	point463	463	238	45	8	45	5	45	0	0	0	0
	point464	464	238	45	8	45	5	45	0	0	0	0
	point465	465	238	45	8	45	5	45	0	0	0	0
	point466	466	238	45	8	45	5	45	0	0	0	0
	point467	467	238	45	8	45	5	45	0	0	0	0
	point468	468	238	45	8	45	5	45	0	0	0	0
	point469	469										
SR 126 East On Ramp	point470	470	76	45	2	45	2	45	0	0	0	0
	point471	471	76	45	2	45	2	45	0	0	0	0
	point472	472	76	45	2	45	2	45	0	0	0	0
	point473	473	76	45	2	45	2	45	0	0	0	0
	point474	474	76	45	2	45	2	45	0	0	0	0
	point475	475	76	45	2	45	2	45	0	0	0	0
	point476	476	76	45	2	45	2	45	0	0	0	0
	point477	477	76	45	2	45	2	45	0	0	0	0
	point478	478	76	45	2	45	2	45	0	0	0	0
	point479	479	76	45	2	45	2	45	0	0	0	0
	point480	480	76	45	2	45	2	45	0	0	0	0
	point481	481	76	45	2	45	2	45	0	0	0	0
	point482	482	76	45	2	45	2	45	0	0	0	0
	point483	483	76	45	2	45	2	45	0	0	0	0
	point484	484	76	45	2	45	2	45	0	0	0	0
	point485	485	76	45	2	45	2	45	0	0	0	0
	point486	486	76	45	2	45	2	45	0	0	0	0

	point487	487	76	45	2	45	2	45	0	0	0	0
	point488	488	76	45	2	45	2	45	0	0	0	0
	point489	489	76	49	2	45	2	45	0	0	0	0
	point490	490	76	45	2	45	2	45	0	0	0	0
	point491	491	76	45	2	45	2	45	0	0	0	0
	point492	492	76	45	2	45	2	45	0	0	0	0
	point493	493										

Rincon Consultants, Inc
P. K. Nichols

11 August 2008
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Road A pad 132	10	1	1,563.8	2,249.2	201.60	4.92	0.00	66	10.0	8.0	Y
Road H pad 133	11	1	1,702.3	2,058.8	194.60	4.92	0.00	66	10.0	8.0	Y
Road G pad 144	12	1	1,947.3	2,054.4	192.80	4.92	0.00	66	10.0	8.0	Y
Road G pad 145	13	1	2,253.5	2,026.5	190.90	4.92	0.00	66	10.0	8.0	Y
Road I pad 146	14	1	2,296.5	1,946.8	190.70	4.92	0.00	66	10.0	8.0	Y
Raod J pad 163	15	1	2,343.3	1,546.8	198.50	4.92	0.00	66	10.0	8.0	Y
Road K pad 177	16	1	2,352.0	1,329.2	201.50	4.92	0.00	66	10.0	8.0	Y
Road K pad 178	17	1	2,355.4	1,117.1	207.30	4.92	0.00	66	10.0	8.0	Y
Measurment location2	18	1	2,346.9	1,462.0	198.00	4.92	0.00	66	10.0	8.0	Y
Road T front of pad 149	22	1	2,184.2	1,873.5	191.40	4.92	0.00	66	10.0	8.0	Y
Road J front of pad 161	23	1	2,227.5	1,497.8	199.60	4.92	0.00	66	10.0	8.0	Y
Road J front of pad 168	24	1	2,159.2	1,438.1	203.60	4.92	0.00	66	10.0	8.0	Y
Road K front of pad 175	25	1	2,207.6	1,236.6	203.50	4.92	0.00	66	10.0	8.0	Y

Rincon Consultants, Inc 11 August 2008
P. K. Nichols TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands SP Soundwall (no garden wall)

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Perturbs Incre-ment	#Up	#Dn	On Struct?	Important Reflec-tions?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier13	W	0.00	99.99	0.00				0.00	point26	26	1,681.2	2,420.5	195.00	10.00	1.00	16	10		
									point27	27	1,682.6	2,379.1	194.00	10.00	1.00	16	10		
									point28	28	1,697.7	2,354.6	193.00	10.00	1.00	16	10		
									point29	29	1,725.8	2,328.7	192.00	10.00	1.00	16	10		
									point30	30	1,766.6	2,319.6	192.00	10.00	1.00	16	10		
									point31	31	1,821.9	2,323.7	192.00	10.00	1.00	16	10		
									point32	32	1,908.6	2,331.8	191.00	10.00	1.00	16	10		
									point33	33	1,992.9	2,326.8	190.00	10.00	1.00	16	10		
									point34	34	2,046.1	2,298.1	189.00	10.00	1.00	16	10		
									point35	35	2,111.9	2,239.0	188.00	10.00	1.00	16	10		
									point36	36	2,261.9	2,112.4	187.00	10.00	1.00	16	10		
									point37	37	2,323.1	2,039.3	187.60	10.00	1.00	16	10		
									point38	38	2,344.6	1,994.9	187.60	10.00	1.00	16	10		
									point39	39	2,367.4	1,947.6	188.00	10.00	1.00	16	10		
									point40	40	2,384.7	1,899.6	188.50	10.00	1.00	16	10		
									point41	41	2,386.9	1,856.7	189.00	10.00	1.00	16	10		
									point42	42	2,392.0	1,774.2	191.00	10.00	1.00	16	10		
									point43	43	2,398.5	1,533.2	197.00	10.00	1.00	16	10		
									point44	44	2,406.6	1,286.2	203.00	10.00	1.00	16	10		
									point45	45	2,414.2	1,101.3	207.00	10.00					

Roadway Noise - Wells Rd

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Wells Rd:Telegraph-Carlos, Existing

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	946.0
Average automobile speed (mph):	40.0
Medium truck volume (v/h):	10.0
Average medium truck speed (mph):	40.0
Heavy truck volume (v/h):	10.0
Average heavy truck speed (mph):	40.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	66.3

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Wells Rd: Telegraph-Carlos, Existing+Project

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1007.0
Average automobile speed (mph):	40.0
Medium truck volume (v/h):	10.0
Average medium truck speed (mph):	40.0
Heavy truck volume (v/h):	10.0
Average heavy truck speed (mph):	40.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	66.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Wells Rd: Telegraph-Carlos, Existing+Cumulative

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1137.0
Average automobile speed (mph):	40.0
Medium truck volume (v/h):	12.0
Average medium truck speed (mph):	40.0
Heavy truck volume (v/h):	12.0
Average heavy truck speed (mph):	40.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	67.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Wells Rd: Telegraph-Carlos, Existing+Project+Cumulative

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1178.0
Average automobile speed (mph):	40.0
Medium truck volume (v/h):	12.0
Average medium truck speed (mph):	40.0
Heavy truck volume (v/h):	12.0
Average heavy truck speed (mph):	40.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	67.3

Roadway Noise Telegraph Road

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Telegraph Rd: Saticoy-Wells, Existing

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	583.0
Average automobile speed (mph):	50.0
Medium truck volume (v/h):	6.0
Average medium truck speed (mph):	50.0
Heavy truck volume (v/h):	6.0
Average heavy truck speed (mph):	50.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	67.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Telegraph Rd: Wells-Saticoy, Existing+Project

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	637.0
Average automobile speed (mph):	50.0
Medium truck volume (v/h):	7.0
Average medium truck speed (mph):	50.0
Heavy truck volume (v/h):	7.0
Average heavy truck speed (mph):	50.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	67.5

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Telegraph Rd: Wells-Saticoy, Existing+Cumulative

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	549.0
Average automobile speed (mph):	50.0
Medium truck volume (v/h):	6.0
Average medium truck speed (mph):	50.0
Heavy truck volume (v/h):	6.0
Average heavy truck speed (mph):	50.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	66.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Telegraph Rd: Wells-Saticoy, Existing+Cumulative+Project

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	603.0
Average automobile speed (mph):	50.0
Medium truck volume (v/h):	6.0
Average medium truck speed (mph):	50.0
Heavy truck volume (v/h):	6.0
Average heavy truck speed (mph):	50.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Receptor

Distance from center of 12-ft wide, single lane roadway (ft):	50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	67.3

Road way Noise Blackburn/SR126

RESULTS: SOUND LEVELS

Parklands SP

Rincon Consultants, Inc
P. K. Nichols

3 September 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: ParklandsSP Existing
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road A pad 132	10	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
Road H pad 133	11	1	0.0	57.4	66	57.4	10	----	57.4	0.0	8	-8.0
Road G pad 144	12	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
Road G pad 145	13	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0
Road I pad 146	14	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0
Raod J pad 163	15	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
Road K pad 177	16	1	0.0	70.2	66	70.2	10	Snd Lvl	70.2	0.0	8	-8.0
Road K pad 178	17	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
Measurment location2	18	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
Road T front of pad 149	22	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0
Road J front of pad 161	23	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
Road J front of pad 168	24	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Road K front of pad 175	25	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	13	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

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P. K. Nichols

Cumulative - 1

3 September 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands-Blackburn Exisitng+Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road G pad 145	13	1	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0
Road I pad 146	14	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
Raod J pad 163	15	1	0.0	70.5	66	70.5	10	Snd Lvl	70.5	0.0	8	-8.0
Road K pad 177	16	1	0.0	70.4	66	70.4	10	Snd Lvl	70.4	0.0	8	-8.0
Road K pad 178	17	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
Measurment location2	18	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	6	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Rincon Consultants, Inc
P. K. Nichols

Cumulative - 2

3 September 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands-Blackburn Exisitng+Cumulative
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road G pad 145	13	1	0.0	69.0	66	69.0	10	Snd Lvl	69.0	0.0	8	-8.0
Road I pad 146	14	1	0.0	69.6	66	69.6	10	Snd Lvl	69.6	0.0	8	-8.0
Raod J pad 163	15	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0
Road K pad 177	16	1	0.0	71.6	66	71.6	10	Snd Lvl	71.6	0.0	8	-8.0
Road K pad 178	17	1	0.0	70.2	66	70.2	10	Snd Lvl	70.2	0.0	8	-8.0
Measurment location2	18	1	0.0	71.5	66	71.5	10	Snd Lvl	71.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	6	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

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P. K. Nichols

Cumulative - 3

3 September 2008
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Parklands SP
RUN: Parklands-Blackburn Exsitng+Cumultiv+Prj
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	No Barrier LAeq1h Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Road G pad 145	13	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0
Road I pad 146	14	1	0.0	69.7	66	69.7	10	Snd Lvl	69.7	0.0	8	-8.0
Raod J pad 163	15	1	0.0	71.9	66	71.9	10	Snd Lvl	71.9	0.0	8	-8.0
Road K pad 177	16	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0
Road K pad 178	17	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
Measurment location2	18	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	6	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

NOISE IMPACT STUDY
PARKLANDS MASTER PLAN
TENTATIVE TRACT MAP NO. 5632
VENTURA, CALIFORNIA

Prepared for:
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Project no. 0502-2151
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1.0 INTRODUCTION

The proposed Parklands Master Plan involves the development of a 66.73 acre site located immediately west of Wells Road and south of Telegraph Road, Ventura, California. The development would consist of 326 single-family residences, 161 units of multi-family residences and 15,290 gross square feet of retail/commercial. This Noise Impact Study was prepared for submittal to the City of Ventura to facilitate assessment of environmental impacts. This Study was prepared consistent with the *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects* and the *Technical Noise Supplement* developed by the California Department of Transportation (Caltrans).

2.0 SUMMARY

2.1 PROPOSED PROJECT

Noise modeling indicates that implementation of the Parklands Master Plan would result in noise increases at existing residences of 0.6 dBA Leq or less. This impact is considered less than significant based on criteria used in the 2005 General Plan Environmental Impact Report. However, modeled noise levels at all existing residences along Telegraph Road and Blackburn Road exceed the 65 dBA CNEL limit of Policy 7E of the 2005 General Plan.

Noise modeling indicates traffic noise levels at exterior living spaces at proposed residences near SR 126 (along the southern site boundary, represented by Receptors R2 and R3) and residences near the Blackburn Road/Wells Road intersection (represented by Receptor NR4) would exceed the Policy 7E standard. Future increases in traffic volumes (especially on SR 126) would exacerbate this condition.

General Plan Policy 7E requires interior noise levels of 45 dBA CNEL or less in habitable rooms. Residential construction in compliance with the California Building Code generally results in a 20 to 30 dBA attenuation of noise external to the structure. Assuming a 20 dBA attenuation, interior traffic noise at proposed residences along Telegraph Road, Wells Road and Blackburn Road (represented by Receptors R2, R3, NR4, NR7 and R8) would exceed the 45 dBA CNEL interior standard.

2.2 MITIGATED PROJECT

A sound wall between Blackburn Road and SR 126 is proposed to reduce traffic noise levels. In addition, garden walls immediately north of Blackburn Road are proposed to further mitigate traffic noise from SR 126. Additional measures are proposed to reduce interior noise levels through the use of improved construction materials and methods (see Section 10.1).

Noise modeling indicates that proposed mitigation would reduce traffic noise at exterior living spaces of proposed residences below the Policy 7E standard (65 dBA CNEL). Therefore, the mitigated project (existing+project conditions) complies with the exterior noise standard of Policy 7E. Implementation of the recommended sound insulation materials and methods is expected to reduce interior noise levels below the Policy 7E standard.

However, noise modeling indicates that the proposed walls would not reduce future traffic noise at the exterior living space of one proposed residence (represented by Receptor NR4) below the Policy 7E standard (65 dBA CNEL). The Policy 7E noise standard would be exceeded at this residence due to proximity to Wells Road and building orientation, as traffic noise at the exterior living space would not be attenuated by the residential structure. This condition would be mitigated by linking the residential structure with the detached garage, to provide noise attenuation for the exterior living space. With implementation of this mitigation measure, all proposed residences would comply with the exterior and interior noise standards of Policy 7E under both existing and future conditions.

3.0 SETTING

The project site is located immediately north of State Route 126, west of Wells Road and south of Telegraph Road. Therefore, the noise environment of the site is dominated by traffic noise. Other noise sources include farm equipment used to cultivate row crops on the site, and occasional over-flights of light aircraft (mostly from the Camarillo Airport).

4.0 CHARACTERISTICS OF NOISE

Noise is generally defined as unwanted or objectionable sound. Noise levels are measured on a logarithmic scale because of physical characteristics of sound transmission and reception. Noise energy is typically reported in units of decibels (dB), where zero decibels is defined as 20 μPa or the absolute threshold of hearing in healthy young adults. Community noise levels are typically measured in terms of the A-weighted decibel (dBA). A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear.

Noise levels diminish (or attenuate) as distance to the source increases according to the inverse square rule, but the rate constant varies with the type of sound source. The typical sound attenuation rate from point sources such as industrial facilities is about 6 dB per doubling of distance and 3 dB per doubling of distance for line sources (vehicle traffic).

Distance attenuation is a combination of geometric divergence and ground attenuation. Geometric divergence is the geometric spreading of energy over an ever increasing area. Ground attenuation is the absorption of noise energy by the ground when the noise path is very near the ground surface. The combination of these two factors is known as the drop-off factor. Hard sites are defined as sites with reflective materials such as pavement or water bodies, and are assigned a drop-off factor of 3.0 dB per doubling of distance due to the lack of ground attenuation. Soft sites have absorptive surfaces such as dirt and vegetation, and are assigned a drop-off factor of 4.5 dB per doubling of distance due to an assumed 1.5 dB of ground attenuation.

Equivalent noise level (Leq) is the average noise level on an energy basis for a specific time period. The duration of noise and the time of day at which it occurs are important factors in determining the impact of noise on communities. Noise is more disturbing at night and noise indices have been developed to account for the time of day and duration of noise generation. The Community Noise Equivalent Level (CNEL) and Day-Night Average Level (DNL or Ldn) are such indices. These indices are time-weighted average values equal to the amount of acoustic energy equivalent to a time-varying sound over a 24-hour period. The CNEL index penalizes night-time noise (10 p.m. to 7 a.m.) by adding 10 dB and evening noise (7 p.m. to 10 p.m.) by adding 5 dB to account for increased sensitivity of the community after dark. The Ldn index penalizes night-time noise the same as the CNEL index, but does not penalize evening noise.

5.0 NOISE STANDARDS

To limit population exposure to objectionable and/or physically damaging noise levels, Federal, State, and local governments have established noise standards. Noise standards applicable to the project include:

- Traffic noise abatement criteria (NAC) adopted by the Federal Highway Administration (FHWA) and Caltrans;
- Noise compatibility guidelines of the California Office of Planning and Research;
- Federal Interagency Committee on Noise criteria; and
- Policy 7E of the 2005 Ventura General Plan.

5.1 NOISE ABATEMENT CRITERIA (NAC)

The FHWA and Caltrans NAC is 67 dBA Leq (outdoor) for residences and other noise sensitive land uses (parks, schools, churches, hospitals, etc.). FHWA and Caltrans NAC is 72 dBA Leq (outdoor) for non-noise sensitive land uses. The NAC were used to determine if proposed residences would be exposed to excessive peak hour noise.

5.2 NOISE COMPATIBILITY GUIDELINES

Noise compatibility guidelines of the California Office of Planning and Research indicate:

- Noise levels below 60 dBA Ldn or CNEL are normally acceptable for single-family residences;
- Noise levels between 60 and 70 dBA Ldn or CNEL are conditionally acceptable for single-family residences;
- Noise levels below 65 dBA Ldn or CNEL are normally acceptable for multi-family residences, schools and churches; and
- Noise levels between 65 and 70 dBA Ldn or CNEL are conditionally acceptable for multi-family residences, schools and churches.

These guidelines were used to determine if existing or proposed land uses in the project vicinity would be exposed to excessive noise.

5.3 FEDERAL INTERAGENCY COMMITTEE ON NOISE

Consistent with the City of Ventura 2005 General Plan Environmental Impact Report, Federal Interagency Committee on Noise criteria were used to determine if project-related traffic noise increases would significantly impact existing land uses. These thresholds include:

- A 5 dBA increase is considered significant if existing ambient noise is less than 60 dBA CNEL;
- A 3 dBA increase is considered significant if existing ambient noise is between 60 and 65 dBA CNEL; and
- A 1.5 dBA increase is considered significant if existing ambient noise is greater than 65 dBA CNEL.

5.4 POLICY 7E OF THE VENTURA 2005 GENERAL PLAN

Action 7.32 of Policy 7E requires an acoustical analysis and implementation of mitigation to ensure noise levels at exterior spaces of new residences does not exceed 65 dBA CNEL and interior noise of habitable rooms does not exceed 45 dBA CNEL.

6.0 NOISE RECEPTORS

6.1 EXISTING

Land uses adjacent to the project site include the following:

- Residences along Telegraph Road north of the site and along Linden Drive west of the site;
- Bonaventure senior housing project at the northwest corner of Telegraph Road and Wells Road;
- Residences within the Country Estates Mobile Home Park on Blackburn Road;
- A single-family residence off Blackburn Road;
- St. Augustine Academy on Wells Road; and
- Las Clinicas medical building on Wells Road.

These receptors were included in the noise modeling to determine if project-related traffic would result in significant noise increases. Existing receptor locations are identified in Figure 1.

6.2 PROPOSED

Several residences proposed as part of the Parklands Master Plan were selected as noise receptors to determine if the post-project conditions would result in excessive traffic noise at these residences. Proposed noise receptor locations are also identified in Figure 1.

7.0 NOISE MONITORING

Noise levels were measured at three locations adjacent to the project site. Measurements were conducted on November 4, 2005 using a Larson-Davis DSP-80 Type 1 Precision Integrating Sound Level Meter. The Meter was calibrated using a Larson-Davis CAL200 Calibrator at 94 dBA. Measurements were conducted for 15 to 20 minutes, during or near p.m. peak hour. Other data recorded during noise monitoring included vehicle speeds and traffic volume (5 minute count) Noise monitoring data and field observations indicated that the primary source of noise at the project site is traffic on State Route (SR) 126. Monitoring data is presented in Table 1.

Table 1. Noise Monitoring Data

Location	Time Period	Noise Level (dBA Leq)
Near Bonaventure Senior Housing (Telegraph Road)	1535 to 1550	67.0
Near Las Clincas medical building (Wells Road)	1555 to 1615	76.1
Near Country Estates Mobile Home Park (Blackburn Road)	1623 to 1643	74.2

8.0 NOISE MODEL INPUTS

8.1 MODEL DESCRIPTION

The SOUND2000 Model was used to predict future noise levels associated with traffic generated by the proposed project. Noise levels at both existing and proposed land uses were modeled to determine if the project would have a significant noise impact on existing land uses and to determine if implementation of the Parklands Master Plan would expose future residents to excessive noise.

The SOUND2000 Model is based on methodology documented in FHWA-RD-77-108 and uses California Vehicle Noise Reference Energy Mean Emission Levels (Calveno). The Model was developed to estimate peak hour noise, such that time-weighted values (Ldn or CNEL) are not provided.

Geographical coordinates (x,y,z) for receivers and roadway alignments used in the Model were taken from the drawings provided by the project engineer (DTR Engineering). Roadways modeled included SR 126, Wells Road, Telegraph Road and Blackburn Road.

Due to the level topography of the project area, the roadway elevation was assumed to be zero. In addition, no grade corrections were applied to the noise reference levels. Consistent with Section N-5311 of the Technical Noise Supplement, receiver elevation was considered 1.5 meters (5 feet) above the ground elevation. However, a receiver elevation of 7 feet was used for the Country Estates Mobile Home Park as mobile homes are elevated on stands.

Consistent with Section N-5513 of the Technical Noise Supplement, a drop-off rate of 3 dBA was assumed because the distance between the most impacted receivers and modeled traffic lanes was less than 50 feet (15 meters).

8.2 TRAFFIC DATA

Existing, future (year 2025) and project-related traffic volumes on affected roadways was obtained from the Traffic and Circulation Study prepared for the Parklands project by Associated Transportation Engineers (dated October 14, 2005). Based on review of the Traffic and Circulation Study, p.m. peak hour had the highest traffic volumes and was used as the analysis scenario for the noise modeling. However, traffic volumes on SR 126 were not included in the Traffic and Circulation Study and were obtained from the Caltrans website and the City of Ventura 2005 General Plan Environmental Impact Report.

The percentage of trucks on SR 126 was obtained from *2004 Annual Average Daily Truck Traffic on the California State Highway System* compiled by Caltrans. Based on field observations and modeling results, Wells Road was assumed to have the same percentage of trucks as SR 126. Telegraph Road and Blackburn Road were assumed to have a lower percentage of trucks than SR 126. Consistent with Section N-5511 of the Technical Noise Supplement, medium-duty trucks are defined as trucks with two axles and six wheels, with a gross vehicle weight between 10,000 and 26,500 pounds. Heavy-duty trucks are defined as trucks with three or more axles. Peak hour (p.m.) traffic volumes in units of vehicles per hour (vph) used in the modeling are presented in Table 2.

Table 2. Traffic Volumes used in the Noise Modeling

Roadway	Existing Volume (vph)	Existing + Project Volume (vph)	Year 2025 Volume (vph)	Year 2025 + Project Volume (vph)
SR 126 Westbound	1850	1850	2580	2580
SR 126 Eastbound	1850	1850	2580	2580
Wells Road Northbound	670	759	946	1035
Wells Road Southbound	460	477	533	550
Telegraph Road Westbound	370	394	376	400
Telegraph Road Eastbound	380	456	384	460
Blackburn Road Westbound	80	174	89	183
Blackburn Road Eastbound	70	128	78	128

8.3 SOUND WALLS

The existing masonry wall located immediately south and east of the Country Estates Mobile Home Park was included in the modeling. However, the wall is only 6 to 6.5 feet high and the mobile homes are elevated such that the wall is an ineffective sound barrier.

9.0 NOISE MODEL RESULTS

9.1 EXISTING RECEPTORS

Noise model results are presented in Tables 3 and 4 for existing and year 2025 scenarios, respectively. The implementation of the Parklands Master Plan would result in a less than 1 dBA increase in traffic noise levels at existing receptors. Therefore, the project-related noise increase is not considered significant, based on the Federal Interagency Committee on Noise.

Based on conversion factors provided in Section N-2231 of the Caltrans Technical Noise Supplement, every receptor modeled exceeds the 65 dBA CNEL limit of Policy 7E of the General Plan. The modeled existing noise level at receptors R1, R11, R15 and R17 exceeds the Caltrans NAC (67 dBA Leq).

Table 3. Noise Model Results for Existing Receptors under Current Conditions (dBA Leq)

Receptor Number	Receptor Description	Existing	Existing + Project	Project Increase
R1	Mobile home on Blackburn Road	70.0	70.2	0.2
R15	Single-family residence off Blackburn Road	71.8	71.9	0.1
R11	Single-family residence near Telegraph Road/Linden Drive intersection	68.1	68.5	0.4
R10	Single-family residence near Telegraph Road/Nevada Avenue intersection	66.0	66.5	0.5
R17	Single-family residence on Linden Drive	67.4	67.9	0.5
R12	Bonaventure senior housing	66.3	66.7	0.4
R13	St. Augustine Academy	66.8	67.3	0.5
R9	Las Clinicas medical building	69.6	70.0	0.4

Table 4. Noise Model Results for Existing Receptors under Year 2025 Conditions (dBA Leq)

Receptor Number	Receptor Description	Year 2025	Year 2025 + Project	Project Increase
R1	Mobile home on Blackburn Road	71.4	71.6	0.2
R15	Single-family residence off Blackburn Road	73.2	73.3	0.1
R11	Single-family residence near Telegraph Road/Linden Drive intersection	68.3	68.6	0.3
R10	Single-family residence near Telegraph Road/Nevada Avenue intersection	66.3	66.7	0.4
R17	Single-family residence on Linden Drive	67.5	68.1	0.6
R12	Bonaventure senior housing	66.7	67.0	0.3
R13	St. Augustine Academy	68.0	68.3	0.3
R9	Las Clinicas medical building	70.9	71.2	0.3

9.2 PROPOSED RECEPTORS

Exterior Noise Standards. Noise model results are presented in Tables 5 and 6 for existing and year 2025 scenarios, respectively. Generally, the receptors represent exterior living spaces of the nearest residence to noise sources (roadways). Based on conversion factors provided in Section N-2231 of the Caltrans Technical Noise Supplement and 24-hour traffic counts on Wells Road, Leq noise values were converted to CNEL values. Residences proposed as part of the Parklands Master Plan would be exposed to noise levels exceeding the Ventura General Plan Policy 7E limit (65 dBA CNEL) and Caltrans NAC (67 dBA Leq) (see Table 5 and 6 values in bold).

Based on meetings with City staff, the exterior noise standard of Policy 7E is applied to exterior living spaces, including side yards and back yards for single-family residences and courtyards for multiple-family residences. Front yards are not considered exterior living spaces. Therefore, project-related noise levels were estimated for exterior living spaces, including backyards or sideyards of single-family residences (receptors R2, R3, NR4, R6, NR36) and courtyards for multiple-family residences (receptors NR5, NR16, NR35). Modeled noise values for exterior spaces were reduced by 5 dBA as recommended by Harris (1991) for residences along Telegraph Road and Wells Road as these areas would be shielded by intervening structures.

Table 5 indicates the Policy 7E exterior noise standard at exterior living spaces for single-family residences with backyards near SR 126 (represented by Receptors R2 and R3), and side yards facing Wells Road (represented by Receptor NR4).

Future conditions (year 2025) involve increased traffic volumes, especially on SR 126, which would exacerbate existing traffic noise. Similar to noise modeling results for existing+project conditions (see Table 5), future traffic conditions (see Table 6) would result in the exposure of exterior living spaces of residences near SR 126 and Wells Road to traffic noise exceeding the Policy 7E standard.

Table 5. Noise Model Results for Proposed Receptors under Existing + Project Conditions

Receptor Number	Receptor Description	dBA Leq	dBA CNEL
R2	Backyard of single-family residence near Country Estates Mobile Home Park	**73.8**	**74.5**
R3	Backyard of single-family residence near Blackburn Road	**72.3**	**73.0**
NR4	Sideyard of single-family residence near Wells Road	66.4	**67.1**
NR5	Courtyard of multi-family residence near Wells Road*	62.5	63.2
R6	Single-family residence west of Brown Barranca	62.2	62.9
NR7	Multi-family residence near Wells Road (structure)	67.6	68.3
R8	Single-family residence near Telegraph Road/Linden Road intersection (front yard)	66.8	67.5
NR35	Courtyard of multi-family residence near Telegraph Road/Wells Road intersection*	61.6	62.3
NR36	Backyard of single-family residence along Telegraph Road near Linden Drive*	59.6	60.3
NR16	Backyard of single-family residence along Telegraph Road*	62.2	62.9

*Considered exterior living space, noise value includes attenuation from residential structure between roadway and receptor

Table 6. Noise Model Results for Proposed Receptors under Year 2025 + Project Conditions

Receptor Number	Receptor Description	dBA Leq	dBA CNEL
R2	Backyard of single-family residence near Country Estates Mobile Home Park	**75.2**	**75.9**
R3	Backyard of single-family residence near Blackburn Road	**73.6**	**74.3**
NR4	Sideyard of single-family residence near Wells Road	**67.6**	**68.3**
NR5	Courtyard of multi-family residence near Wells Road*	63.6	64.3
R6	Single-family residence west of Brown Barranca	63.2	63.9
NR35	Courtyard of multi-family residence near Telegraph Road/Wells Road intersection*	62.6	63.3
NR36	Backyard of single-family residence along Telegraph Road near Linden Drive*	59.9	60.6
NR16	Backyard of single-family residence along Telegraph Road*	62.6	63.3

*Considered exterior living space, noise value includes attenuation from residential structure between roadway and receptor

Interior Noise Standard. General Plan Policy 7E requires noise levels of 45 dBA CNEL or less in habitable rooms. Residential construction in compliance with the California Building Code generally results in a 20 to 30 dBA attenuation of noise external to the structure. Assuming a 20 dBA attenuation, Tables 5 and 6 indicate interior noise at proposed residences along Telegraph Road, Wells Road and Blackburn Road (represented by Receptors R2, R3, NR4, NR7, R8) would exceed the 45 dBA CNEL interior standard.

10.0 MITIGATION

10.1 CURRENT CONDITIONS

Exterior Noise Standard. Sound walls were considered as mitigation to reduce traffic noise levels at proposed residences. Based on concerns expressed by City staff, sound walls were limited to the area immediately south of Blackburn Road, to attenuate traffic noise from SR 126. The proposed sound wall would be 16 feet-tall, constructed of reinforced masonry block (or similar solid wall). Taller walls were not considered as 16 feet is the maximum wall height generally constructed by Caltrans. The proposed wall would not attenuate traffic noise from Wells Road and Telegraph Road; therefore, it would have minimal benefit to proposed residences along these roadways. In addition, lower garden walls (8 foot-high) are proposed along the north side of Blackburn Road to further attenuate traffic noise from SR 126 (see Figure 1).

Table 7 provides noise modeling results of the effectiveness of the proposed sound wall and garden walls. Noise modeling indicates that the proposed walls would reduce traffic noise at exterior living spaces of proposed residences below the Policy 7E standard (65 dBA CNEL). Note that modeled noise levels are provided in Table 7 for Receptors NR7 and R8, although these locations represent the closest point to roadways and not exterior living spaces. These data are used to estimate interior and not exterior noise levels.

An additional benefit of the proposed mitigation is that it would reduce traffic noise at the existing residence off Blackburn Road.

Interior Noise Standard. Assuming a 20 dBA attenuation, Table 7 indicates interior noise (with proposed mitigation) at proposed residences along Telegraph Road (represented by Receptor R8) and Wells Road (represented by Receptor NR7) would exceed the 45 dBA CNEL interior standard.

Therefore, the following mitigation measures should be applied to multiple-family structures along Wells Road and Telegraph Road and the first row of single-family residences along Telegraph Road:

- Windows facing the street should be dual-pane, laminated with a Sound Transmission Class (STC) rating of at least 40;
- Exterior walls facing the street should be constructed of staggered wood studs, or equipped with a resilient channel between the studs and wallboard, or any other wall system with an STC rating of at least 50;
- Exterior doors facing the street should be of a sound insulating design with a STC rating of at least 38; and
- All exterior doors and windows should be installed with proper weather stripping.

Table 7. Mitigated Noise Model Results for Proposed Receptors under Existing + Project Conditions

Receptor Number	Receptor	dBA Leq		dBA CNEL	
		Existing + Project	Existing + Project with Sound Walls	Existing + Project	Existing + Project with Sound Walls
R2	Backyard of single-family residence near Country Estates Mobile Home Park	73.8	61.3	74.5	62.0
R3	Backyard of single-family residence near Blackburn Road	72.3	60.3	73.0	61.0
NR4	Sideyard of single-family residence near Wells Road	66.4	63.5	67.1	64.2
NR5	Courtyard of multi-family residence near Wells Road*	62.5	62.0	63.2	62.7
R6	Single-family residence west of Brown Barranca	62.2	60.2	62.9	60.9
NR7	Multi-family residence near Wells Road (structure)	67.6	67.4	68.3	68.1
R8	Single-family residence near Telegraph Road/Linden Road intersection (front yard)	66.8	66.5	67.5	67.2
NR35	Courtyard of multi-family residence near Telegraph Road/Wells Road intersection*	61.6	61.4	62.3	62.1
NR36	Backyard of single-family residence along Telegraph Road near Linden Drive*	59.6	59.2	60.3	59.9
NR16	Backyard of single-family residence along Telegraph Road*	62.2	62.0	62.9	62.7

*Considered exterior living space, noise value includes attenuation from residential structure between roadway and receptor

10.2 FUTURE CONDITIONS (YEAR 2025)

Exterior Noise Standard. Table 8 provides noise modeling results of the effectiveness of proposed mitigation, a sound wall along SR 126 and garden walls along Blackburn Road. Noise modeling indicates that proposed mitigation would reduce future traffic noise at exterior living spaces of proposed residences below the Policy 7E standard (65 dBA CNEL), with the exception of one residence (see Receptor NR4). The Policy 7E noise standard would be exceeded at this residence due to proximity to Wells Road and building orientation, as traffic noise at the exterior living space would not be attenuated by the residential structure. This condition would be mitigated by linking the residential structure with the detached garage, to provide noise attenuation for the exterior living space. The noise level listed in Table 8 reflects a 5 dbA reduction associated with implementation of this mitigation measure.

Interior Noise Standard. Assuming a 20 dBA attenuation, Table 8 indicates interior noise (with proposed mitigation) at proposed residences along Telegraph Road (represented by Receptor R8) and Wells Road (represented by Receptor NR7) would exceed the 45 dBA CNEL interior standard.

Therefore, the mitigation measures provided in Section 10.1 should be applied to multiple-family structures along Wells Road and Telegraph Road and the first row of single-family residences along Telegraph Road.

Table 8. Mitigated Noise Model Results for Proposed Receptors under Year 2025 + Project Conditions

Receptor Number	Receptor	dBA Leq		dBA CNEL	
		Year 2025 + Project	Year 2025 + Project with Sound Walls	Year 2025 + Project	Year 2025 + Project with Sound Walls
R2	Backyard of single-family residence near Country Estates Mobile Home Park	75.2	62.6	75.9	63.3
R3	Backyard of single-family residence near Blackburn Road	73.6	61.5	74.3	62.2
NR4	Sideyard of single-family residence near Wells Road**	67.6	59.5	68.3	60.2
NR5	Courtyard of multi-family residence near Wells Road*	63.6	63.0	64.3	63.7
R6	Single-family residence west of Brown Barranca	63.2	61.1	63.9	61.8
NR7	Multi-family residence near Wells Road (structure)	68.6	68.3	69.3	69.0
R8	Single-family residence near Telegraph Road/Linden Road intersection (front yard)	67.0	66.6	67.7	67.3
NR35	Courtyard of multi-family residence near Telegraph Road/Wells Road intersection*	62.6	62.3	63.3	63.0
NR36	Backyard of single-family residence along Telegraph Road near Linden Drive*	59.9	59.3	60.6	60.0
NR16	Backyard of single-family residence along Telegraph Road*	62.6	62.3	63.3	63.0

* Considered exterior living space, noise value includes attenuation from residential structure between roadway and receptor
** Noise value includes additional mitigation associated with linking the residential structure to the detached garage

April 2007
Project No. 0502-2152

padre associates, Inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

MAP OF NOISE RECEPTOR
AND PROPOSED SOUND WALL
FIGURE 1

SOUND2000 MODELING DATA

**** Sound 2000 (Caltrans Version of Stamina2/Optima) ****

INPUT DATA FILE : C:\Program Files\Project2000\Data\Parklands_Ex+Proj_Apr07.s32
DATE : 4/6/2007

PARKLANDS PROJECT

TRAFFIC DATA

LANE NO.	AUTO VPH	AUTO MPH	MEDIUM TRKS VPH	MEDIUM TRKS MPH	HEAVY TRKS VPH	HEAVY TRKS MPH	DESCRIPTION
1	127	35	1	30	0	0	EXIST+PROJ PEAK HOUR
2	172	35	2	30	0	0	EXISTING+PROJ PEAK HOUR
3	713	45	19	40	27	35	EXISTING+PROJ PEAK HOUR
4	448	45	12	40	17	35	EXISTING+PROJ PEAK HOUR
5	382	45	8	45	4	40	EXISTING+PROJ PEAK HOUR
6	442	45	9	45	5	40	EXISTING+PROJ PEAK HOUR
7	1739	65	46	65	65	60	EXISTING PEAK HOUR
8	1739	65	46	65	65	60	EXISTING PEAK HOUR

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION	LANE DESCRIPTION
1	1		-100.0	242.0	0.0		EB BLACKBURN
	2		1136.0	308.0	0.0		
	3		1266.0	378.0	0.0		
	4		1505.0	676.0	0.0		
	5		1494.0	936.0	0.0		
			1590.0	1013.0	0.0		
2	1		1590.0	1025.0	0.0		WB BLACKBURN
	2		1476.0	944.0	0.0		
	3		1494.0	682.0	0.0		
	4		1256.0	386.0	0.0		
	5		1134.0	320.0	0.0		
			-100.0	254.0	0.0		
3	1		1760.0	0.0	0.0		NB WELLS
	2		1680.0	900.0	0.0		
			1672.0	3000.0	0.0		
4	1		1640.0	3000.0	0.0		SB WELLS
	2		1648.0	900.0	0.0		
			1725.0	0.0	0.0		
5	1		2000.0	2612.0	0.0		WB TELEGRAPH
			-300.0	2612.0	0.0		
6	1		-300.0	2586.0	0.0		EB TELEGRAPH
			2000.0	2586.0	0.0		
7	1		2000.0	176.0	0.0		WB 126
			-300.0	178.0	0.0		
8	1		-300.0	110.0	0.0		EB 126
			2000.0	108.0	0.0		

BARRIER DATA

Barrier No. 1 Barrier Description: EXIST NOISE WALL
Type: Wall

Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	276.0	1450.0	10.0	16.0	B2 P1	*	6
2	276.0	290.0	0.0	6.0	B2 P2	*	6
3	86.0	287.0	0.0	6.0	B2 P3	*	6
	72.0	300.0	0.0	5.0	B2 P4	*	5

RECEIVER DATA

REC NO.	X	Y	Z	ID
1	124.0	292.0	7.0	EX_BLACKBURN
2	348.0	308.0	5.0	NEW_BLACKBURN
3	1210.0	386.0	5.0	NEW_BLACKBURN2
4	1446.0	1048.0	5.0	NEW_WELLS
5	1574.0	1605.0	5.0	NEW_WELLS_MFR
6	1124.0	1838.0	5.0	NEW_RES_PH1
7	1566.0	2460.0	5.0	NEW_TELEWELLS_MFR
8	352.0	2526.0	5.0	NEW_TELEGRAPH
9	1728.0	1712.0	5.0	MED_BLDG_WELLS
10	696.0	2676.0	5.0	EX_SFR_TELE
11	136.0	2646.0	5.0	EX_SFR2_TELE
12	1230.0	2682.0	5.0	EX_SENIOR_MF
13	1782.0	2045.0	5.0	ST ANTHONYS
14	475.0	395.0	5.0	BLACKBURN SETBACK
15	892.0	386.0	5.0	BLACKBURN_SFR
16	1038.0	2515.0	5.0	NEW_TELE_MFR
17	110.0	2544.0	5.0	NEW_SFR_LINDEN
18	1530.0	1600.0	5.0	WELLS_SETBACK
19	1480.0	2460.0	5.0	WELLS_TELE_SETBACK
20	1266.0	530.0	5.0	BASIN RESIDENCE
21	1444.0	1086.0	5.0	NR4
22	1546.0	1510.0	5.0	NR5
23	1548.0	2268.0	5.0	NR7
24	1280.0	2520.0	5.0	NR16
25	1518.0	2215.0	5.0	NR35
26	350.0	2476.0	5.0	NR36

DROP-OFF RATES

LANE No.	RECEIVER NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
PARKLANDS PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
	BARRIER HEIGHTS										
1	-	6.*							B2 P1	1160.0	
2	-	6.*							B2 P2	190.0	
3	-	6.*							B2 P3	19.1	
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	EX_BLACK	67.	500.	70.2
2	NEW_BLAC	67.	500.	73.8
3	NEW_BLAC	67.	500.	72.3
4	NEW_WELL	67.	500.	66.6
5	NEW_WELL	67.	500.	68.6
6	NEW_RES_	67.	500.	62.2
7	NEW_TELE	67.	500.	69.0
8	NEW_TELE	67.	500.	66.8
9	MED_BLDG	67.	500.	70.0
10	EX_SFR_T	67.	500.	66.5
11	EX_SFR2_	67.	500.	68.5
12	EX_SENIO	67.	500.	66.7
13	ST ANTHO	67.	500.	67.3
14	BLACKBUR	67.	500.	71.4
15	BLACKBUR	67.	500.	71.9
16	NEW_TELE	67.	500.	66.5
17	NEW_SFR_	67.	500.	67.9
18	WELLS_SE	67.	500.	67.0
19	WELLS_TE	67.	500.	67.0
20	BASIN RE	67.	500.	69.7
21	NR4	67.	500.	66.4
22	NR5	67.	500.	67.5
23	NR7	67.	500.	67.6
24	NR16	67.	500.	67.2
25	NR35	67.	500.	66.6
26	NR36	67.	500.	64.6

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
6. 6. 6.

**** Sound 2000 (Caltrans Version of Stamina2/Optima) ****

INPUT DATA FILE : C:\Program Files\Project2000\Data\Parklands_Ex+Proj_Apr07.s32
DATE : 4/6/2007 Mitigated

PARKLANDS PROJECT

TRAFFIC DATA

LANE NO.	AUTO VPH	AUTO MPH	MEDIUM TRKS VPH	MEDIUM TRKS MPH	HEAVY TRKS VPH	HEAVY TRKS MPH	DESCRIPTION
1	127	35	1	30	0	0	EXIST+PROJ PEAK HOUR
2	172	35	2	30	0	0	EXISTING+PROJ PEAK HOUR
3	713	45	19	40	27	35	EXISTING+PROJ PEAK HOUR
4	448	45	12	40	17	35	EXISTING+PROJ PEAK HOUR
5	382	45	8	45	4	40	EXISTING+PROJ PEAK HOUR
6	442	45	9	45	5	40	EXISTING+PROJ PEAK HOUR
7	1739	65	46	65	65	60	EXISTING PEAK HOUR
8	1739	65	46	65	65	60	EXISTING PEAK HOUR

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION	LANE DESCRIPTION
1	1		-100.0	242.0	0.0		EB BLACKBURN
	2		1136.0	308.0	0.0		
	3		1266.0	378.0	0.0		
	4		1505.0	676.0	0.0		
	5		1494.0	936.0	0.0		
			1590.0	1013.0	0.0		
2	1		1590.0	1025.0	0.0		WB BLACKBURN
	2		1476.0	944.0	0.0		
	3		1494.0	682.0	0.0		
	4		1256.0	386.0	0.0		
	5		1134.0	320.0	0.0		
			-100.0	254.0	0.0		
3	1		1760.0	0.0	0.0		NB WELLS
	2		1680.0	900.0	0.0		
			1672.0	3000.0	0.0		
4	1		1640.0	3000.0	0.0		SB WELLS
	2		1648.0	900.0	0.0		
			1725.0	0.0	0.0		
5	1		2000.0	2612.0	0.0		WB TELEGRAPH
			-300.0	2612.0	0.0		
6	1		-300.0	2586.0	0.0		EB TELEGRAPH
			2000.0	2586.0	0.0		
7	1		2000.0	176.0	0.0		WB 126
			-300.0	178.0	0.0		
8	1		-300.0	110.0	0.0		EB 126
			2000.0	108.0	0.0		

BARRIER DATA

Barrier No. 1 Barrier Description: South A Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	290.0	500.0	0.0	8.0	B2 P1	*	8
2	296.0	290.0	0.0	8.0	B2 P2	*	8
	375.0	295.0	0.0	8.0	B2 P3	*	8

Barrier No. 2 Barrier Description: South B Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	420.0	293.0	0.0	8.0	B3 P1	*	8
	632.0	304.0	0.0	8.0	B3 P2	*	8

Barrier No. 3 Barrier Description: South C Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	664.0	306.0	0.0	8.0	B4 P1	*	8
2	806.0	307.0	0.0	8.0	B4 P2	*	8
3	805.0	524.0	0.0	8.0	B4 P3	*	8
4	1002.0	528.0	0.0	8.0	B4 P4	*	8
5	1008.0	320.0	0.0	8.0	B4 P5	*	8
	1040.0	322.0	0.0	8.0	B4 P6	*	8

Barrier No. 4 Barrier Description: South D Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	1080.0	322.0	0.0	8.0	B5 P1	*	8
2	1188.0	358.0	0.0	8.0	B5 P2	*	8
	1330.0	486.0	0.0	8.0	B5 P3	*	8

Barrier No. 5 Barrier Description: Exist Wall Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	276.0	1450.0	10.0	16.0	B5 P1	*	6
2	276.0	290.0	0.0	6.0	B5 P2	*	6
3	86.0	287.0	0.0	6.0	B5 P3	*	6
	72.0	300.0	0.0	5.0	B5 P4	*	5

Barrier No. 6 Barrier Description: SR126 Wall Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	100.0	242.0	0.0	16.0	B6 P1	*	16
2	1058.0	280.0	0.0	16.0	B6 P2	*	16
3	1176.0	310.0	0.0	16.0	B6 P3	*	16
4	1264.0	366.0	0.0	16.0	B6 P4	*	16
5	1506.0	644.0	0.0	16.0	B6 P5	*	16
6	1522.0	712.0	0.0	16.0	B6 P6	*	16
7	1516.0	918.0	0.0	16.0	B6 P7	*	16
	1576.0	964.0	0.0	16.0	B6 P8	*	16

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RECEIVER DATA

REC NO.	X	Y	Z	ID
1	124.0	292.0	7.0	EX_BLACKBURN
2	348.0	308.0	5.0	NEW_BLACKBURN
3	1210.0	386.0	5.0	NEW_BLACKBURN2
4	1446.0	1048.0	5.0	NEW_WELLS
5	1574.0	1605.0	5.0	NEW_WELLS_MFR
6	1124.0	1838.0	5.0	NEW_RES_PH1
7	1566.0	2460.0	5.0	NEW_TELEWELLS_MFR
8	352.0	2526.0	5.0	NEW_TELEGRAPH
9	1728.0	1712.0	5.0	MED_BLDG_WELLS
10	696.0	2676.0	5.0	EX_SFR_TELE
11	136.0	2646.0	5.0	EX_SFR2_TELE
12	1230.0	2682.0	5.0	EX_SENIOR_MF
13	1782.0	2045.0	5.0	ST ANTHONYS
14	475.0	395.0	5.0	BLACKBURN SETBACK
15	892.0	386.0	5.0	BLACKBURN_SFR
16	1038.0	2515.0	5.0	NEW_TELE_MFR
17	110.0	2544.0	5.0	NEW_SFR_LINDEN
18	1530.0	1600.0	5.0	WELLS_SETBACK
19	1480.0	2460.0	5.0	WELLS_TELE_SETBACK
20	1266.0	530.0	5.0	BASIN RESIDENCE
21	1444.0	1086.0	5.0	NR4
22	1546.0	1510.0	5.0	NR5
23	1548.0	2268.0	5.0	NR7
24	1280.0	2520.0	5.0	NR16
25	1518.0	2215.0	5.0	NR35
26	350.0	2476.0	5.0	NR36

DROP-OFF RATES

LANE No.	RECEIVER NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

SOUND32 - RELEASE 07/30/91, MODIFIED 04/22/00

TITLE:
PARKLANDS PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
	BARRIER HEIGHTS										
1	-	8.*							B2 P1	210.1	
2	-	8.*							B2 P2	79.2	
3	-	8.*							B3 P1	212.3	
4	-	8.*							B4 P1	142.0	
5	-	8.*							B4 P2	217.0	
6	-	8.*							B4 P3	197.0	
7	-	8.*							B4 P4	208.1	
8	-	8.*							B4 P5	32.1	
9	-	8.*							B5 P1	113.8	
10	-	8.*							B5 P2	191.2	
11	-	6.*							B5 P1	1160.0	
12	-	6.*							B5 P2	190.0	
13	-	6.*							B5 P3	19.1	
14	-	16.*							B6 P1	958.8	
15	-	16.*							B6 P2	121.8	
16	-	16.*							B6 P3	104.3	
17	-	16.*							B6 P4	368.6	
18	-	16.*							B6 P5	69.9	
19	-	16.*							B6 P6	206.1	
20	-	16.*							B6 P7	75.6	
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	EX_BLACK	67.	500.	66.5
2	NEW_BLAC	67.	500.	61.3
3	NEW_BLAC	67.	500.	60.3
4	NEW_WELL	67.	500.	63.5
5	NEW_WELL	67.	500.	68.2
6	NEW_RES_	67.	500.	60.2
7	NEW_TELE	67.	500.	68.9
8	NEW_TELE	67.	500.	66.5
9	MED_BLDG	67.	500.	69.9
10	EX_SFR_T	67.	500.	66.3
11	EX_SFR2_	67.	500.	68.4
12	EX_SENIO	67.	500.	66.5
13	ST ANTHO	67.	500.	67.0
14	BLACKBUR	67.	500.	60.5
15	BLACKBUR	67.	500.	61.2
16	NEW_TELE	67.	500.	66.3
17	NEW_SFR_	67.	500.	67.8
18	WELLS_SE	67.	500.	66.4
19	WELLS_TE	67.	500.	66.8
20	BASIN RE	67.	500.	60.5
21	NR4	67.	500.	63.5
22	NR5	67.	500.	67.0
23	NR7	67.	500.	67.4
24	NR16	67.	500.	67.0
25	NR35	67.	500.	66.4
26	NR36	67.	500.	64.2

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 6. 6. 6.16.16.16.16.16.16.16.

**** Sound 2000 (Caltrans Version of Stamina2/Optima) ****

INPUT DATA FILE : C:\Program Files\Project2000\Data\Parklands_2025+Proj.s32
DATE : 4/6/2007

PARKLANDS PROJECT

TRAFFIC DATA

LANE NO.	AUTO VPH	AUTO MPH	MEDIUM TRKS VPH	MEDIUM TRKS MPH	HEAVY TRKS VPH	HEAVY TRKS MPH	DESCRIPTION
1	127	35	1	30	0	0	2025+PROJ PEAK HOUR
2	181	35	2	30	0	0	2025+PROJ PEAK HOUR
3	973	45	26	40	36	35	2025+PROJ PEAK HOUR
4	517	45	14	40	19	35	2025+PROJ PEAK HOUR
5	388	45	8	45	4	40	2025+PROJ PEAK HOUR
6	446	45	9	45	5	40	2025+PROJ PEAK HOUR
7	2425	65	65	65	90	60	2025 PEAK HOUR
8	2425	65	65	65	90	60	2025 PEAK HOUR

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION	LANE DESCRIPTION
1	1		-100.0	242.0	0.0		EB BLACKBURN
	2		1136.0	308.0	0.0		
	3		1266.0	378.0	0.0		
	4		1505.0	676.0	0.0		
	5		1494.0	936.0	0.0		
			1590.0	1013.0	0.0		
2	1		1590.0	1025.0	0.0		WB BLACKBURN
	2		1476.0	944.0	0.0		
	3		1494.0	682.0	0.0		
	4		1256.0	386.0	0.0		
	5		1134.0	320.0	0.0		
			-100.0	254.0	0.0		
3	1		1760.0	0.0	0.0		NB WELLS
	2		1680.0	900.0	0.0		
			1672.0	3000.0	0.0		
4	1		1640.0	3000.0	0.0		SB WELLS
	2		1648.0	900.0	0.0		
			1725.0	0.0	0.0		
5	1		2000.0	2612.0	0.0		WB TELEGRAPH
			-300.0	2612.0	0.0		
6	1		-300.0	2586.0	0.0		EB TELEGRAPH
			2000.0	2586.0	0.0		
7	1		2000.0	176.0	0.0		WB 126
			-300.0	178.0	0.0		
8	1		-300.0	110.0	0.0		EB 126
			2000.0	108.0	0.0		

BARRIER DATA

Barrier No. 1 Barrier Description: EXIST NOISE WALLType: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	276.0	1450.0	10.0	16.0	B2 P1	*	6
2	276.0	290.0	0.0	6.0	B2 P2	*	6
3	86.0	287.0	0.0	6.0	B2 P3	*	6
	72.0	300.0	0.0	5.0	B2 P4	*	5

RECEIVER DATA

REC NO.	X	Y	Z	ID
1	124.0	292.0	7.0	EX_BLACKBURN
2	348.0	308.0	5.0	NEW_BLACKBURN
3	1210.0	386.0	5.0	NEW_BLACKBURN2
4	1446.0	1048.0	5.0	NEW_WELLS
5	1574.0	1605.0	5.0	NEW_WELLS_MFR
6	1124.0	1838.0	5.0	NEW_RES_PH1
7	1566.0	2460.0	5.0	NEW_TELEWELLS_MFR
8	352.0	2526.0	5.0	NEW_TELEGRAPH
9	1728.0	1712.0	5.0	MED_BLDG_WELLS
10	696.0	2676.0	5.0	EX_SFR_TELE
11	136.0	2646.0	5.0	EX_SFR2_TELE
12	1230.0	2682.0	5.0	EX_SENIOR_MF
13	1782.0	2045.0	5.0	ST ANTHONYS
14	344.0	358.0	5.0	BLACKBURN_SETBACK
15	892.0	386.0	5.0	BLACKBURN_SFR
16	1038.0	2515.0	5.0	NEW_TELE_MFR
17	110.0	2544.0	5.0	EX_SFR_LINDEN
18	1480.0	2460.0	5.0	WELLS_TELE_SETBACK
19	1444.0	1086.0	5.0	NR4
20	1546.0	1510.0	5.0	NR5
21	1548.0	2268.0	5.0	NR7
22	1280.0	2520.0	5.0	NR16
23	1518.0	2215.0	5.0	NR35
24	350.0	2476.0	5.0	NR36

DROP-OFF RATES

LANE No.	RECEIVER NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

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TITLE:
PARKLANDS PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
		BARRIER HEIGHTS									
1	-	6.*							B2 P1	1160.0	
2	-	6.*							B2 P2	190.0	
3	-	6.*							B2 P3	19.1	
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	EX_BLACK	67.	500.	71.6
2	NEW_BLAC	67.	500.	75.2
3	NEW_BLAC	67.	500.	73.6
4	NEW_WELL	67.	500.	67.8
5	NEW_WELL	67.	500.	69.6
6	NEW_RES_	67.	500.	63.2
7	NEW_TELE	67.	500.	69.8
8	NEW_TELE	67.	500.	67.0
9	MED_BLDG	67.	500.	71.2
10	EX_SFR_T	67.	500.	66.7
11	EX_SFR2_	67.	500.	68.6
12	EX_SENIO	67.	500.	67.0
13	ST ANTHO	67.	500.	68.3
14	BLACKBUR	67.	500.	73.2
15	BLACKBUR	67.	500.	73.3
16	NEW_TELE	67.	500.	66.8
17	EX_SFR_L	67.	500.	68.1
18	WELLS_TE	67.	500.	67.7
19	NR4	67.	500.	67.6
20	NR5	67.	500.	68.6
21	NR7	67.	500.	68.6
22	NR16	67.	500.	67.6
23	NR35	67.	500.	67.6
24	NR36	67.	500.	64.9

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
6. 6. 6.

**** Sound 2000 (Caltrans Version of Stamina2/Optima) ****

INPUT DATA FILE : C:\Program Files\Project2000\Data\Parklands_2025+Proj_Mit.s32
DATE : 4/6/2007

PARKLANDS PROJECT

TRAFFIC DATA

LANE NO.	AUTO VPH	AUTO MPH	MEDIUM TRKS VPH	MEDIUM TRKS MPH	HEAVY TRKS VPH	HEAVY TRKS MPH	DESCRIPTION
1	127	35	1	30	0	0	2025+PROJ PEAK HOUR
2	181	35	2	30	0	0	2025+PROJ PEAK HOUR
3	973	45	26	40	36	35	2025+PROJ PEAK HOUR
4	517	45	14	40	19	35	2025+PROJ PEAK HOUR
5	388	45	8	45	4	40	2025+PROJ PEAK HOUR
6	446	45	9	45	5	40	2025+PROJ PEAK HOUR
7	2425	65	65	65	90	60	2025 PEAK HOUR
8	2425	65	65	65	90	60	2025 PEAK HOUR

LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION	LANE DESCRIPTION
1	1		-100.0	242.0	0.0		EB BLACKBURN
	2		1136.0	308.0	0.0		
	3		1266.0	378.0	0.0		
	4		1505.0	676.0	0.0		
	5		1494.0	936.0	0.0		
			1590.0	1013.0	0.0		
2	1		1590.0	1025.0	0.0		WB BLACKBURN
	2		1476.0	944.0	0.0		
	3		1494.0	682.0	0.0		
	4		1256.0	386.0	0.0		
	5		1134.0	320.0	0.0		
			-100.0	254.0	0.0		
3	1		1760.0	0.0	0.0		NB WELLS
	2		1680.0	900.0	0.0		
			1672.0	3000.0	0.0		
4	1		1640.0	3000.0	0.0		SB WELLS
	2		1648.0	900.0	0.0		
			1725.0	0.0	0.0		
5	1		2000.0	2612.0	0.0		WB TELEGRAPH
			-300.0	2612.0	0.0		
6	1		-300.0	2586.0	0.0		EB TELEGRAPH
			2000.0	2586.0	0.0		
7	1		2000.0	176.0	0.0		WB 126
			-300.0	178.0	0.0		
8	1		-300.0	110.0	0.0		EB 126
			2000.0	108.0	0.0		

BARRIER DATA

Barrier No. 1 Barrier Description: BLACKBURN WALL Type: Wall Barrier

Height Increment (DELZ) = 1 No. Height Changes (P)= 1

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	100.0	242.0	0.0	16.0	B2 P1	*	16
2	1058.0	280.0	0.0	16.0	B2 P2	*	16
3	1176.0	310.0	0.0	16.0	B2 P3	*	16
4	1264.0	366.0	0.0	16.0	B2 P4	*	16
5	1506.0	644.0	0.0	16.0	B2 P5	*	16
6	1522.0	712.0	0.0	16.0	B2 P6	*	16
7	1516.0	918.0	0.0	16.0	B2 P7	*	16
	1576.0	964.0	0.0	16.0	B1 P8	*	16

Barrier No. 2 Barrier Description: EXIST WALL Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	276.0	1450.0	10.0	16.0	B2 P1	*	6
2	276.0	290.0	0.0	6.0	B2 P2	*	6
3	86.0	287.0	0.0	6.0	B2 P3	*	6
	72.0	300.0	0.0	5.0	B2 P4	*	5

Barrier No. 3 Barrier Description: SOUTH A Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	290.0	500.0	0.0	8.0	B5 P1	*	8
2	296.0	290.0	0.0	8.0	B5 P2	*	8
	375.0	290.0	0.0	8.0	B5 P3	*	8

Barrier No. 4 Barrier Description: SOUTH B Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	420.0	292.0	0.0	8.0	B6 P1	*	8
	632.0	302.0	0.0	8.0	B6 P2	*	8

Barrier No. 5 Barrier Description: SOUTH C Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	664.0	304.0	0.0	8.0	B7 P1	*	8
2	806.0	304.0	0.0	8.0	B7 P2	*	8
3	805.0	524.0	0.0	8.0	B7 P3	*	8
4	1002.0	528.0	0.0	8.0	B7 P4	*	8
5	1008.0	316.0	0.0	8.0	B7 P5	*	8
	1040.0	316.0	0.0	8.0	B7 P6	*	8

Barrier No. 6 Barrier Description: SOUTH D Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)		BARRIER HEIGHTS AT ENDS	
1	1080.0	320.0	0.0	8.0	B8 P1	*	8
2	1188.0	358.0	0.0	8.0	B8 P2	*	8
	1330.0	486.0	0.0	8.0	B8 P3	*	8

==========

RECEIVER DATA

REC NO.	X	Y	Z	ID
1	124.0	292.0	7.0	EX_BLACKBURN
2	348.0	308.0	5.0	NEW_BLACKBURN
3	1210.0	386.0	5.0	NEW_BLACKBURN2
4	1446.0	1048.0	5.0	NEW_WELLS
5	1574.0	1605.0	5.0	NEW_WELLS_MFR
6	1124.0	1838.0	5.0	NEW_RES_BARRANCA
7	1566.0	2460.0	5.0	NEW_TELEWELLS_MFR
8	352.0	2526.0	5.0	NEW_TELEGRAPH
9	1728.0	1712.0	5.0	MED_BLDG_WELLS
10	696.0	2676.0	5.0	EX_SFR_TELE
11	136.0	2646.0	5.0	EX_SFR2_TELE
12	1230.0	2682.0	5.0	EX_SENIOR_MF
13	1782.0	2045.0	5.0	ST_ANTHONYS
14	475.0	395.0	5.0	BLACKBURN_SETBACK
15	892.0	386.0	5.0	BLACKBURN_SFR
16	1038.0	2515.0	5.0	NEW_TELE_MFR
17	110.0	2544.0	5.0	EX_SFR_LINDEN
18	1530.0	1600.0	5.0	WELLS SETBACK
19	1480.0	2460.0	5.0	WELLS_TELE_SETBACK
20	1266.0	530.0	5.0	NEW_BASIN_SFR
21	460.0	310.0	5.0	NEW_BLACKBURN
22	564.0	312.0	5.0	NEW_BLACKBURN
23	740.0	318.0	5.0	NEW_BLACKBURN
24	1330.0	800.0	5.0	REC 24
25	300.0	500.0	5.0	REC 25
26	400.0	2525.0	5.0	REC 26
27	600.0	2525.0	5.0	REC 27
28	400.0	2480.0	5.0	REC 28
29	600.0	2480.0	5.0	REC 29
30	1100.0	2515.0	5.0	REC 30
31	1400.0	2515.0	5.0	REC 31
32	1560.0	2450.0	5.0	REC 32
33	1444.0	1086.0	5.0	NR4
34	1546.0	1510.0	5.0	NR5
35	1548.0	2268.0	5.0	NR7
36	1280.0	2520.0	5.0	NR16
37	1518.0	2215.0	5.0	NR35
38	350.0	2476.0	5.0	NR36

DROP-OFF RATES

LANE No.	RECEIVER NO. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

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TITLE:
PARKLANDS PROJECT

1

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
		BARRIER HEIGHTS									
1	-	15.	16.*	17.					B2 P1	958.8	
2	-	15.	16.*	17.					B2 P2	121.8	
3	-	15.	16.*	17.					B2 P3	104.3	
4	-	15.	16.*	17.					B2 P4	368.6	
5	-	15.	16.*	17.					B2 P5	69.9	
6	-	15.	16.*	17.					B2 P6	206.1	
7	-	15.	16.*	17.					B2 P7	75.6	
8	-	6.*							B2 P1	1160.0	
9	-	6.*							B2 P2	190.0	
10	-	6.*							B2 P3	19.1	
11	-	8.*							B5 P1	210.1	
12	-	8.*							B5 P2	79.0	
13	-	8.*							B6 P1	212.2	
14	-	8.*							B7 P1	142.0	
15	-	8.*							B7 P2	220.0	
16	-	8.*							B7 P3	197.0	
17	-	8.*							B7 P4	212.1	
18	-	8.*							B7 P5	32.0	
19	-	8.*							B8 P1	114.5	
20	-	8.*							B8 P2	191.2	
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	EX_BLACK	67.	500.	67.8
2	NEW_BLAC	67.	500.	62.6
3	NEW_BLAC	67.	500.	61.5
4	NEW_WELL	67.	500.	64.4
5	NEW_WELL	67.	500.	69.2
6	NEW_RES_	67.	500.	61.1
7	NEW_TELE	67.	500.	69.7
8	NEW_TELE	67.	500.	66.6
9	MED_BLDG	67.	500.	71.0
10	EX_SFR_T	67.	500.	66.4
11	EX_SFR2_	67.	500.	68.5
12	EX_SENIO	67.	500.	66.8
13	ST_ANTHO	67.	500.	68.1
14	BLACKBUR	67.	500.	61.7
15	BLACKBUR	67.	500.	62.3
16	NEW_TELE	67.	500.	66.5
17	EX_SFR_L	67.	500.	67.9
18	WELLS SE	67.	500.	67.4
19	WELLS_TE	67.	500.	67.5
20	NEW_BASI	67.	500.	61.5
21	NEW_BLAC	67.	500.	62.4
22	NEW_BLAC	67.	500.	62.2
23	NEW_BLAC	67.	500.	61.9
24	REC 24	67.	500.	61.4
25	REC 25	67.	500.	60.3
26	REC 26	67.	500.	66.6
27	REC 27	67.	500.	66.6
28	REC 28	67.	500.	64.5
29	REC 29	67.	500.	64.6
30	REC 30	67.	500.	66.6
31	REC 31	67.	500.	67.7
32	REC 32	67.	500.	69.4
33	NR4	67.	500.	64.5
34	NR5	67.	500.	68.0
35	NR7	67.	500.	68.3
36	NR16	67.	500.	67.3
37	NR35	67.	500.	67.3
38	NR36	67.	500.	64.3

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION

2 2 2 2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

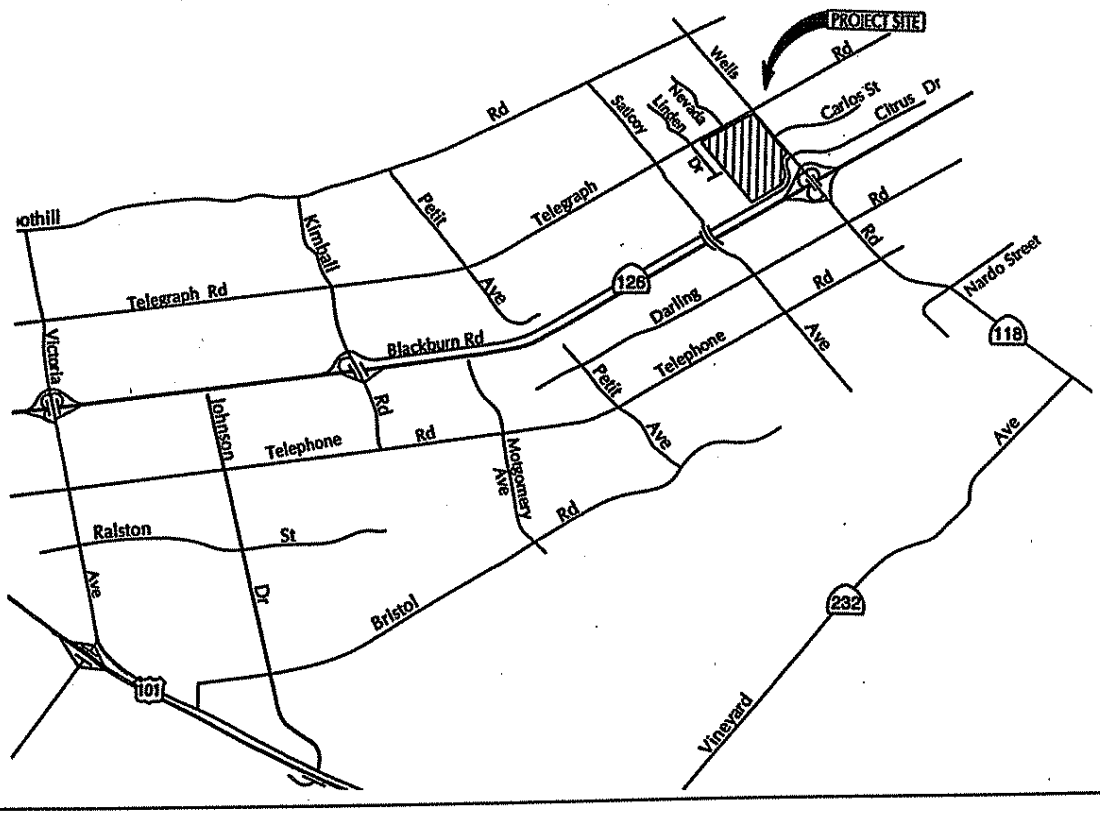
16.16.16.16.16.16.16. 6. 6. 6. 8. 8. 8. 8. 8. 8. 8. 8. 8.

Appendix H

Traffic Report

PARKLANDS PROJECT
CITY OF VENTURA, CALIFORNIA

REVISED TRAFFIC AND CIRCULATION STUDY



September 3, 2008

ATE #08088

Prepared for:

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Since 1978

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September 3, 2008

08088R01.wpd

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REVISED TRAFFIC AND CIRCULATION STUDY FOR THE PARKLANDS PROJECT, CITY OF VENTURA, CALIFORNIA

Associated Transportation Engineers (ATE) has prepared the following revised traffic and circulation study for the Parklands Project, located in the City of Ventura. The study addresses potential traffic and circulation impacts associated with the project and identifies improvements where appropriate. A review of the site access and internal circulation system is also provided. It is our understanding that the results of this study will be used by the City of Ventura to process the project's development application.

We appreciate the opportunity to assist you with this project. Please contact our office if you have any questions or comments regarding the contents of this study.

Associated Transportation Engineers

Scott A. Schell, AICP, PTP
Principal Transportation Planner

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INTRODUCTION

The following revised study contains an analysis of potential traffic and circulation impacts associated with the Parklands Project, located in the City of Ventura. The report provides information relative to existing and future traffic conditions within the study-area adjacent to the project site and addresses site access, circulation, and parking issues. An analysis of the project's potential impacts to the Ventura County Regional Roadway network is also provided.

PROJECT DESCRIPTION

The 66.7-acre project site is bounded by Telephone Road on the north, Blackburn Road on the south, Wells Road on the east and Linden Drive on the west. Figure 1 shows the location of the project site within the City of Ventura. The site is currently occupied by agricultural uses. The project is proposing to construct a total of 499 residential units (216 single family units and 283 condominium/townhouse units), a 6,560 square feet (S.F.) community building and 25,000 S.F. of commercial space on the site. The remainder of the site is designated for public parkland and open space. Figure 2 illustrates the site plan developed for the Parklands. The commercial space and 173 condominium units are located east of the Brown Barranca in the northeast corner of the site. The remaining 326 residential units and the community building are located west of the Brown Barranca.

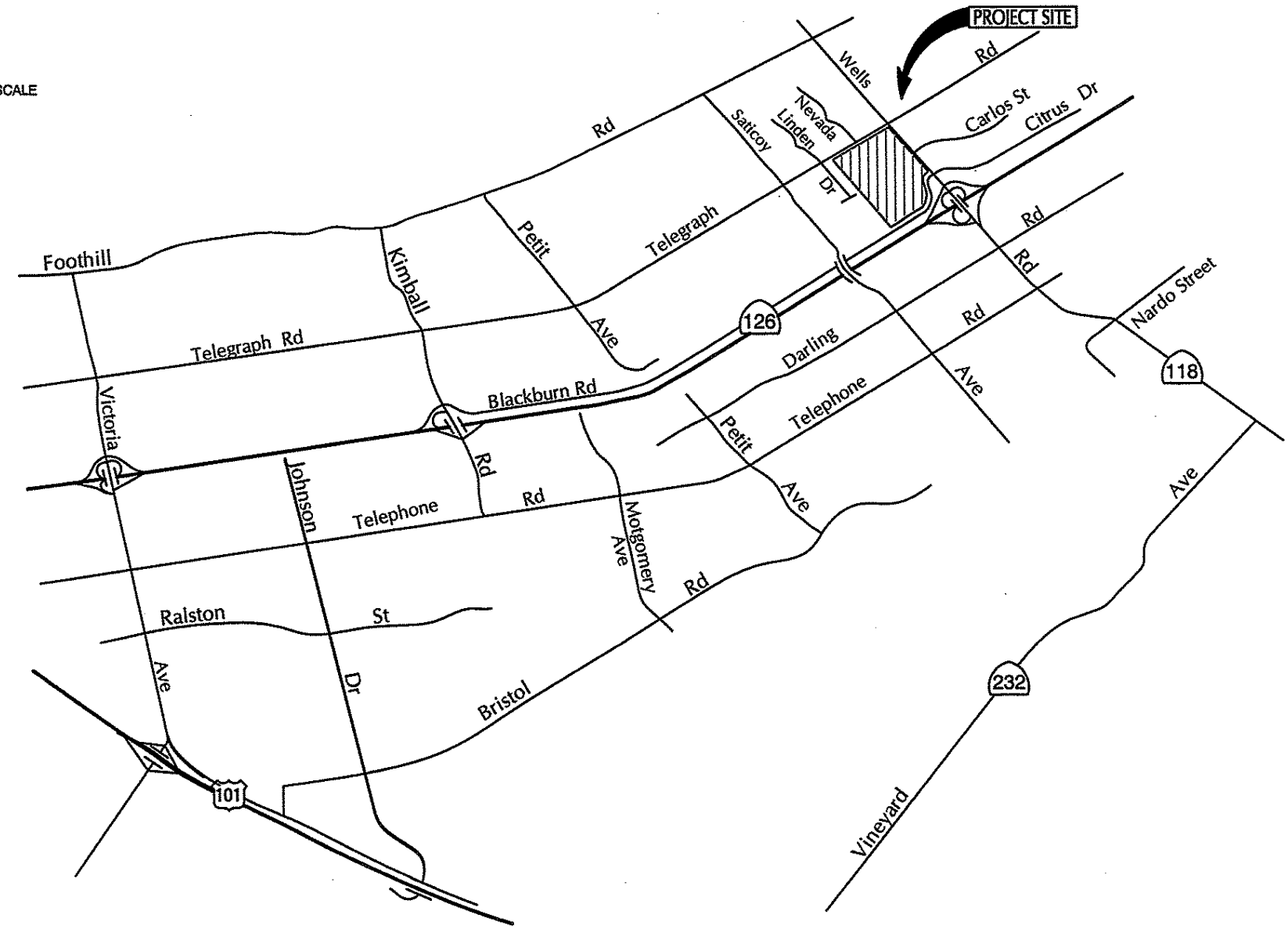
Vehicular access to the site is proposed via street connections to Telegraph Road, Wells Road and Blackburn Road. Additional access is proposed with an extension of Carlos Street, which currently terminates at Wells Road on the eastern boundary of the site. Frontage improvements would include widening of Wells Road and Telegraph Road and construction of a raised median on these roadways along the project's boundary.

STUDY-AREA INTERSECTIONS

Table 1 lists the intersection that were identified by City staff the traffic study.

Table 1
Study-Area Intersections

Intersections	
1. Foothill Road/Wells Road	10. Wells Road/State Route 126 Eastbound Ramps
2. Telegraph Road/Kimball Road	11. Wells Road/Darling Road
3. Telegraph Road/Petit Avenue	12. Telephone Road/Kimball Road
4. Telegraph Road/Saticoy Avenue	13. Telephone Road/Montgomery Avenue
5. Telegraph Road/Nevada Avenue	14. Telephone Road/Petit Avenue
6. Telegraph Road/Wells Road	15. Telephone Road/Saticoy Avenue
7. Wells Road/Carlos Street	16. Telephone Road/Wells Road
8. Wells Road/Citrus Drive-Blackburn Road	17. Wells Road/Nardo Street
9. Wells Road/State Route 126 Westbound Ramps	18. Los Angeles Avenue/Vineyard Avenue



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EXISTING STREET NETWORK AND PROJECT LOCATION

FIGURE 1

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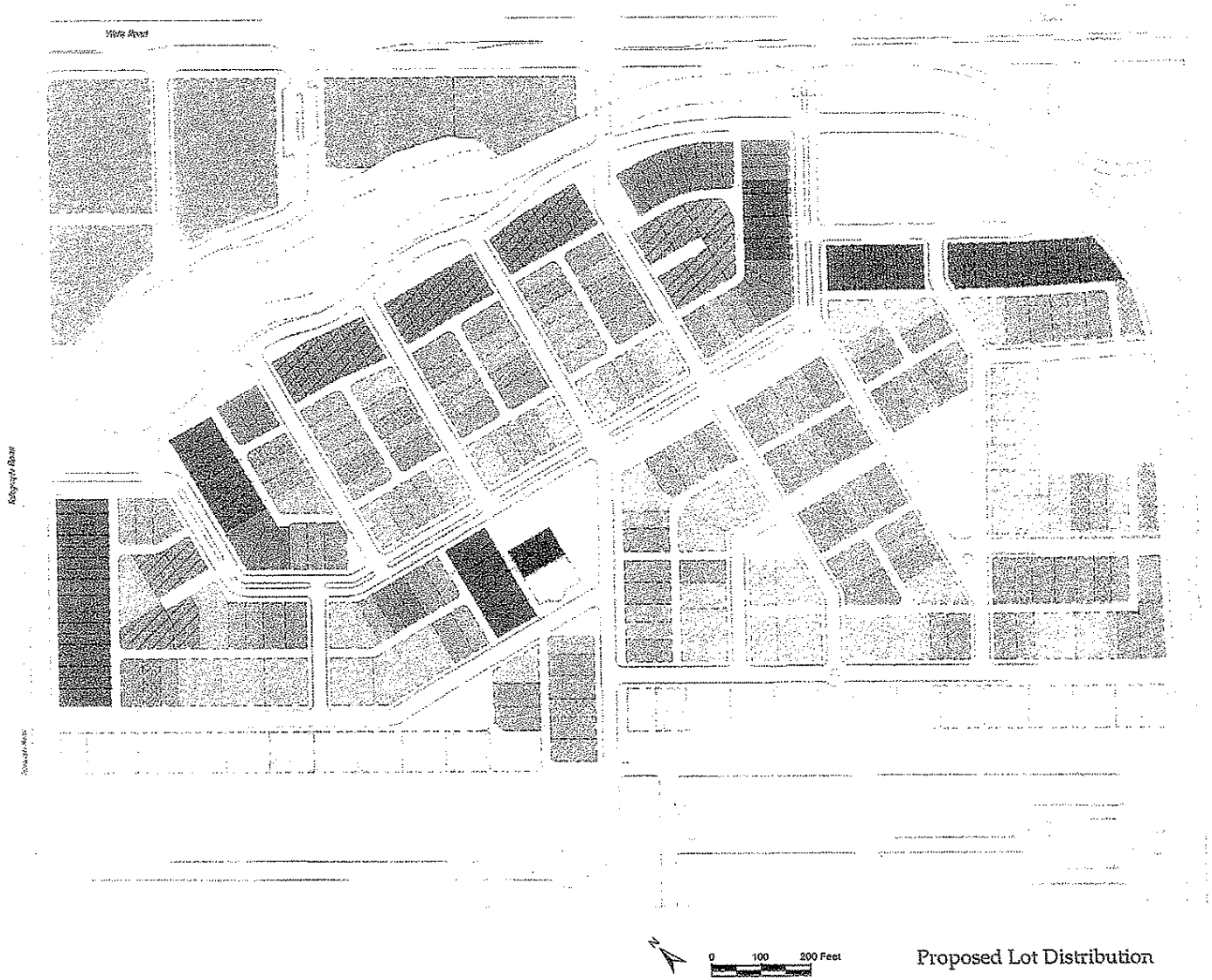
Unit Count by Building Type	Quantity	Unit Size
Courtyard Housing and Live/Work	173 units	850-1,300
22' x 92' Rowhouse	62 units	1,350-2,050
22' x 92' Triplex	24 units	1,350-2,050
22' x 92' Quadplex	24 units	1,350-2,050
35' x 92' SFH 2-story	68 units	1,600-2,450
35' x 92' SFH 1.5-story + Bonus Room	18 units	1,800-2,450
45' x 92' SFH 2-story	50 units	2,000-3,050
59' x 75' Bungalow Court	10 units	2,800-3,200
52' x 84' SFH 2-story	26 units	2,850-3,250
69' x 84' SFH 2-story	19 units	3,000-3,600
52' x 84' SFH 1.5-story	7 units	2,800-3,250
69' x 84' SFH 1.5-story	18 units	3,000-3,600
TOTAL	499 units	
Community Building		



Proposed Lot Distribution

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PROJECT SITE PLAN

FIGURE 2

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EXISTING CONDITIONS

Street Network

The project site is served by a network of highways, arterial streets and collector streets, as illustrated in Figure 1. The following text provides a brief discussion of the major components of the study-area street network.

State Route 126, located south of the project site, is a four-lane east-west freeway that extends from U.S. Highway 101 to Santa Paula. East of Santa Paula the freeway becomes a conventional highway and extends to Interstate 5 in Santa Clarita (Los Angeles County). State Route 126 provides regional access to the project site via the State Route 126/Wells Road Interchange. The Wells Road/State Route 126 Eastbound Ramp intersection is controlled by a traffic signal, and the Wells Road/State Route 126 Eastbound Ramps intersection is controlled by a stop-sign on the off ramp approach .

Wells Road is a Primary Arterial that extends south from Foothill Road until it becomes Los Angeles Avenue at a point south of Telephone Road in the County of Ventura. South of State Route 126 the roadway is also a state facility (State Route 118). Wells Road would provide access to the project site via a total of four street connections. The roadway contains five travel lanes and a raised median from State Route 126 to Carlos Street. North of Carlos Street the roadway gradually narrows to two travel lanes and a median two-way left-turn lane. The speed limit adjacent the project site is 40 miles per hour (mph). The intersections of Wells Road with Telegraph Road, Citrus Drive - Blackburn Road, Darling Road, Telephone Road, and Nardo Street are signalized. The Wells Road/Carlos Street intersection is controlled by a stop sign on Carlos Street.

Telegraph Road, located along the site's north frontage, is an east-west Primary Arterial that connects the residential and commercial uses in the eastern part of Ventura to downtown. Telegraph Road extends from Main Street through the study-area to the City of Santa Paula. It contains four travel lanes east of Kimball Road, and two travel lanes and a median two-way left-turn lane between Petit Avenue and Wells Road. The posted speed limit adjacent the site is 45 to 55 mph. The roadway would provide access to the project site via three street connections. The intersections of Telegraph Road with Kimball Road, Petit Avenue and Saticoy Avenue are controlled by traffic signals. The Telegraph Road/Nevada Avenue intersection is controlled by stop signs on Nevada Avenue.

Telephone Road, located south of State Route 126, is a four- to six-lane Primary Arterial that extends north from Olivas Park Drive to U.S. Highway 101, from where it extends easterly until it terminates at Wells Road. Telephone Road would provide a connection between the project site and the commercial and residential areas located south of State Route 126. The intersections of Telephone Road with Kimball Road, Montgomery Avenue, Petit Avenue and Saticoy Avenue are controlled by traffic signals.

Blackburn Road, which borders the site on the south, is a two-lane undivided Local Street that serves as a frontage roadway to State Route 126. The roadway extends westerly from Kimball Road to Wells Road. It would provide access to the project site via four street connections.

Intersection Operations

Because traffic flow on urban arterials is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. In rating intersection operations, "Levels of Service" (LOS) A through F are used, with LOS A indicating free flow operations and LOS F indicating congested operations (more complete definitions of levels of service are included in the Technical Appendix). The City considers LOS E acceptable at freeway interchange intersections, and LOS D acceptable at the "Principal Intersections" within the City. Principal Intersections are intersections that are regularly monitored by the City as a gauge of the operation of the City's circulation system. The City does not have a level of service standard for non-Principal Intersections, except for those that are located on the CMP[1] network, at which the CMP level of service standard of LOS E is applicable.

Figures 3 and 4 show the existing A.M. and P.M. peak hour traffic volumes for the study-area intersections. The peak hour volumes were obtained from counts conducted by ATE in September 2005, August 2008, and from counts provided by City staff. Levels of service for the signalized intersections were calculated based on the "Intersection Capacity Utilization" (ICU) methodology parameters outlined in the City's 2005 Ventura General Plan EIR[2]. Levels of service for the unsignalized intersections were calculated using the Highway Capacity Software (HCS), which implements the Highway Capacity Manual (HCM) methodology[3] to determine the total delay in seconds experienced by vehicles at a stop-controlled intersection, which is then related to a level of service.

Level of service calculation worksheets and a brief discussion of the procedures used to calculate intersection levels of service are contained in the Technical Appendix. Table 2 presents the existing peak hour levels of service for the study-area intersections. The intersection numbering correlates with the numbering system used in the Technical Appendix.

---

1 2004-2005 Ventura County Congestion Management Program, Ventura County Transportation Commission, 2005.

2 City of Ventura 2005 General Plan, Final Environmental Impact Report, City of Ventura, August 2005.

3 Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 2000.

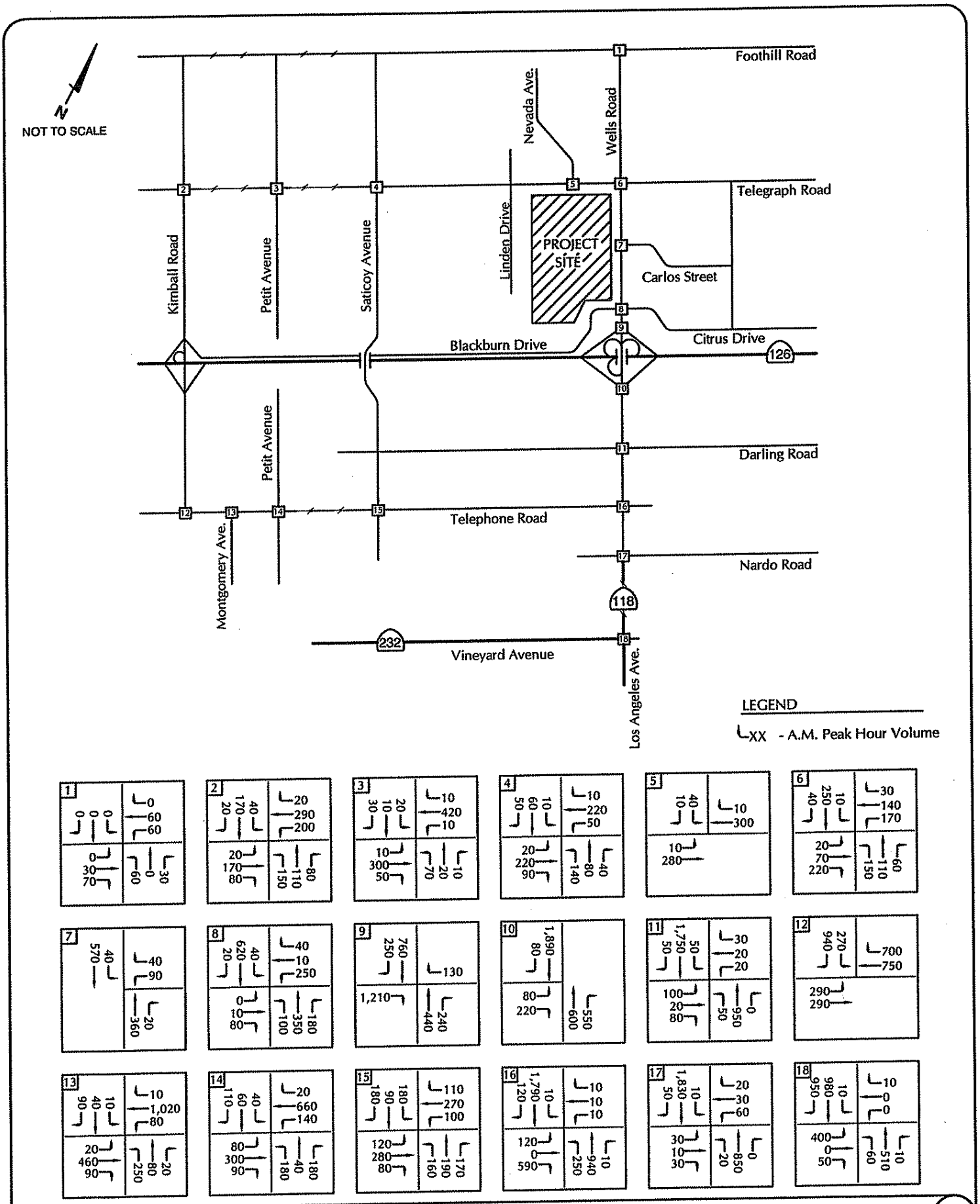

FIGURE 3

EXISTING A.M. PEAK HOUR VOLUMES

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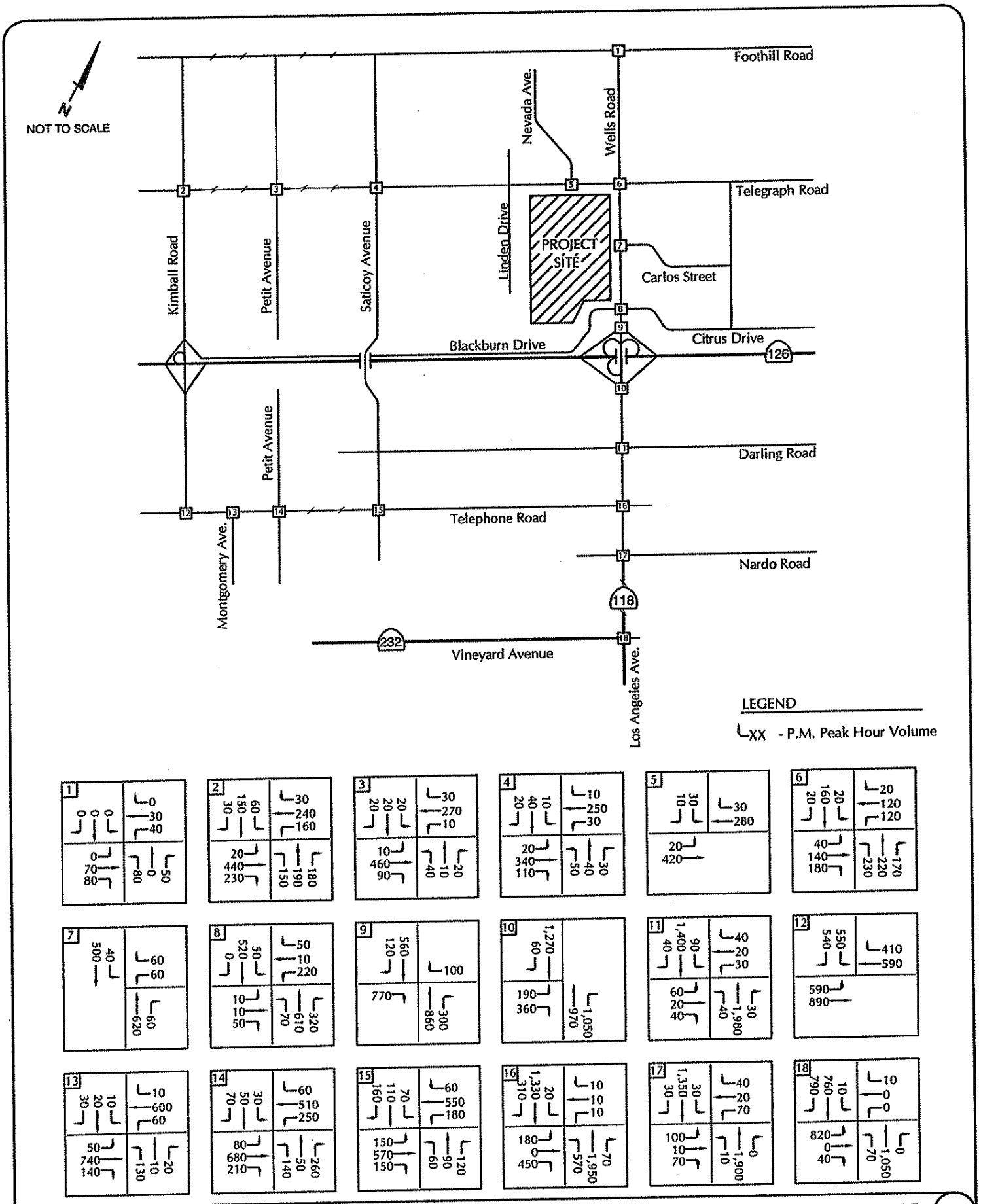

FIGURE 4

EXISTING P.M. PEAK HOUR VOLUMES

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Table 2
Existing A.M. and P.M. Peak Hour Intersection Levels of Service

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		ICU/Delay	LOS	ICU/Delay	LOS
1. Foothill Road/Wells Road [a]	Stop-Sign	8.9 sec.	LOS A	9.2 sec	LOS A
2. Telegraph Road/Kimball Road	Signal	0.21	LOS A	0.30	LOS A
3. Telegraph Road/Petit Avenue	Signal	0.34	LOS A	0.24	LOS A
4. Telegraph Road/Saticoy Avenue	Signal	0.38	LOS A	0.37	LOS A
5. Telegraph Road/Nevada Avenue [a]	Stop-Sign	10.7 sec.	LOS B	10.5 sec.	LOS B
6. Telegraph Road/Wells Road	Signal	0.54	LOS A	0.52	LOS A
7. Carlos Street/Wells Road [a]	Stop-Sign	12.5 sec.	LOS B	12.2 sec.	LOS B
8. Citrus Dr.-Blackburn Rd/Wells Road	Signal	0.33	LOS A	0.34	LOS A
9. State Route 126 WB Ramps/Wells Road [a]	Stop-Sign	10.5 sec.	LOS B	12.5 sec.	LOS B
10. State Route 126 EB Ramps/Wells Road	Signal	0.73	LOS C	0.63	LOS C
11. Darling Road/Wells Road	Signal	0.72	LOS C	0.78	LOS C
12. Telephone Road/Kimball Road	Signal	0.69	LOS B	0.53	LOS A
13. Telephone Road/Montgomery Avenue	Signal	0.57	LOS A	0.38	LOS A
14. Telephone Road/Petit Avenue	Signal	0.41	LOS A	0.49	LOS A
15. Telephone Road/Saticoy Avenue	Signal	0.39	LOS A	0.41	LOS A
16. Telephone Road/Wells Road	Signal	0.78	LOS C	0.72	LOS C
17. Nardo Street/Wells Road	Signal	0.64	LOS B	0.71	LOS C
18. Los Angeles Avenue/Vineyard Avenue	Signal	0.56	LOS A	0.61	LOS B

[a] Unsignalized intersection; level of service determined by average delay per vehicle.

The data presented in Table 2 indicate that all of the study-area intersections operate at LOS C or better under existing conditions, which is considered acceptable based on the City's and County's level of service standards.

IMPACT THRESHOLDS

The City's traffic impact thresholds were used to assess the significance of the traffic impacts generated by the Parklands Project. These guidelines are outlined in the following text.

Performance Standard: Level of service E (peak hour ICU less than or equal to 1.00) for freeway ramp intersections and non-Principal Intersections that are located in the CMP network. Level of service D (peak hour ICU less than or equal to 0.90) for all other Principal Intersections.

Threshold of Significance: For an intersection that is forecast to operate worse than its performance standard, the impact of a project is considered to be significant if the project increases the ICU by more than 0.01.

If the above guidelines are exceeded, the project developer may be required to construct improvements or implement other methods to reduce the level of impact to insignificance. The thresholds of significance identified above assume full contribution to the Traffic Mitigation Fee Fund.

PLANNED ROADWAY NETWORK IMPROVEMENTS

Several long-term roadway and intersection improvement projects have been identified in the City's 2005 General Plan EIR that would be required to maintain the City's performance standards under Year 2025 conditions. Table 3 lists the committed improvements (those that are funded and planned for implementation) that would affect the study-area roadway network.

Table 3
City of Ventura Committed Roadway Network Improvements

Roadways/Intersections	Improvement
Telegraph Road (Saticoy Avenue to Wells Road)	Widen to four lanes (a)
Wells Road (State Route 126 to City limits)	Widen to six Lanes
Wells Road (Carlos Street to Citrus Drive)	Widen to four lanes
"A" Street (Saticoy Avenue to Wells Road)	New two-lane roadway
Wells Road/State Route 126 EB Ramps intersection	Add third NB and SB through lanes
Wells Road/Darling Road intersection	Add third NB and SB through lanes
Wells Road/Telephone Road intersection	Add third NB and SB through lanes
Wells Road/Nardo Street	Add third NB and SB through lanes

(a) This improvement has been re-evaluated, no widening is proposed on Telegaraph Road

The new roadway "A" Street, programmed to extend from Saticoy Avenue to Wells Road, would connect to the existing segment of Carlos Street located north of the Country Estates Mobile Home Park and west of the project site. When fully constructed, this roadway provides a direct connection between the Parklands Project and Saticoy Avenue.

It is noted that the segment of Telegraph Road from Saticoy Avenue to Wells Road and the segment of Wells Road between Telegraph and Carlos Street were originally expected to be widened to four lanes as part of the 2005 General Plan. However, the need for additional capacity was reevaluated as part of the Wells Saticoy Community Plan process, and it was determined that the roadways do not need to be widened. The project is therefore proposing

a general plan amendment to modify the roadway designation of Wells Road from a four-lane arterial to collector standards, while the general plan amendment and designation change for Telegraph Road will be conducted as part of another project located nearby.

Based on City staff direction, the committed roadway and intersection improvements listed in Table 3, including the general plan amendments discussed above, were assumed in the Year 2025 analysis provided in this traffic study.

PROJECT GENERATED TRAFFIC VOLUMES

Trip Generation

Trip generation estimates were calculated for the Parklands Project using the City approved Single Family Residential, Condominium, and Community Shopping trip generation rates. Pursuant to the City's traffic analysis guidelines, a pass-by factor of 30% was applied to the trip generation estimates for the Community Shopping component. Table 4 shows the trip generation estimates developed for the project.

Table 4
Project Trip Generation

Land Use	Size	Average Daily		A.M. Peak Hour		P.M. Peak Hour	
		Rate	Trips	Rate	Trips	Rate	Trips
Single Family Residential	216 Units	9.57	2,067	0.75	162	1.01	218
Condominium/Townhouse	283 Units	5.86	1,658	0.44	125	0.54	147
Community Shopping	25 KSF[a]	104.77	2,619	2.60	65	9.46	237
(Primary Trips - 70%)			(1,833)		(45)		(166)
(Pass-By Trips - 30%)			(786)		(20)		(71)
TOTAL			**6,344**		**352**		**602**
Total Primary Trips			**5,558**		**332**		**531**

[a] KSF = 1,000 S.F.

The data in Table 3 indicate that the project is expected to generate 6,344 average daily trips (ADT), with 352 trips during the A.M. peak hour and 602 trips during the P.M. peak hour. Of these trips, 5,558 ADT, 332 A.M. peak hour trips and 531 P.M. peak hour trips would be new to the adjacent roadway system.

Trip Distribution

Table 5 and Figure 5 show the distribution percentages developed for the residential and commercial components of the project. The distribution pattern for the residential component was developed based on information presented in existing traffic studies, existing traffic

volumes measured in the study area, and the access locations shown on the project site plan. The commercial component is expected to function as a "Neighborhood Center" which would generate traffic from within the Parklands site and the local area immediately adjacent to the site. The distribution pattern for the commercial uses was therefore developed based on the location of the residential areas within the vicinity of the site.

Table 5
Project Trip Distribution Percentages

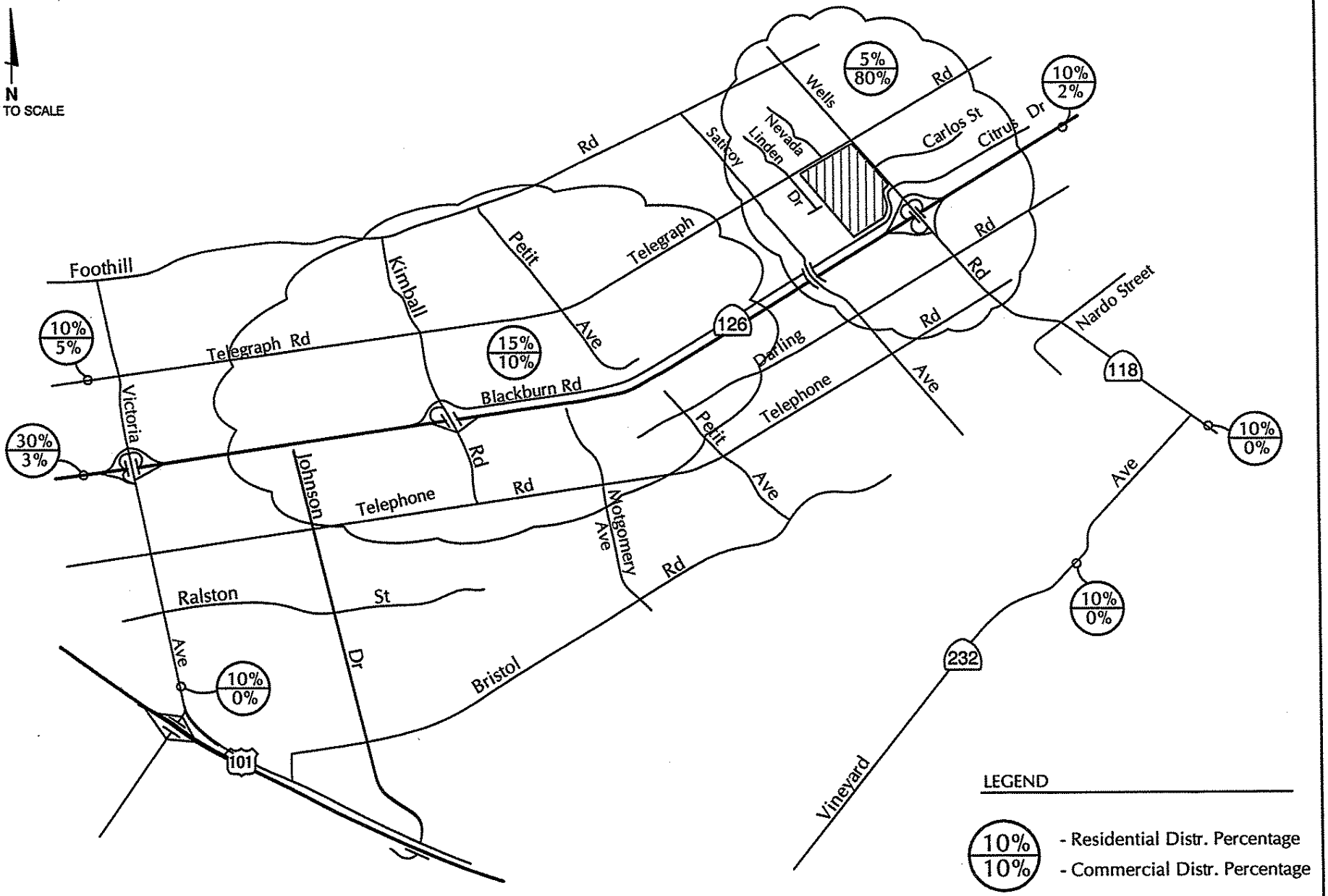
Origin/Destination	Direction	Residential Component Distribution %	Commercial Component Distribution %
State Route 126	West	30%	3%
State Route 126	East	10%	2%
State Route 118	South	10%	0%
Vineyard Avenue (to Oxnard/U.S. 101 SB)	South	10%	0%
Victoria Avenue	Southwest	10%	0%
Telegraph Rd	West	10%	5%
Local Area (West of Saticoy Ave)	West	15%	10%
Local Area (East of Saticoy Ave)	-	5%	80%
Total		**100%**	**100%**

Project-generated traffic was assigned to the study-area street system based on the distribution percentages shown in Table 5. The project-added peak hour traffic volumes at the study-area intersections are illustrated in Figures 6 and 7. The project traffic assignment to the project access roadways is shown in Figures 6A and 6B.

PROJECT-SPECIFIC IMPACTS

Intersection Impacts

Levels of service were calculated for the study-area intersections assuming the Existing+Project peak hour traffic forecasts illustrated in Figures 8 and 9. Tables 6 and 7 compare the Existing and Existing+Project levels of service for the study-area intersections and identify project-specific impacts based on the City's thresholds.



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PROJECT TRIP DISTRIBUTION PERCENTAGES

FIGURE 5

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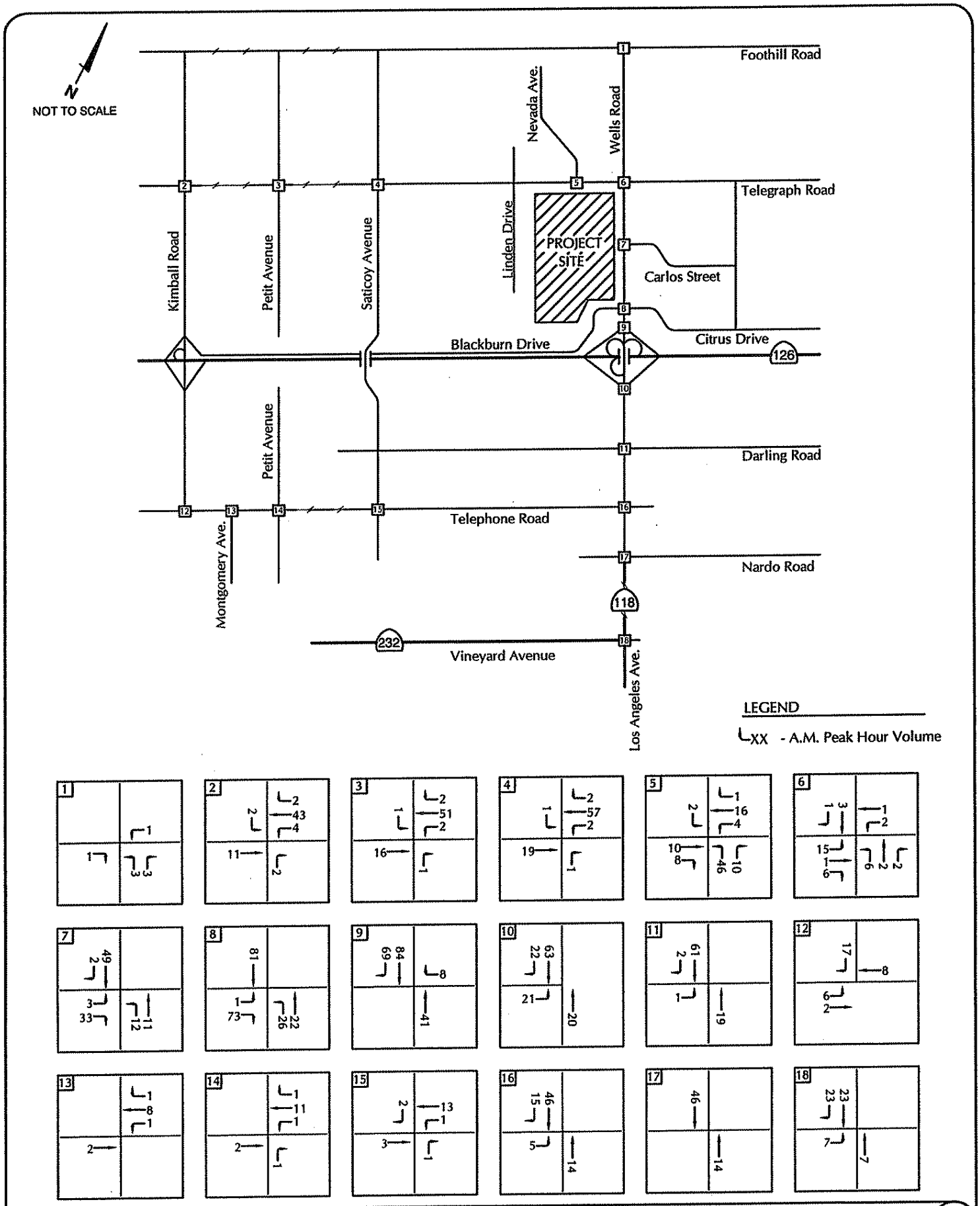

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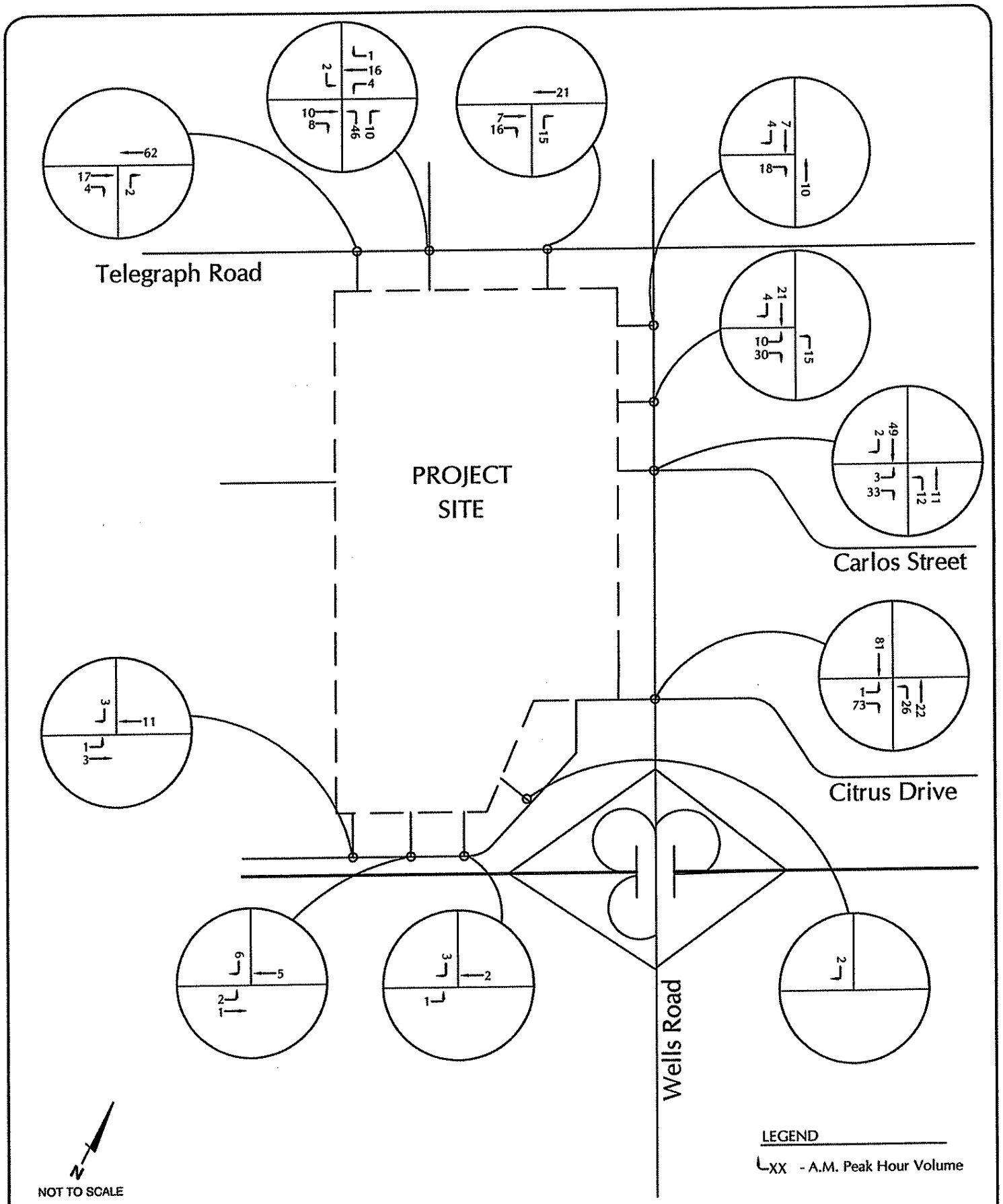
PROJECT-ADDED A.M. PEAK HOUR VOLUMES

FIGURE 6

MMF- #08088



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PROJECT-ADDED A.M. PEAK HOUR VOLUMES

FIGURE 6A

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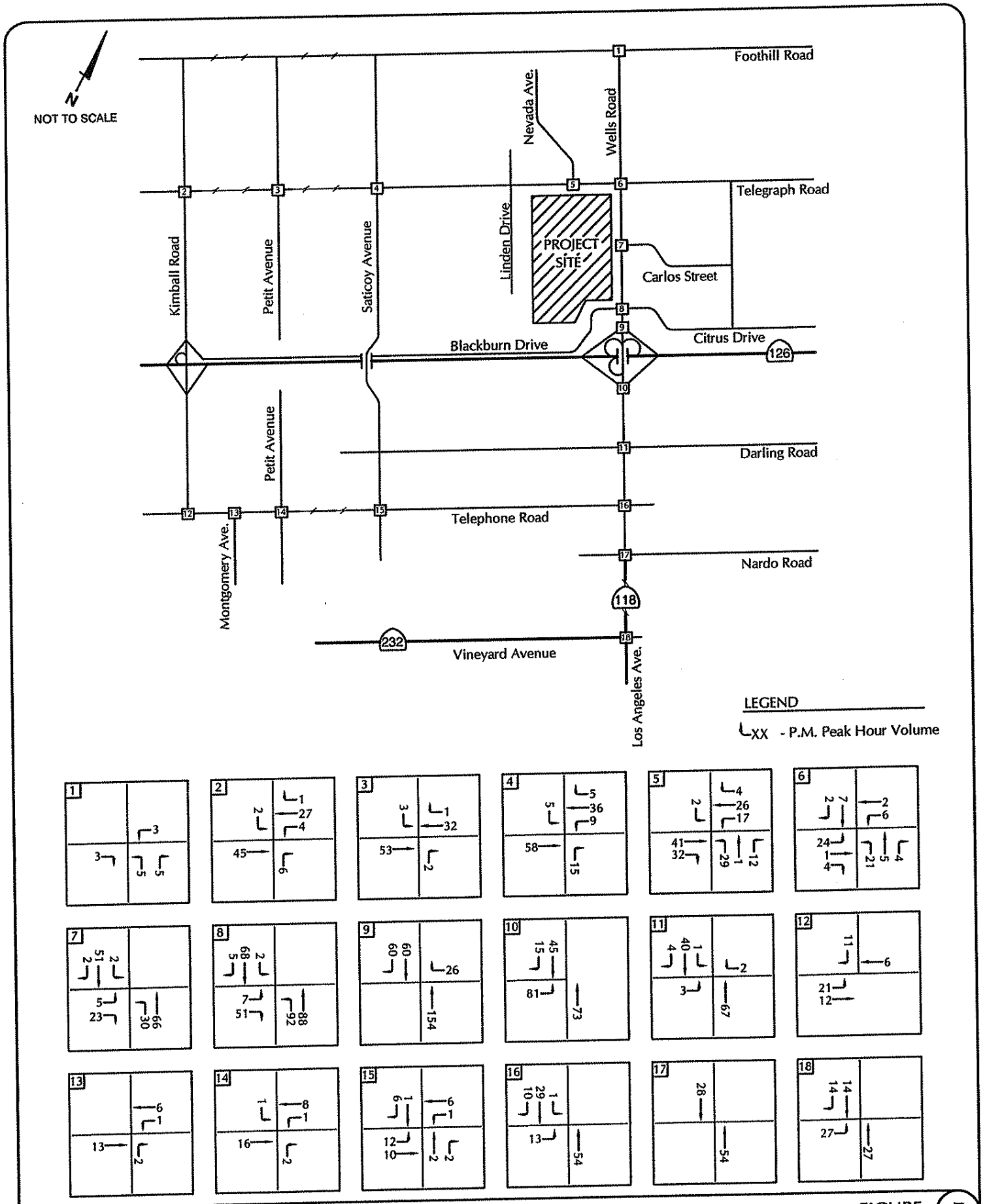

FIGURE 7

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PROJECT-ADDED P.M. PEAK HOUR VOLUMES

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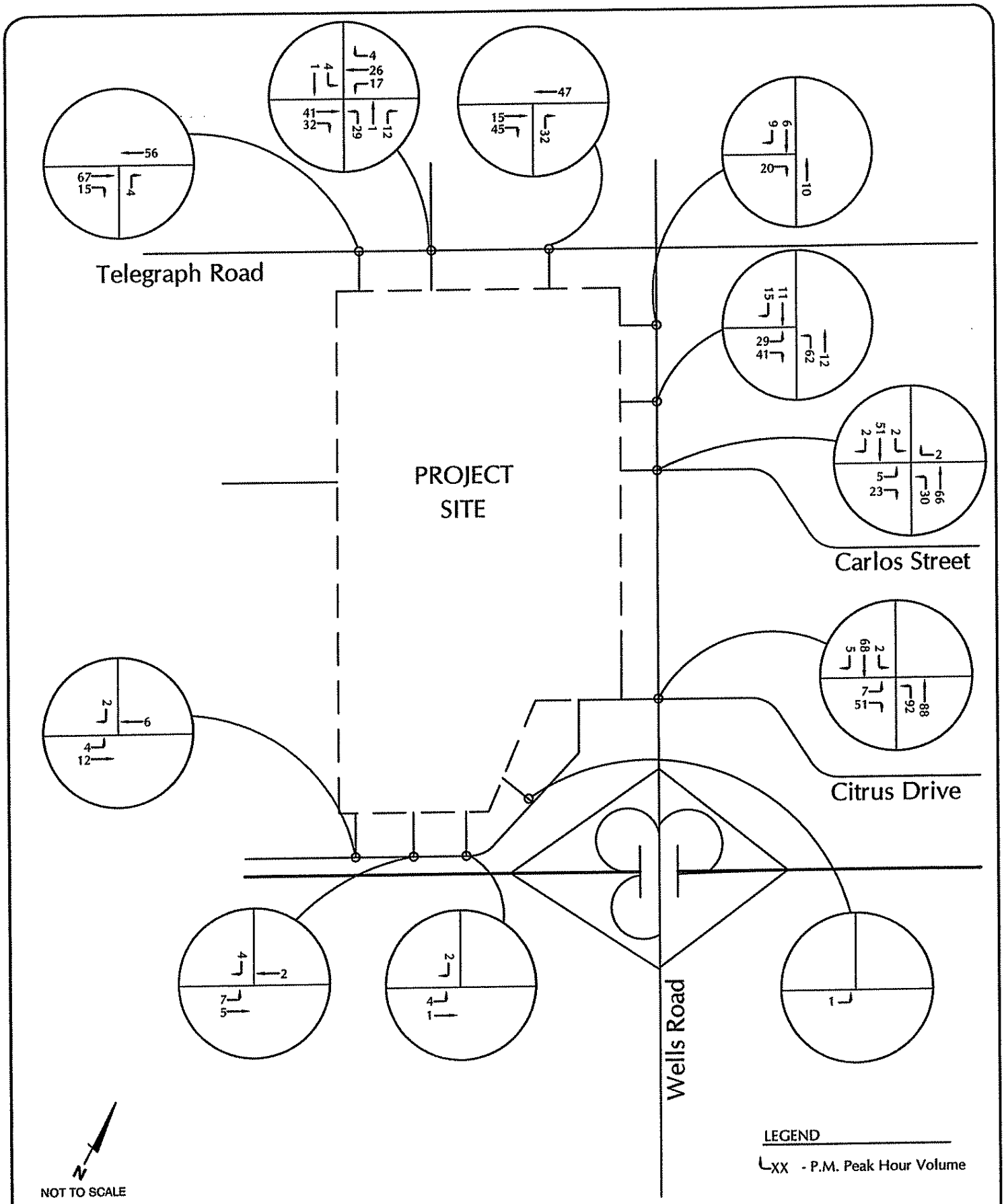

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PROJECT-ADDED P.M. PEAK HOUR VOLUMES

FIGURE 7A

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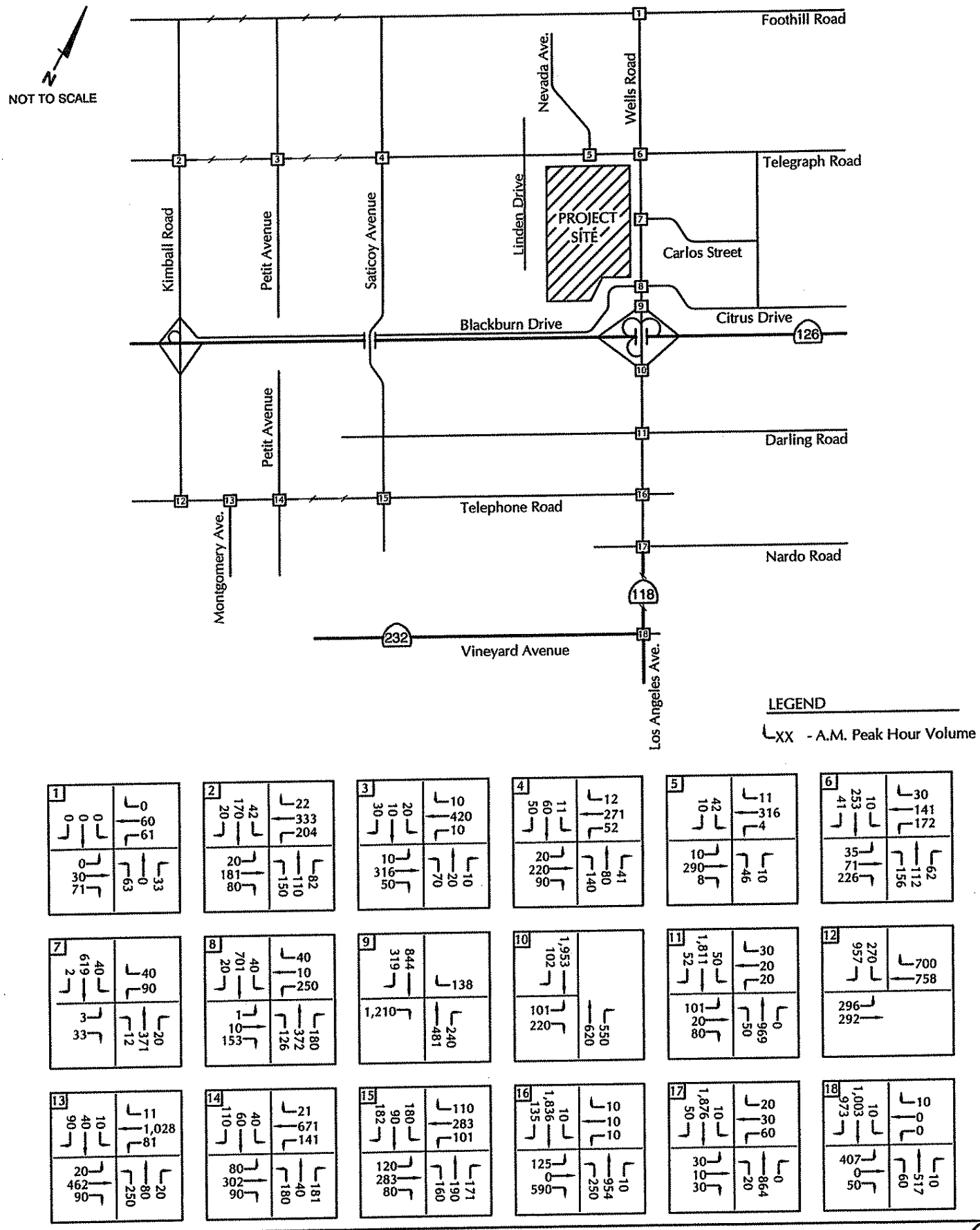

FIGURE 8

EXISTING + PROJECT A.M. PEAK HOUR VOLUMES

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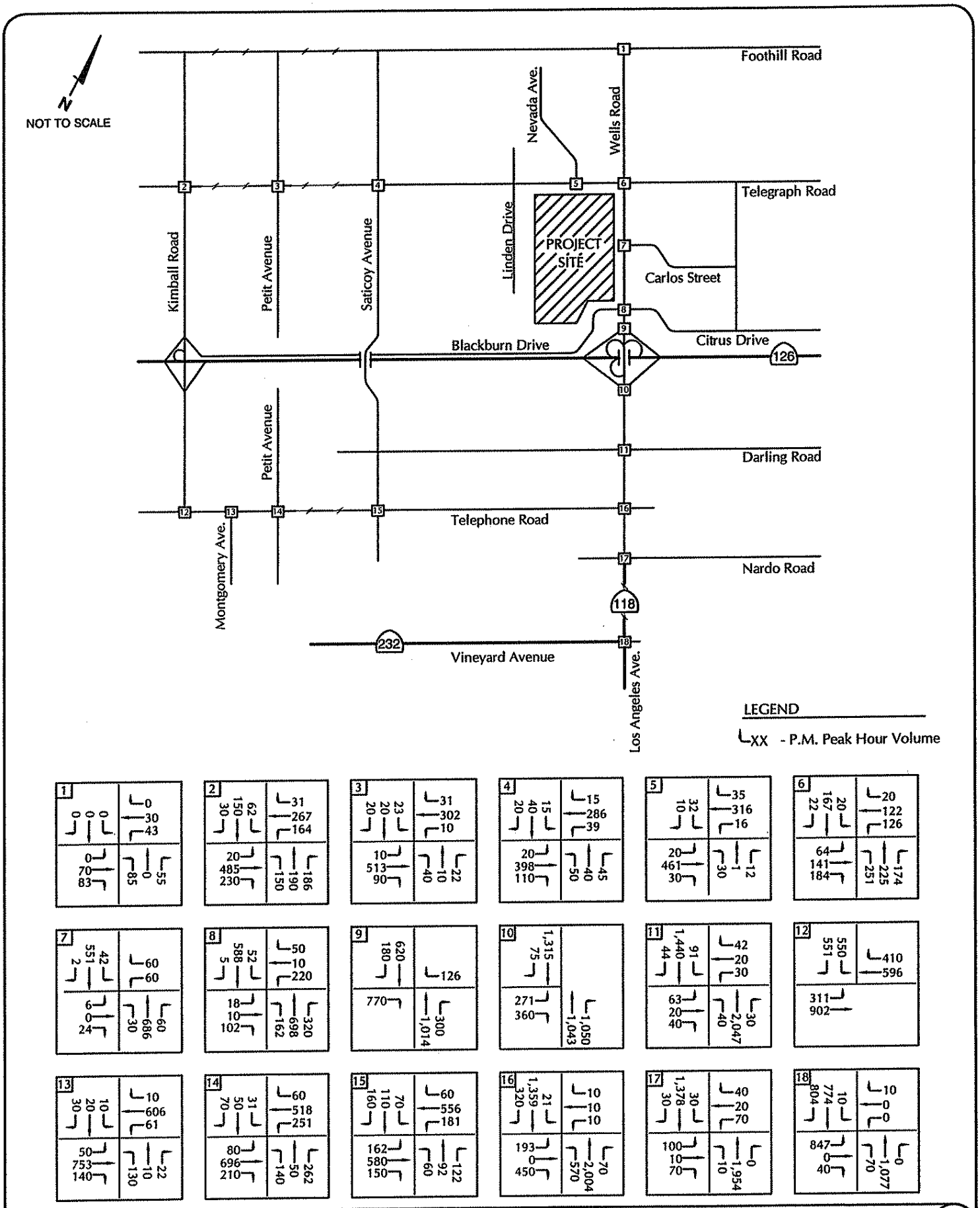
MMF- #08088



EXISTING + PROJECT P.M. PEAK HOUR VOLUMES

FIGURE 9

MMF- #08088

Table 6
Existing + Project A.M. Intersection Levels of Service

Intersection	Existing		Existing + Project		Impact?
	ICU/Delay	LOS	ICU/Delay	LOS	
1. Foothill Road/Wells Road [a]	8.9 sec.	LOS A	8.7 sec.	LOS A	No
2. Telegraph Road/Kimball Road	0.21	LOS A	0.22	LOS A	No
3. Telegraph Road/Petit Avenue	0.34	LOS A	0.37	LOS A	No
4. Telegraph Road/Saticoy Avenue	0.38	LOS A	0.40	LOS A	No
5. Telegraph Road/Nevada Avenue [a]	10.7 sec.	LOS B	11.1 sec.	LOS B	No
6. Telegraph Road/Wells Road	0.54	LOS A	0.56	LOS A	No
7. Carlos Street/Wells Road [a]	12.5 sec.	LOS B	11.5 sec.	LOS B	No
8. Citrus Dr-Blackburn Rd/Wells Road	0.33	LOS A	0.42	LOS A	No
9. State Route 126 WB Ramps/Wells Road [a]	10.5 sec.	LOS B	10.7 sec.	LOS B	No
10. State Route 126 EB Ramps/Wells Road	0.73	LOS C	0.75	LOS C	No
11. Darling Road/Wells Road	0.72	LOS C	0.74	LOS C	No
12. Telephone Road/Kimball Road	0.69	LOS B	0.70	LOS B	No
13. Telephone Road/Montgomery Avenue	0.57	LOS A	0.57	LOS A	No
14. Telephone Road/Petit Avenue	0.41	LOS A	0.41	LOS A	No
15. Telephone Road/Saticoy Avenue	0.39	LOS A	0.40	LOS A	No
16. Telephone Road/Wells Road	0.78	LOS C	0.79	LOS C	No
17. Nardo Street/Wells Road	0.64	LOS B	0.66	LOS B	No
18. Los Angeles Avenue/Vineyard Avenue	0.56	LOS A	0.57	LOS A	No

[a] Unsignalized intersection; level of service determined by average delay per vehicle.

Table 7
Existing + Project P.M. Intersection Levels of Service

Intersection	Existing		Existing + Project		Impact?
	ICU/Delay	LOS	ICU/Delay	LOS	
1. Foothill Road/Wells Road [a]	9.2 sec	LOS A	9.3 sec.	LOS A	No
2. Telegraph Road/Kimball Road	0.30	LOS A	0.31	LOS A	No
3. Telegraph Road/Petit Avenue	0.24	LOS A	0.26	LOS A	No
4. Telegraph Road/Saticoy Avenue	0.37	LOS A	0.41	LOS A	No
5. Telegraph Road/Nevada Avenue [a]	10.5 sec.	LOS B	11.4 sec.	LOS B	No
6. Telegraph Road/Wells Road	0.52	LOS A	0.54	LOS A	No
7. Carlos Street/Wells Road [a]	12.2 sec.	LOS B	12.5 sec.	LOS B	No
8. Citrus Dr-Blackburn Rd/Wells Road	0.34	LOS A	0.40	LOS A	No
9. State Route 126 WB Ramps/Wells Road [a]	12.5 sec.	LOS B	14.2 sec.	LOS B	No
10. State Route 126 EB Ramps/Wells Road	0.63	LOS C	0.64	LOS C	No
11. Darling Road/Wells Road	0.78	LOS C	0.80	LOS C	No
12. Telephone Road/Kimball Road	0.53	LOS A	0.55	LOS A	No
13. Telephone Road/Montgomery Avenue	0.38	LOS A	0.39	LOS A	No
14. Telephone Road/Petit Avenue	0.49	LOS A	0.49	LOS A	No
15. Telephone Road/Saticoy Avenue	0.41	LOS A	0.41	LOS A	No
16. Telephone Road/Wells Road	0.72	LOS C	0.74	LOS C	No
17. Nardo Street/Wells Road	0.71	LOS C	0.72	LOS C	No
18. Los Angeles Avenue/Vineyard Avenue	0.61	LOS B	0.63	LOS B	No

[a] Unsignalized intersection; level of service determined by average delay per vehicle.

The data presented in Tables 6 and 7 indicate that all of the study-area intersections are forecast to operate at LOS C or better during the A.M. and P.M. peak hours. The project would not generate any project-specific impacts to the study-area intersections based on the City's impact criteria.

FRONTAGE IMPROVEMENTS

Telegraph Road: Frontage improvements include widening of Telegraph Road along the project's frontage to provide two-travel lanes, parallel parking on both sides of the street, a bike lane on the south side of the street, a central median, and a 28-foot parkway on the north side of the street. The proposed parkway would provide a meandering bike lane and pedestrian path.

Wells Road (north of Citrus Drive): Improvements include widening the street to provide one travel lane in each direction with parallel parking and bicycle lanes on both sides of the street. A center median would also be installed along this segment.

Wells Road (South of Citrus Drive): Improvements including widening the roadway to provide two travel lanes in each direction, as well as parallel parking and bicycle lanes on both sides of the street. A center median would also be installed along this segment.

Blackburn Road: Blackburn Road would be realigned to connect to the project's main roadway approximately 100 feet west of Wells Road. Additional improvements would include construction of curb, gutter and sidewalk on Blackburn Road along the project's frontage.

SITE ACCESS AND CIRCULATION

Site Access

The site plan indicates that access to the project would be provided by three connections located on Telegraph Road, four connections located on Wells Road, four connections on Blackburn Road and one connection to Carlos Street to the west. All connections would be unsignalized, except the primary roadway connection on Wells Road opposite Citrus Drive, which is signalized. The following text provides an analysis of the operations of the street connections to the existing street network based on the project turning volumes shown in Figures 6A and 6B, and the future traffic volumes on the adjacent street system.

Telegraph Road: The most western street connection to Telegraph Road and the driveway located west of Wells Road would be restricted to right-turn movements only. These connections would operate acceptably with minimal delays. The main connection is proposed opposite Nevada Avenue. This connection would be full access and controlled by a stop sign. The intersection would operate at LOS B with stop signs and single lanes on the side street approaches, which is considered acceptable. The site plan indicates that the westbound left-turn bay on Telegraph Road would contain 150 feet of storage. This would be sufficient to provide storage for the expected westbound left-turn movement (16 PHT or less) into the project roadway.

The main project connection on Telegraph Road opposite Nevada Avenue would be designed as a two-lane divided "Parkway". It would contain 17-foot wide inbound and outbound lanes that are divided by a raised median, which would extend to the intersection with Telegraph Road. A truck turning movement analysis using Autoturn software indicated that this configuration would accommodate a California Design Vehicle (wheelbase 40 feet), provided that on-street parking is prohibited on the parkway adjacent the intersection.

Wells Road: The project proposes a total of four connections to Wells Road; two driveways would provide access to the retail/condominium component of the site, and two street connections opposite Carlos Street and Citrus Drive that would provide access to the residential areas west of the Brown Barranca.

The first driveway on Wells Road would be located approximately 250 feet south of Telegraph Road. The driveway would be restricted to right-turns only, and would operate

acceptably. The second driveway would be located approximately 500 feet south of Telegraph Road. This driveway would be full access. The section of Wells Road adjacent to the full access driveway would contain one through lane and a left-turn bay in the northbound direction, and one through lane and a shared through/right-turn lane in the southbound direction. The project driveway would be 24 feet wide, providing for one inbound and one outbound lane. The intersection would operate at LOS B with a stop sign on the side street approach, which is considered acceptable.

The length of the driveway throat of the second driveway from Telegraph Road is shown as 30 feet. Directly west of the driveway throat, the driveway contains a median and angled parking on both sides. The current design would not accommodate simultaneous driveway and parking movements. It is recommended that the driveway and driveway throat length be modified to accommodate turning and parking movements.

The third connection to Wells Road would be located opposite Carlos Street. This roadway connection would be full access. The connection would contain one inbound and one outbound lane (a total of 30 feet wide) and would be controlled by a stop sign. The new Wells Road/Carlos Street is forecast to operate at LOS B under the Year 2025+Project scenario, which is considered acceptable based on City thresholds. It is recommended that frontage improvements at this location include modification of the existing raised median on Wells Road to accommodate a northbound left-turn bay, which should contain 100 feet of vehicle storage and a 60 foot taper to accommodate the forecast turning volume of 30 P.M. peak hour trips (PHT).

The fourth project connection to Wells Road would be located opposite Citrus Drive at the current connection of Blackburn Road to Wells Road. This connection would be designed as a two-lane divided "Parkway". It would contain 20-foot wide inbound and outbound lanes that are divided by a raised median, which is set back approximately 25 feet from the intersection with Wells Road. A truck turning movement analysis using Autoturn software indicated that the proposed configuration would accommodate a California Design Vehicle provided that on-street parking is prohibited on the parkway between Wells Road and Blackburn Road.

It is recommended that the eastbound approach (project parkway) retain its current lane geometry (a shared left-turn/through and a right-turn lane), which would provide better operations and reduce queue lengths compared to the proposed one-lane approach. This would require that the median on the parkway be modified to provide sufficient width for two lanes on the eastbound approach, or that the approach be widened.

Wells Road contains raised medians with left-turn bays at the Wells Road/Citrus Drive intersection. The southbound left-turn bay contains 100 feet of vehicle storage, which is sufficient to accommodate the left-turn volume of 70 PHT or less. The northbound left-turn bay also contains 100 feet of storage, which is not adequate to accommodate the forecast left-turn volume of 126 PHT during the A.M. peak hour and 162PHT during the P.M. peak hour.

It is recommended that the median on Wells Road south of the Wells Road/Citrus Drive intersection be reconstructed to provide a minimum of 160 feet of storage in the northbound left-turn bay to avoid vehicles blocking through traffic on Wells Road. The total length of the

left-turn bay would be 220 feet assuming a 60 feet taper. The distance from State Route 126 Westbound Off-Ramp to the Wells Road/Citrus Drive intersection is 300 feet, or 80 feet to the start of the taper of the modified left-turn lane on Wells Road. This length would be sufficient for vehicles that turn onto Wells Road from the Westbound Off-Ramp to access the northbound left-turn bay. Coordination with Caltrans would be required to finalize the ultimate design of the improvements on Wells Road.

Circulation

Vehicular Circulation: The on-site circulation system consists of two-lane divided parkways, two-lane undivided avenues, residential streets and alleys. Parking would be allowed on each of the internal roads, except the alleys. The street network contains elements that are designed to provide for low vehicular speeds throughout the site. These elements include 10-foot lane widths or less, on-street parking, tight curb radii and shared use of road by vehicles and bicyclists. The ultimate site plan should contain more detailed roadway design features than provided in the preliminary site plan. In general, the two-lane divided parkway should be designed to accommodate a California Design Vehicle (WB 40 semi-truck). The secondary roadways should be designed to accommodate trash trucks and emergency vehicles.

Pedestrian and Bicycle Circulation: Pedestrian access to the project is provided via sidewalks on each of the roadway and driveway connections to the sidewalks on Telegraph Road, Wells Road and Blackburn Road, which would be constructed as frontage improvements. Sidewalks are provided along all the internal roadways, except the alleys. Crosswalks are provided at the Telegraph Road/Wells Road and Wells Road/Citrus Drive intersections.

The bicycle circulation plan would consist of Class III bike lanes; bikes would share the road with vehicles. Class II bike lanes would be provided on Telegraph Road. Wells Road is currently designated as a Primary Arterial. Frontage improvements along Wells Road would thus include a Class II bike lane. It is noted that no bike lanes are provided on Wells Road south of the intersection with Citrus Drive.

TRAFFIC SIGNAL WARRANTS

Per City staff request, the need for a traffic signal at the Telegraph Road/Nevada Avenue intersection and the Wells Road /Carlos Street intersection was evaluated based on Caltrans' traffic signal warrant criteria. Warrant worksheets are included in the Technical Appendix for review. The text below summarizes the findings.

Telegraph Road/Nevada Avenue: The analysis found that the Existing+Project and Year 2025+Project traffic volumes at this location would not satisfy any of the traffic signal warrants. The level of service calculation provided in this traffic study indicate that the intersection is forecast to operate acceptably at LOS B under either condition with the proposed stop-sign control. Based on this data, it is not recommended that a traffic signal be installed at this location.

Wells Road/Carlos Street: The analysis found that both the Existing+Project and Year 2025+Project traffic volumes at this location would satisfy Condition B (Interruption of Continuous Traffic) of Warrant 1 (Eight Hour Vehicular Volume). However, the

Existing+Project and Year 2025+Project traffic volumes did not satisfy either of the remaining seven Caltrans warrants. Caltrans states that "the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control. Delay, congestion, approach conditions, driver confusion, future land-use, or other evidence of the need for right-of-way assignment beyond that which would be provided by a stop sign shall be demonstrated". As shown in this traffic study, the intersection is forecast to operate at LOS B or better during the peak hours with the proposed stop sign control on the minor streets. Based on this data, it is not recommended that a traffic signal be installed at this location.

PARKING

The City of Ventura parking requirements for shopping centers ranges from one parking space for each 250 square feet of gross floor area to 300 square feet of gross floor area. The parking space requirement for the 25,000 SF of retail use proposed on the site is 83 to 100 spaces.

The City's off-street parking requirements for residential uses are as follows: 2 parking spaces per single family dwelling; 1 space per single family secondary unit and 2.5 space per condominium unit. The off-street parking space requirement for the residential uses proposed on the site is: 432 spaces for single family dwellings (216 units) and 708 spaces for the condominium/townhouses (283 units).

YEAR 2025 TRAFFIC IMPACTS

Year 2025 Intersection Traffic Volumes

The Year 2025 intersection peak hour traffic volume forecasts for the study-area intersections were obtained from City staff. The Year 2025 traffic volumes were developed using the Ventura citywide traffic model, which utilizes General Plan land use and circulation system assumptions to derive corresponding traffic forecast data. It thus includes the committed roadway and intersection improvements discussed previously in the Planned Roadway Network Improvements section. It is noted that the volumes for the Vineyard Avenue/Los Angeles Avenue intersection, which were obtained from the traffic study completed for the Ventura County Yard Project[4]. Figures 10 and 11 illustrate the Year 2025 A.M. and P.M. peak hour traffic volumes, respectively.

[4] Ventura County Yard Project, Traffic Study, Crain & Associates, 2004.

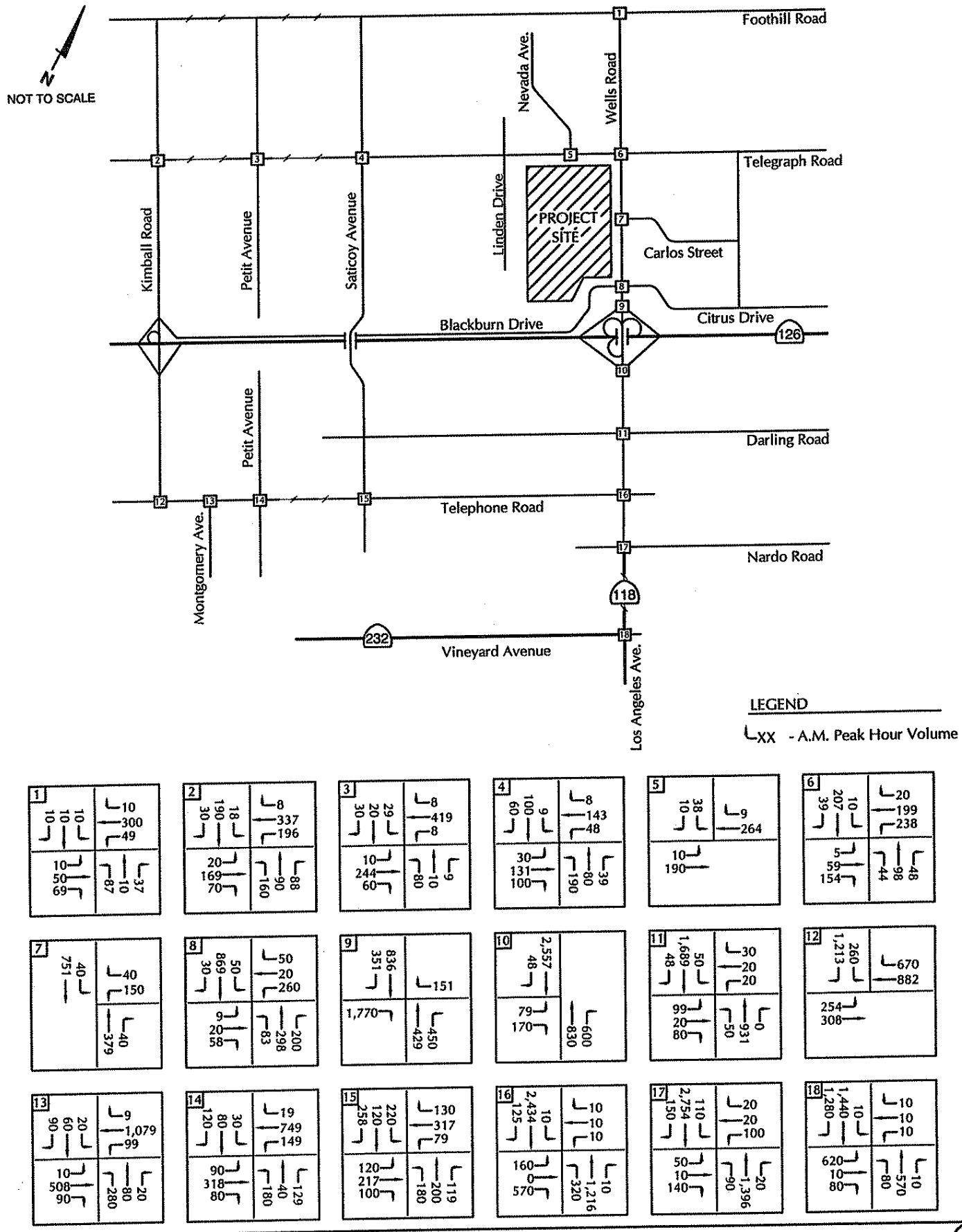


FIGURE 10

YEAR 2025 A.M. PEAK HOUR VOLUMES

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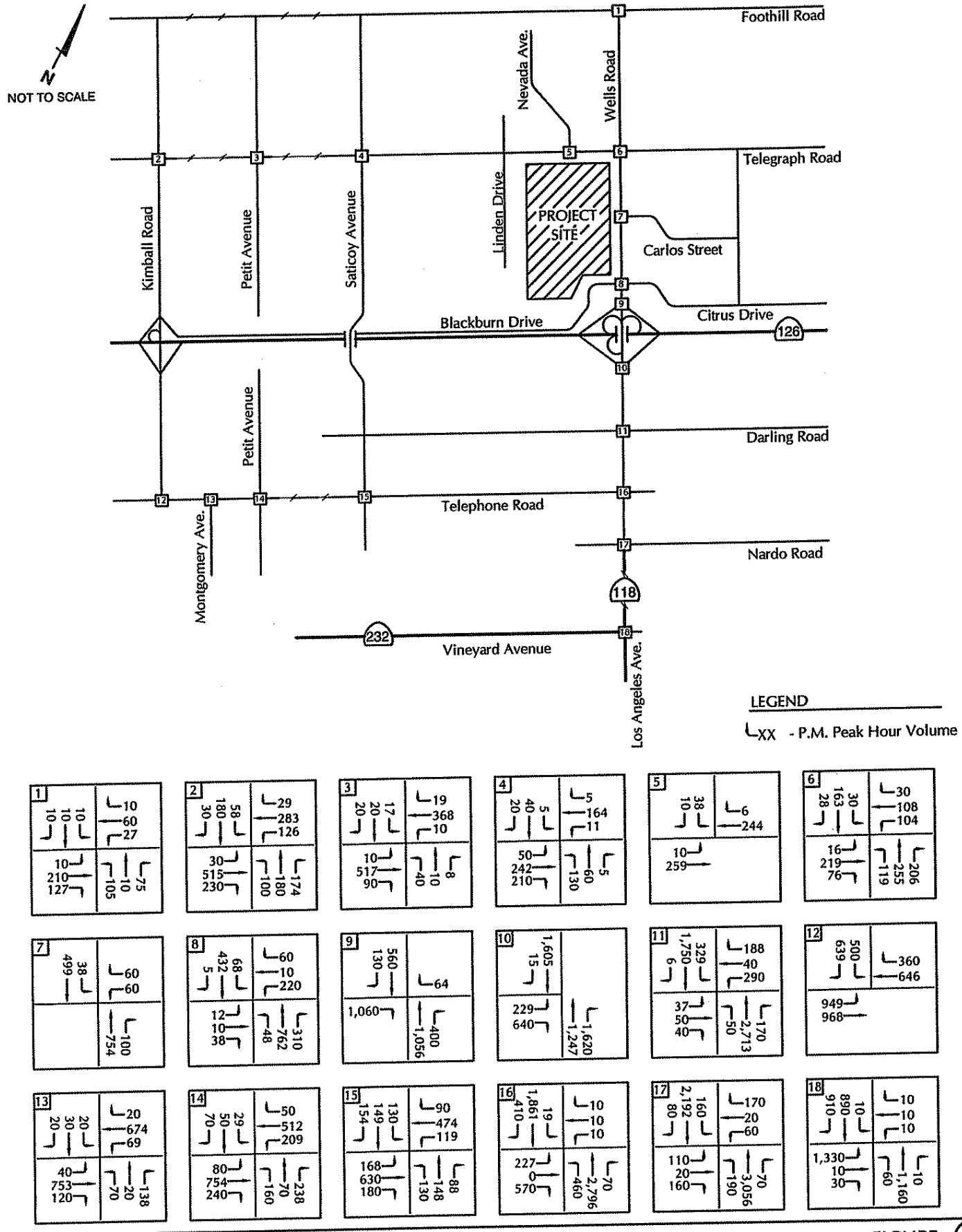

FIGURE 11

YEAR 2025 P.M. PEAK HOUR VOLUMES

Associated Transportation Engineers

MMF- #08088

Year 2025 Intersection Operations

Levels of service were calculated for the study-area intersections assuming the Year 2025 traffic conditions. The calculation results are summarized in Table 8. Worksheets showing the level of service calculations are included in the Technical Appendix.

Table 8
Year 2025 Peak Hour Intersection Levels of Service

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		ICU/Delay	LOS	ICU/Delay	LOS
1. Foothill Road/Wells Road [a]	Stop-Sign	9.7 sec.	LOS A	11.1 sec.	LOS B
2. Telegraph Road/Kimball Road	Signal	0.23	LOS A	0.32	LOS A
3. Telegraph Road/Petit Avenue	Signal	0.35	LOS A	0.24	LOS A
4. Telegraph Road/Saticoy Avenue [b]	Signal	0.47	LOS A	0.45	LOS A
5. Telegraph Road/Nevada Avenue [a b]	Stop-Sign	10.2 sec.	LOS B	9.5 sec.	LOS B
6. Telegraph Road/Wells Road	Signal	0.44	LOS A	0.42	LOS A
7. Carlos Street/Wells Road [a b]	Stop-Sign	12.1 sec.	LOS B	10.5 sec.	LOS B
8. Citrus Dr.-Blackburn Rd/Wells Road	Signal	0.42	LOS A	0.45	LOS A
9. State Route 126 WB Ramps/Wells Road [a]	Signal	10.6 sec.	LOS B	13.3 sec.	LOS B
10. State Route 126 EB Ramps/Wells Road [b]	Signal	0.64	LOS B	0.73	LOS C
11. Darling Road/Wells Road [b]	Signal	0.61	LOS C	0.84	LOS D
12. Telephone Road/Kimball Road	Signal	0.76	LOS C	0.65	LOS B
13. Telephone Road/Montgomery Avenue [b]	Signal	0.58	LOS A	0.35	LOS A
14. Telephone Road/Petit Avenue [b]	Signal	0.45	LOS A	0.58	LOS A
15. Telephone Road/Saticoy Avenue [b]	Signal	0.48	LOS A	0.46	LOS A
16. Telephone Road/Wells Road [b]	Signal	0.71	LOS C	0.70	LOS B
17. Nardo Street/Wells Road [b]	Signal	0.71	LOS C	0.83	LOS D
18. Los Angeles Avenue/Vineyard Avenue	Signal	0.77	LOS C	0.80	LOS C

[a] Unsignalized intersection; level of service determined by average delay per vehicle.
[b] Assumes City committed intersection improvements.

Table 8 indicates that all of the study-area intersections are forecast to operate at LOS D or better under the Year 2025 scenario.

Year 2025 + Project Intersection Operations

The project-added traffic volumes were layered onto the Year 2025 intersection volumes to develop the Year 2025+Project intersection traffic forecasts. Figures 12 and 13 show the Year 2025+Project A.M. and P.M. peak hour traffic volumes. Tables 9 And 10 compare the Year 2025 and Year 2025+Project levels of service and identify cumulative impacts.

Table 9
Year 2025 + Project A.M. Peak Hour Intersection Levels of Service

Intersection	Year 2025		Year 2025+Project		Impact?
	ICU/Delay	LOS	ICU/Delay	LOS	
1. Foothill Road/Wells Road [a]	9.7 sec.	LOS A	11.6 sec.	LOS B	No
2. Telegraph Road/Kimball Road	0.23	LOS A	0.24	LOS A	No
3. Telegraph Road/Petit Avenue	0.35	LOS A	0.38	LOS A	No
4. Telegraph Road/Saticoy Avenue [b]	0.47	LOS A	0.49	LOS A	No
5. Telegraph Road/Nevada Avenue [a b]	10.2 sec.	LOS B	10.5 sec.	LOS B	No
6. Telegraph Road/Wells Road	0.44	LOS A	0.45	LOS A	No
7. Carlos Street/Wells Road [a b]	12.1 sec.	LOS B	14.8 sec.	LOS B	No
8. Citrus Dr.-Blackburn Rd/Wells Road	0.38	LOS A	0.45	LOS A	No
9. State Route 126 WB Ramps/Wells Road [a]	10.6 sec.	LOS B	10.9 sec.	LOS B	No
10. State Route 126 EB Ramps/Wells Road [b]	0.64	LOS B	0.66	LOS B	No
11. Darling Road/Wells Road [b]	0.61	LOS B	0.62	LOS B	No
12. Telephone Road/Kimball Road	0.76	LOS C	0.76	LOS C	No
13. Telephone Road/Montgomery Avenue [b]	0.58	LOS A	0.58	LOS A	No
14. Telephone Road/Petit Avenue [b]	0.45	LOS A	0.46	LOS A	No
15. Telephone Road/Saticoy Avenue [b]	0.48	LOS A	0.49	LOS A	No
16. Telephone Road/Wells Road [b]	0.71	LOS C	0.72	LOS C	No
17. Nardo Street/Wells Road [b]	0.71	LOS C	0.72	LOS C	No
18. Los Angeles Avenue/Vineyard Avenue	0.77	LOS C	0.78	LOS C	No

[a] Unsignalized intersection; level of service determined by average delay per vehicle.
[b] Assumes City committed intersection improvements.

The level of service data contained in Table 9 shows that all of the study-area intersections would continue to operate at LOS C or better during the A.M. peak hour volumes. The project would not generate any cumulative impacts during the A.M. peak hour under Year 2025+Project conditions.

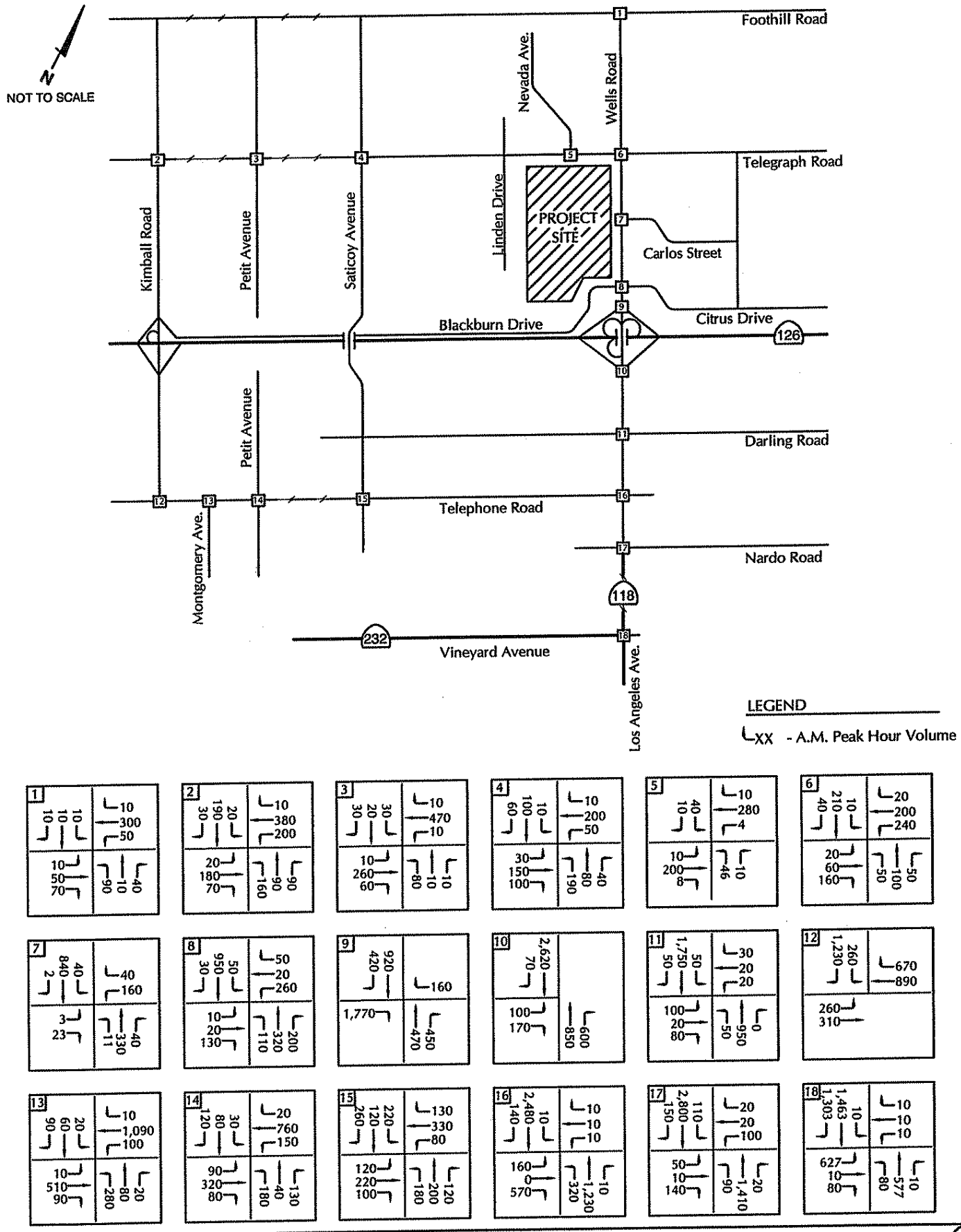

FIGURE 12

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YEAR 2025 + PROJECT A.M. PEAK HOUR VOLUMES

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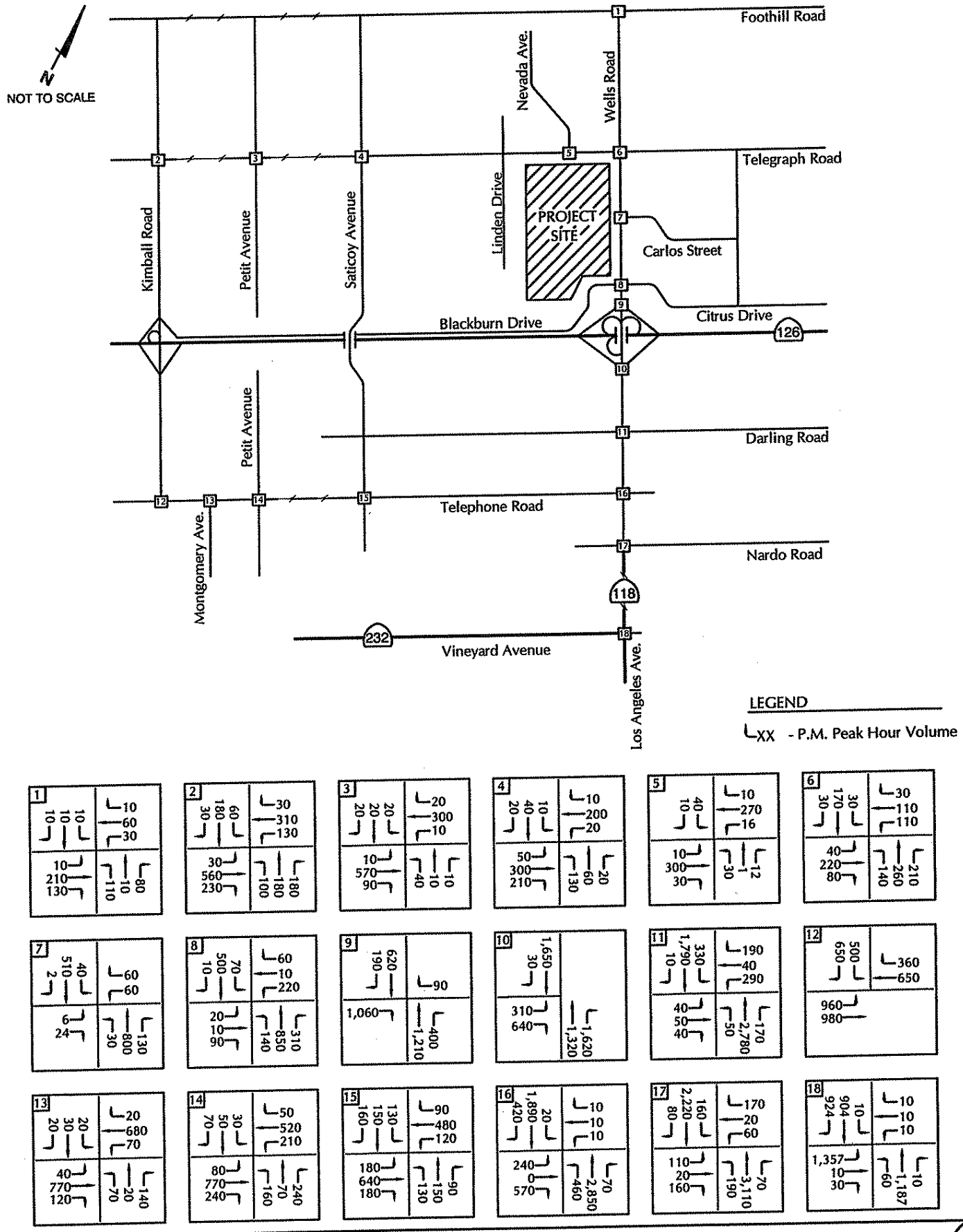

YEAR 2025 + PROJECT P.M. PEAK HOUR VOLUMES

FIGURE 13

ASSOCIATED TRANSPORTATION ENGINEERS

MMF- #08088

Table 10
Year 2025 + Project P.M. Peak Hour Intersection Levels of Service

Intersection	Year 2025		Year 2025 + Project		Impact?
	ICU/Delay	LOS	ICU/Delay	LOS	
1. Foothill Road/Wells Road [a]	11.1 sec.	LOS B	11.2 sec.	LOS B	No
2. Telegraph Road/Kimball Road	0.32	LOS A	0.34	LOS A	No
3. Telegraph Road/Petit Avenue	0.24	LOS A	0.26	LOS A	No
4. Telegraph Road/Saticoy Avenue [b]	0.45	LOS A	0.50	LOS A	No
5. Telegraph Road/Nevada Avenue [a b]	9.5 sec.	LOS A	10.2 sec.	LOS B	No
6. Telegraph Road/Wells Road	0.42	LOS A	0.46	LOS A	No
7. Carlos Street/Wells Road [a b]	10.5 sec.	LOS B	13.5 sec.	LOS B	No
8. Citrus Dr.-Blackburn Rd/Wells Road	0.39	LOS A	0.46	LOS A	No
9. State Route 126 WB Ramps/Wells Road [a]	13.3 sec.	LOS B	15.1 sec.	LOS C	No
10. State Route 126 EB Ramps/Wells Road [b]	0.73	LOS C	0.74	LOS C	No
11. Darling Road/Wells Road [b]	0.84	LOS D	0.85	LOS D	No
12. Telephone Road/Kimball Road	0.65	LOS B	0.66	LOS B	No
13. Telephone Road/Montgomery Avenue [b]	0.35	LOS A	0.35	LOS A	No
14. Telephone Road/Petit Avenue [b]	0.58	LOS A	0.58	LOS A	No
15. Telephone Road/Saticoy Avenue [b]	0.46	LOS A	0.47	LOS A	No
16. Telephone Road/Wells Road [b]	0.70	LOS B	0.72	LOS C	No
17. Nardo Street/Wells Road	0.83	LOS D	0.85	LOS D	No
18. Los Angeles Avenue/Vineyard Avenue	0.80	LOS C	0.82	LOS D	No

[a] Unsignalized intersection; level of service determined by average delay per vehicle.
[b] Assumes City committed intersection improvements.

Table 10 indicates that the study-area intersections are forecast to operate at LOS D or better during the P.M. peak hour under the Year 2025 + Project traffic volumes. The project would not generate any cumulative impacts during the P.M. peak hour under Year 2025 + Project conditions.

MITIGATION MEASURES

Project-Specific Measures

The traffic study found that the Parklands Project would not generate any project-specific intersection impacts based on the City's impact criteria. Mitigation measures are therefore not

required for the study-area intersections. The following improvements are however recommended along the project 's frontage:

It is recommended that the full access driveway proposed on Wells Road approximately 500 feet south of Telegraph Road be modified to accommodate turning and parking movements. These modifications should include provision of additional throat length and reconfiguration of the parking area directly west of the driveway connection to Wells Road.

It is recommended that frontage improvements at the Wells Road/Carlos Street intersection include modification of the existing raised median on Wells Road to accommodate a northbound left-turn bay, which should contain 100 feet of vehicle storage and a 60 foot taper.

It is recommended that the eastbound approach (project parkway) of the Wells Road/Citrus Drive intersection retain its current lane geometry (a shared left-turn/through and a right-turn lane), which would provide better operations and reduce queue lengths compared to the proposed one-lane approach. This would require that the median on the parkway be modified to provide sufficient width for two lanes on the eastbound approach, or that the approach be widened.

It is recommended that the median on Wells Road south of the Wells Road/Citrus Drive intersection be reconstructed to provide a minimum of 160 feet of storage in the northbound left-turn bay to avoid vehicles blocking through traffic on Wells Road.

It is recommended that the two-lane divided parkway on the site be designed to accommodate a California Design Vehicle (WB 40 semi-truck). The secondary roadways should be designed to accommodate trash trucks and emergency vehicles.

Year 2025 Measures

The traffic study found that the Parklands Project would not generate any cumulative intersection impacts based on the City's impact criteria. Mitigation measures are therefore not required for the study-area intersections.

STATE ROUTE 126 OPERATIONS

Levels of service were calculated for the segment of State Route 126 adjacent to the Wells Road interchange using the operations method contained in the Highway Capacity Manual (LOS worksheet are contained in the Technical Appendix). There are three performance measures for freeway operation. Density in passenger cars per mile per lane (pc/mi/ln), mean passenger car speed (mph), and volume to capacity (v/c). Each of these measures is an indication of how the traffic is being accommodated. While the three measures are interrelated, level of service is based upon density (pc/mi/ln). Table 11 shows the Existing and Existing + Project levels of service for the SR 126 freeway. Year 2025 and Year 2025 + Project levels of service are shown on Table 12.

Table 11
State Route 126 Operations - Existing + Project

Direction	Existing			Existing + Project		
	Speed(1)	Density(2)	LOS(3)	Speed(1)	Density(2)	LOS(3)
Eastbound	69.8	21.4	LOS C	69.7	22.1	LOS C
Westbound	70.0	17.4	LOS B	70.0	17.9	LOS B

(1) Speed = average speed in MPH.
(2) Density = passenger cars per mile per lane (pc/mi/ln).
(3) LOS based on Density.

As shown in Table 11, the SR 126 freeway operations at LOS B-C during the peak hour period under Existing and Existing + Project condition. The analysis shows that the Parklands Project would not significantly impact freeway operations under the Existing + Project scenario.

Table 12
State Route 126 Operations - Year 2025 + Project

Direction	Year 2025			Year 2025 + Project		
	Speed(1)	Density(2)	LOS(3)	Speed(1)	Density(2)	LOS(3)
Eastbound	69.5	22.8	LOS C	69.3	23.5	LOS C
Westbound	70.0	18.5	LOS C	70.0	19.0	LOS C

(1) Speed = average speed in MPH.
(2) Density = passenger cars per mile per lane (pc/mi/ln).
(3) LOS based on Density.

As shown in Table 12, the SR 126 freeway is forecast to operate at LOS C during the peak hour period under Year 2025 and Year 2025 + Project condition. The analysis shows that the Parklands Project would not significantly impact freeway operations under the Year 2025 + Project scenario.

The SR 126/Wells Road interchange is a partial cloverleaf configuration, with free flow ramps for most of the movements. The levels of service shown in Tables 6 and 7 (Existing + Project) and Tables 9 and 10 (Year 2025 + Project) for the eastbound and westbound ramp terminals are based on the City's ICU method. To address Caltrans concerns, further review of the ramp intersections was completed using the operations method outlined in the Highway Capacity Manual using the SYNCHRO software program. The results of the analysis shows that the ramp intersections are forecast to operate at LOS A-B with Existing + Project traffic. The 95th percentile queue for the SR 126 westbound off to northbound Wells Road movement, which is controlled by a stop sign, is forecast at 1-2 vehicles for the Existing + Project scenario. This queue will be easily accommodated on the off-ramp and would not affect mainline operations. The SR 126 westbound

off-ramp to southbound Wells Road movement is free flow loop ramp (no control) and queues would therefore not form. The SR 126 eastbound off-ramp connection to Wells Road is controlled by a traffic signal. The 95th percentile queue is forecast at 6-8 vehicles on the off-ramp for the Existing + Project scenario, which would be accommodated on the ramp and not affect mainline operations.

The Year 2025 + Project operation analysis indicates that the ramp intersections are forecast to operate at LOS C or better. The 95th percentile queue for the SR 126 westbound off to northbound Wells Road movement, which is controlled by a stop sign, is forecast at 1-2 vehicles for the Year 2025 + Project scenario. This queue will be easily
and would not affect mainline operations. The SR 126 eastbou
Road is controlled by a traffic signal. The 95th percentile que
vehicles on the off-ramp for the Year 2025 + Project scenari
approximately 700 feet of storage area (approximately 30 ve
queues without affecting mainline operations.

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VENTURA COUNTY GENERAL PLAN CONSISTENCY

The City of Ventura and Ventura County have executed
Agreement" wherein the City and the County agree that a pro-r
will be collected by each agency for identified traffic impacts in
would be consistent with the Ventura County General Plan b
"Reciprocal Traffic Mitigation Agreement" between the Cit
Ventura.

VENTURA COUNTY CONGESTION MANAGEMENT PROGRAM

According to the County's Congestion Management Program (CMP), the minimum acceptable standard for traffic operations is LOS "E". However, so that local jurisdictions are not unfairly penalized for existing congestion, CMP locations currently operating in the LOS "F" range are considered acceptable.

Intersection Operation

The Wells Road/Telephone Road, SR 126 EB Ramps/Wells Road, and the SR 126 WB Ramps intersections are contained in the County's CMP. As shown on Tables 9 and 10, the CMP intersections are forecast to operates at LOS C or better under Year 2025 + Project conditions. These operations are considered acceptable based on the County's CMP standards.

■ ■ ■

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Scott A. Schell, AICP, PTP, Principal Transportation Planner
Richard Pool, P.E., Principal Engineer
Dan Dawson, PTP, Supervising Transportation Planner
Matthew Farrington, Transportation Planner I

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Persons Contacted

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Isabella do Val Gamble, DTR Engineering
Steve DeGeorge, Ventura County Transportation Committee

TECHNICAL APPENDIX

CONTENTS:

LEVEL OF SERVICE DEFINITIONS

INTERSECTION LEVEL OF SERVICE CALCULATION DISCUSSION

TRAFFIC COUNTS

TRAFFIC SIGNAL WARRANT WORKSHEETS

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

Reference 1.	Foothill Road/Wells Road
Reference 2.	Telegraph Road/Kimball Road
Reference 3.	Telegraph Road/Petit Avenue
Reference 4.	Telegraph Road/Saticoy Avenue
Reference 5.	Telegraph Road/Nevada Avenue
Reference 6.	Telegraph Road/Wells Road
Reference 7.	Carlos Street/Wells Road
Reference 8.	Citrus Dr-Blackburn Rd/Wells Road
Reference 9.	State Route 126 WB Ramps/Wells Road
Reference 10.	State Route 126 EB Ramps/Wells Road
Reference 11.	Darling Road/Wells Road
Reference 12.	Telephone Road/Kimball Road
Reference 13.	Telephone Road/Montgomery Avenue
Reference 14.	Telephone Road/Petit Avenue
Reference 15.	Telephone Road/Saticoy Avenue
Reference 16.	Telephone Road/Wells Road
Reference 17.	Wells Road/Nardo Street
Reference 18.	Los Angeles Avenue/Vineyard Avenue

STATE ROUTE 126 CALCULATION WORKSHEETS

LEVEL OF SERVICE DEFINITIONS

Signalized Intersection Level of Service Definitions

LOS	Delay[a]	V/C Ratio	Definition
A	< 10.0	< 0.60	Progression is extremely favorable. Most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	10.1 - 20.0	0.61 - 0.70	Good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20.1 - 35.0	0.71 - 0.80	Only fair progression, longer cycle lengths, or both, result in higher cycle lengths. Cycle lengths may fail to serve queued vehicles, and overflow occurs. Number of vehicles stopped is significant, though many still pass through intersection without stopping.
D	35.1 - 55.0	0.81 - 0.90	Congestion becomes more noticeable. Unfavorable progression, long cycle lengths and high v/c ratios result in longer delays. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55.1 - 80.0	0.91 - 1.00	High delay values indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent
F	> 80.0	> 1.00	Considered unacceptable for most drivers, this level occurs when arrival flow rates exceed the capacity of lane groups, resulting in many individual cycle failures. Poor progression and long cycle lengths may also contribute to high delay levels.

[a] Average control delay per vehicle in seconds.

Unsignalized Intersection Level of Service Definitions

The HCM[1] uses *control delay* to determine the level of service at unsignalized intersections. Control delay is the difference between the travel time actually experienced at the control device and the travel time that would occur in the absence of the traffic control device. Control delay includes deceleration from free flow speed, queue move-up time, stopped delay and acceleration back to free flow speed.

LOS	Control Delay Seconds per Vehicle
A	< 10.0
B	10.1 - 15.0
C	15.1 - 25.0
D	25.1 - 35.0
E	35.1 - 50.0
F	> 50.0

[1] Highway Capacity Manual, National Research Board, 2000

ASSOCIATED TRANSPORTATION ENGINEERS
100 North Hope Avenue, Suite 4, Santa Barbara, CA 93110-1686 • (805) 687-4418 • FAX (805) 682-8509

INTERSECTION LEVEL OF SERVICE CALCULATION DISCUSSION

Table 4.12-1
Arterial Intersection Performance Criteria

V/C Calculation Methodology [a]

Level of service to be based on peak hour intersection capacity utilization (ICU) values calculated using the following values:

Saturation Flow Rate: 1,600 vehicles/hour/lane.

Clearance Interval: none

Performance Standard

Level of Service E (peak hour ICU less than or equal to 1.00) for freeway ramp intersections. Level of Service D (peak hour ICU less than or equal to 0.90) for all other Principal Intersections*.

Threshold of Significance (for impact analyses)

For an intersection that is forecast to operate worse than it's performance standard, the impact of a given project is considered to be significant if the project increases the ICU by more than 0.01. An ICU increase of more than .01 does not cause the threshold of significance to be exceeded if the with-project ICU does not exceed the maximum ICU value.

Level of Service

Level of service ranges are as follows:

ICU	LEVEL OF SERVICE (LOS)
0.00 – 0.60	A
0.61 – 0.70	B
0.71 – 0.80	C
0.81 – 0.90	D
0.91 – 1.00	E
Above 1.00	F

* Principal Intersections are intersections to be regularly monitored as a gauge of the operation of the City's circulation system. These intersections are illustrated on Figure 4-5 of the traffic study in Appendix E.
[a] Methodology is consistent with that recommended in the Ventura County Congestion Management Program

TRAFFIC COUNTS

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

24-HOUR ADT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: VENTURA TRAFFIC COUNTS
LOCATION: NEVADA AVENUE NORTH OF TELEGRAPH ROAD
DATE: THURSDAY SEPTEMBER 8TH, 2005

DIRECTION:	SB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	2	0	2	4
1:00	0	0	2	0	2
2:00	0	0	0	2	2
3:00	0	0	0	0	0
4:00	0	2	1	1	4
5:00	2	8	8	8	26
6:00	6	12	12	16	46
7:00	20	12	28	20	80
8:00	19	14	12	24	69
9:00	12	6	12	6	36
10:00	16	6	9	14	45
11:00	10	5	2	12	29
12:00	8	10	3	10	31
13:00	10	8	14	15	47
14:00	14	10	10	8	42
15:00	12	16	19	13	60
16:00	7	11	14	7	39
17:00	22	16	10	16	64
18:00	10	11	11	14	46
19:00	10	10	10	14	44
20:00	14	2	6	5	27
21:00	4	10	9	2	25
22:00	12	2	4	3	21
23:00	0	9	5	1	15
				TOTAL	804

AM PEAK HOUR	0730-0830
VOLUME	81
PM PEAK HOUR	1700-1800
VOLUME	64

DIRECTION:	O				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	0	0
11:00	0	0	0	0	0
12:00	0	0	0	0	0
13:00	0	0	0	0	0
14:00	0	0	0	0	0
15:00	0	0	0	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	0	0	0	0
19:00	0	0	0	0	0
20:00	0	0	0	0	0
21:00	0	0	0	0	0
22:00	0	0	0	0	0
23:00	0	0	0	0	0
				TOTAL	0

AM PEAK HOUR	0000-0100
VOLUME	0
PM PEAK HOUR	1200-1300
VOLUME	0

TOTAL BI-DIRECTIONAL VOLUME	804

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

24-HOUR ADT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: VENTURA TRAFFIC COUNTS
LOCATION: TELEGRAPH ROAD WEST OF NEVADA AVENUE
DATE: THURSDAY SEPTEMBER 8TH, 2005

DIRECTION:	EB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	7	3	6	9	25
1:00	5	1	2	3	11
2:00	3	2	0	0	5
3:00	1	1	0	2	4
4:00	1	4	3	4	12
5:00	7	9	20	18	54
6:00	26	31	38	62	157
7:00	44	53	54	82	233
8:00	94	71	64	64	293
9:00	72	52	54	66	244
10:00	48	70	56	65	239
11:00	51	58	54	69	232
12:00	68	57	78	60	263
13:00	61	58	59	64	242
14:00	58	67	76	89	290
15:00	88	100	137	108	433
16:00	112	96	105	123	436
17:00	120	96	99	92	407
18:00	66	70	64	72	272
19:00	66	58	71	55	250
20:00	41	40	36	46	163
21:00	39	35	35	42	151
22:00	36	13	14	13	76
23:00	6	9	14	8	37
				TOTAL	4529

AM PEAK HOUR	0745-0845
VOLUME	311
PM PEAK HOUR	1515-1615
VOLUME	457

DIRECTION:	O				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	0	0
11:00	0	0	0	0	0
12:00	0	0	0	0	0
13:00	0	0	0	0	0
14:00	0	0	0	0	0
15:00	0	0	0	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	0	0	0	0
19:00	0	0	0	0	0
20:00	0	0	0	0	0
21:00	0	0	0	0	0
22:00	0	0	0	0	0
23:00	0	0	0	0	0
				TOTAL	0

AM PEAK HOUR	0000-0100
VOLUME	0
PM PEAK HOUR	1200-1300
VOLUME	0

TOTAL BI-DIRECTIONAL VOLUME	4529

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

24-HOUR ADT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: VENTURA TRAFFIC COUNTS
LOCATION: TELEGRAPH ROAD EAST OF NEVADA AVENUE
DATE: THURSDAY SEPTEMBER 8TH, 2005

DIRECTION:	WB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	6	2	8	3	19
1:00	0	2	1	2	5
2:00	0	0	1	0	1
3:00	2	0	0	0	2
4:00	1	2	4	6	13
5:00	5	9	8	21	43
6:00	23	44	43	77	187
7:00	50	70	98	86	304
8:00	61	86	68	64	279
9:00	50	62	56	52	220
10:00	54	68	62	44	228
11:00	55	44	63	62	224
12:00	64	71	57	54	246
13:00	76	62	66	65	269
14:00	59	76	62	72	269
15:00	92	66	76	78	312
16:00	68	87	78	72	305
17:00	88	100	90	100	378
18:00	62	68	58	46	234
19:00	34	45	36	31	146
20:00	35	25	40	24	124
21:00	21	20	18	15	74
22:00	16	19	15	14	64
23:00	10	9	3	5	27
				TOTAL	3973

AM PEAK HOUR	0730-0830
VOLUME	331
PM PEAK HOUR	1700-1800
VOLUME	378

DIRECTION:	O				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	0	0
11:00	0	0	0	0	0
12:00	0	0	0	0	0
13:00	0	0	0	0	0
14:00	0	0	0	0	0
15:00	0	0	0	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	0	0	0	0
19:00	0	0	0	0	0
20:00	0	0	0	0	0
21:00	0	0	0	0	0
22:00	0	0	0	0	0
23:00	0	0	0	0	0
				TOTAL	0

AM PEAK HOUR	0000-0100
VOLUME	0
PM PEAK HOUR	1200-1300
VOLUME	0

TOTAL BI-DIRECTIONAL VOLUME	3973

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WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

24-HOUR ADT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: VENTURA TRAFFIC COUNTS
LOCATION: WELLS ROAD SOUTH OF CARLOS STREET
DATE: THURSDAY SEPTEMBER 8TH, 2005

DIRECTION:	NB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	16	8	10	5	39
1:00	6	8	3	4	21
2:00	3	6	1	1	11
3:00	3	6	1	2	12
4:00	2	6	2	11	21
5:00	15	18	20	41	94
6:00	52	72	56	86	266
7:00	67	71	92	88	318
8:00	111	102	78	102	393
9:00	85	82	80	54	301
10:00	74	76	62	68	280
11:00	81	68	76	96	321
12:00	82	85	103	84	354
13:00	83	96	96	116	391
14:00	98	115	88	102	403
15:00	124	118	256	332	830
16:00	168	173	169	158	668
17:00	144	169	138	144	595
18:00	108	118	99	70	395
19:00	59	70	64	60	253
20:00	62	62	62	53	239
21:00	49	44	37	42	172
22:00	28	29	28	26	111
23:00	28	14	10	8	60
				TOTAL	6548

AM PEAK HOUR	0730-0830
VOLUME	393
PM PEAK HOUR	1530-1630
VOLUME	929

DIRECTION:	O				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	0	0
11:00	0	0	0	0	0
12:00	0	0	0	0	0
13:00	0	0	0	0	0
14:00	0	0	0	0	0
15:00	0	0	0	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	0	0	0	0
19:00	0	0	0	0	0
20:00	0	0	0	0	0
21:00	0	0	0	0	0
22:00	0	0	0	0	0
23:00	0	0	0	0	0
				TOTAL	0

AM PEAK HOUR	0000-0100
VOLUME	0
PM PEAK HOUR	1200-1300
VOLUME	0

TOTAL BI-DIRECTIONAL VOLUME	6548

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

24-HOUR ADT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: VENTURA TRAFFIC COUNTS
LOCATION: CARLOS STREET EAST OF WELLS ROAD
DATE: THURSDAY SEPTEMBER 8TH, 2005

DIRECTION:	WB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	2	4	2	2	10
1:00	0	2	0	0	2
2:00	0	2	0	0	2
3:00	1	0	1	1	3
4:00	1	1	6	8	16
5:00	0	8	8	18	34
6:00	11	27	26	40	104
7:00	29	36	62	59	186
8:00	34	37	42	38	151
9:00	33	33	40	32	138
10:00	18	30	21	37	106
11:00	50	30	38	28	146
12:00	22	41	37	25	125
13:00	32	28	36	34	130
14:00	34	34	41	38	147
15:00	44	24	36	38	142
16:00	38	49	54	40	181
17:00	52	42	46	26	166
18:00	28	38	34	22	122
19:00	15	24	20	15	74
20:00	26	16	17	15	74
21:00	26	10	7	13	56
22:00	6	5	4	1	16
23:00	2	4	1	2	9
				TOTAL	2140

AM PEAK HOUR	0730-0830
VOLUME	192
PM PEAK HOUR	1615-1715
VOLUME	195

DIRECTION:	O				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	0	0
11:00	0	0	0	0	0
12:00	0	0	0	0	0
13:00	0	0	0	0	0
14:00	0	0	0	0	0
15:00	0	0	0	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	0	0	0	0
19:00	0	0	0	0	0
20:00	0	0	0	0	0
21:00	0	0	0	0	0
22:00	0	0	0	0	0
23:00	0	0	0	0	0
				TOTAL	0

AM PEAK HOUR	0000-0100
VOLUME	0
PM PEAK HOUR	1200-1300
VOLUME	0

TOTAL BI-DIRECTIONAL VOLUME	2140

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

24-HOUR ADT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: VENTURA TRAFFIC COUNTS
LOCATION: WELLS ROAD NORTH OF CARLOS STREET
DATE: THURSDAY SEPTEMBER 8TH, 2005

DIRECTION:	SB				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	9	1	4	6	20
1:00	7	1	1	4	13
2:00	1	8	0	5	14
3:00	2	6	3	5	16
4:00	8	14	17	17	56
5:00	18	50	68	74	210
6:00	86	85	112	114	397
7:00	130	140	164	162	596
8:00	132	128	118	112	490
9:00	101	102	86	100	389
10:00	94	101	84	104	383
11:00	94	106	83	108	391
12:00	104	90	92	94	380
13:00	117	82	102	94	395
14:00	100	100	110	114	424
15:00	102	152	135	109	498
16:00	131	134	124	122	511
17:00	157	121	116	123	517
18:00	86	83	80	78	327
19:00	64	56	68	61	249
20:00	43	31	43	48	165
21:00	40	38	35	34	147
22:00	23	17	13	20	73
23:00	8	11	14	6	39
				TOTAL	6700

AM PEAK HOUR	0715-0815
VOLUME	598
PM PEAK HOUR	1615-1715
VOLUME	537

DIRECTION:	O				
TIME	00-15	15-30	30-45	45-60	HOUR TOTALS
0:00	0	0	0	0	0
1:00	0	0	0	0	0
2:00	0	0	0	0	0
3:00	0	0	0	0	0
4:00	0	0	0	0	0
5:00	0	0	0	0	0
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	0	0
11:00	0	0	0	0	0
12:00	0	0	0	0	0
13:00	0	0	0	0	0
14:00	0	0	0	0	0
15:00	0	0	0	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	0	0	0	0
19:00	0	0	0	0	0
20:00	0	0	0	0	0
21:00	0	0	0	0	0
22:00	0	0	0	0	0
23:00	0	0	0	0	0
				TOTAL	0

AM PEAK HOUR	0000-0100
VOLUME	0
PM PEAK HOUR	1200-1300
VOLUME	0

TOTAL BI-DIRECTIONAL VOLUME	6700

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

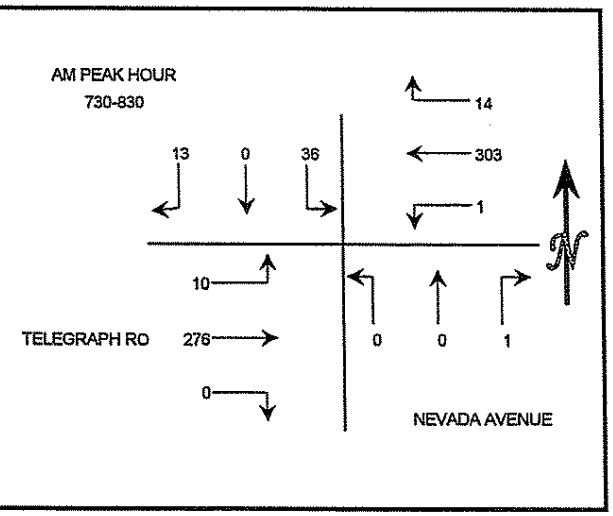
CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: PARKLANDS PROJECT
DATE: THURSDAY, SEPTEMBER 8TH, 2005
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S NEVADA AVENUE
E/W TELEGRAPH ROAD

15 MIN COUNTS — 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	4	0	8	3	53	0	0	0	0	0	49	0	117
715-730	0	0	7	2	67	0	0	0	0	0	52	1	129
730-745	4	0	14	3	91	0	0	0	0	0	55	1	168
745-800	6	0	6	3	85	1	1	0	0	0	74	4	180
800-815	2	0	8	2	56	0	0	0	0	0	86	3	157
815-830	1	0	8	6	71	0	0	0	0	0	61	2	149
830-845	2	0	7	2	63	0	0	0	0	0	60	1	135
845-900	4	0	8	5	53	0	0	0	0	0	64	0	134

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	14	0	35	11	296	1	1	0	0	0	230	6	594
715-815	12	0	35	10	299	1	1	0	0	0	267	9	634
730-830	13	0	36	14	303	1	1	0	0	0	276	10	654
745-845	11	0	29	13	275	1	1	0	0	0	281	10	621
800-900	9	0	31	15	243	0	0	0	0	0	271	6	575

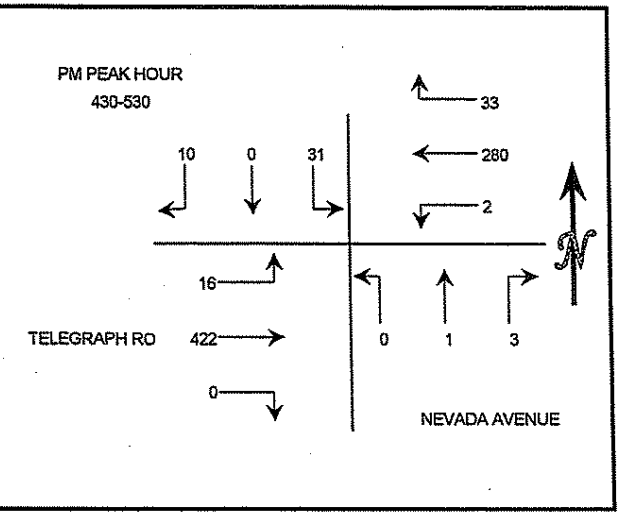


15 MIN COUNTS — 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	1	0	4	5	55	0	2	0	0	0	113	3	183
415-430	3	0	3	10	68	1	2	0	0	1	92	1	181
430-445	3	0	8	6	67	0	1	0	0	0	99	2	186
445-500	0	0	4	9	55	2	1	1	0	0	116	3	191
500-515	6	0	7	6	77	0	0	0	0	0	110	7	213
515-530	1	0	12	12	81	0	1	0	0	0	97	4	208
530-545	3	0	1	4	78	1	2	0	0	0	87	1	177
545-600	6	0	6	9	70	1	0	0	0	0	91	2	185

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	7	0	19	30	245	3	6	1	0	1	420	9	741
415-515	12	0	22	31	267	3	4	1	0	1	417	13	771
430-530	10	0	31	33	280	2	3	1	0	0	422	16	798
445-545	10	0	24	31	291	3	4	1	0	0	410	15	789
500-600	16	0	26	31	306	2	3	0	0	0	385	14	783



WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

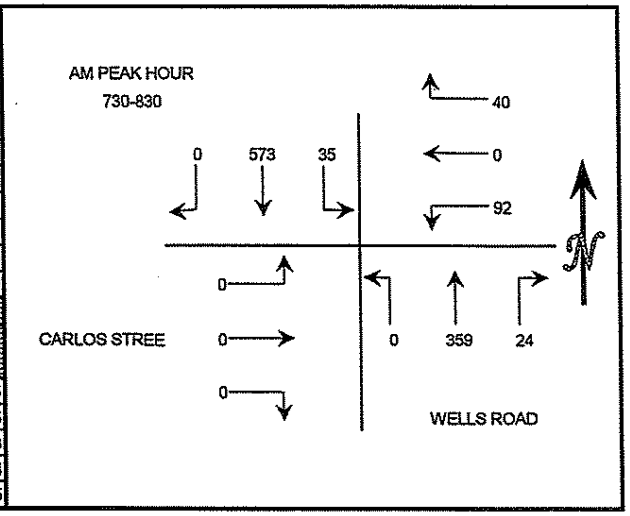
CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: PARKLANDS PROJECT
DATE: THURSDAY, SEPTEMBER 8TH, 2005
PERIODS: 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM
INTERSECTION: N/S WELLS ROAD
E/W CARLOS STREET

15 MIN COUNTS — 7:00 AM TO 9:00 AM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	0	121	9	8	0	11	3	63	0	0	0	0	215
715-730	0	123	12	9	0	19	6	73	0	0	0	0	242
730-745	0	174	10	15	0	31	6	93	0	0	0	0	329
745-800	0	143	10	11	0	28	3	84	0	0	0	0	279
800-815	0	126	8	9	0	17	10	95	0	0	0	0	265
815-830	0	130	7	5	0	16	5	87	0	0	0	0	250
830-845	0	102	9	13	0	17	6	73	0	0	0	0	220
845-900	0	96	9	11	0	13	1	90	0	0	0	0	220

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-800	0	561	41	43	0	89	18	313	0	0	0	0	1065
715-815	0	566	40	44	0	95	25	345	0	0	0	0	1115
730-830	0	573	35	40	0	92	24	359	0	0	0	0	1123
745-845	0	501	34	38	0	78	24	339	0	0	0	0	1014
800-900	0	454	33	38	0	63	22	345	0	0	0	0	955

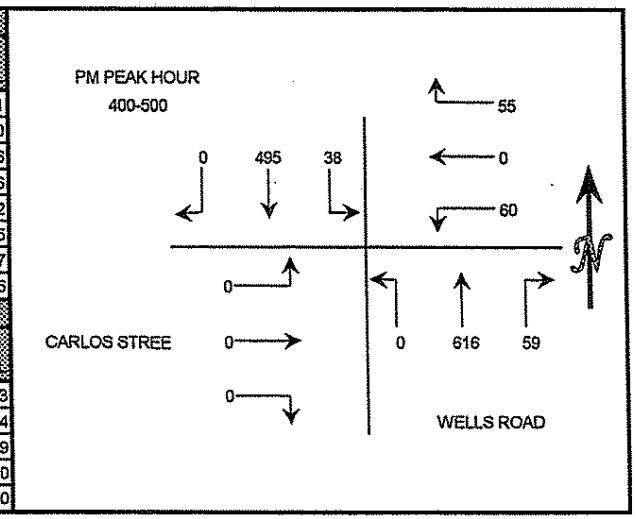


15 MIN COUNTS — 4:00 PM TO 6:00 PM

PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	0	123	10	18	0	6	14	160	0	0	0	0	331
415-430	0	131	12	15	0	16	15	151	0	0	0	0	340
430-445	0	113	7	13	0	19	13	161	0	0	0	0	326
445-500	0	128	9	9	0	19	17	144	0	0	0	0	326
500-515	0	142	6	15	0	14	12	133	0	0	0	0	322
515-530	0	127	8	15	0	10	11	154	0	0	0	0	325
530-545	0	133	7	11	0	15	14	127	0	0	0	0	307
545-600	0	126	13	9	0	14	17	137	0	0	0	0	316

HOUR TOTALS

TIME	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-500	0	495	38	55	0	60	59	616	0	0	0	0	1323
415-515	0	514	34	52	0	68	57	589	0	0	0	0	1314
430-530	0	510	30	52	0	62	53	592	0	0	0	0	1299
445-545	0	530	30	50	0	58	54	558	0	0	0	0	1280
500-600	0	528	34	50	0	53	54	551	0	0	0	0	1270



WILTEC

TEL: (626) 564-1944 FAX: (626) 564-0969

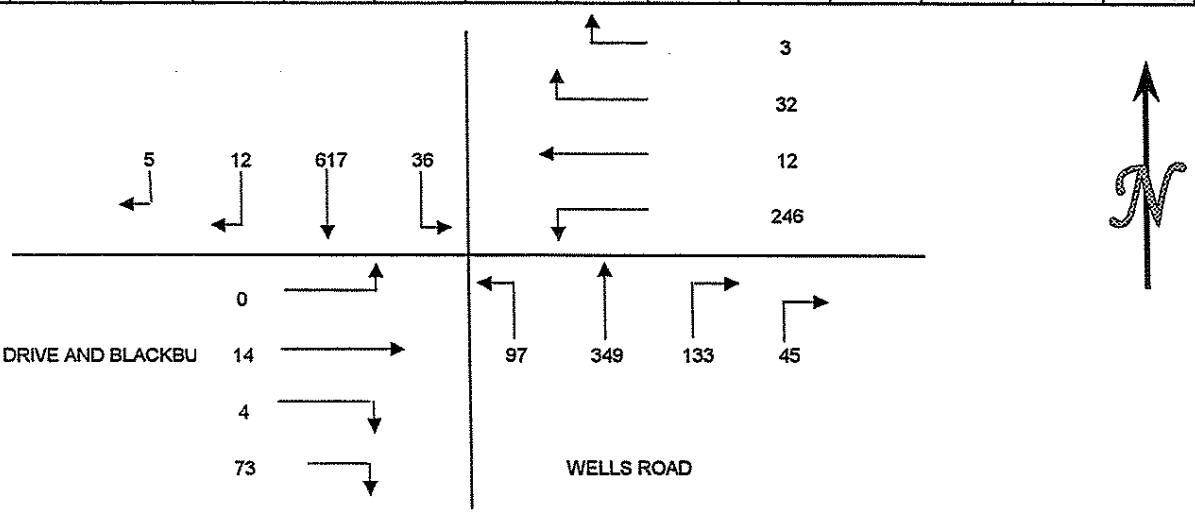
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: PARKLANDS PROJECT
DATE: THURSDAY, SEPTEMBER 8TH, 2005
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTI(N/S WELLS ROAD
E/W CITRUS DRIVE AND BLACKBURN ROAD

VEHICLE COUNTS

PERIOD 15 MIN COUN	1R SBRT ON RED	1 SBRT	2 SBTH	3 SBLT	4R WBRT ON RED	4 WBRT	5 WBTH	6 WBLT	7R NBRT ON RED	7 NBRT	8 NBTH	9 NBLT	10R EBRT ON RED	10 EBRT	11 EBTH	12 EBLT	TOTAL
700-715	0	0	151	3	4	4	1	55	5	25	56	7	21	3	2	0	337
715-730	0	0	159	8	1	3	2	74	10	23	61	4	22	1	6	1	375
730-745	1	2	177	6	0	9	5	71	7	24	83	26	29	1	3	0	444
745-800	4	7	162	6	2	10	3	62	10	34	86	45	15	1	2	0	449
800-815	0	3	132	13	1	5	3	51	13	40	98	19	16	0	7	0	401
815-830	0	0	146	11	0	8	1	62	15	35	82	7	13	2	2	0	384
830-845	0	2	123	10	2	4	3	63	13	27	72	5	14	1	2	2	343
845-900	0	0	109	11	4	8	2	47	13	30	90	5	8	1	4	0	332
HOUR TOTALS																	
0700-0800	5	9	649	23	7	26	11	262	32	106	286	82	87	6	13	1	1605
0715-0815	5	12	630	33	4	27	13	258	40	121	328	94	82	3	18	1	1669
0730-0830	5	12	617	36	3	32	12	246	45	133	349	97	73	4	14	0	1678
0745-0845	4	12	563	40	5	27	10	238	51	136	338	76	58	4	13	2	1577
0800-0900	0	5	510	45	7	25	9	223	54	132	342	36	51	4	15	2	1460

AM PEAK HOUR
0730-0830



WILTEC

TEL: (626) 564-1944 FAX: (626) 564-0969

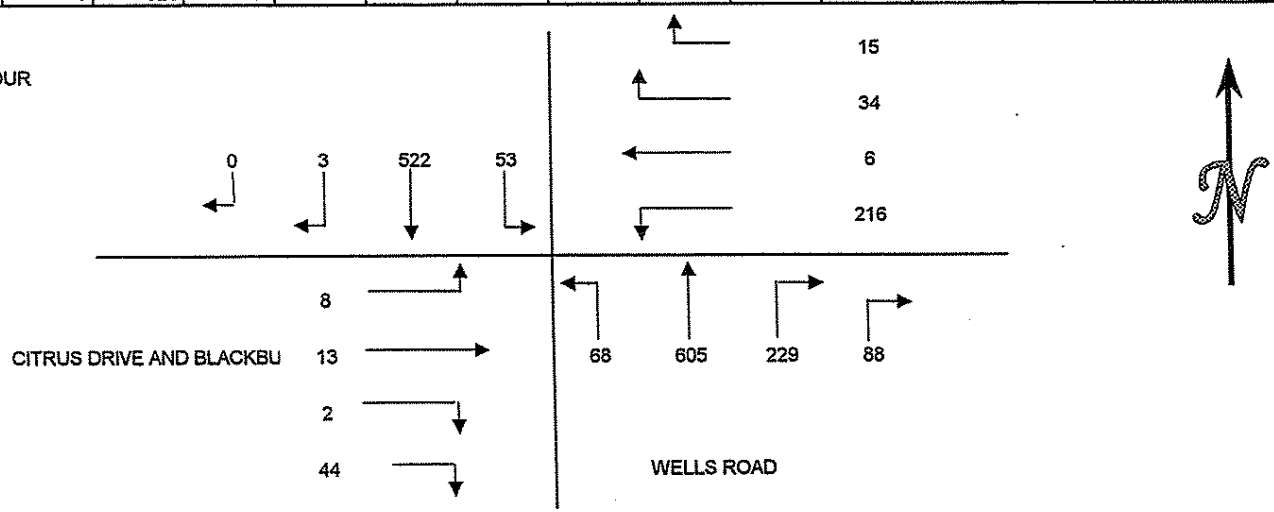
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: ASSOCIATED TRANSPORTATION ENGINEERS
PROJECT: PARKLANDS PROJECT
DATE: THURSDAY, SEPTEMBER 8TH, 2005
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTI(N/S WELLS ROAD
E/W CITRUS DRIVE AND BLACKBURN ROAD

VEHICLE COUNTS

PERIOD 15 MIN COUN	1R SBRT ON RED	1 SBRT	2 SBTH	3 SBLT	4R WBRT ON RED	4 WBRT	5 WBTH	6 WBLT	7R NBRT ON RED	7 NBRT	8 NBTH	9 NBLT	10R EBRT ON RED	10 EBRT	11 EBTH	12 EBLT	TOTAL
400-415	1	1	116	11	4	7	6	48	14	53	133	15	8	1	1	0	419
415-430	0	1	142	8	5	10	1	54	16	65	165	14	16	1	4	2	504
430-445	0	1	113	12	4	9	1	56	19	61	146	21	7	0	3	1	454
445-500	0	0	122	15	3	8	1	49	24	47	143	17	12	1	3	5	450
500-515	0	1	145	18	3	7	3	57	29	56	151	16	9	0	3	0	498
515-530	2	2	123	10	4	11	5	61	20	66	150	20	6	3	4	2	489
530-545	1	3	138	8	8	3	4	42	19	30	119	16	8	0	0	2	401
545-600	1	1	120	11	7	2	1	52	25	51	139	11	13	1	5	0	440
HOUR TOTALS																	
400-500	1	3	493	46	16	34	9	207	73	226	587	67	43	3	11	8	1827
415-515	0	3	522	53	15	34	6	216	88	229	605	68	44	2	13	8	1906
430-530	2	4	503	55	14	35	10	223	92	230	590	74	34	4	13	8	1891
445-545	3	6	528	51	18	29	13	209	92	199	563	69	35	4	10	9	1838
500-600	4	7	526	47	22	23	13	212	93	203	559	63	36	4	12	4	1828

PM PEAK HOUR
415-515



14

Intersection Turning Movement

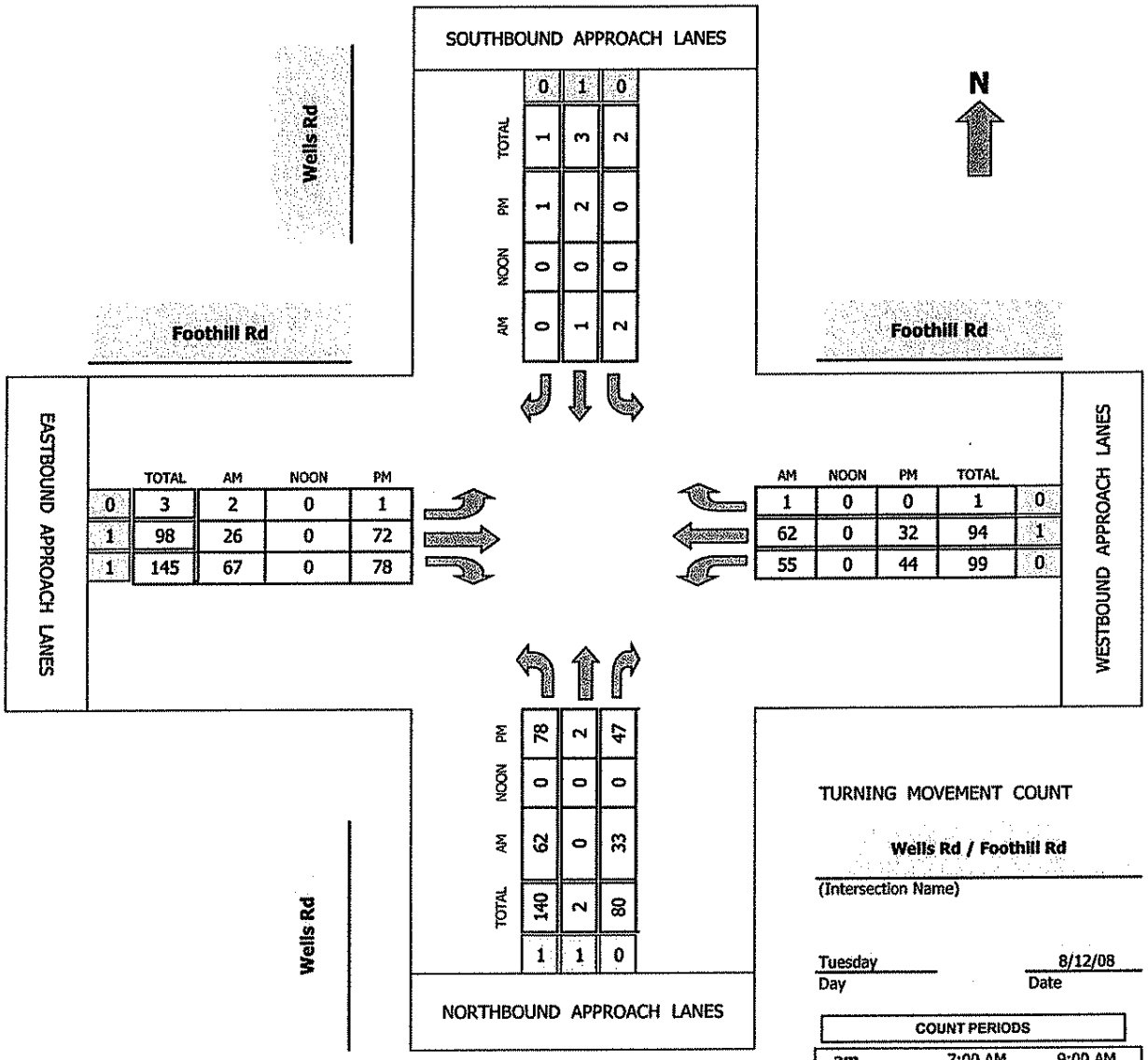
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Wells Rd/Foothill Rd

Project #: 08-5008-001



	TOTAL	AM	NOON	PM
0	0	1	0	
	1	0	0	1
	3	1	0	2
	2	2	0	0

	TOTAL	AM	NOON	PM
0	3	2	0	1
1	98	26	0	72
1	145	67	0	78

	AM	NOON	PM	TOTAL
1	0	0	1	0
62	0	32	94	1
55	0	44	99	0

	TOTAL	AM	NOON	PM
1	140	62	0	78
1	2	0	0	2
0	80	33	0	47

TURNING MOVEMENT COUNT

Wells Rd / Foothill Rd

(Intersection Name)

Tuesday — Day

8/12/08 — Date

COUNT PERIODS		
am	7:00 AM -	9:00 AM
noon	-	
pm	4:00 PM -	6:00 PM

CONTROL: 2-Way Stop (N/S)

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	415 PM

Intersection Turning Movement

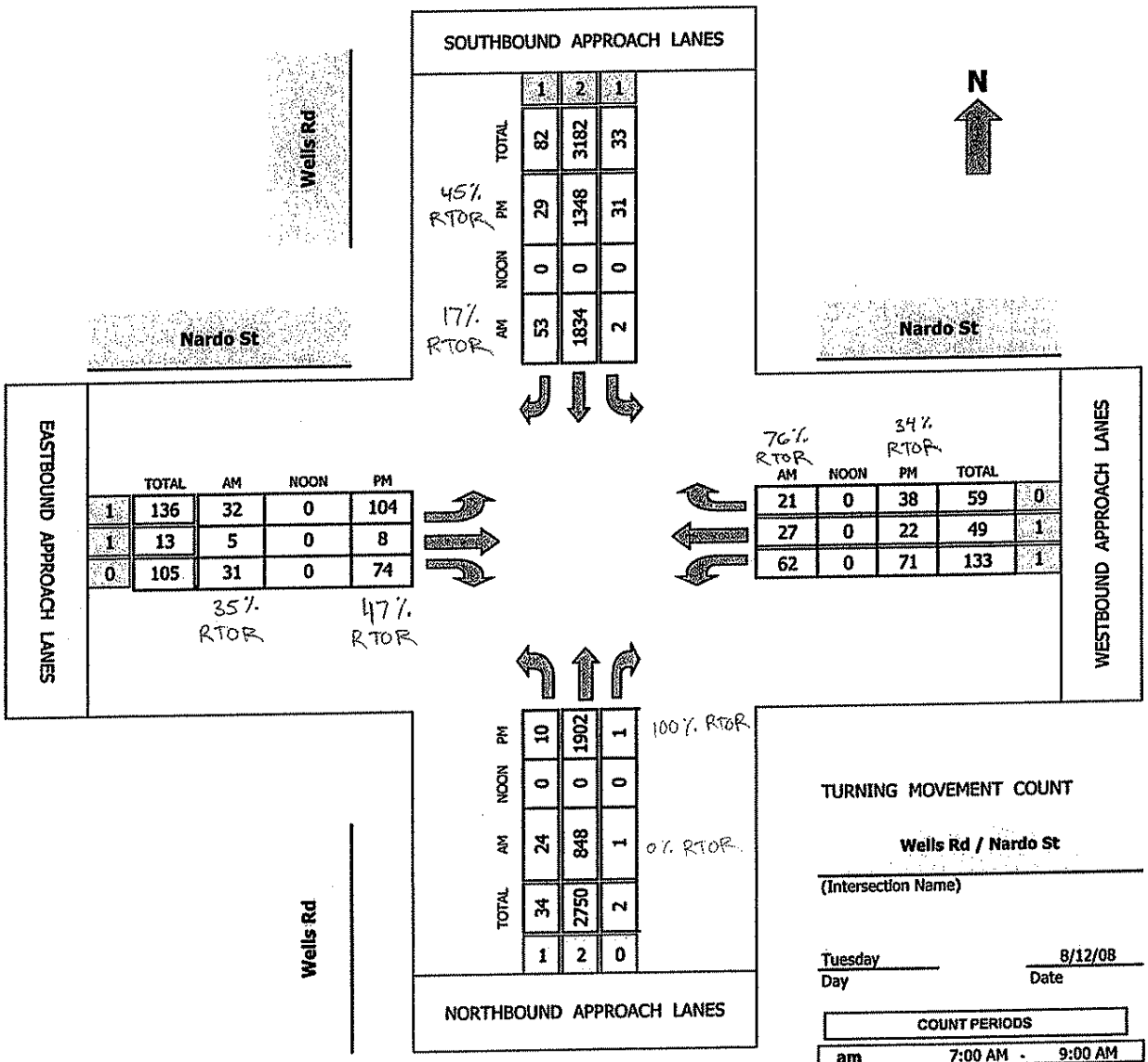
Prepared by:

NDS

National Data & Surveying Services

TMC Summary of Wells Rd/Nardo St

Project #: 08-5008-002



	TOTAL	AM	NOON	PM
1	136	32	0	104
1	13	5	0	8
0	105	31	0	74

	AM	NOON	PM	TOTAL	
	21	0	38	59	0
	27	0	22	49	1
	62	0	71	133	1

	TOTAL	AM	NOON	PM
1	82	53	0	29
2	3182	1834	0	1348
1	33	2	0	31

	TOTAL	AM	NOON	PM
1	34	24	0	10
2	2750	848	0	1902
0	2	1	0	1

TURNING MOVEMENT COUNT

Wells Rd / Nardo St

(Intersection Name)

Tuesday — Day

8/12/08 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

CONTROL: Signalized

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

#18

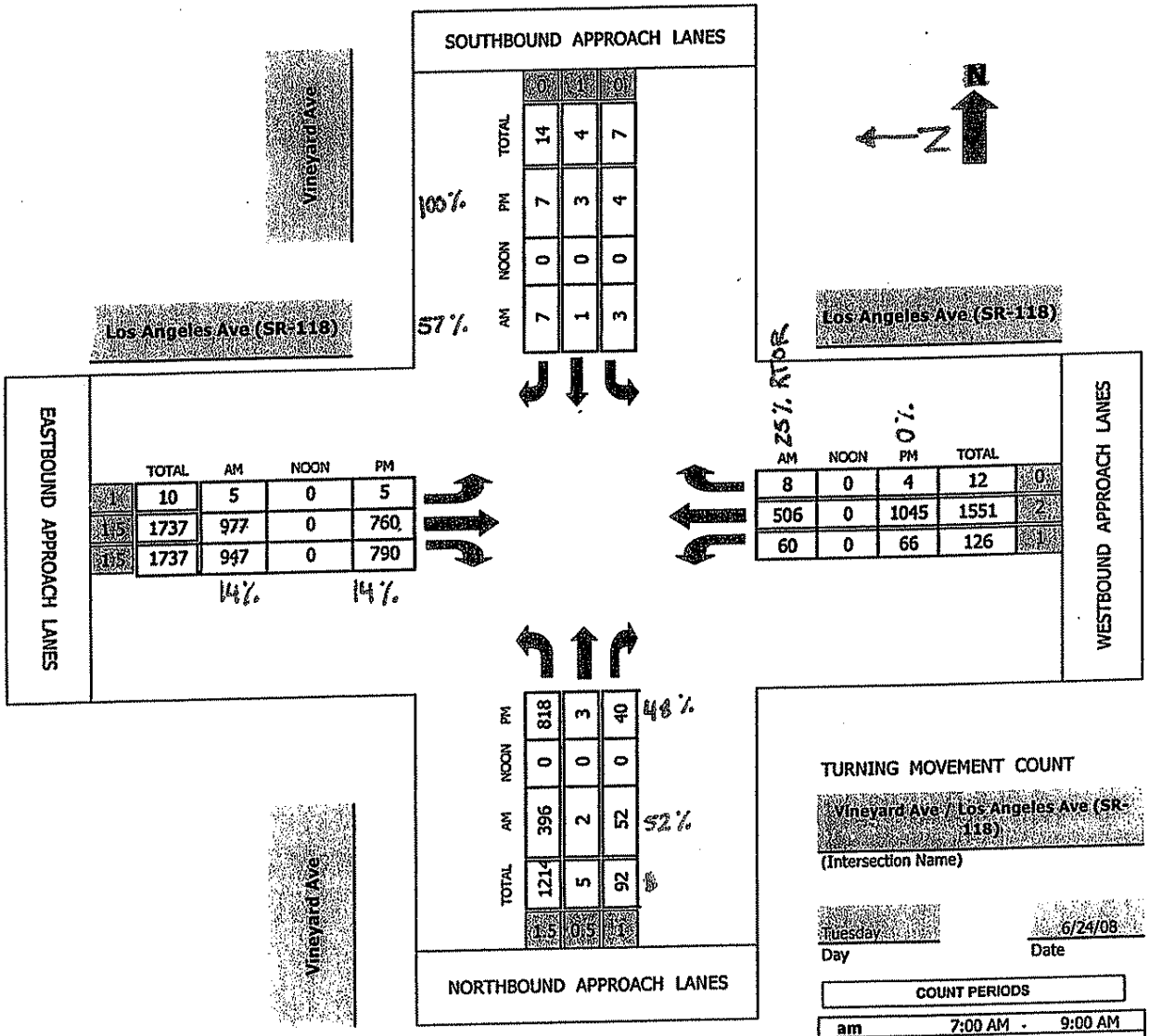
Intersection Turning Movement

Prepared by:

National Data & Surveying Services

TMC Summary of Vineyard Ave/Los Angeles Ave (SR-118)

Project #: 08-2303-002



TURNING MOVEMENT COUNT

Vineyard Ave / Los Angeles Ave (SR-118)
(Intersection Name)

Tuesday — Day

6/24/08 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon		-	
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	715 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	445 PM

TRAFFIC SIGNAL WARRANT WORKSHEETS

Existing + Project Traffic Volumes

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 1 of 4)

07 (DIST) Ven (CO) ____ (RTE) ____ (KPM)

CALC DL DATE 10-10-05
CHK ____ DATE ____

Major St: Telegraph Rd
Minor St: Nevada Ave

Critical Approach Speed 80 km/h
Critical Approach Speed 40 km/h

Critical speed of major street traffic > 64 km/h (40 mph)..... ☒ } RURAL (R)
or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS												
	U	R	U	~~R~~									
APPROACH LANES	1		2 or More		7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	618	658	588	643	857	852	903	582	
Highest Approaches Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	80	69	47	42	60	39	64	46	SB

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS												
	U	R	U	~~R~~									
APPROACH LANES	1		2 or More		7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	618	658	588	643	857	852	903	582	
Highest Approaches Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	80	69	47	42	60	39	64	46	SB

Combination of Conditions A & B

SATISFIED YES ☐ NO ☒

REQUIREMENT	WARRANT	✓	FULFILLED
TWO WARRANTS SATISFIED 80%	1. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	2. INTERRUPTION OF CONTINUOUS TRAFFIC		

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for four hours.

APPROACH LANES	One	2 or More	8-9	9-10	4-5	5-6 Hour
Both Approaches - Major Street		X	658	857	852	903
Highest Approaches - Minor Street	X		69	60	39	64

SB

*All plotted points fall above the curves in MUTCD Figure 4C-1 or 4C-2. Yes ☐ No ☒

WARRANT 3 - Peak Hour **PART A or PART B SATISFIED YES ☐ NO ☒**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceedds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — Yes ☐ No ☒
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaoches. — Yes ☒ No ☐

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	5-6			Hour
Both Approaches - Major Street		X	903			
Highest Approaches - Minor Street	X		64			

SB

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.

20

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 3 of 4)

DIST ____ CO ____ RTE ____ KPM ____

CALC DL DATE 10-10-05
CHK ____ DATE ____

Major St: ____ Critical Approach Speed ____ km/h
Minor St: ____ Critical Approach Speed ____ km/h

Critical speed of major street > 64 km/h (40 mph)..... ☐ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 4 - Pedestrian Volume
(All Parts Must Be Satisfied)

100% SATISFIED YES ☐ NO ☐

Hours --->						
Pedestrian Volume					Any hour > 190	Yes ☐ No ☐
					OR 4 hours > 100	Yes ☐ No ☐
Adequate Crossing Gaps					AND < 60 gap/hr	Yes ☐ No ☐

NA

AND, The distance to the nearest traffic signal along the major street is greater than 90m (300 ft) ---------- Yes ☐ No ☐

AND, The new traffic signal will not seriously disrupt progressive traffic flow in the major street. ---------- Yes ☐ No ☐

WARRANT 5 - School Crossing
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☐

Part A
Gap/Minutes and # of Children

Each of Two Hours --->			
Gaps vs Minutes	Minutes Children Using Crossing		
	Number of Adequate Gaps		
School Age Pedestrians Crossing Street			

Gaps < Minutes SATISFIED YES ☐ NO ☐
Children > 20/hr SATISFIED YES ☐ NO ☐

NA

Part B
Distance to Nearest Controlled Crossing

Is Nearest Controlled Crossing More Than 180 m (600 ft) away? SATISFIED YES ☐ NO ☐

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Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 4 of 4)

WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	FULFILLED
> 300 m (1000 ft)	N N/A m, S N/A m, E <300 m, W >300 m	Yes ☐ No ☒
On one way isolated streets or streets with one way traffic significance and adjacent signals are so far apart that necessary platooning and speed control would be lost.		
On 2-way streets where adjacent signals do not provide necessary platooning and speed control proposed signals could constitute a progressive signal system.		☐ ☒

WARRANT 7 - Crash Warrant
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

REQUIREMENTS	WARRANT	✓	FULFILLED
One Warrant Satisfied 80%	Warrant 1 - Minimum Vehicular Volume		
	OR Warrant 2 - Interruption of Continuous Traffic		Yes ☐ No ☒
Signal Will Not Seriously Disrupt Progressive Traffic Flow			☐ ☒
Adequate Trial of Less Restrictive Remedies Has Failed to Reduce Accident Frequency			☐ ☒
Acc. Within a 12 Month Period Susceptible for Corr. & Involving Injury or ≥ $500 Damage			
MINIMUM REQUIREMENTS	NUMBER OF ACCIDENTS		
5 or More			☐ ☒

WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)

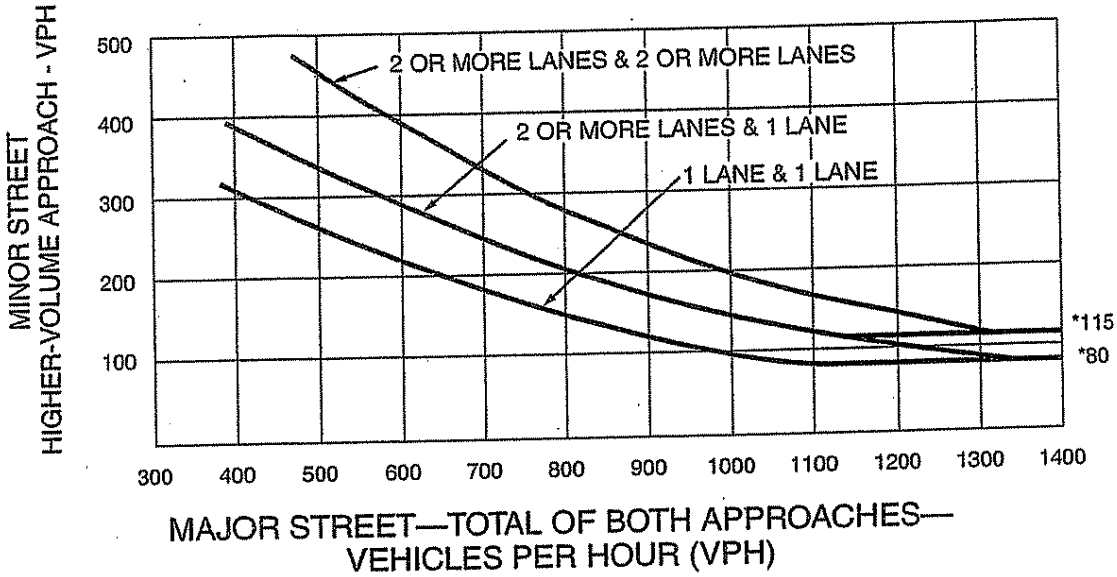
SATISFIED YES ☐ NO ☒

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES			✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour <1,000 Veh/Hr				
	OR During Each of Any 5 Hrs. of a Sat. and/or Sun _____ Veh/Hr				Yes ☐ No ☒
	CHARACTERISTICS OF MAJOR ROUTES	MAJOR ST.	MINOR ST.		
	Hwy. System Serving as Principal Network for Through Traffic				
	Rural or Suburban Highway Outside Of, Entering, or Traversing a City				
	Appears as Major Route on an Official Plan	✓			
	Any Major Route Characteristics Met, Both Streets				☐ ☒

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

22

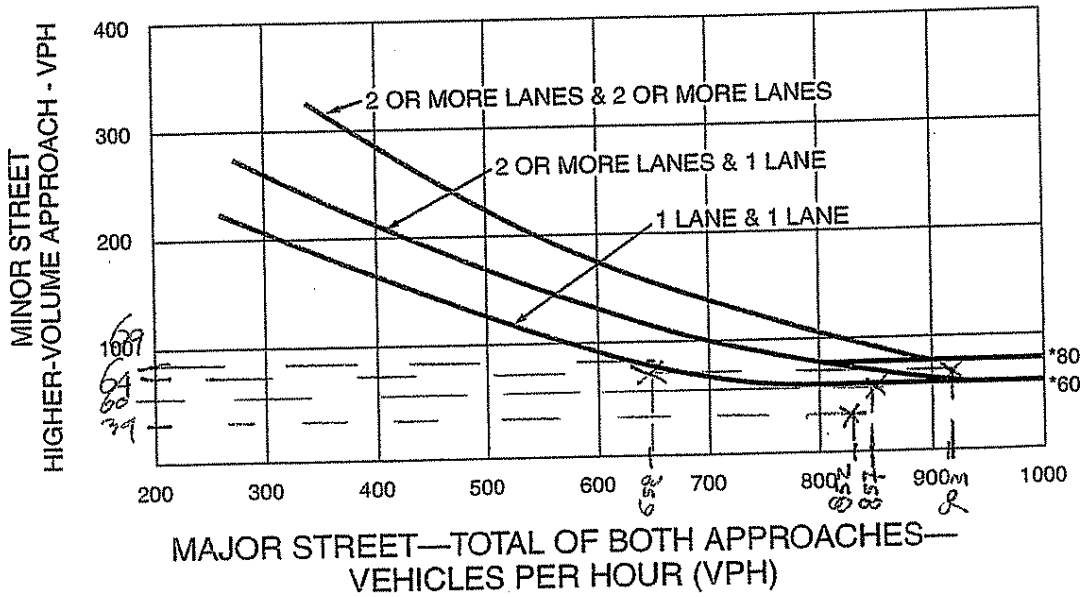
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

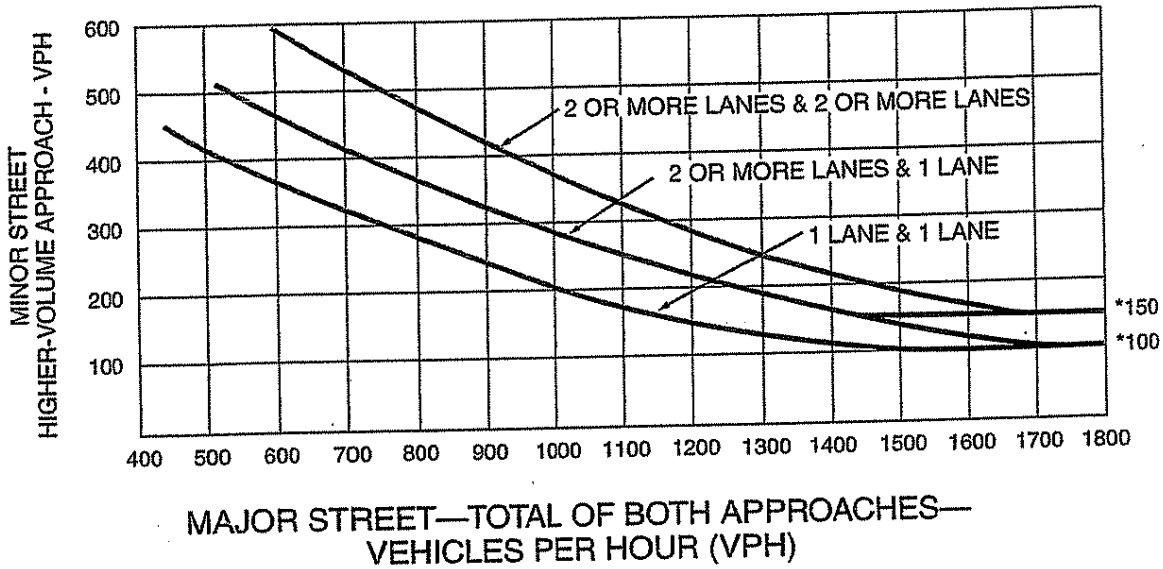
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Telegraph Rd

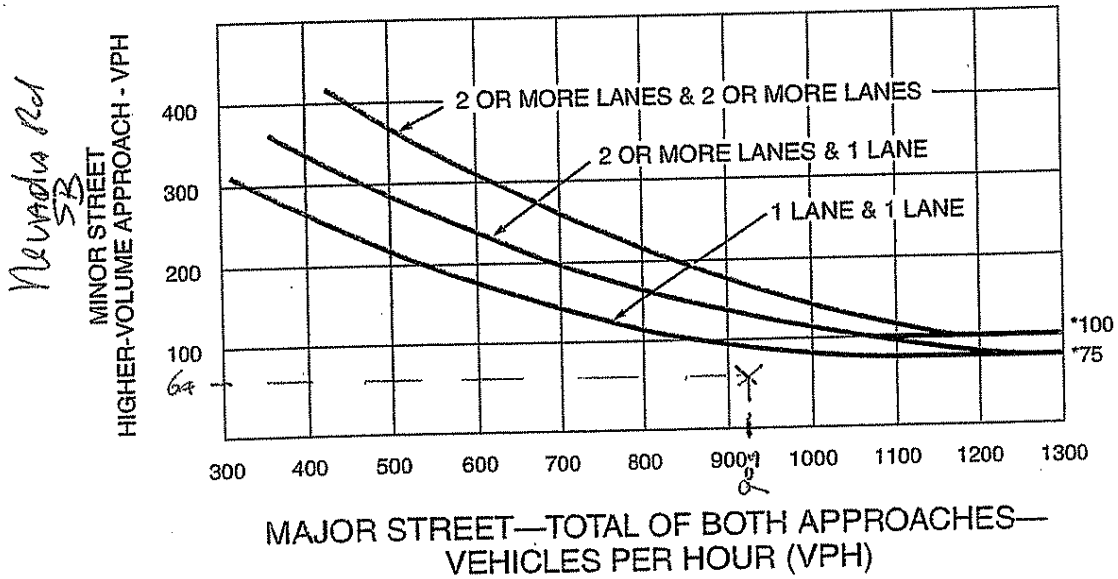
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Telegraph Rd

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Year 2025 + Project Traffic Volumes

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 1 of 4)

07 (DIST) Ven (CO) ____ (RTE) ____ (KPM)

CALC DL DATE 10-10-05
CHK ____ DATE ____

Major St: Telegraph Rd — Critical Approach Speed 80 km/h
Minor St: Nevada Rd — Critical Approach Speed 40 km/h

Critical speed of major street traffic > 64 km/h (40 mph)..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS											
	U	R	U	R								
APPROACH LANES	1		2 or More		7-8	8-9	11-12	12-1	1-2	2-3	5-6	6-7 Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	607	646	577	632	842	837	887	572
Highest Approaches Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	80	69	47	42	60	39	64	46

SB

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS											
	U	R	U	R								
APPROACH LANES	1		2 or More		7-8	8-9	11-12	12-1	1-2	2-3	5-6	6-7 Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	607	646	577	632	842	837	887	572
Highest Approaches Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	80	69	47	42	60	39	64	46

SB

Combination of Conditions A & B

SATISFIED YES ☐ NO ☒

REQUIREMENT	WARRANT	✓	FULFILLED
TWO WARRANTS SATISFIED 80%	1. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☑
	2. INTERRUPTION OF CONTINUOUS TRAFFIC		

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Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for four hours.

APPROACH LANES	One	2 or More	7-8	8-9	4-5	5-6 Hour	
Both Approaches - Major Street		X	646	842	837	887	
Highest Approaches - Minor Street	X		69	60	39	64	53

*All plotted points fall above the curves in MUTCD Figure 4C-1 or 4C-2. Yes ☐ No ☒

WARRANT 3 - Peak Hour **PART A or PART B SATISFIED YES ☐ NO ☒**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceedds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — Yes ☐ No ☒
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaoches. — Yes ☐ No ☒

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	5-6				Hour	
Both Approaches - Major Street		X	887					
Highest Approaches - Minor Street	X		64					53

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 3 of 4)

DIST ____ CO ____ RTE ____ KPM ____

CALC _____ DATE _____
CHK _____ DATE _____

Major St: _____ Critical Approach Speed _____ km/h
Minor St: _____ Critical Approach Speed _____ km/h

Critical speed of major street > 64 km/h (40 mph)..... ☐ or ☐ } RURAL (R)
In built up area of isolated community of < 10,000 population..... ☐
☐ URBAN (U)

WARRANT 4 - Pedestrian Volume
(All Parts Must Be Satisfied)

100% SATISFIED YES ☐ NO ☐

Hours --->						
Pedestrian Volume					Any hour > 190	Yes ☐ No ☐
					OR 4 hours > 100	Yes ☐ No ☐
Adequate Crossing Gaps					AND < 60 gap/hr	Yes ☐ No ☐

NA

AND, The distance to the nearest traffic signal along the major street is greater than 90m (300 ft) ---------- Yes ☐ No ☐

AND, The new traffic signal will not seriously disrupt progressive traffic flow in the major street. ---------- Yes ☐ No ☐

WARRANT 5 - School Crossing
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☐

Part A
Gap/Minutes and # of Children

Each of Two Hours --->			
Gaps vs Minutes	Minutes Children Using Crossing		
	Number of Adequate Gaps		
School Age Pedestrians Crossing Street			

Gaps < Minutes SATISFIED YES ☐ NO ☐
Children > 20/hr SATISFIED YES ☐ NO ☐

NA

Part B
Distance to Nearest Controlled Crossing

Is Nearest Controlled Crossing More Than 180 m (600 ft) away? SATISFIED YES ☐ NO ☐

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Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 4 of 4)

WARRANT 6 - Coordinated Signal System **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	FULFILLED
> 300 m (1000 ft)	N NA m, S NA m, E <300m, W >300m	Yes ☐ No ☒
On one way isolated streets or streets with one way traffic significance and adjacent signals are so far apart that necessary platooning and speed control would be lost.		
On 2-way streets where adjacent signals do not provide necessary platooning and speed control proposed signals could constitute a progressive signal system.		☐ ☒

WARRANT 7 - Crash Warrant **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

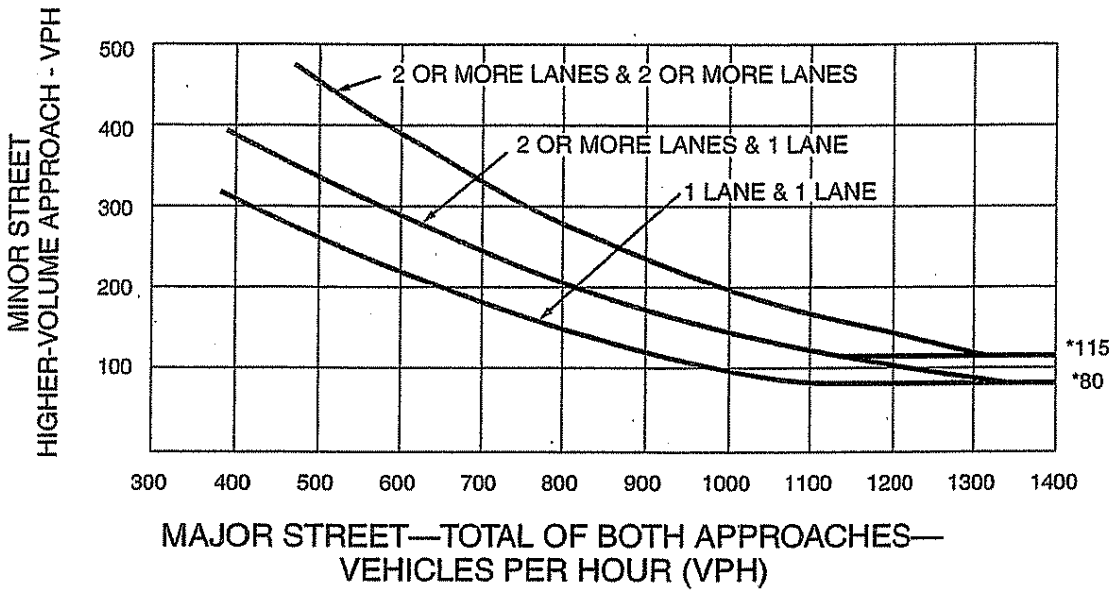
REQUIREMENTS	WARRANT	✓	FULFILLED
One Warrant Satisfied 80%	Warrant 1 - Minimum Vehicular Volume		
	OR		
	Warrant 2 - Interruption of Continuous Traffic		Yes ☐ No ☒
Signal Will Not Seriously Disrupt Progressive Traffic Flow			☐ ☒
Adequate Trial of Less Restrictive Remedies Has Failed to Reduce Accident Frequency			☐ ☒
Acc. Within a 12 Month Period Susceptible for Corr. & Involving Injury or ≥ $500 Damage			
MINIMUM REQUIREMENTS	NUMBER OF ACCIDENTS		
5 or More			☐ ☒

WARRANT 8 - Roadway Network **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES			✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour < 1,000 Veh/Hr				
	OR				
	During Each of Any 5 Hrs. of a Sat. and/or Sun _____ Veh/Hr				Yes ☐ No ☒
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ST.	MINOR ST.		
Hwy. System Serving as Principal Network for Through Traffic					
Rural or Suburban Highway Outside Of, Entering, or Traversing a City					
Appears as Major Route on an Official Plan		✓			
Any Major Route Characteristics Met, Both Streets					☐ ☒

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

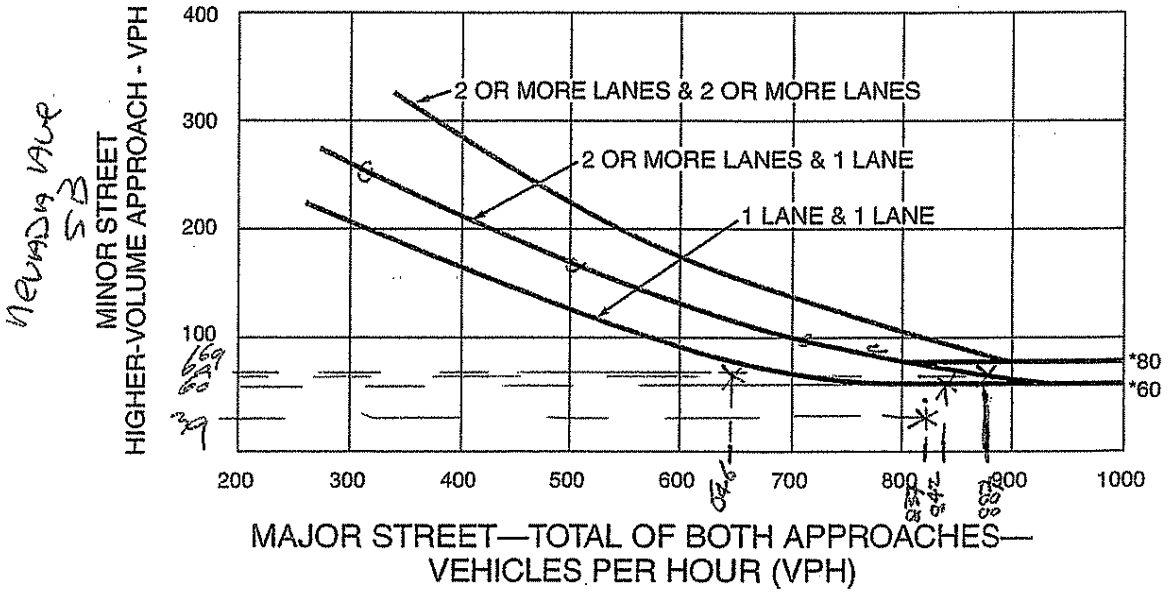
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

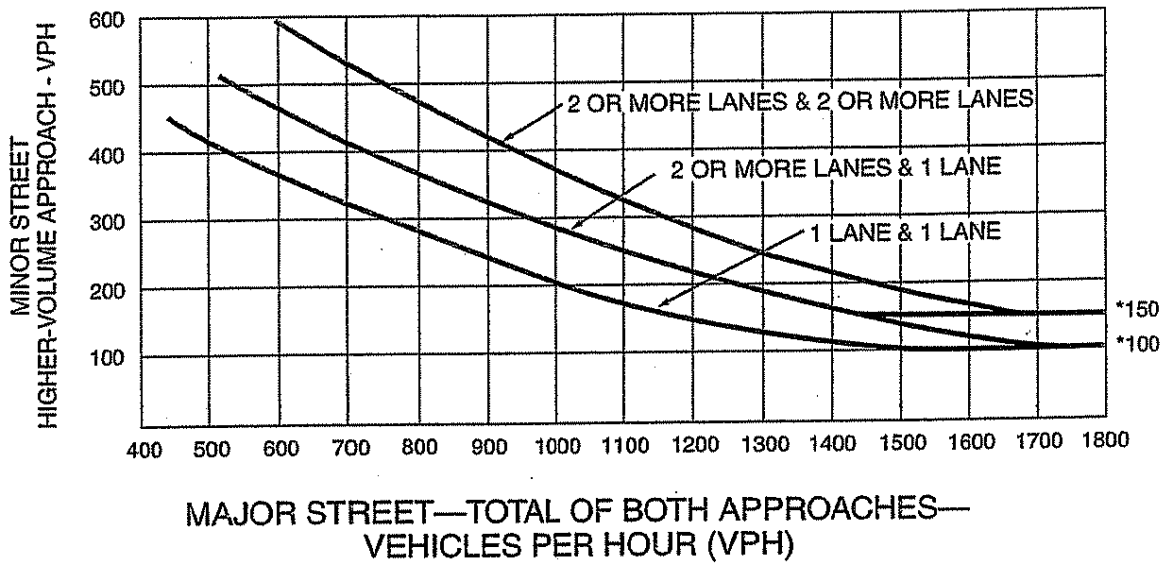
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Telegraph Rd

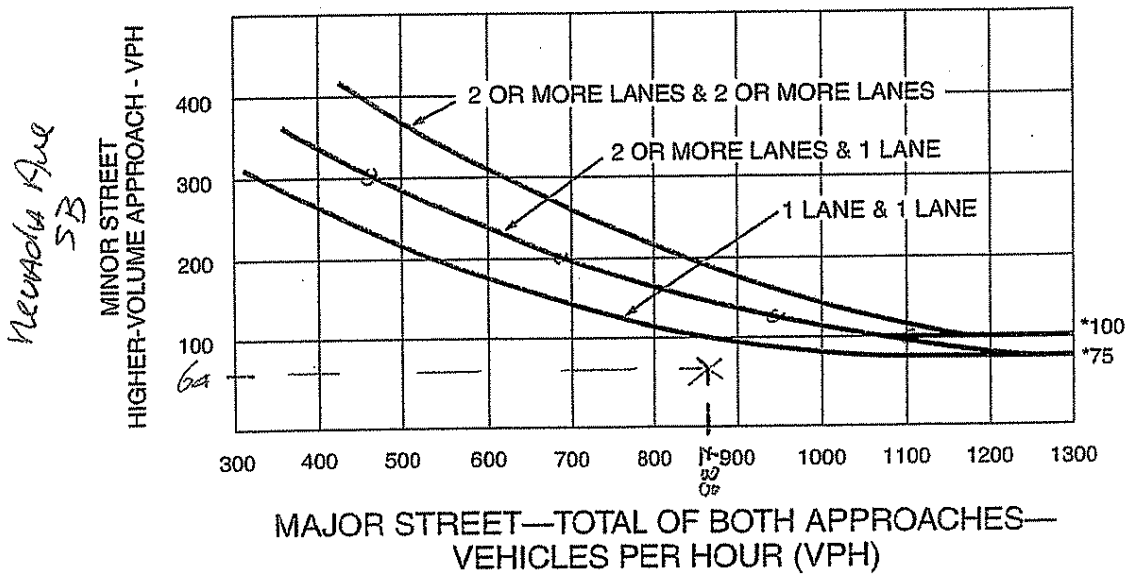
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Telegraph Rd

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Existing + Project Traffic Volumes

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 1 of 4)

07 (DIST) Ven (CO) ____ (RTE) ____ (KPM)

CALC DC DATE 10.10.05
CHK ____ DATE ____

Major St: Wells Road
Minor St: Charles Streets

Critical Approach Speed 65 km/h
Critical Approach Speed 40 km/h

Critical speed of major street traffic > 64 km/h (40 mph)..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS											
	U	R	U	~~R~~								
APPROACH LANES	1		2 or More		7-8	8-9	12-1	1-2	2-3	3-4	4-5	5-6 Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1015	980	815	872	918	1474	1309	1234
Highest Approaches Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	138	113	93	97	109	105	134	123

WB both lanes

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☒ NO ☐
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS											
	U	R	U	~~R~~								
APPROACH LANES	1		2 or More		7-8	8-9	12-1	1-2	2-3	3-4	4-5	5-6 Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1015	980	815	872	918	1474	1309	1234
Highest Approaches Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	138	113	93	97	109	105	134	123

WB both lanes

Combination of Conditions A & B

SATISFIED YES ☐ NO ☒

REQUIREMENT	WARRANT	✓	FULFILLED
TWO WARRANTS SATISFIED 80%	1. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	2. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for four hours.

APPROACH LANES	One	2 or More	8 / 4 / 5 / 6 Hour			
Both Approaches - Major Street		X	1015	1474	1309	1234
Highest Approaches - Minor Street	X		63	48	60	56

WB LT Lane only

*All plotted points fall above the curves in MUTCD Figure 4C-1 or 4C-2. Yes ☐ No ☒

WARRANT 3 - Peak Hour **PART A or PART B SATISFIED YES ☐ NO ☐**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceedds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — Yes ☐ No ☒
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaoches. — Yes ☒ No ☐

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	4-5 / / / Hour			
Both Approaches - Major Street		X	1309			
Highest Approaches - Minor Street	X		60			

WB LT Lane only

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.

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Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 3 of 4)

DIST ____ CO ____ RTE ____ KPM ____

CALC _____ DATE _____
CHK _____ DATE _____

Major St: _____ Critical Approach Speed _____ km/h
Minor St: _____ Critical Approach Speed _____ km/h

Critical speed of major street > 64 km/h (40 mph)..... ☐ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 4 - Pedestrian Volume
(All Parts Must Be Satisfied)

100% SATISFIED YES ☐ NO ☐ N.A.

Hours --->						
Pedestrian Volume					Any hour > 190	Yes ☐ No ☐
					OR 4 hours > 100	Yes ☐ No ☐
Adequate Crossing Gaps					AND < 60 gap/hr	Yes ☐ No ☐

AND, The distance to the nearest traffic signal along the major street is greater than 90m (300 ft) ---------- Yes ☐ No ☐

AND, The new traffic signal will not seriously disrupt progressive traffic flow in the major street. ---------- Yes ☐ No ☐

WARRANT 5 - School Crossing
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☐ N.A.

Part A
Gap/Minutes and # of Children

Each of Two Hours --->			
Gaps vs Minutes	Minutes Children Using Crossing		
	Number of Adequate Gaps		
School Age Pedestrians Crossing Street			

Gaps < Minutes SATISFIED YES ☐ NO ☐
Children > 20/hr SATISFIED YES ☐ NO ☐

Part B
Distance to Nearest Controlled Crossing

Is Nearest Controlled Crossing More Than 180 m (600 ft) away? SATISFIED YES ☐ NO ☐

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 4 of 4)

WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	FULFILLED
> 300 m (1000 ft)	N >300 m, S <300 m, E N/A m, W N/A m	Yes ☐ No ☒
On one way isolated streets or streets with one way traffic significance and adjacent signals are so far apart that necessary platooning and speed control would be lost.		
On 2-way streets where adjacent signals do not provide necessary platooning and speed control proposed signals could constitute a progressive signal system.		☐ ☒

WARRANT 7 - Crash Warrant
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

REQUIREMENTS	WARRANT	✓	FULFILLED
One Warrant Satisfied 80%	Warrant 1 - Minimum Vehicular Volume		
	OR Warrant 2 - Interruption of Continuous Traffic	✓	Yes ☒ No ☐
Signal Will Not Seriously Disrupt Progressive Traffic Flow			☐ ☒
Adequate Trial of Less Restrictive Remedies Has Failed to Reduce Accident Frequency			☐ ☒
Acc. Within a 12 Month Period Susceptible for Corr. & Involving Injury or ≥ $500 Damage			
MINIMUM REQUIREMENTS	NUMBER OF ACCIDENTS		
5 or More			☐ ☒

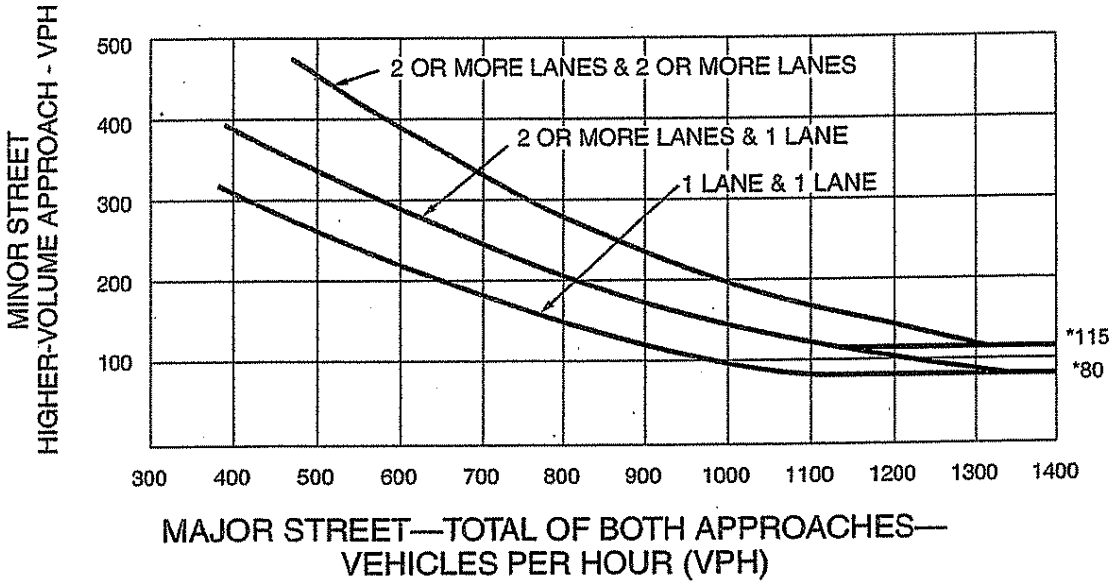
WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES		✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 1,400 Veh/Hr			
	OR During Each of Any 5 Hrs. of a Sat. and/or Sun _____ Veh/Hr			Yes ☒ No ☐
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ST.	MINOR ST.	
Hwy. System Serving as Principal Network for Through Traffic				
Rural or Suburban Highway Outside Of, Entering, or Traversing a City				
Appears as Major Route on an Official Plan		✓		
Any Major Route Characteristics Met, Both Streets				☐ ☒

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

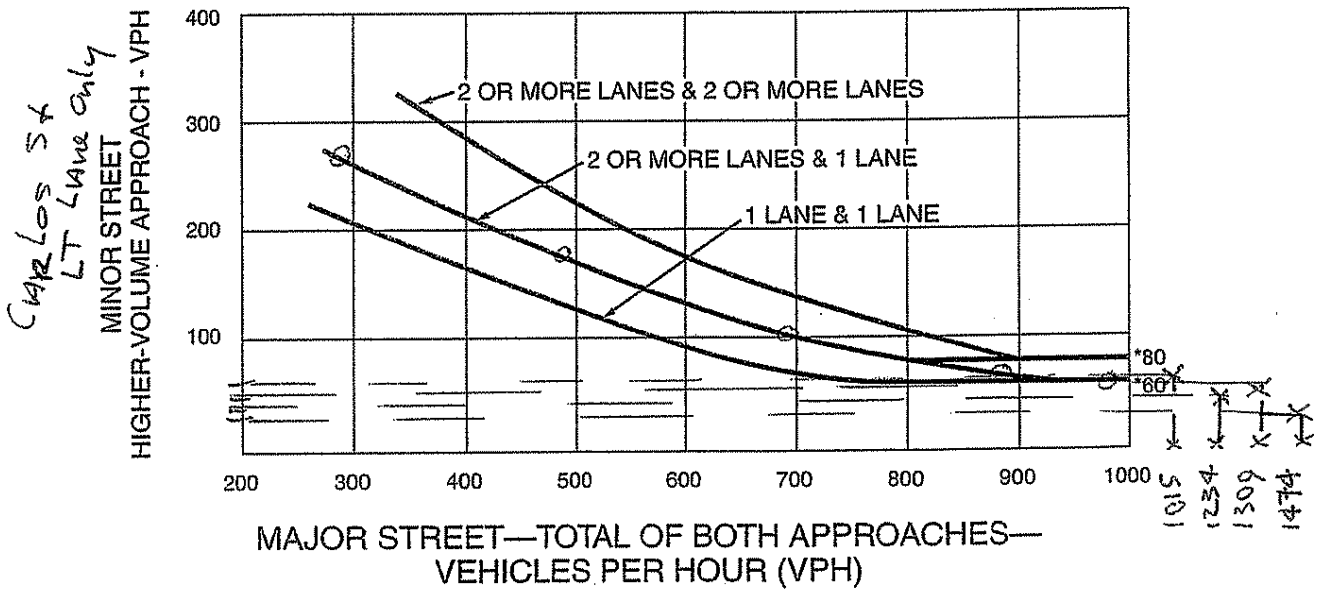


*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

*

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Wells Rd

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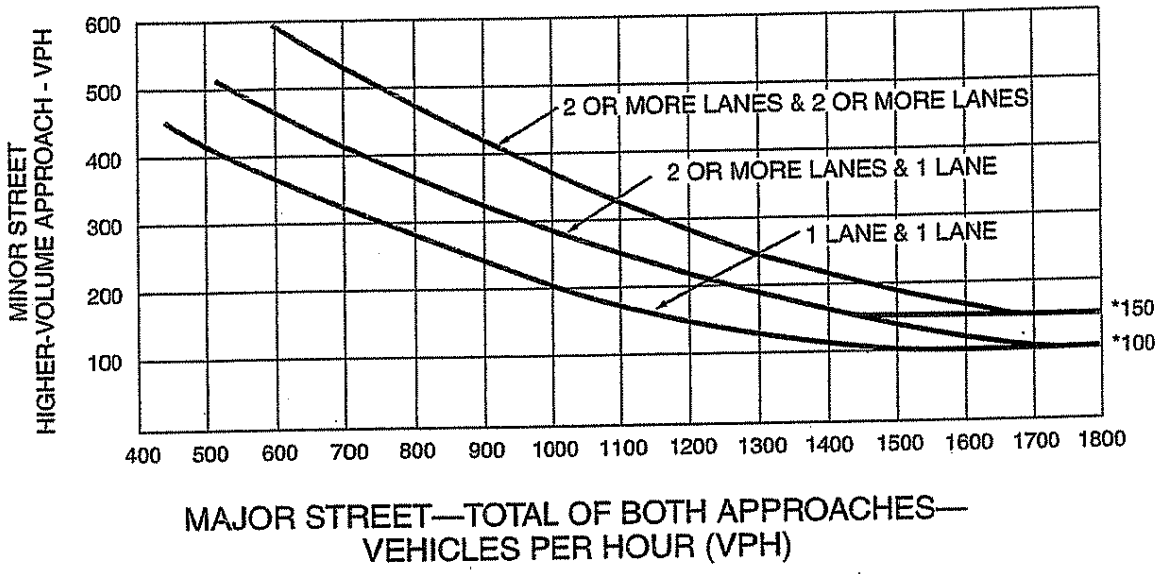
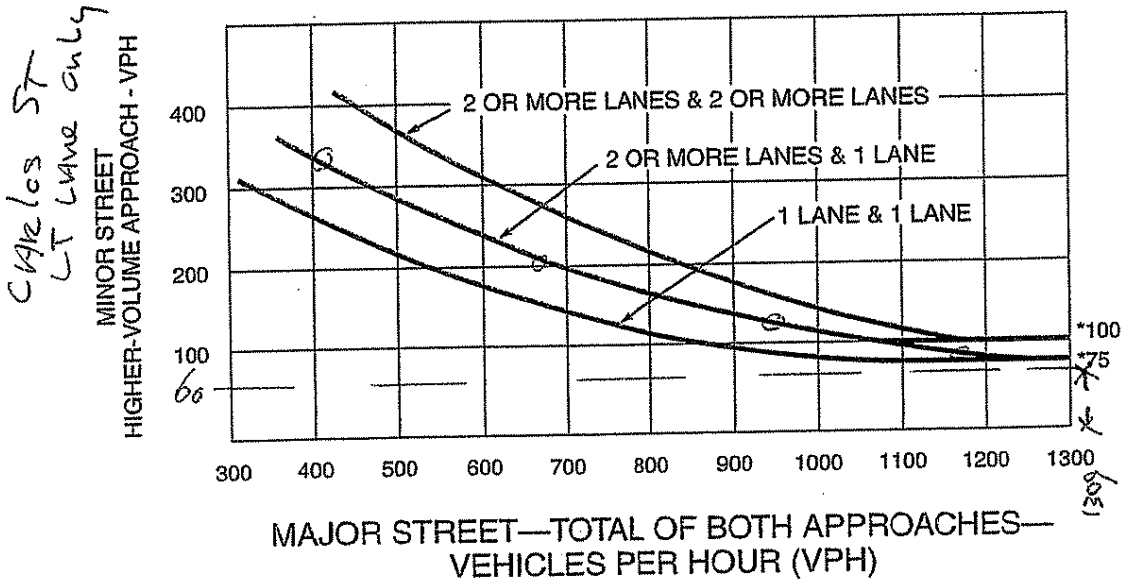
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Wells Rd

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Year 2025 + Project Traffic Volumes

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 1 of 4)

07 Ven ____ ____
DIST CO RTE KPM

CALC DL DATE 10-10-05
CHK ____ DATE ____

Major St: Wells Rd
Minor St: Carlos St

Critical Approach Speed ____ km/h
Critical Approach Speed ____ km/h

Critical speed of major street traffic > 64 km/h (40 mph)..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS												
	U	R	U	~~R~~									
APPROACH LANES	1		2 or More		7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4 Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1161	1121	932	998	1050	1687	1497	1412	
Highest Approaches Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	125	103	85	88	100	96	122	112	WB 2 lanes

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☒ NO ☐
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS												
	U	R	U	~~R~~									
APPROACH LANES	1		2 or More		7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4 Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1161	1121	932	998	1050	1687	1497	1412	
Highest Approaches Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	125	103	85	88	100	96	122	112	WB 2 lanes

Combination of Conditions A & B

SATISFIED YES ☐ NO ☒

REQUIREMENT	WARRANT	✓	FULFILLED
TWO WARRANTS SATISFIED 80%	1. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	2. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 2 of 4)

WARRANT 2 - Four Hour Vehicular Volume SATISFIED* YES ☐ NO ☒

Record hourly vehicular volumes for four hours.

APPROACH LANES	One	2 or More	8	9	5	6 Hour
Both Approaches - Major Street		X	1161	1687	1497	1412
Highest Approaches - Minor Street	X		63	48	60	56

WB LT Lane only

*All plotted points fall above the curves in MUTCD Figure 4C-1 or 4C-2. Yes ☐ No ☒

WARRANT 3 - Peak Hour PART A or PART B SATISFIED YES ☐ NO ☒

PART A SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied)

1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceedds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; AND — Yes ☐ No ☒
2. The volume on the same minor street approach equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND — Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaoches. — Yes ☒ No ☐

PART B SATISFIED YES ☐ NO ☒

APPROACH LANES	One	2 or More	5				Hour
Both Approaches - Major Street		X	1497				
Highest Approaches - Minor Street	X		60				

WB LT Lane only

The plotted points for vehicles per hour on major streets (both approaches) and the corresponding per hour higher volume vehicle minor street approach (one direction only) for one hour (any consecutive 15 minute period) fall above the applicable curves in MUTCD Figure 4C-3 or 4C-4.

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Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 3 of 4)

DIST	CO	RTE	KPM

CALC _____ DATE _____
CHK _____ DATE _____

Major St: _____ Critical Approach Speed _____ km/h
Minor St: _____ Critical Approach Speed _____ km/h

Critical speed of major street > 64 km/h (40 mph)..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 4 - Pedestrian Volume
(All Parts Must Be Satisfied)

100% SATISFIED YES ☐ NO ☐

Hours --->				
Pedestrian Volume				
Adequate Crossing Gaps				

Any hour > 190 Yes ☐ No ☐
OR 4 hours > 100 Yes ☐ No ☐
AND < 60 gap/hr Yes ☐ No ☐

NA

AND, The distance to the nearest traffic signal along the major street is greater than 90m (300 ft) ---------- Yes ☐ No ☐

AND, The new traffic signal will not seriously disrupt progressive traffic flow in the major street. ---------- Yes ☐ No ☐

WARRANT 5 - School Crossing
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☐

Part A
Gap/Minutes and # of Children

NA

Each of Two Hours --->			
Gaps vs Minutes	Minutes Children Using Crossing		
	Number of Adequate Gaps		
School Age Pedestrians Crossing Street			

Gaps < Minutes SATISFIED YES ☐ NO ☐
Children > 20/hr SATISFIED YES ☐ NO ☐

Part B
Distance to Nearest Controlled Crossing

Is Nearest Controlled Crossing More Than 180 m (600 ft) away? SATISFIED YES ☐ NO ☐

Figure 4C-101. Traffic Signal Warrants Worksheet (Sheet 4 of 4)

WARRANT 6 - Coordinated Signal System
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	FULFILLED
> 300 m (1000 ft)	N >300 m, S <300 m, E N/A m, W N/A m	Yes ☐ No ☒
On one way isolated streets or streets with one way traffic significance and adjacent signals are so far apart that necessary platooning and speed control would be lost.		
On 2-way streets where adjacent signals do not provide necessary platooning and speed control proposed signals could constitute a progressive signal system.		☐ ☒

WARRANT 7 - Crash Warrant
(All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

REQUIREMENTS	WARRANT	✓	FULFILLED
One Warrant Satisfied 80%	Warrant 1 - Minimum Vehicular Volume		
	OR Warrant 2 - Interruption of Continuous Traffic	✓	Yes ☒ No ☐
Signal Will Not Seriously Disrupt Progressive Traffic Flow			☐ ☒
Adequate Trial of Less Restrictive Remedies Has Failed to Reduce Accident Frequency			☐ ☒
Acc. Within a 12 Month Period Susceptible for Corr. & Involving Injury or ≥ $500 Damage			
MINIMUM REQUIREMENTS	NUMBER OF ACCIDENTS		
5 or More			☐ ☒

WARRANT 8 - Roadway Network
(All Parts Must Be Satisfied)

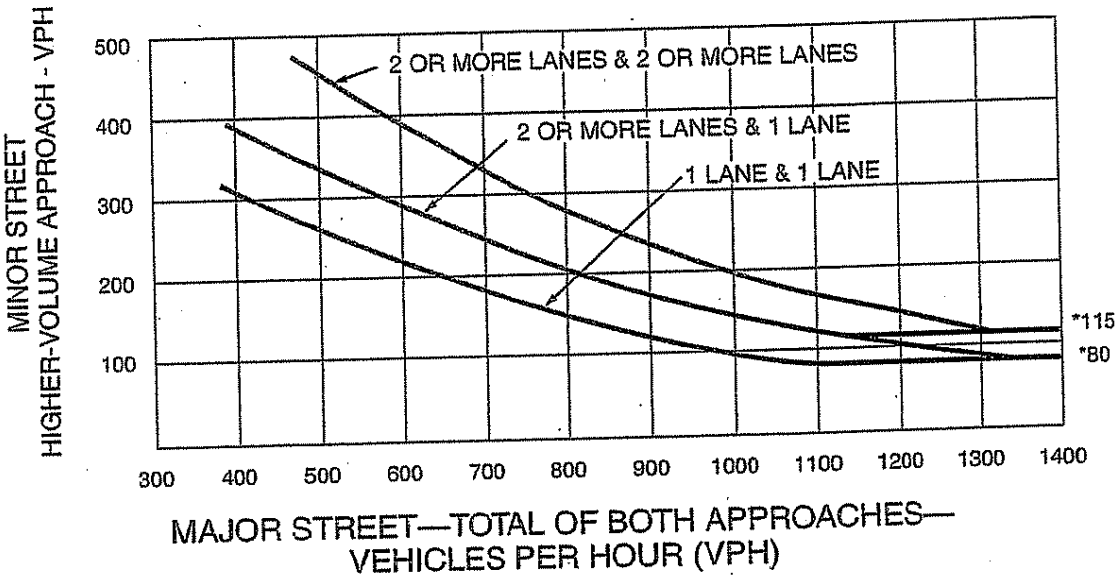
SATISFIED YES ☐ NO ☒

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES			✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour >1000 Veh/Hr				
	OR During Each of Any 5 Hrs. of a Sat. and/or Sun _____ Veh/Hr				Yes ☒ No ☐
CHARACTERISTICS OF MAJOR ROUTES		MAJOR ST.	MINOR ST.		
Hwy. System Serving as Principal Network for Through Traffic					
Rural or Suburban Highway Outside Of, Entering, or Traversing a City					
Appears as Major Route on an Official Plan		✓			
Any Major Route Characteristics Met, Both Streets					☐ ☒

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

40

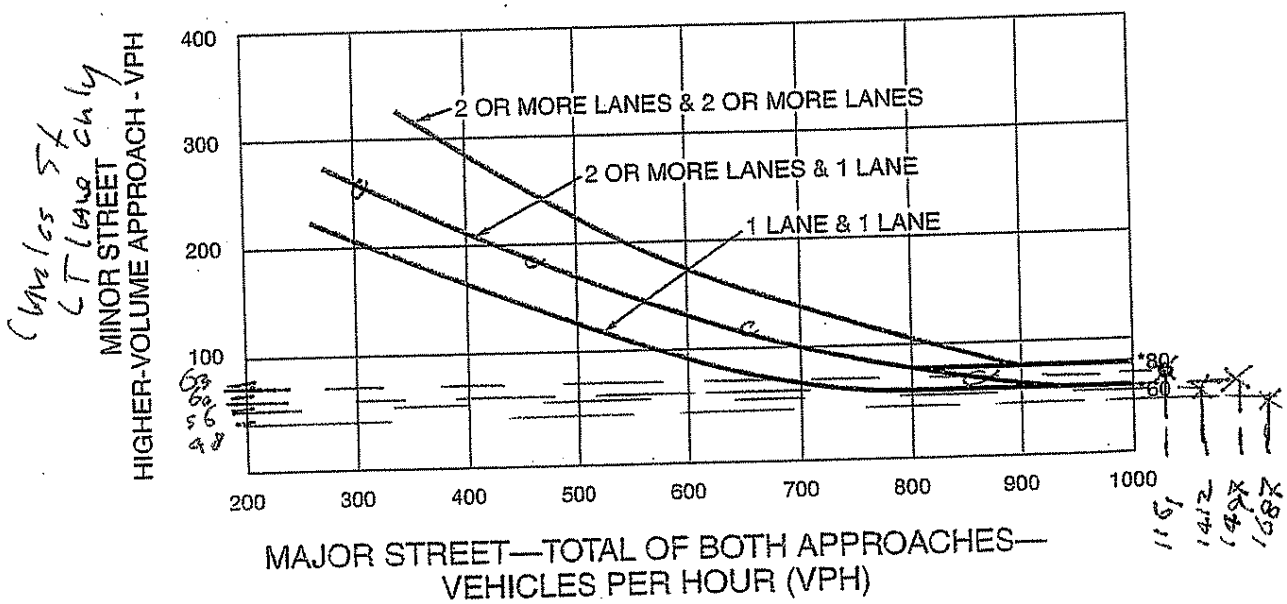
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

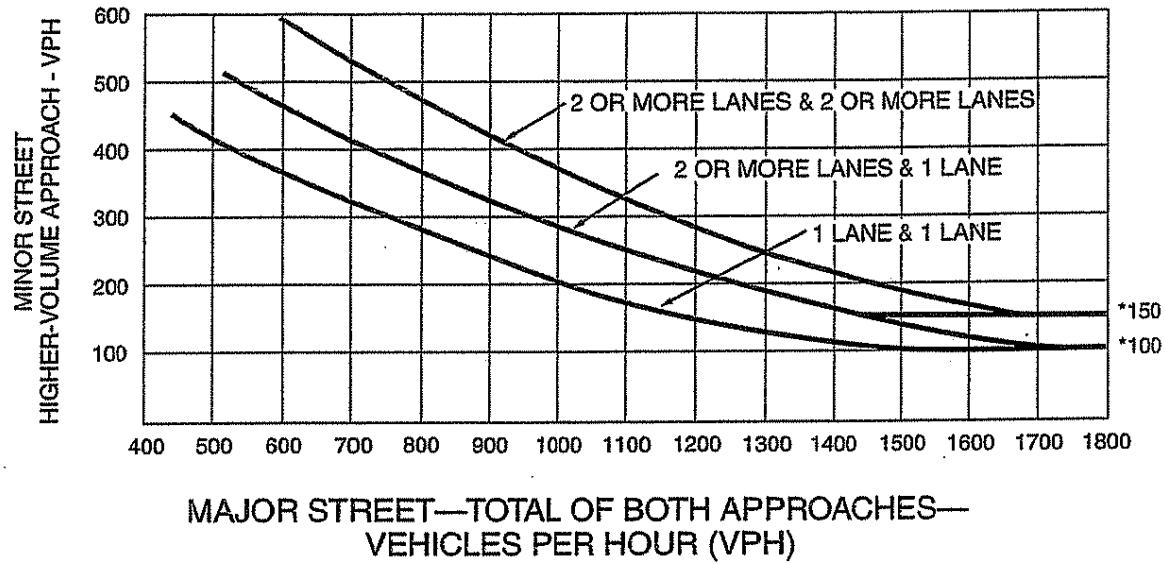


*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Wells Rd

41

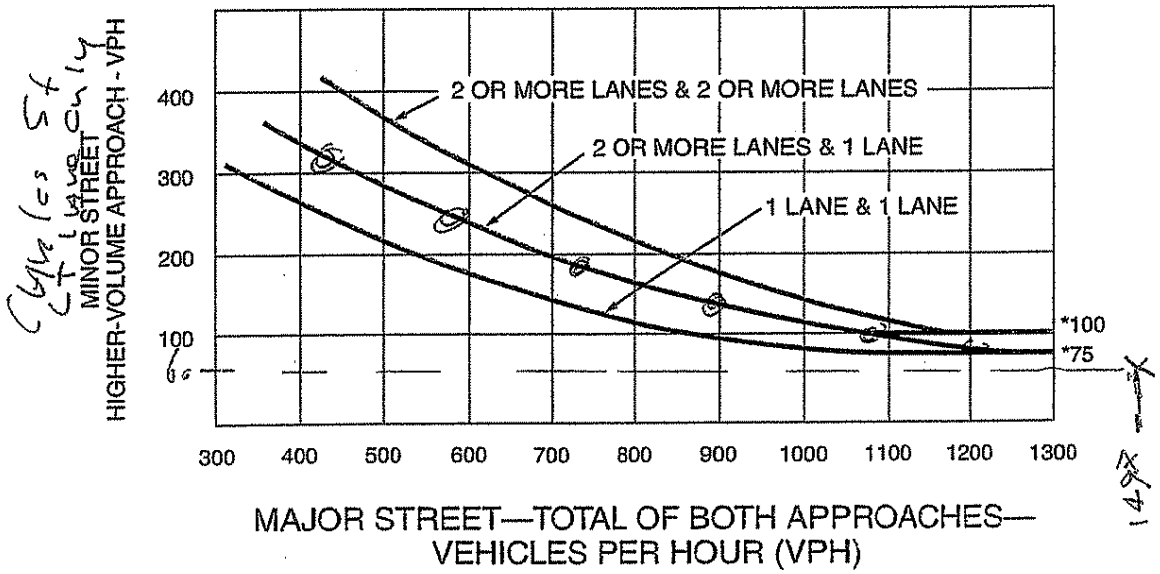
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Wells Rd

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INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

Reference 1. Foothill Road/Wells Road
Reference 2. Telegraph Road/Kimball Road
Reference 3. Telegraph Road/Petit Avenue
Reference 4. Telegraph Road/Saticoy Avenue
Reference 5. Telegraph Road/Nevada Avenue
Reference 6. Telegraph Road/Wells Road
Reference 7. Carlos Street/Wells Road
Reference 8. Citrus Dr-Blackburn Rd/Wells Road
Reference 9. State Route 126 WB Ramps/Wells Road
Reference 10. State Route 126 EB Ramps/Wells Road
Reference 11. Darling Road/Wells Road
Reference 12. Telephone Road/Kimball Road
Reference 13. Telephone Road/Montgomery Avenue
Reference 14. Telephone Road/Petit Avenue
Reference 15. Telephone Road/Saticoy Avenue
Reference 16. Telephone Road/Wells Road
Reference 17. Wells Road/Nardo Street
Reference 18. Los Angeles Avenue/Vineyard Avenue

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01AM_EX
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	EXISTING
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: FOOTHILL ROAD | North/South Street: WELLS ROAD

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	30	70	60	60	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	30	70	60	60	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	60	0	30	0	0	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	60	0	30	0	0	0
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	0	60	60		30		0	
C (m) (veh/h)	1531	1480	719		1039			
v/c	0.00	0.04	0.08		0.03			
95% queue length	0.00	0.13	0.27		0.09			
Control Delay (s/veh)	7.4	7.5	10.5		8.6			
LOS	A	A	B		A			
Approach Delay (s/veh)	--	--	9.8					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01PM_EX
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	EXISTING
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: FOOTHILL ROAD | North/South Street: WELLS ROAD

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	70	80	40	30	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	70	80	40	30	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	80	0	50	0	0	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	80	0	50	0	0	0
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	0	40	80		50		0	
C (m) (veh/h)	1570	1419	760		987			
v/c	0.00	0.03	0.11		0.05			
95% queue length	0.00	0.09	0.35		0.16			
Control Delay (s/veh)	7.3	7.6	10.3		8.8			
LOS	A	A	B		A			
Approach Delay (s/veh)	--	--	9.7					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01AM_EX+PR
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	EXISTING+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: FOOTHILL ROAD | North/South Street: WELLS ROAD

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	30	71	61	60	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	30	71	61	60	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	63	0	33	0	0	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	63	0	33	0	0	0
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	0	61	63		33		0	
C (m) (veh/h)	1531	1479	717		1039			
v/c	0.00	0.04	0.09		0.03			
95% queue length	0.00	0.13	0.29		0.10			
Control Delay (s/veh)	7.4	7.5	10.5		8.6			
LOS	A	A	B		A			
Approach Delay (s/veh)	--	--	9.8					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01PM_EX+PR
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	EXISTING+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: FOOTHILL ROAD | North/South Street: WELLS ROAD

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	70	83	43	30	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	70	83	43	30	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	85	0	55	0	0	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	85	0	55	0	0	0
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	0	43	85		55		0	
C (m) (veh/h)	1570	1415	752		987			
v/c	0.00	0.03	0.11		0.06			
95% queue length	0.00	0.09	0.38		0.18			
Control Delay (s/veh)	7.3	7.6	10.4		8.9			
LOS	A	A	B		A			
Approach Delay (s/veh)	--	--	9.8					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01AM_2025
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	YEAR 2025
Analysis Time Period	A.M. PEAK HOUR		

Project Description	PARKLANDS PROJECT - 08088
East/West Street: FOOTHILL ROAD	North/South Street: WELLS ROAD
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	57	0	27	0	0	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	30	69	59	60	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR	LTR		
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	30	69	59	60	0
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	57	0	27
Percent Heavy Vehicles	4	0	0	4	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	LTR		LTR		LT		R
v (veh/h)	57	0		119		30		69
C (m) (veh/h)	1610	1574		713		727		1091
v/c	0.04	0.00		0.17		0.04		0.06
95% queue length	0.11	0.00		0.60		0.13		0.20
Control Delay (s/veh)	7.3	7.3		11.1		10.2		8.5
LOS	A	A		B		B		A
Approach Delay (s/veh)	--	--	11.1			9.0		
Approach LOS	--	--	B			A		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01AM_2025+PR
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description	PARKLANDS PROJECT - 08088
East/West Street: FOOTHILL ROAD	North/South Street: WELLS ROAD
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	50	70	50	300	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	50	70	50	300	10
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	90	10	40	10	10	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	90	10	40	10	10	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	10	50	90		50		30	
C (m) (veh/h)	1239	1455	456		815		486	
v/c	0.01	0.03	0.20		0.06		0.06	
95% queue length	0.02	0.11	0.73		0.20		0.20	
Control Delay (s/veh)	7.9	7.6	14.8		9.7		12.9	
LOS	A	A	B		A		B	
Approach Delay (s/veh)	--	--	13.0			12.9		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01PM_2025
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	YEAR 2025
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: FOOTHILL ROAD | North/South Street: WELLS ROAD

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	210	127	27	60	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	210	127	27	60	10
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	105	10	75	10	10	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	105	10	75	10	10	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	10	27	105		85		30	
C (m) (veh/h)	1518	1211	564		779		559	
v/c	0.01	0.02	0.19		0.11		0.05	
95% queue length	0.02	0.07	0.68		0.37		0.17	
Control Delay (s/veh)	7.4	8.0	12.8		10.2		11.8	
LOS	A	A	B		B		B	
Approach Delay (s/veh)	--	--	11.7			11.8		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	01PM_2025+PR
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	08/14/2008	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: FOOTHILL ROAD | North/South Street: WELLS ROAD

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	210	130	30	60	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	210	130	30	60	10
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R	LTR		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	110	10	80	10	10	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	110	10	80	10	10	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L		TR		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT	LTR	L		TR		LTR	
v (veh/h)	10	30	110		90		30	
C (m) (veh/h)	1518	1208	557		780		550	
v/c	0.01	0.02	0.20		0.12		0.05	
95% queue length	0.02	0.08	0.74		0.39		0.17	
Control Delay (s/veh)	7.4	8.1	13.1		10.2		11.9	
LOS	A	A	B		B		B	
Approach Delay (s/veh)	--	--	11.8			11.9		
Approach LOS	--	--	B			B		

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AWD = 11.2 sec. / LOS B

PARKLANDS #08088

REFERENCE #02AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *KIMBALL ROAD*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	150	110	80	40	170	20	20	170	80	200	290	20
(B) PROJECT	0	0	2	2	0	0	0	11	0	4	43	2
(C) CUMULATIVE	160	90	88	18	190	30	20	169	70	196	337	8

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND LL TT R	SOUTH BOUND L TT R	EAST BOUND L TT R	WEST BOUND LL TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	2	3200	150	150	160	160	0.05 *	0.05 *	0.05 *	0.05 *		
NBT	2	3200	110	110	90	90	0.03	0.03	0.03	0.03		
NBR	1	1600	80	82	88	90	0.05	0.05	0.06	0.06		
SBL	1	1600	40	42	18	20	0.03	0.03	0.01	0.01		
SBT	2	3200	170	170	190	190	0.05 *	0.05 *	0.06 *	0.06 *		
SBR	1	1600	20	20	30	30	0.01	0.01	0.02	0.02		
EBL	1	1600	20	20	20	20	0.01	0.01	0.01 *	0.01 *		
EBT	2	3200	170	181	169	180	0.05 *	0.06 *	0.05	0.06		
EBR (a)	1	1600	80	80	70	70	0.05	0.05	0.04	0.04		
WBL	2	3200	200	204	196	200	0.06 *	0.06 *	0.06	0.06		
WBT	2	3200	290	333	337	380	0.09	0.10	0.11 *	0.12 *		
WBR	1	1600	20	22	8	10	0.01	0.01	0.01	0.01		
							--	--		--		
			INTERSECTION CAPACITY UTILIZATION:				0.21	0.22	0.23	0.24		
			LEVEL OF SERVICE:				A	A	A	A		

NOTES:

(a) NOT CRITICAL DUE TO RTOR

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #02PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE:

TIME PERIOD: *P.M.*

N/S STREET: *KIMBALL ROAD*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	150	190	180	60	150	30	20	440	230	160	240	30
(B) PROJECT	0	0	6	2	0	0	0	45	0	4	27	1
(C) CUMULATIVE	100	180	174	58	180	30	30	515	230	126	283	29

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND LL TT R	SOUTH BOUND L TT R	EAST BOUND L TT R	WEST BOUND LL TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	2	3200	150	150	100	100	0.05	0.05	0.03	0.03		
NBT	2	3200	190	190	180	180	0.06	0.06	0.06	0.06		
NBR *(a)*	1	1600	108	112	122	126	0.07 *	0.07 *	0.08 *	0.08 *		
SBL	1	1600	60	62	58	60	0.04 *	0.04 *	0.04 *	0.04 *		
SBT	2	3200	150	150	180	180	0.05	0.05	0.06	0.06		
SBR	1	1600	30	30	30	30	0.02	0.02	0.02	0.02		
EBL	1	1600	20	20	30	30	0.01	0.01	0.02	0.02		
EBT	2	3200	440	485	515	560	0.14 *	0.15 *	0.16 *	0.18 *		
EBR	1	1600	230	230	230	230	0.14	0.14	0.14	0.14		
WBL	2	3200	160	164	126	130	0.05 *	0.05 *	0.04 *	0.04 *		
WBT	2	3200	240	267	283	310	0.08	0.08	0.09	0.10		
WBR	1	1600	30	31	29	30	0.02	0.02	0.02	0.02		
							--	--		--		
			INTERSECTION CAPACITY UTILIZATION:				0.30	0.31	0.32	0.34		
			LEVEL OF SERVICE:				A	A	A	A		

NOTES:

(a) *40% RTOR EX / 30% RTOR YEAR 2025*

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #03AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *PETIT AVENUE*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	70	20	10	20	10	30	10	300	50	10	420	10
(B) PROJECT	0	0	1	1	0	0	0	16	0	2	51	2
(C) CUMULATIVE	80	10	9	29	20	30	10	244	60	8	419	8

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L TR	L TT R	L T R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	70	70	80	80	0.04 *	0.04 *	0.05 *	0.05 *		
NBT	1	1600	20	20	10	10	0.01	0.01	0.01	0.01		
NBR	1	1600	10	11	9	10	0.01	0.01	0.01	0.01		
SBL	1	1600	20	21	29	30	0.01	0.01	0.02	0.02		
SBT	1	1600	10	10	20	20	0.03 *	0.03 *	0.03 *	0.03 *		
SBR	0	0	30	30	30	30	0.00	0.00	0.00	0.00		
EBL	1	1600	10	10	10	10	0.01 *	0.01 *	0.01 *	0.01 *		
EBT	2	3200	300	316	244	260	0.09	0.10	0.08	0.08		
EBR	1	1600	50	50	60	60	0.03	0.03	0.04	0.04		
WBL	1	1600	10	12	8	10	0.01	0.01	0.01	0.01		
WBT	1	1600	420	471	419	470	0.26 *	0.29 *	0.26 *	0.29 *		
WBR	1	1600	10	12	8	10	0.01	0.01	0.01	0.01		
			INTERSECTION CAPACITY UTILIZATION:				0.34	0.37	0.35	0.38		
			LEVEL OF SERVICE:				A	A	A	A		

NOTES:

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #03PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *PETIT AVENUE*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	40	10	20	20	20	20	10	460	90	10	270	30
(B) PROJECT	0	0	2	3	0	0	0	53	0	0	32	1
(C) CUMULATIVE	40	10	8	17	20	20	10	517	90	10	268	19

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L TR	L TT R	L T R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	40	40	40	40	0.03 *	0.03 *	0.03 *	0.03 *		
NBT	1	1600	10	10	10	10	0.01	0.01	0.01	0.01		
NBR	1	1600	20	22	8	10	0.01	0.01	0.01	0.01		
SBL	1	1600	20	23	17	20	0.01	0.01	0.01	0.01		
SBT	1	1600	20	20	20	20	0.03 *	0.03 *	0.03 *	0.03 *		
SBR	0	0	20	20	20	20	0.00	0.00	0.00	0.00		
EBL	1	1600	10	10	10	10	0.01 *	0.01 *	0.01 *	0.01 *		
EBT	2	3200	460	513	517	570	0.14	0.16	0.16	0.18		
EBR	1	1600	90	90	90	90	0.06	0.06	0.06	0.06		
WBL	1	1600	10	10	10	10	0.01	0.01	0.01	0.01		
WBT	1	1600	270	302	268	300	0.17 *	0.19 *	0.17 *	0.19 *		
WBR	1	1600	30	31	19	20	0.02	0.02	0.01	0.01		
			INTERSECTION CAPACITY UTILIZATION:				0.24	0.26	0.24	0.26		
			LEVEL OF SERVICE:				A	A	A	A		

NOTES:

MMF
08/14/08

REFERENCE #04EX_AM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *A.M.*
N/S STREET: *SATICOY AVENUE*
E/W STREET: *TELEGRAPH ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	140	80	40	10	60	50	20	220	90	50	220	10
(B) PROJECT	0	0	1	1	0	0	0	19	0	3	57	2

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TR	L TR	L TR	L T R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	140	140	0.09 *	0.09 *				
NBT	1	1600	80	80	0.08	0.08				
NBR	0	0	40	41	0.00	0.00				
SBL	1	1600	10	11	0.01	0.01				
SBT	1	1600	60	60	0.07 *	0.07 *				
SBR	0	0	50	50	0.00	0.00				
EBL	1	1600	20	20	0.01	0.01				
EBT	1	1600	220	239	0.19 *	0.21 *				
EBR	0	0	90	90	0.00	0.00				
WBL	1	1600	50	53	0.03 *	0.03 *				
WBT	1	1600	220	277	0.14	0.17				
WBR	1	1600	10	12	0.01	0.01				
			INTERSECTION CAPACITY UTILIZATION:		0.38	0.40				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

REFERENCE #04EX_PM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *P.M.*
N/S STREET: *SATICOY AVENUE*
E/W STREET: *TELEGRAPH ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	50	40	30	10	40	20	20	340	110	30	250	10
(B) PROJECT	0	0	15	5	0	0	0	58	0	9	36	5

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TR	L TR	L TR	L T R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	50	50	0.03 *	0.03 *				
NBT	1	1600	40	40	0.04	0.05				
NBR	0	0	30	45	0.00	0.00				
SBL	1	1600	10	15	0.01	0.01				
SBT	1	1600	40	40	0.04 *	0.04 *				
SBR	0	0	20	20	0.00	0.00				
EBL	1	1600	20	20	0.01	0.01				
EBT	1	1600	340	398	0.28 *	0.32 *				
EBR	0	0	110	110	0.00	0.00				
WBL	1	1600	30	39	0.02 *	0.02 *				
WBT	1	1600	250	286	0.16	0.18				
WBR	1	1600	10	15	0.01	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.37	0.41				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #04CUM_AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *SATICOY AVENUE*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL (W/ N/S SPLIT PHASING)

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	190	80	39	9	100	60	30	131	100	48	143	8
(B) PROJECT	0	0	1	1	0	0	0	19	0	2	57	2

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	LTR	LTR	L TR	L T R

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	0	0	190	190	0.00	0.00				
NBT	1	1600	80	80	0.19 *	0.19 *				
NBR	0	0	39	40	0.00	0.00				
SBL	0	0	9	10	0.00	0.00				
SBT	1	1600	100	100	0.11 *	0.11 *				
SBR	0	0	60	60	0.00	0.00				
EBL	1	1600	30	30	0.02	0.02				
EBT	1	1600	131	150	0.14 *	0.16 *				
EBR	0	0	100	100	0.00	0.00				
WBL	1	1600	48	50	0.03 *	0.03 *				
WBT	1	1600	143	200	0.09	0.13				
WBR	1	1600	8	10	0.01	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.47	0.49				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #04CUM_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *SATICOY AVENUE*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL (W/ N/S SPLIT PHASING)

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	130	60	5	5	40	20	50	242	210	11	164	5
(B) PROJECT	0	0	15	5	0	0	0	58	0	9	36	5

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	LTR	LTR	L TR	L T R

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	0	0	130	130	0.00	0.00				
NBT	1	1600	60	60	0.12 *	0.13 *				
NBR	0	0	5	20	0.00	0.00				
SBL	0	0	5	10	0.00	0.00				
SBT	1	1600	40	40	0.04 *	0.04 *				
SBR	0	0	20	20	0.00	0.00				
EBL	1	1600	50	50	0.03	0.03				
EBT	1	1600	242	300	0.28 *	0.32 *				
EBR	0	0	210	210	0.00	0.00				
WBL	1	1600	11	20	0.01 *	0.01 *				
WBT	1	1600	164	200	0.10	0.13				
WBR	1	1600	5	10	0.00	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.45	0.50				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_EX_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	280	0	0	300	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	280	0	0	300	10
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	1	0	1	1	1
Configuration	L		TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	40	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	40	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	10	0	0		0		50	
C (m) (veh/h)	1239	1271			754		629	
v/c	0.01	0.00			0.00		0.08	
95% queue length	0.02	0.00			0.00		0.26	
Control Delay (s/veh)	7.9	7.8			9.8		11.2	
LOS	A	A			A		B	
Approach Delay (s/veh)	--	--				11.2		
Approach LOS	--	--				B		

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AWD: 10.7 sec. / LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_EX+PR_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	290	8	4	316	11
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	290	8	4	316	11
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	1	0	1	1	1
Configuration	L		TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	46	0	10	42	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	46	0	10	42	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	10	4	46		10		52	
C (m) (veh/h)	1221	1252	575		741		603	
v/c	0.01	0.00	0.08		0.01		0.09	
95% queue length	0.02	0.01	0.26		0.04		0.28	
Control Delay (s/veh)	8.0	7.9	11.8		9.9		11.5	
LOS	A	A	B		A		B	
Approach Delay (s/veh)	--	--	11.5			11.5		
Approach LOS	--	--	B			B		

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AWD = 11.1 sec. / LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_EX_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	20	420	0	0	280	30
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	20	420	0	0	280	30
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	1	0	1	1	1
Configuration	L		TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	30	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	30	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	20	0	0		0		40	
C (m) (veh/h)	1239	1128			629		568	
v/c	0.02	0.00			0.00		0.07	
95% queue length	0.05	0.00			0.00		0.23	
Control Delay (s/veh)	8.0	8.2			10.7		11.8	
LOS	A	A			B		B	
Approach Delay (s/veh)	--	--				11.8		
Approach LOS	--	--				B		

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AWD = 10.5 sec. / LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_EX+PR_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	20	461	30	16	306	34
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	20	461	30	16	306	34
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	1	0	1	1	1
Configuration	L		TR	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	30	1	12	32	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	30	1	12	32	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	20	16	31		12		42	
C (m) (veh/h)	1208	1062	470		585		503	
v/c	0.02	0.02	0.07		0.02		0.08	
95% queue length	0.05	0.05	0.21		0.06		0.27	
Control Delay (s/veh)	8.0	8.4	13.2		11.3		12.8	
LOS	A	A	B		B		B	
Approach Delay (s/veh)	--	--	12.7			12.8		
Approach LOS	--	--	B			B		

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AWD: 11.4 sec. / LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_CU_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	190	0	0	264	19
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	190	0	0	264	19
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	38	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	38	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	10	0	0		0		48	
C (m) (veh/h)	1268	1372			847		680	
v/c	0.01	0.00			0.00		0.07	
95% queue length	0.02	0.00			0.00		0.23	
Control Delay (s/veh)	7.9	7.6			9.3		10.7	
LOS	A	A			A		B	
Approach Delay (s/veh)	--	--				10.7		
Approach LOS	--	--				B		

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AWD = 10.2 sec. LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_CU_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	259	0	0	144	6
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	259	0	0	144	6
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	38	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	38	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	10	0	0		0		48	
C (m) (veh/h)	1414	1288			889		789	
v/c	0.01	0.00			0.00		0.06	
95% queue length	0.02	0.00			0.00		0.19	
Control Delay (s/veh)	7.6	7.8			9.0		9.9	
LOS	A	A			A		A	
Approach Delay (s/veh)	--	--				9.9		
Approach LOS	--	--				A		

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AWD = 9.5 sec. LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_CU+PR_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description	PARKLANDS PROJECT - 08088
East/West Street: TELEGRAPH ROAD	North/South Street: NEVADA AVENUE
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	200	8	4	280	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	200	8	4	280	10
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	46	0	10	40	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	46	0	10	40	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	10	4	46		10		50	
C (m) (veh/h)	1260	1351	628		832		656	
v/c	0.01	0.00	0.07		0.01		0.08	
95% queue length	0.02	0.01	0.24		0.04		0.25	
Control Delay (s/veh)	7.9	7.7	11.2		9.4		10.9	
LOS	A	A	B		A		B	
Approach Delay (s/veh)	--	--	10.9			10.9		
Approach LOS	--	--	B			B		

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AWD = 10.5 sec. / LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	05_CU+PR_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: TELEGRAPH ROAD | North/South Street: NEVADA AVENUE

Intersection Orientation: East-West | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	10	300	30	16	270	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	10	300	30	16	270	10
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	30	1	12	40	0	10
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	30	1	12	40	0	10
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	10	16	31		12		50	
C (m) (veh/h)	1265	1212	599		844		655	
v/c	0.01	0.01	0.05		0.01		0.08	
95% queue length	0.02	0.04	0.16		0.04		0.25	
Control Delay (s/veh)	7.9	8.0	11.3		9.3		11.0	
LOS	A	A	B		A		B	
Approach Delay (s/veh)	--	--	10.8			11.0		
Approach LOS	--	--	B			B		

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AWD = 10.2 sec. LOS B

PARKLANDS #08088 **REFERENCE #06_AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	150	110	60	10	250	40	20	70	220	170	140	30
(B) PROJECT	6	2	2	0	3	1	15	1	6	2	1	0
(C) CUMULATIVE	44	98	48	10	207	39	5	59	154	238	199	20

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L T R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	150	156	44	50	0.09 *	0.10 *	0.03 *	0.03 *		
NBT	1	1600	110	112	98	100	0.07	0.07	0.06	0.06		
NBR	1	1600	60	62	48	50	0.04	0.04	0.03	0.03		
SBL	1	1600	10	10	10	10	0.01	0.01	0.01	0.01		
SBT	1	1600	250	253	207	210	0.16 *	0.16 *	0.13 *	0.13 *		
SBR	1	1600	40	41	39	40	0.03	0.03	0.02	0.03		
EBL	1	1600	20	35	5	20	0.01	0.02	0.00	0.01		
EBT	1	1600	70	71	59	60	0.18 *	0.19 *	0.13 *	0.14 *		
EBR	0	0	220	226	154	160	0.00	0.00	0.00	0.00		
WBL	1	1600	170	172	238	240	0.11 *	0.11 *	0.15 *	0.15 *		
WBT	1	1600	140	141	199	200	0.11	0.11	0.14	0.14		
WBR	0	0	30	30	20	20	0.00	0.00	0.00	0.00		
							--	--		--		
INTERSECTION CAPACITY UTILIZATION:							0.54	0.56	0.44	0.45		
LEVEL OF SERVICE:							A	A	A	A		

NOTES:

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #06_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *TELEGRAPH ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	230	220	170	20	160	20	40	140	180	120	120	20
(B) PROJECT	21	5	4	0	7	2	24	1	4	6	2	0
(C) CUMULATIVE	119	255	206	30	163	28	16	219	76	104	108	30

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L T R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	230	251	119	140	0.14 *	0.16 *	0.07 *	0.09 *		
NBT	1	1600	220	225	255	260	0.14	0.14	0.16	0.16		
NBR	1	1600	170	174	206	210	0.11	0.11	0.13	0.13		
SBL	1	1600	20	20	30	30	0.01	0.01	0.02	0.02		
SBT	1	1600	160	167	163	170	0.10 *	0.10 *	0.10 *	0.11 *		
SBR	1	1600	20	22	28	30	0.01	0.01	0.02	0.02		
EBL	1	1600	40	64	16	40	0.03	0.04	0.01	0.03		
EBT	1	1600	140	141	219	220	0.20 *	0.20 *	0.18 *	0.19 *		
EBR	0	0	180	184	76	80	0.00	0.00	0.00	0.00		
WBL	1	1600	120	126	104	110	0.08 *	0.08 *	0.07 *	0.07 *		
WBT	1	1600	120	122	108	110	0.09	0.09	0.09	0.09		
WBR	0	0	20	20	30	30	0.00	0.00	0.00	0.00		
			INTERSECTION CAPACITY UTILIZATION:				0.52	0.54	0.42	0.46		
			LEVEL OF SERVICE:				A	A	A	A		

NOTES:

MMF
08/14/08

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_EX_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		360	20	40	570	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	90	0	40
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				90		40
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	40	570	0	0	360	20
Percent Heavy Vehicles	4	0	0	4	0	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		40	90		40			
C (m) (veh/h)		1161	427		826			
v/c		0.03	0.21		0.05			
95% queue length		0.11	0.80		0.15			
Control Delay (s/veh)		8.2	15.7		9.6			
LOS		A	C		A			
Approach Delay (s/veh)	--	--	13.8					
Approach LOS	--	--	B					

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AWD = 12.5 sec. / LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_EX+PR_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	11	371	20	40	619	2
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	3	0	32	90	0	40
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	1	1	2	0
Configuration	L	T	R	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	3	0	32	90	0	40
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	40	619	2	11	371	20
Percent Heavy Vehicles	4	0	0	4	0	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration		LTR		L		TR

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR		LTR	
v (veh/h)	11	40	90		40		35	
C (m) (veh/h)	942	1150	471		818		641	
v/c	0.01	0.03	0.19		0.05		0.05	
95% queue length	0.04	0.11	0.71		0.15		0.17	
Control Delay (s/veh)	8.9	8.2	14.4		9.6		10.9	
LOS	A	A	B		A		B	
Approach Delay (s/veh)	--	--	13.0			10.9		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_EX_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		620	60	40	500	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	60	0	60
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				60		60
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	40	500	0	0	620	60
Percent Heavy Vehicles	4	0	0	4	0	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		40	60		60			
C (m) (veh/h)		895	398		680			
v/c		0.04	0.15		0.09			
95% queue length		0.14	0.53		0.29			
Control Delay (s/veh)		9.2	15.6		10.8			
LOS		A	C		B			
Approach Delay (s/veh)	--	--	13.2					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_EX+PR_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	EXISTING+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	30	686	60	42	551	2
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	6	0	24	60	0	60
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	1	1	2	0
Configuration	L	T	R	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6	0	24	60		60
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	42	551	2	30	686	60
Percent Heavy Vehicles	4	0	0	4	0	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	1	0	1
Configuration		LTR		L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		R		LTR	
v (veh/h)	30	42	60		60		30	
C (m) (veh/h)	999	845	329		647		600	
v/c	0.03	0.05	0.18		0.09		0.05	
95% queue length	0.09	0.16	0.67		0.31		0.16	
Control Delay (s/veh)	8.7	9.5	18.4		11.1		11.3	
LOS	A	A	C		B		B	
Approach Delay (s/veh)	--	--	14.8			11.3		
Approach LOS	--	--	B			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_YEAR 2025_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025
Analysis Time Period	A.M. PEAK HOUR		

Project Description	PARKLANDS PROJECT - 08088
East/West Street: CARLOS STREET	North/South Street: WELLS ROAD
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		349	20	40	521	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	90	0	40
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				90		40
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	40	521	0	0	349	20
Percent Heavy Vehicles	4	0	0	4	0	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		40	90		40			
C (m) (veh/h)		1172	452		833			
v/c		0.03	0.20		0.05			
95% queue length		0.11	0.74		0.15			
Control Delay (s/veh)		8.2	14.9		9.5			
LOS		A	B		A			
Approach Delay (s/veh)	--	--	13.3					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_YEAR 2025_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		294	20	38	519	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	90	0	40
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	1	1	2	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				90		40
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	38	519	0	0	294	20
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (veh/h)		38	90		40			
C (m) (veh/h)		1229	598		867			
v/c		0.03	0.15		0.05			
95% queue length		0.10	0.53		0.15			
Control Delay (s/veh)		8.0	12.1		9.4			
LOS		A	B		A			
Approach Delay (s/veh)	--	--	11.2					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_YEAR 2025+PR_AM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	11	330	40	40	840	2
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	3	0	32	160	0	40
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	1	1	2	0
Configuration	L	T	R	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	3	0	32	160	0	40
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	40	840	2	11	330	40
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	11	40	160		40		35	
C (m) (veh/h)	777	1171	423		844		524	
v/c	0.01	0.03	0.38		0.05		0.07	
95% queue length	0.04	0.11	1.80		0.15		0.21	
Control Delay (s/veh)	9.7	8.2	18.7		9.5		12.4	
LOS	A	A	C		A		B	
Approach Delay (s/veh)	--	--	16.8			12.4		
Approach LOS	--	--	C			B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	07_YEAR 2025+PR_PM
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: CARLOS STREET | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	30	800	130	40	510	2
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	6	0	24	60	0	60
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	1	1	2	0
Configuration	L	T	R	L	T	TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	6	0	24	60	0	60
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	40	510	2	30	800	130
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (veh/h)	30	40	60		60		30	
C (m) (veh/h)	1036	719	287		594		604	
v/c	0.03	0.06	0.21		0.10		0.05	
95% queue length	0.09	0.18	0.79		0.34		0.16	
Control Delay (s/veh)	8.6	10.3	20.9		11.7		11.3	
LOS	A	B	C		B		B	
Approach Delay (s/veh)	--	--	16.3			11.3		
Approach LOS	--	--	C			B		

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PARKLANDS #08088

REFERENCE #08AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *SEPTEMBER 2005*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *CITRUS DRIVE-BLACKBURN ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	100	350	180	40	620	20	0	10	80	250	10	40
(B) PROJECT	27	22	0	0	81	0	1	0	72	0	0	0
(C) CUMULATIVE	83	298	200	50	869	30	9	20	58	260	20	50

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L TT TR	LT R	L LTR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	100	127	83	110	0.06 *	0.08 *	0.05 *	0.07 *		
NBT	2	3200	350	372	298	320	0.11	0.12	0.09	0.10		
NBR	1	1600	180	180	200	200	0.11	0.11	0.13	0.13		
SBL	1	1600	40	40	50	50	0.03	0.03	0.03	0.03		
SBT	3	4800	620	701	869	950	0.13 *	0.15 *	0.19 *	0.20 *		
SBR	0	0	20	20	30	30	0.00	0.00	0.00	0.00		
EBL	0	0	0	1	9	10	0.00	0.00	0.00	0.00		
EBT	1	1600	10	10	20	20	0.01	0.01	0.02	0.02		
EBR	1	1600	80	152	58	130	0.05 *	0.10 *	0.04 *	0.08 *		
WBL	0	0	250	250	260	260	0.00	0.00	0.00	0.00		
WBT	2	3200	10	10	20	20	0.09 *	0.09 *	0.10 *	0.10 *		
WBR	0	0	40	40	50	50	0.00	0.00	0.00	0.00		
							--	--		--		
INTERSECTION CAPACITY UTILIZATION:							0.33	0.42	0.38	0.45		
LEVEL OF SERVICE:							A	A	A	A		

NOTES:

MMF
08/15/08

PARKLANDS #08088 **REFERENCE #08PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: ***SEPTEMBER 2005***

TIME PERIOD: ***P.M.***

N/S STREET: ***WELLS ROAD***

E/W STREET: ***CITRUS DRIVE-BLACKBURN ROAD***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	70	610	320	50	520	10	10	10	50	220	10	50
(B) PROJECT	92	88	0	2	68	5	8	0	52	0	0	0
(C) CUMULATIVE	48	762	310	68	432	5	12	10	38	220	10	60

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L TT TR	LT R	L LTR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	70	162	48	140	0.04	0.10	0.03	0.09		
NBT	2	3200	610	698	762	850	0.19 *	0.22 *	0.24 *	0.27 *		
NBR (a)	1	1600	230	230	223	223	0.14	0.14	0.14	0.14		
SBL	1	1600	50	52	68	70	0.03 *	0.03 *	0.04 *	0.04 *		
SBT	3	4800	520	588	432	500	0.11	0.13	0.09	0.11		
SBR	0	0	10	15	5	10	0.00	0.00	0.00	0.00		
EBL	0	0	10	18	12	20	0.00	0.00	0.00	0.00		
EBT	1	1600	10	10	10	10	0.01	0.02	0.01	0.02		
EBR	1	1600	50	102	38	90	0.03 *	0.06 *	0.02 *	0.06 *		
WBL	0	0	220	220	220	220	0.00	0.00	0.00	0.00		
WBT	2	3200	10	10	10	10	0.09 *	0.09 *	0.09 *	0.09 *		
WBR	0	0	50	50	60	60	0.00	0.00	0.00	0.00		
							--	--		--		
			INTERSECTION CAPACITY UTILIZATION:				0.34	0.40	0.39	0.46		
			LEVEL OF SERVICE:				A	A	A	A		

NOTES:

(a) 28% RTOR

MMF
08/15/08

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_EX_AM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	EXISTING
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		440			760	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	130
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						130
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	760	0	0	440	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					130			
C (m) (veh/h)					790			
v/c					0.16			
95% queue length					0.59			
Control Delay (s/veh)					10.5			
LOS					B			
Approach Delay (s/veh)	--	--	10.5					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_EX+PR_AM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	EXISTING+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		481			844	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	138
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						138
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	844	0	0	481	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					138			
C (m) (veh/h)					767			
v/c					0.18			
95% queue length					0.65			
Control Delay (s/veh)					10.7			
LOS					B			
Approach Delay (s/veh)	--	--	10.7					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_CU_AM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	YEAR 2025
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		429			836	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	152
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						152
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	836	0	0	429	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					152			
C (m) (veh/h)					797			
v/c					0.19			
95% queue length					0.70			
Control Delay (s/veh)					10.6			
LOS					B			
Approach Delay (s/veh)	--	--	10.6					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_CU+PR_AM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	A.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		470			920	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	160
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						160
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	920	0	0	470	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					160			
C (m) (veh/h)					773			
v/c					0.21			
95% queue length					0.78			
Control Delay (s/veh)					10.9			
LOS					B			
Approach Delay (s/veh)	--	--	10.9					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*09_EX_PM*
Agency/Co.	*ATE*	Jurisdiction	*VENTURA*
Date Performed	*8/18/2008*	Analysis Year	*EXISTING*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description *PARKLANDS #08088*

East/West Street: *SR 126 WB RAMPS*	North/South Street: *WELLS ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		860			560	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	100
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						100
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	560	0	0	860	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					100			
C (m) (veh/h)					579			
v/c					0.17			
95% queue length					0.62			
Control Delay (s/veh)					12.5			
LOS					B			
Approach Delay (s/veh)	--	--	12.5					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_EX+PR_PM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	EXISTING+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1014			620	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	126
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						126
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	620	0	0	1014	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					126			
C (m) (veh/h)					516			
v/c					0.24			
95% queue length					0.95			
Control Delay (s/veh)					14.2			
LOS					B			
Approach Delay (s/veh)	--	--	14.2					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_CU_PM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	YEAR 2025
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1056			560	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	64
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						64
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	560	0	0	1056	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					64			
C (m) (veh/h)					500			
v/c					0.13			
95% queue length					0.44			
Control Delay (s/veh)					13.3			
LOS					B			
Approach Delay (s/veh)	--	--	13.3					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	09_CU+PR_PM
Agency/Co.	ATE	Jurisdiction	VENTURA
Date Performed	8/18/2008	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS #08088

East/West Street: SR 126 WB RAMPS | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1210			620	
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	90
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T			T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						90
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	620	0	0	1210	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					90			
C (m) (veh/h)					446			
v/c					0.20			
95% queue length					0.75			
Control Delay (s/veh)					15.1			
LOS					C			
Approach Delay (s/veh)	--	--	15.1					
Approach LOS	--	--	C					

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REFERENCE #10EX_AM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *A.M.*
N/S STREET: *WELLS ROAD*
E/W STREET: *SR 126 EASTBOUND RAMPS*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	0	600	550	0	1890	80	80	0	220	0	0	0
(B) PROJECT	0	20	0	0	63	22	21	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	TT R	TT R	L R	

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	0	0	0	0	0.00 *	0.00 *				
NBT	2	3200	600	620	0.19	0.19				
NBR (a)	1	1600	550	550	0.34	0.34				
SBL	0	0	0	0	0.00	0.00				
SBT	2	3200	1890	1953	0.59 *	0.61 *				
SBR (b)	1	1600	80	102	0.05	0.06				
EBL	1	1600	80	101	0.05	0.06				
EBT	0	0	0	0	0.00	0.00				
EBR	1	1600	220	220	0.14 *	0.14 *				
WBL	0	0	0	0	0.00	0.00				
WBT	0	0	0	0	0.00	0.00				
WBR	0	0	0	0	0.00	0.00				
					--	--				
		INTERSECTION CAPACITY UTILIZATION:			0.73	0.75				
		LEVEL OF SERVICE:			C	C				

NOTES:
(a) *FREE RIGHT TURN*
(b) *FREE RIGHT TURN*

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #10EX_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: ***WELLS ROAD***

E/W STREET: ***SR 126 EASTBOUND RAMPS***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	0	970	1050	0	1270	60	190	0	360	0	0	0
(B) PROJECT	0	73	0	0	45	15	81	0	0	0	0	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	TT R	TT R	L R	

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	0	0	0	0	0.00	0.00				
NBT	2	3200	970	1043	0.30	0.33				
NBR *(a)*	1	1600	1050	1050	0.66	0.66				
SBL	0	0	0	0	0.00	0.00				
SBT	2	3200	1270	1315	0.40 *	0.41 *				
SBR *(b)*	1	1600	60	75	0.04	0.05				
EBL	1	1600	190	271	0.12	0.17				
EBT	0	0	0	0	0.00	0.00				
EBR *(c)*	1	1600	360	360	0.23 *	0.23 *				
WBL	0	0	0	0	0.00	0.00				
WBT	0	0	0	0	0.00	0.00				
WBR	0	0	0	0	0.00	0.00				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.63	0.64				
			LEVEL OF SERVICE:		B	B				

NOTES:

(a) *FREE RIGHT TURN*

(b) *FREE RIGHT TURN*

MMF

08/14/08

88

PARKLANDS #08088

REFERENCE #10CUM_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *SR 126 EASTBOUND RAMPS*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	0	830	600	0	2557	48	79	0	170	0	0	0
(B) PROJECT	0	20	0	0	63	22	21	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	TTT R	TTT R	L R	

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	0	0	0	0	0.00	0.00				
NBT	3	4800	830	850	0.17	0.18				
NBR *(a)*	1	1600	600	600	0.38	0.38				
SBL	0	0	0	0	0.00	0.00				
SBT	3	4800	2557	2620	0.53 *	0.55 *				
SBR *(b)*	1	1600	48	70	0.03	0.04				
EBL	1	1600	79	100	0.05	0.06				
EBT	0	0	0	0	0.00	0.00				
EBR *(c)*	1	1600	170	170	0.11 *	0.11 *				
WBL	0	0	0	0	0.00	0.00				
WBT	0	0	0	0	0.00	0.00				
WBR *(d)*	0	0	0	0	0.00	0.00				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.64	0.66				
			LEVEL OF SERVICE:		B	B				

NOTES:

(a) *FREE RIGHT TURN*

(b) *FREE RIGHT TURN*

MMF

08/14/08

PARKLANDS #08088 **REFERENCE #10CUM_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *SR 126 EASTBOUND RAMPS*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	0	1247	1620	0	1605	15	229	0	640	0	0	0
(B) PROJECT	0	73	0	0	45	15	81	0	0	0	0	0
	0	1320	1620	0	1650	30	310	0	640	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	TTT R	TTT R	L R	

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	0	0	0	0	0.00	0.00				
NBT	3	4800	1247	1320	0.26	0.28				
NBR (a)	1	1600	1620	1620	1.01	1.01				
SBL	0	0	0	0	0.00	0.00				
SBT	3	4800	1605	1650	0.33 *	0.34 *				
SBR (b)	1	1600	15	30	0.01	0.02				
EBL	1	1600	229	310	0.14	0.19				
EBT	0	0	0	0	0.00	0.00				
EBR	1	1600	640	640	0.40 *	0.40 *				
WBL	0	0	0	0	0.00	0.00				
WBT	0	0	0	0	0.00	0.00				
WBR	0	0	0	0	0.00	0.00				
			LOST TIME:		--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.73	0.74				
			LEVEL OF SERVICE:		C	C				

NOTES:

(a) FREE RIGHT TURN

(b) FREE RIGHT TURN

MMF

08/14/08

PARKLANDS #08088 **REFERENCE #11EX_AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *DARLING ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	50	950	0	50	1750	50	100	20	80	20	20	30
(B) PROJECT	0	19	0	0	61	2	1	0	0	0	0	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L T TR	LTR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2	SCENARIO V/C RATIOS 3	SCENARIO V/C RATIOS 4		
NBL	1	1600	50	50	0.03 *	0.03 *				
NBT	2	3200	950	969	0.30	0.30				
NBR (a)	1	1600	0	0	0.00	0.00				
SBL	1	1600	50	50	0.03	0.03				
SBT	2	3200	1750	1811	0.55 *	0.57 *				
SBR (a)	1	1600	50	52	0.03	0.03				
EBL	0	0	100	101	0.00	0.00				
EBT	1	1600	20	20	0.13 *	0.13 *				
EBR	0	0	80	80	0.00	0.00				
WBL	1	1600	20	20	0.01 *	0.01 *				
WBT	1	1600	20	20	0.03	0.03				
WBR	0	0	30	30	0.00	0.00				
					--	--				
INTERSECTION CAPACITY UTILIZATION:					0.72	0.74				
LEVEL OF SERVICE:					C	C				

NOTES:

(a) WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #11EX_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *DARLING ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	40	1980	30	90	1400	40	60	20	40	30	20	40
(B) PROJECT	0	67	0	1	40	4	3	0	0	0	0	2

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L T TR	LTR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2	SCENARIO V/C RATIOS 3	SCENARIO V/C RATIOS 4		
NBL	1	1600	40	40	0.03	0.03				
NBT	2	3200	1980	2047	0.62 *	0.64 *				
NBR	1	1600	30	30	0.02	0.02				
SBL	1	1600	90	91	0.06 *	0.06 *				
SBT	2	3200	1400	1440	0.44	0.45				
SBR	1	1600	40	44	0.03	0.03				
EBL	0	0	60	63	0.00	0.00				
EBT	1	1600	20	20	0.08 *	0.08 *				
EBR	0	0	40	40	0.00	0.00				
WBL	1	1600	30	30	0.02 *	0.02 *				
WBT	1	1600	20	20	0.04	0.04				
WBR	0	0	40	42	0.00	0.00				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.78	0.80				
			LEVEL OF SERVICE:		C	C				

NOTES:

MMF
08/14/08

PARKLANDS #08088

REFERENCE #11CUM_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *DARLING ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	30	1221	60	120	2329	8	69	30	100	70	30	70
(B) PROJECT	0	19	0	0	61	2	1	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	L TT TR	L TT TR	LTR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	30	30	0.02 *	0.02 *				
NBT	3	4800	1221	1240	0.25	0.26				
NBR (a)	1	1600	60	60	0.04	0.04				
SBL	2	3200	120	120	0.04	0.04				
SBT	3	4800	2329	2390	0.49 *	0.50 *				
SBR (a)	1	1600	8	10	0.01	0.01				
EBL	1	1600	69	70	0.04	0.04				
EBT	1	1600	30	30	0.08 *	0.08 *				
EBR	0	0	100	100	0.00	0.00				
WBL	2	3200	70	70	0.02 *	0.02 *				
WBT	1	1600	30	30	0.06	0.06				
WBR	0	0	70	70	0.00	0.00				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.61	0.62				
			LEVEL OF SERVICE:		B	B				

NOTES:

(a) WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE

MMF
08/14/08

REFERENCE #11CUM_PM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *P.M.*
N/S STREET: *WELLS ROAD*
E/W STREET: *DARLING ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	50	2713	170	329	1750	6	67	30	100	290	40	188
(B) PROJECT	0	67	0	1	40	4	3	0	0	0	0	2
	50	2780	170	330	1790	10	70	30	100	290	40	190

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	L TT TR	L TT TR	LTR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)
SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	50	50	0.03	0.03				
NBT	3	4800	2713	2780	0.57 *	0.58 *				
NBR (a)	1	1600	170	170	0.11	0.11				
SBL	2	3200	329	330	0.10 *	0.10 *				
SBT	3	4800	1750	1790	0.37	0.37				
SBR (a)	1	1600	6	10	0.00	0.01				
EBL	1	1600	67	70	0.04	0.04				
EBT	1	1600	30	30	0.08 *	0.08 *				
EBR	0	0	100	100	0.00	0.00				
WBL	2	3200	290	290	0.09 *	0.09 *				
WBT	1	1600	40	40	0.14	0.14				
WBR	0	0	188	190	0.00	0.00				
					--	--				
INTERSECTION CAPACITY UTILIZATION:					0.84	0.85				
LEVEL OF SERVICE:					D	D				

NOTES:

(a) WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE

MMF
08/14/08

PARKLANDS #08088

REFERENCE #12AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *KIMBALL ROAD*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	0	0	0	270	0	940	290	290	0	0	750	700
(B) PROJECT	0	0	0	0	0	17	6	2	0	0	8	0
(C) CUMULATIVE	0	0	0	260	0	1213	254	308	0	0	882	670

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
		LL RR	LL TTT	TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
NBT	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
NBR	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
SBL	2	3200	270	270	260	260	0.08	0.08	0.08	0.08		
SBT	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
SBR (a)	2	3200	724	737	1080	1095	0.23 *	0.23 *	0.34 *	0.34 *		
EBL	2	3200	290	296	254	260	0.09 *	0.09 *	0.08 *	0.08 *		
EBT	3	4800	290	292	308	310	0.06	0.06	0.06	0.07		
EBR	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
WBL	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
WBT	2	3200	750	758	882	890	0.23	0.24	0.28	0.28		
WBR (b)	1	1600	595	595	543	543	0.37 *	0.37 *	0.34 *	0.34 *		
INTERSECTION CAPACITY UTILIZATION:							0.69	0.70	0.76	0.76		
LEVEL OF SERVICE:							B	B	C	C		

NOTES:

(a) 23% RTOR EX / 11% RTOR CUM

(b) 15% RTOR / 19% RTOR CUM

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #12PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *KIMBALL ROAD*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	0	0	0	550	0	540	590	890	0	0	590	410
(B) PROJECT	0	0	0	0	0	11	21	12	0	0	6	0
(C) CUMULATIVE	0	0	0	500	0	639	939	968	0	0	644	360

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS		LL RR	LL TTT	TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
NBT	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
NBR	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
SBL	2	3200	550	550	500	500	0.17 *	0.17 *	0.16 *	0.16 *		
SBT	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
SBR (a)	2	3200	540	551	639	650	0.17	0.17	0.20	0.20		
EBL	2	3200	590	611	939	960	0.18 *	0.19 *	0.29 *	0.30 *		
EBT	3	4800	890	902	968	980	0.19	0.19	0.20	0.20		
EBR	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
WBL	0	0	0	0	0	0	0.00	0.00	0.00	0.00		
WBT	2	3200	590	596	644	650	0.18 *	0.19 *	0.20 *	0.20 *		
WBR (a)	1	1600	410	410	360	360	0.26	0.26	0.23	0.23		
							--	--		--		
INTERSECTION CAPACITY UTILIZATION:							0.53	0.55	0.65	0.66		
LEVEL OF SERVICE:							A	A	B	B		

NOTES:

(a) *NOT CRITCAL DUE TO RTOR*

MMF
08/14/08

PARKLANDS #08088

REFERENCE #13EX_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *MONTGOMERY AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	250	80	20	10	40	90	20	460	90	80	1020	10
(B) PROJECT	0	0	0	0	0	0	0	2	0	1	8	1

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	L TR	L TR	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	250	250	0.16 *	0.16 *				
NBT	1	1600	80	80	0.05	0.05				
NBR *(a)*	1	1600	20	20	0.01	0.01				
SBL	1	1600	10	10	0.01	0.01				
SBT	1	1600	40	40	0.08 *	0.08 *				
SBR	0	0	90	90	0.00	0.00				
EBL	1	1600	20	20	0.01 *	0.01 *				
EBT	2	3200	460	462	0.14	0.14				
EBR *(a)*	1	1600	90	90	0.06	0.06				
WBL	1	1600	80	81	0.05	0.05				
WBT	2	3200	1020	1028	0.32 *	0.32 *				
WBR *(a)*	1	1600	10	11	0.01	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.57	0.57				
			LEVEL OF SERVICE:		A	A				

NOTES:

(a) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE*

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #13EX_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *MONTGOMERY AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	130	10	20	10	20	30	50	740	140	60	600	10
(B) PROJECT	0	0	2	0	0	0	0	13	0	1	6	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TR	L TR	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	130	130	0.08 *	0.08 *				
NBT	1	1600	10	10	0.01	0.01				
NBR *(a)*	1	1600	20	22	0.01	0.01				
SBL	1	1600	10	10	0.01	0.01				
SBT	1	1600	20	20	0.03 *	0.03 *				
SBR	0	0	30	30	0.00	0.00				
EBL	1	1600	50	50	0.03	0.03				
EBT	2	3200	740	753	0.23 *	0.24 *				
EBR *(a)*	1	1600	140	140	0.09	0.09				
WBL	1	1600	60	61	0.04 *	0.04 *				
WBT	2	3200	600	606	0.19	0.19				
WBR *(a)*	1	1600	10	10	0.01	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.38	0.39				
			LEVEL OF SERVICE:		A	A				

NOTES:

(a) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE*

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #13CU_AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *MONTGOMERY AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	280	80	20	20	60	90	10	508	90	99	1082	9
(B) PROJECT	0	0	0	0	0	0	0	2	0	1	8	1

GEOMETRICS

YEAR 2025 GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TR	L T R	L T TR	L TT R

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (A)

SCENARIO 2: CUMULATIVE+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	280	280	0.18 *	0.18 *				
NBT	1	1600	80	80	0.05	0.05				
NBR *(a)*	1	1600	20	20	0.01	0.01				
SBL	1	1600	20	20	0.01	0.01				
SBT	1	1600	60	60	0.04	0.04				
SBR *(b)*	1	1600	80	80	0.05 *	0.05 *				
EBL	1	1600	10	10	0.01 *	0.01 *				
EBT	2	3200	508	510	0.16	0.16				
EBR *(a)*	1	1600	90	90	0.06	0.06				
WBL	1	1600	99	100	0.06	0.06				
WBT	2	3200	1082	1090	0.34 *	0.34 *				
WBR	1	1600	9	10	0.01	0.01				
					--	--				
				INTERSECTION CAPACITY UTILIZATION:	0.58	0.58				
				LEVEL OF SERVICE:	A	A				

NOTES:

(a) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE*

(b) *11% RTOR*

MMF
08/14/08

PARKLANDS #08088

REFERENCE #13CUM_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *MONTGOMERY AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	70	20	138	20	30	20	40	757	120	69	674	20
(B) PROJECT	0	0	2	0	0	0	0	13	0	1	6	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	L TR	L T R	L T TR	L TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	70	70	0.04	0.04				
NBT	1	1600	20	20	0.01	0.01				
NBR *(a)*	1	1600	76	77	0.05 *	0.05 *				
SBL	1	1600	20	20	0.01	0.01				
SBT	1	1600	30	30	0.02 *	0.02 *				
SBR	1	1600	20	20	0.01	0.01				
EBL	1	1600	40	40	0.03	0.03				
EBT	2	3200	757	770	0.24 *	0.24 *				
EBR *(b)*	1	1600	120	120	0.08	0.08				
WBL	1	1600	69	70	0.04 *	0.04 *				
WBT	2	3200	674	680	0.21	0.21				
WBR	1	1600	20	20	0.01	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.35	0.35				
			LEVEL OF SERVICE:		A	A				

NOTES:

(a) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE / 45% RTOR*

(b) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE*

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #14EX_AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *PETIT AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	180	40	180	40	60	110	80	300	90	140	660	20
(B) PROJECT	0	0	1	0	0	0	0	2	0	1	11	1

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L TR	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	180	180	0.11 *	0.11 *				
NBT	1	1600	40	40	0.03	0.03				
NBR	1	1600	180	181	0.11	0.11				
SBL	1	1600	40	40	0.03	0.03				
SBT	1	1600	60	60	0.04 *	0.04 *				
SBR *(a)*	1	1600	110	110	0.07	0.07				
EBL	1	1600	80	80	0.05 *	0.05 *				
EBT	2	3200	300	302	0.09	0.09				
EBR *(a)*	1	1600	90	90	0.06	0.06				
WBL	1	1600	140	141	0.09	0.09				
WBT	2	3200	660	671	0.21 *	0.21 *				
WBR *(a)*	1	1600	20	21	0.01	0.01				
				INTERSECTION CAPACITY UTILIZATION:	0.41	0.41				
				LEVEL OF SERVICE:	A	A				

NOTES:

(a) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE*

MMF
08/14/08

REFERENCE #14EX_PM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *P.M.*
N/S STREET: *PETIT AVENUE*
E/W STREET: *TELEPHONE ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	140	50	260	30	50	70	80	680	210	250	510	60
(B) PROJECT	0	0	2	0	0	0	0	16	0	1	8	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L TR	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	140	140	0.09 *	0.09 *				
NBT	1	1600	50	50	0.03	0.03				
NBR	1	1600	260	262	0.16	0.16				
SBL	1	1600	30	30	0.02	0.02				
SBT	1	1600	50	50	0.03 *	0.03 *				
SBR (a)	1	1600	70	70	0.04	0.04				
EBL	1	1600	80	80	0.05	0.05				
EBT	2	3200	680	696	0.21 *	0.22 *				
EBR (a)	1	1600	210	210	0.13	0.13				
WBL	1	1600	250	251	0.16 *	0.16 *				
WBT	2	3200	510	518	0.16	0.16				
WBR (a)	1	1600	60	60	0.04	0.04				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.49	0.49				
			LEVEL OF SERVICE:		A	A				

NOTES:

(a) WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #14CUM_AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *PETIT AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	180	40	129	30	80	120	90	318	80	149	749	19
(B) PROJECT	0	0	1	0	0	0	0	2	0	1	11	1

GEOMETRICS

YEAR 2025 GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TR	L T R	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	180	180	0.11 *	0.11 *				
NBT	1	1600	40	40	0.11	0.11				
NBR	0	0	129	130	0.00	0.00				
SBL	1	1600	30	30	0.02	0.02				
SBT	1	1600	80	80	0.05 *	0.05 *				
SBR (b)	1	1600	120	120	0.08	0.08				
EBL	1	1600	90	90	0.06 *	0.06 *				
EBT	2	3200	318	320	0.10	0.10				
EBR (a)	1	1600	80	80	0.05	0.05				
WBL	1	1600	149	150	0.09	0.09				
WBT	2	3200	749	760	0.23 *	0.24 *				
WBR (a)	1	1600	19	20	0.01	0.01				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.45	0.46				
			LEVEL OF SERVICE:		A	A				

NOTES:

(a) WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE

(b) NOT CRITICAL DUE TO RTOR

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #14CUM_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: ***2004***

TIME PERIOD: ***P.M.***

N/S STREET: ***PETIT AVENUE***

E/W STREET: ***TELEPHONE ROAD***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	160	70	238	30	50	70	80	754	240	209	512	50
(B) PROJECT	0	0	2	0	0	0	0	16	0	1	8	0

GEOMETRICS

YEAR 2025 GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TR	L T R	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	160	160	0.10	0.10				
NBT	1	1600	70	70	0.19 *	0.19 *				
NBR	0	0	238	240	0.00	0.00				
SBL	1	1600	30	30	0.02 *	0.02 *				
SBT	1	1600	50	50	0.03	0.03				
SBR *(a)*	1	1600	70	70	0.04	0.04				
EBL	1	1600	80	80	0.05	0.05				
EBT	2	3200	754	770	0.24 *	0.24 *				
EBR *(a)*	1	1600	240	240	0.15	0.15				
WBL	1	1600	209	210	0.13 *	0.13 *				
WBT	2	3200	512	520	0.16	0.16				
WBR *(a)*	1	1600	50	50	0.03	0.03				
					--	--				
				INTERSECTION CAPACITY UTILIZATION:	0.58	0.58				
				LEVEL OF SERVICE:	A	A				

NOTES:

(a) *WIDE TR LANE ACTS AS SEPARATE THRU AND RIGHT-TURN LANE*

MMF
08/14/08

REFERENCE #15EX_AM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *A.M.*
N/S STREET: *SATICOY AVENUE*
E/W STREET: *TELEPHONE ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	160	190	170	180	90	180	120	280	80	100	270	110
(B) PROJECT	0	0	1	0	0	2	0	3	0	1	13	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L T R	L TT R	L TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	160	160	0.10	0.10				
NBT	1	1600	190	190	0.12 *	0.12 *				
NBR	1	1600	170	171	0.11	0.11				
SBL	1	1600	180	180	0.11 *	0.11 *				
SBT	1	1600	90	90	0.06	0.06				
SBR	1	1600	180	182	0.11	0.11				
EBL	1	1600	120	120	0.08 *	0.08 *				
EBT	2	3200	280	283	0.09	0.09				
EBR	1	1600	80	80	0.05	0.05				
WBL	1	1600	100	101	0.06	0.06				
WBT	2	3200	270	283	0.08 *	0.09 *				
WBR	1	1600	110	110	0.07	0.07				
			INTERSECTION CAPACITY UTILIZATION:		0.39	0.40				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

REFERENCE #15EX_PM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *P.M.*
N/S STREET: *SATICOY AVENUE*
E/W STREET: *TELEPHONE ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	80	90	120	70	110	160	150	570	150	180	550	60
(B) PROJECT	0	2	2	0	1	6	12	10	0	1	6	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L T R	L TT R	L TT R

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	80	80	0.11 *	0.11 *				
NBT	1	1600	90	92	0.03	0.03				
NBR	1	1600	120	122	0.11	0.11				
SBL	1	1600	70	70	0.03	0.03				
SBT	1	1600	110	111	0.04 *	0.04 *				
SBR (a)	1	1600	160	166	0.07	0.07				
EBL	1	1600	150	162	0.05 *	0.05 *				
EBT	2	3200	570	580	0.09	0.09				
EBR	1	1600	150	150	0.06	0.06				
WBL	1	1600	180	181	0.09	0.09				
WBT	2	3200	550	556	0.21 *	0.21 *				
WBR	1	1600	60	60	0.01	0.01				
			INTERSECTION CAPACITY UTILIZATION:		0.41	0.41				
			LEVEL OF SERVICE:		A	A				

NOTES:

(a) NOT CRITICAL DUE TO RTOR

MMF
08/14/08

PARKLANDS #~~05448~~ 06088

REFERENCE #~~09~~ CUM_AM 15

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *A.M.*

N/S STREET: *SATICOY AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	180	200	119	220	120	258	120	217	100	79	317	130
(B) PROJECT	0	0	1	0	0	2	0	3	0	1	13	0

GEOMETRICS

YEAR 2025 GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L T R	L TT R	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	180	180	0.11	0.11				
NBT	1	1600	200	200	0.13 *	0.13 *				
NBR	1	1600	119	120	0.07	0.08				
SBL	1	1600	220	220	0.14 *	0.14 *				
SBT	1	1600	120	120	0.08	0.08				
SBR	1	1600	258	260	0.16	0.16				
EBL	1	1600	120	120	0.08 *	0.08 *				
EBT	2	3200	217	220	0.07	0.07				
EBR	1	1600	100	100	0.06	0.06				
WBL	1	1600	79	80	0.05	0.05				
WBT	2	3200	317	330	0.14 *	0.14 *				
WBR	0	0	130	130	0.00	0.00				
			INTERSECTION CAPACITY UTILIZATION:		0.48	0.49				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

PARKLANDS #08088 **REFERENCE #15CUM_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *SATICOY AVENUE*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	130	148	88	130	149	154	168	630	180	119	474	90
(B) PROJECT	0	2	2	0	1	6	12	10	0	1	6	0
	130	150	90	130	150	160	180	640	180	120	480	90

GEOMETRICS

YEAR 2025 GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T R	L T R	L TT R	L T TR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	130	130	0.08 *	0.08 *				
NBT	1	1600	148	150	0.09	0.09				
NBR	1	1600	88	90	0.06	0.06				
SBL	1	1600	130	130	0.08	0.08				
SBT	1	1600	149	150	0.09 *	0.09 *				
SBR	1	1600	154	160	0.10	0.10				
EBL	1	1600	168	180	0.11 *	0.11 *				
EBT	2	3200	630	640	0.20	0.20				
EBR	1	1600	180	180	0.11	0.11				
WBL	1	1600	119	120	0.07	0.08				
WBT	2	3200	474	480	0.18 *	0.18 *				
WBR	0	0	90	90	0.00	0.00				
			INTERSECTION CAPACITY UTILIZATION:		0.46	0.47				
			LEVEL OF SERVICE:		A	A				

NOTES:

MMF
08/14/08

REFERENCE #16EX_AM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *A.M.*
N/S STREET: *WELLS ROAD*
E/W STREET: *TELEPHONE ROAD*
CONTROL TYPE: SIGNAL (WITH E/W SPLIT PHASING)

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	250	940	10	10	1790	120	120	0	590	10	10	10
(B) PROJECT	0	14	0	0	46	15	5	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	LL T TR	L TT R	LL RR	LTR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	2	3200	250	250	0.08 *	0.08 *				
NBT	2	3200	940	954	0.30	0.30				
NBR	0	0	10	10	0.00	0.00				
SBL	1	1600	10	10	0.01	0.01				
SBT	2	3200	1790	1836	0.56 *	0.57 *				
SBR	1	1600	120	135	0.08	0.08				
EBL	2	3200	120	125	0.04	0.04				
EBT	0	0	0	0	0.00	0.00				
EBR (a)	2	3200	384	384	0.12 *	0.12 *				
WBL	0	0	10	10	0.00	0.00				
WBT	1	1600	10	10	0.02 *	0.02 *				
WBR	0	0	10	10	0.00	0.00				
			INTERSECTION CAPACITY UTILIZATION:		0.78	0.79				
			LEVEL OF SERVICE:		C	C				

NOTES:

(a) *35% RTOR*

MMF
08/15/08

REFERENCE #16EX_PM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *P.M.*
N/S STREET: *WELLS ROAD*
E/W STREET: *TELEPHONE ROAD*
CONTROL TYPE: SIGNAL (WITH E/W SPLIT PHASING)

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	570	1950	70	20	1330	310	180	0	450	10	10	10
(B) PROJECT	0	54	0	1	29	10	13	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	LL T TR	L TT R	LL RR	LTR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	2	3200	570	570	0.18	0.18				
NBT	2	3200	1950	2004	0.63 *	0.65 *				
NBR	0	0	70	70	0.00	0.00				
SBL	1	1600	20	21	0.01 *	0.01 *				
SBT	2	3200	1330	1359	0.42	0.43				
SBR	1	1600	310	320	0.19	0.20				
EBL	2	3200	180	193	0.06 *	0.06 *				
EBT	0	0	0	0	0.00	0.00				
EBR	2	3200	450	450	0.14	0.14				
WBL	0	0	10	10	0.00	0.00				
WBT	1	1600	10	10	0.02 *	0.02 *				
WBR	0	0	10	10	0.00	0.00				
			INTERSECTION CAPACITY UTILIZATION:		0.72	0.74				
			LEVEL OF SERVICE:		C	C				

NOTES:

MMF
08/15/08

REFERENCE #16CUM_AM

PARKLANDS #8088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2004*
TIME PERIOD: *A.M.*
N/S STREET: *WELLS ROAD*
E/W STREET: *TELEPHONE ROAD*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	320	1216	10	10	2434	125	155	0	570	10	10	10
(B) PROJECT	0	14	0	0	46	15	5	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
YEAR 2025 GEOMETRICS	LL TT TR	L TTT R	LL RR	LTR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)
SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	2	3200	320	320	0.10 *	0.10 *				
NBT	3	4800	1216	1230	0.26	0.26				
NBR	0	0	10	10	0.00	0.00				
SBL	1	1600	10	10	0.01	0.01				
SBT	3	4800	2434	2480	0.51 *	0.52 *				
SBR	1	1600	125	140	0.08	0.09				
EBL	2	3200	155	160	0.05	0.05				
EBT	0	0	0	0	0.00	0.00				
EBR (a)	2	3200	257	257	0.08 *	0.08 *				
WBL	0	0	10	10	0.00	0.00				
WBT	1	1600	10	10	0.02 *	0.02 *				
WBR	0	0	10	10	0.00	0.00				
					--	--				
			INTERSECTION CAPACITY UTILIZATION:		0.71	0.72				
			LEVEL OF SERVICE:		C	C				

NOTES:

(a) *55% RTOR*

MMF
08/15/08

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PARKLANDS #08088 **REFERENCE #16CUM_PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2004*

TIME PERIOD: *P.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *TELEPHONE ROAD*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	460	2796	70	19	1861	410	227	0	570	10	10	10
(B) PROJECT	0	54	0	1	29	10	13	0	0	0	0	0

GEOMETRICS

YEAR 2025 GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LL TT TR	L TTT R	LL RR	LTR

TRAFFIC SCENARIOS

SCENARIO 1: CUMULATIVE (C)

SCENARIO 2: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	2	3200	460	460	0.14	0.14				
NBT	3	4800	2796	2850	0.60 *	0.61 *				
NBR	0	0	70	70	0.00	0.00				
SBL	1	1600	19	20	0.01 *	0.01 *				
SBT	3	4800	1861	1890	0.39	0.39				
SBR	1	1600	410	420	0.26	0.26				
EBL	2	3200	227	240	0.07 *	0.08 *				
EBT	0	0	0	0	0.00	0.00				
EBR (a)	2	3200	570	570	0.18	0.18				
WBL	0	0	10	10	0.00	0.00				
WBT	1	1600	10	10	0.02 *	0.02 *				
WBR	0	0	10	10	0.00	0.00				
			INTERSECTION CAPACITY UTILIZATION:		0.70	0.72				
			LEVEL OF SERVICE:		B	C				

NOTES:

(a) NOT CRITICAL DUE TO RTOR

MMF
08/15/08

PARKLANDS #08088

REFERENCE #17AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2008*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *NARDO STREET*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	20	850	0	0	1830	50	30	10	30	60	30	20
(B) PROJECT	0	14	0	0	46	0	0	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	L T TR	L TT R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	20	20	20	20	0.01 *	0.01 *		
NBT	2	3200	850	864	1496	1510	0.27	0.27		
NBR	0	0	0	0	0	0	0.00	0.00		
SBL	1	1600	0	0	30	30	0.00	0.00		
SBT	2	3200	1830	1876	2894	2940	0.57 *	0.59 *		
SBR	1	1600	42	42	75	75	0.03	0.03		
EBL	1	1600	30	30	30	30	0.02	0.02		
EBT	1	1600	10	10	10	10	0.02 *	0.02 *		
EBR	0	0	20	20	20	20	0.00	0.00		
WBL	1	1600	60	60	60	60	0.04 *	0.04 *		
WBT	1	1600	30	30	30	30	0.02	0.02		
WBR	0	0	5	5	5	5	0.00	0.00		
			INTERSECTION CAPACITY UTILIZATION:				0.64	0.66		
			LEVEL OF SERVICE:				B	B		

NOTES:

MMF
08/18/08

REFERENCE #17EX_PM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2008*
TIME PERIOD: *P.M.*
N/S STREET: *WELLS ROAD*
E/W STREET: *NARDO STREET*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	10	1900	0	30	1350	30	100	10	74	70	20	40
(B) PROJECT	0	54	0	0	28	0	0	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	L T TR	L TT R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2				
NBL	1	1600	10	10	0.01	0.01				
NBT	2	3200	1900	1954	0.59 *	0.61 *				
NBR *(a)*	0	0	0	0	0.00	0.00				
SBL	1	1600	30	30	0.02 *	0.02 *				
SBT	2	3200	1350	1378	0.42	0.43				
SBR *(b)*	1	1600	17	17	0.01	0.01				
EBL	1	1600	100	100	0.06 *	0.06 *				
EBT	1	1600	10	10	0.03	0.03				
EBR ©	0	0	39	39	0.00	0.00				
WBL	1	1600	70	70	0.04	0.04				
WBT	1	1600	20	20	0.03 *	0.03 *				
WBR *(d)*	0	0	26	26	0.00	0.00				
			INTERSECTION CAPACITY UTILIZATION:		0.71	0.72				
			LEVEL OF SERVICE:		C	C				

NOTES:

(a) *100% RTOR*
(b) 45% RTOR
© *47% RTOR*
(d) *34% RTOR*

MMF
08/18/08

PARKLANDS #08088

REFERENCE #17AM_CU

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2008*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *NARDO STREET*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	90	1396	20	110	2754	150	50	10	140	50	20	100
(B) PROJECT	0	14	0	0	46	0	0	0	0	0	0	0

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	L TT TR	L TTT R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	90	90	90	90	0.06 *	0.06 *				
NBT	3	4800	1396	1410	1396	1410	0.30	0.30				
NBR	0	0	20	20	20	20	0.00	0.00				
SBL	1	1600	110	110	110	110	0.07	0.07				
SBT	3	4800	2754	2800	2754	2800	0.61 *	0.62 *				
SBR	0	0	150	150	150	150	0.00	0.00				
EBL	1	1600	50	50	50	50	0.03 *	0.03 *				
EBT	1	1600	10	10	10	10	0.01	0.01				
EBR	1	1600	140	140	130	130	0.09	0.09				
WBL	1	1600	50	50	50	50	0.03	0.03				
WBT	1	1600	20	20	20	20	0.01 *	0.01 *				
WBR	1	1600	100	100	98	98	0.06	0.06				
			INTERSECTION CAPACITY UTILIZATION:				0.71	0.72				
			LEVEL OF SERVICE:				C	C				

NOTES:

MMF
08/18/08

PARKLANDS #08088

REFERENCE #17PM_CU

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2008*

TIME PERIOD: *A.M.*

N/S STREET: *WELLS ROAD*

E/W STREET: *NARDO STREET*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) CUMULATIVE	190	3056	70	160	2192	80	110	20	160	60	20	170
(B) PROJECT	0	54	0	0	28	0	0	0	0	0	0	0

GEOMETRICS

EXISTING GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT TR	L TTT R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	190	190	190	190	0.12	0.12		
NBT	3	4800	3056	3110	3056	3110	0.65 *	0.66 *		
NBR	0	0	70	70	70	70	0.00	0.00		
SBL	1	1600	160	160	160	160	0.10 *	0.10 *		
SBT	3	4800	2192	2220	2192	2220	0.47	0.48		
SBR	0	0	80	80	80	80	0.00	0.00		
EBL	1	1600	110	110	110	110	0.07 *	0.07 *		
EBT	1	1600	20	20	20	20	0.01	0.01		
EBR	1	1600	160	160	160	160	0.10	0.10		
WBL	1	1600	60	60	60	60	0.04	0.04		
WBT	1	1600	20	20	20	20	0.01 *	0.01 *		
WBR	1	1600	170	170	170	170	0.11	0.11		
		INTERSECTION CAPACITY UTILIZATION:					0.83	0.85		
		LEVEL OF SERVICE:					D	D		

NOTES:

MMF
08/18/08

REFERENCE #18AM

PARKLANDS #08088
INTERSECTION CAPACITY UTILIZATION WORKSHEET
COUNT DATE: *2008*
TIME PERIOD: *A.M.*
N/S STREET: *LOS ANGELES AVENUE*
E/W STREET: *VINEYARD AVENUE*
CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	60	510	10	10	980	950	400	10	60	10	10	10
(B) PROJECT	0	7	0	0	23	23	7	0	0	0	0	0
(C) CUMULATIVE	80	570	10	10	1440	1280	620	10	80	10	10	10

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	L T TR	L T TR R	L LT R	LTR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	60	60	80	80	0.04 *	0.04 *	0.05 *	0.05 *		
NBT	2	3200	510	517	570	577	0.16	0.17	0.18	0.18		
NBR	0	0	10	10	10	10	0.00	0.00	0.00	0.00		
SBL	1	1600	10	10	10	10	0.01	0.01	0.01	0.01		
SBT	3	4800	980	1003	1440	1463	0.36 *	0.36 *	0.50 *	0.51 *		
SBR (a)	0	0	722	739	973	990	0.00	0.00	0.00	0.00		
EBL	0	0	400	407	620	627	0.00	0.00	0.00	0.00		
EBT	2	3200	10	10	10	10	0.13 *	0.13 *	0.20 *	0.20 *		
EBR (b)	1	1600	30	30	40	40	0.02	0.02	0.03	0.03		
WBL	0	0	10	10	10	10	0.00	0.00	0.00	0.00		
WBT	1	1600	10	10	10	10	0.02 *	0.02 *	0.02 *	0.02 *		
WBR	0	0	10	10	10	10	0.00	0.00	0.00	0.00		
INTERSECTION CAPACITY UTILIZATION:							0.54	0.55	0.769	0.779		
LEVEL OF SERVICE:							A	A	C	C		

NOTES:
(a) 24% RTOR
(b) 50% RTOR

MMF
09/03/08

PARKLANDS #08088 **REFERENCE #18PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2008*

TIME PERIOD: *P.M.*

N/S STREET: *LOS ANGELES AVENUE*

E/W STREET: *VINEYARD AVENUE*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING	70	1050	10	10	760	790	820	10	40	10	10	10
(B)	PROJECT	0	27	0	0	14	14	27	0	0	0	0	0
(C)	CUMULATIVE	60	1160	10	10	890	910	1330	10	30	10	10	10

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
EXISTING GEOMETRICS	L T TR	L T TR R	L LT R	LTR

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)
SCENARIO 2: EXISTING+PROJECT (A+B)
SCENARIO 3: CUMULATIVE (C)
SCENARIO 4: CUMULATIVE+PROJECT(C+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4		
NBL	1	1600	70	70	60	60	0.04	0.04	0.04	0.04		
NBT	2	3200	1050	1077	1160	1187	0.33 *	0.34 *	0.36 *	0.37 *		
NBR	1	1600	8	8	8	8	0.01	0.01	0.01	0.01		
SBL	1	1600	10	10	10	10	0.01 *	0.01 *	0.01 *	0.01 *		
SBT	3	4800	760	774	890	904	0.16	0.16	0.19	0.19		
SBR (a)	1	1600	213	217	246	249	0.13	0.14	0.15	0.16		
EBL	0	0	820	847	1330	1357	0.00	0.00	0.00	0.00		
EBT	2	3200	10	10	10	10	0.26 *	0.27 *	0.42 *	0.43 *		
EBR	1	1600	19	19	14	14	0.01	0.01	0.01	0.01		
WBL	0	0	10	10	10	10	0.00	0.00	0.00	0.00		
WBT	1	1600	10	10	10	10	0.02 *	0.02 *	0.02 *	0.02 *		
WBR	0	0	4	4	4	4	0.00	0.00	0.00	0.00		
			INTERSECTION CAPACITY UTILIZATION:				0.61	0.63	0.80	0.82		
			LEVEL OF SERVICE:				B	B	C	D		

NOTES:

(a) 73% RTOR

MMF
09/03/08

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	MMF	Intersection	WELLS RD/PROJECT DWY
Agency/Co.	ATE	Jurisdiction	CITY OF VENTURA
Date Performed	9/28/2005	Analysis Year	YEAR 2025+PROJECT
Analysis Time Period	P.M. PEAK HOUR		

Project Description: PARKLANDS PROJECT - 08088

East/West Street: PROJECT DWY | North/South Street: WELLS ROAD

Intersection Orientation: North-South | Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	62	826			548	15
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	29	0	41	0	0	0
Percent Heavy Vehicles	4	--	--	4	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	1	0	0	1	0
Configuration	L	T				TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	29	0	41			
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	548	15	62	826	0
Percent Heavy Vehicles	4	4	4	4	4	4
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	0	0
Configuration		LTR				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LTR	
v (veh/h)	62						70	
C (m) (veh/h)	999						425	
v/c	0.06						0.16	
95% queue length	0.20						0.59	
Control Delay (s/veh)	8.8						15.1	
LOS	A						C	
Approach Delay (s/veh)	--	--				15.1		
Approach LOS	--	--				C		

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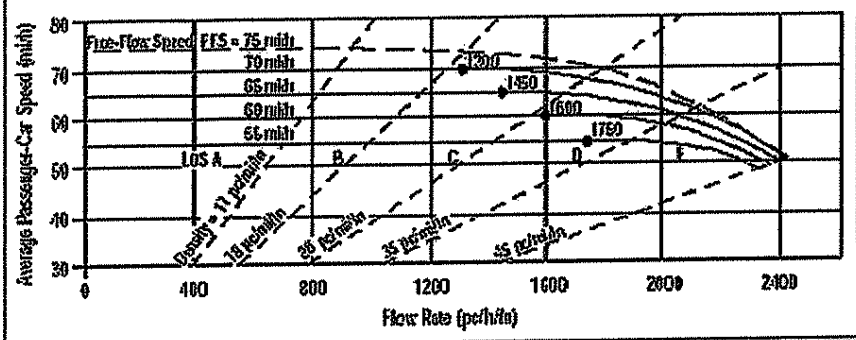
AWD = 12.1 sec. / LOS B

STATE ROUTE 126 CALCULATION WORKSHEETS

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	DLD
Agency or Company	ATE
Date Performed	8/18/2008
Analysis Time Period	P.M. PEAK

Site Information

Highway/Direction of Travel	SR 126 EB
From/To	W/O SR 118
Jurisdiction	VENTURA COUNTY
Analysis Year	EXISITING

Project Description

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	2615	veh/h	Peak-Hour Factor, PHF	0.90
AADT		veh/day	%Trucks and Buses, P_T	5
Peak-Hr Prop. of AADT, K			%RVs, P_R	2
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D		veh/h	Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

Calculate Flow Adjustments

f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.972

Speed Inputs

Lane Width	12.0	ft
Rt-Shoulder Lat. Clearance	6.0	ft
Interchange Density	0.50	I/mi
Number of Lanes, N	2	
FFS (measured)	70.0	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	70.0	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1495	pc/h/ln
S	69.8	mi/h
D = v_p / S	21.4	pc/mi/ln
LOS	C	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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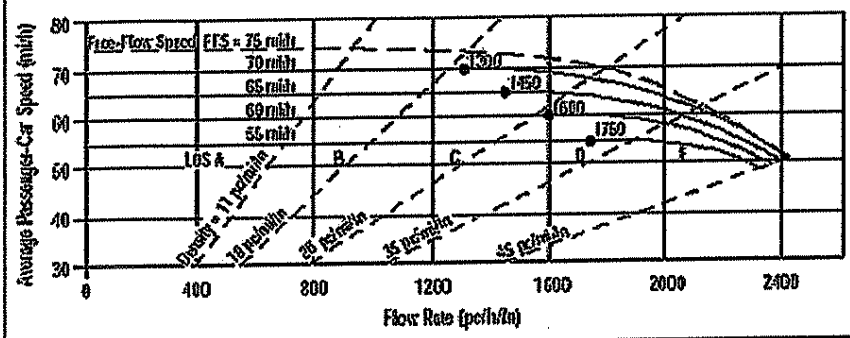
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*DLD*
Agency or Company	*ATE*
Date Performed	*8/18/2008*
Analysis Time Period	*P.M. PEAK*

Site Information

Highway/Direction of Travel	*SR 126 EB*
From/To	*W/O SR 118*
Jurisdiction	*VENTURA COUNTY*
Analysis Year	*EXISITING + PROJECT*

Project Description

☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2696*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*2*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1541*	pc/h/ln
S	*69.7*	mi/h
D = v_p / S	*22.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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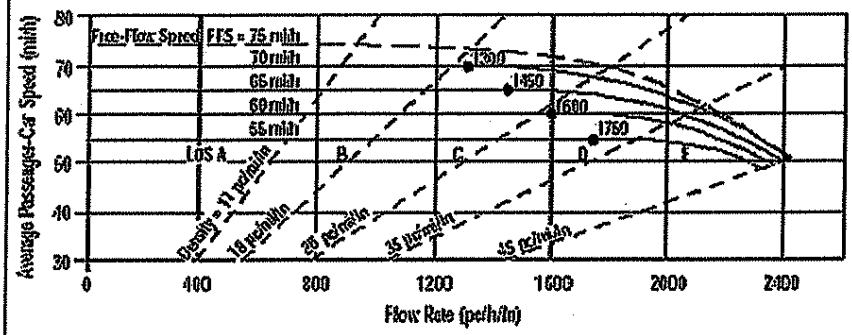
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*DLD*	Highway/Direction of Travel	*SR 126 WB*
Agency or Company	*ATE*	From/To	*W/O SR 118*
Date Performed	*8/18/2008*	Jurisdiction	*VENTURA COUNTY*
Analysis Time Period	*P.M. PEAK*	Analysis Year	*EXISITING*

Project Description

☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2135*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*2*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1221*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*17.4*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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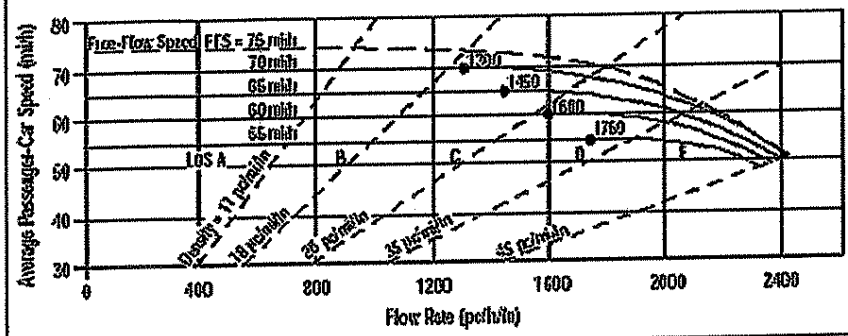
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*DLD*
Agency or Company	*ATE*
Date Performed	*8/18/2008*
Analysis Time Period	*P.M. PEAK*

Site Information

Highway/Direction of Travel	*SR 126 WB*
From/To	*W/O SR 118*
Jurisdiction	*VENTURA COUNTY*
Analysis Year	*EXISITING + PROJECT*

Project Description

☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2195*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*2*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1255*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*17.9*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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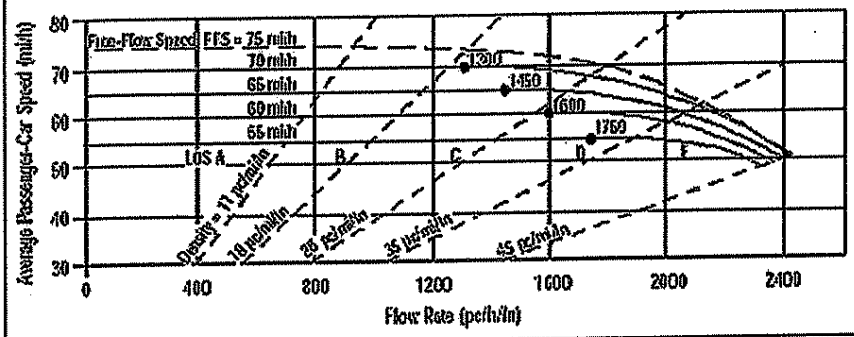
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*DLD*
Agency or Company	*ATE*
Date Performed	*8/18/2008*
Analysis Time Period	*P.M. PEAK*

Site Information

Highway/Direction of Travel	*SR 126 EB*
From/To	*W/O SR 118*
Jurisdiction	*VENTURA COUNTY*
Analysis Year	*CUMULATIVE*

Project Description

☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2770*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	i/mi
Number of Lanes, N	*2*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1584*	pc/h/ln
S	*69.5*	mi/h
D = v_p / S	*22.8*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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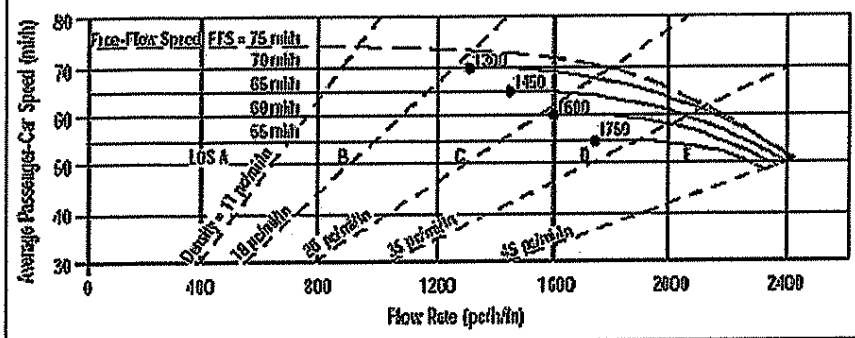
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*DLD*	Highway/Direction of Travel	*SR 126 EB*
Agency or Company	*ATE*	From/To	*W/O SR 118*
Date Performed	*8/18/2008*	Jurisdiction	*VENTURA COUNTY*
Analysis Time Period	*P.M. PEAK*	Analysis Year	*CUMULATIVE + PROJECT*

Project Description

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2851*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*2*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1630*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.3*	mi/h	S		mi/h
D = v_p / S	*23.5*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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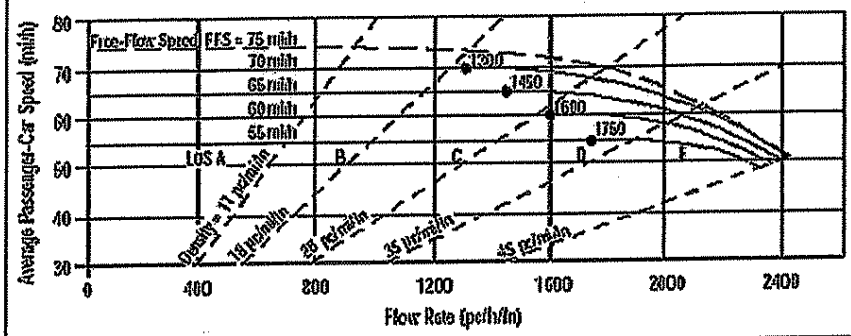
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*DLD*
Agency or Company	*ATE*
Date Performed	*8/18/2008*
Analysis Time Period	*P.M. PEAK*

Site Information

Highway/Direction of Travel	*SR 126 WB*
From/To	*W/O SR 118*
Jurisdiction	*VENTURA COUNTY*
Analysis Year	*CUMULATIVE*

Project Description

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2265*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	i/mi
Number of Lanes, N	*2*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1295*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*18.5*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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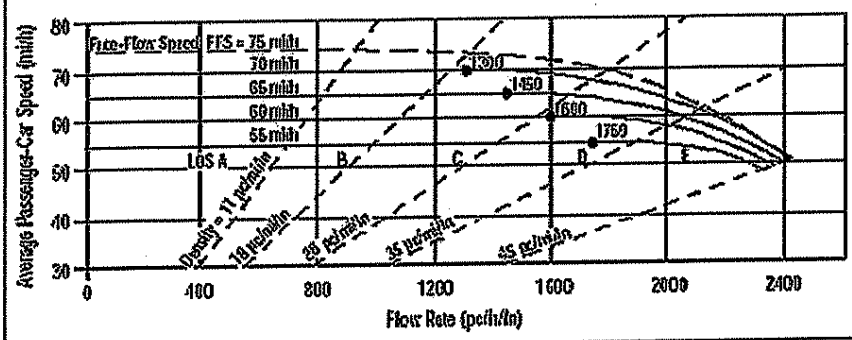
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*DLD*
Agency or Company	*ATE*
Date Performed	*8/18/2008*
Analysis Time Period	*P.M. PEAK*

Site Information

Highway/Direction of Travel	*SR 126 WB*
From/To	*W/O SR 118*
Jurisdiction	*VENTURA COUNTY*
Analysis Year	*CUMULATIVE + PROJECT*

Project Description

☒ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2326*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*5*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*2*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.972*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*2*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1330*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*19.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	138	0	481	0	0	844	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	150	0	523	0	0	917	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								635				
pX, platoon unblocked												
vC, conflicting volume	1329	1440	459	982	1440	261	917			523		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1329	1440	459	982	1440	261	917			523		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	80	100			100		
cM capacity (veh/h)	90	132	549	204	132	737	739			1040		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	150	261	261	0	459	459	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	150	0	0	0	0	0	0
cSH	1700	737	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.20	0.15	0.15	0.00	0.27	0.27	0.00
Queue Length 95th (ft)	0	19	0	0	0	0	0	0
Control Delay (s)	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B						
Approach Delay (s)	0.0	11.1	0.0			0.0		
Approach LOS	A	B						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	126	0	1014	0	0	620	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	137	0	1102	0	0	674	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								635				
pX, platoon unblocked	0.88	0.88		0.88	0.88	0.88				0.88		
vC, conflicting volume	1362	1776	337	1439	1776	551	674			1102		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1274	1745	337	1362	1745	351	674			978		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	76	100			100		
cM capacity (veh/h)	83	75	659	94	75	567	913			616		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	137	551	551	0	337	337	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	137	0	0	0	0	0	0
cSH	1700	567	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.24	0.32	0.32	0.00	0.20	0.20	0.00
Queue Length 95th (ft)	0	23	0	0	0	0	0	0
Control Delay (s)	0.0	13.4	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B						
Approach Delay (s)	0.0	13.4	0.0			0.0		
Approach LOS	A	B						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	
Lane Util. Factor	1.00		1.00					0.95			0.95	
Frt	1.00		0.85					1.00			1.00	
Flt Protected	0.95		1.00					1.00			1.00	
Satd. Flow (prot)	1770		1583					3539			3539	
Flt Permitted	0.95		1.00					1.00			1.00	
Satd. Flow (perm)	1770		1583					3539			3539	
Volume (vph)	101	0	220	0	0	0	0	620	0	0	1953	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	0	239	0	0	0	0	674	0	0	2123	0
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	110	0	230	0	0	0	0	674	0	0	2123	0
Turn Type	Prot		custom						Free			Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	13.3		13.3					43.7			43.7	
Effective Green, g (s)	13.3		13.3					43.7			43.7	
Actuated g/C Ratio	0.20		0.20					0.67			0.67	
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	362		324					2379			2379	
v/s Ratio Prot	0.06							0.19			c0.60	
v/s Ratio Perm			0.15									
v/c Ratio	0.30		0.71					0.28			0.89	
Uniform Delay, d1	21.9		24.1					4.3			8.7	
Progression Factor	1.00		1.00					1.00			1.00	
Incremental Delay, d2	0.5		7.2					0.3			5.6	
Delay (s)	22.4		31.2					4.6			14.3	
Level of Service	C		C					A			B	
Approach Delay (s)		28.4			0.0			4.6			14.3	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	110	239	674	2123
v/c Ratio	0.30	0.72	0.28	0.89
Control Delay	22.4	29.2	5.1	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.4	29.2	5.1	16.7
Queue Length 50th (ft)	37	83	49	314
Queue Length 95th (ft)	73	147	78	#581
Internal Link Dist (ft)			1008	555
Turn Bay Length (ft)				
Base Capacity (vph)	436	398	2378	2378
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.60	0.28	0.89

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	
Lane Util. Factor	1.00		1.00					0.95			0.95	
Frt	1.00		0.85					1.00			1.00	
Flt Protected	0.95		1.00					1.00			1.00	
Satd. Flow (prot)	1770		1583					3539			3539	
Flt Permitted	0.95		1.00					1.00			1.00	
Satd. Flow (perm)	1770		1583					3539			3539	
Volume (vph)	271	0	360	0	0	0	0	1043	0	0	1315	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	0	391	0	0	0	0	1134	0	0	1429	0
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	295	0	376	0	0	0	0	1134	0	0	1429	0
Turn Type	Prot		custom						Free			Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	15.0		15.0					27.0			27.0	
Effective Green, g (s)	15.0		15.0					27.0			27.0	
Actuated g/C Ratio	0.30		0.30					0.54			0.54	
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	531		475					1911			1911	
v/s Ratio Prot	0.17							0.32			c0.40	
v/s Ratio Perm			0.25									
v/c Ratio	0.56		0.79					0.59			0.75	
Uniform Delay, d1	14.7		16.1					7.8			8.9	
Progression Factor	1.00		1.00					1.00			1.00	
Incremental Delay, d2	1.3		8.7					1.4			2.7	
Delay (s)	16.0		24.8					9.1			11.6	
Level of Service	B		C					A			B	
Approach Delay (s)		21.0			0.0			9.1			11.6	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	295	391	1134	1429
v/c Ratio	0.56	0.80	0.59	0.75
Control Delay	17.2	23.5	10.0	13.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.2	23.5	10.0	13.0
Queue Length 50th (ft)	67	91	115	166
Queue Length 95th (ft)	124	#203	169	243
Internal Link Dist (ft)			1008	555
Turn Bay Length (ft)				
Base Capacity (vph)	602	553	1911	1911
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.49	0.71	0.59	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	160	0	470	0	0	920	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	174	0	511	0	0	1000	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								635				
pX, platoon unblocked												
vC, conflicting volume	1429	1511	500	1011	1511	255	1000			511		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1429	1511	500	1011	1511	255	1000			511		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	77	100			100		
cM capacity (veh/h)	73	119	516	194	119	744	688			1051		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	174	255	255	0	500	500	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	174	0	0	0	0	0	0
cSH	1700	744	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.23	0.15	0.15	0.00	0.29	0.29	0.00
Queue Length 95th (ft)	0	23	0	0	0	0	0	0
Control Delay (s)	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B						
Approach Delay (s)	0.0	11.3	0.0			0.0		
Approach LOS	A	B						

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	90	0	1210	0	0	620	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	98	0	1315	0	0	674	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								635				
pX, platoon unblocked	0.76	0.76		0.76	0.76	0.76				0.76		
vC, conflicting volume	1429	1989	337	1652	1989	658	674			1315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1253	1986	337	1545	1986	243	674			1104		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	83	100			100		
cM capacity (veh/h)	82	46	659	60	46	579	913			480		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	98	658	658	0	337	337	0
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	98	0	0	0	0	0	0
cSH	1700	579	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.17	0.39	0.39	0.00	0.20	0.20	0.00
Queue Length 95th (ft)	0	15	0	0	0	0	0	0
Control Delay (s)	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B						
Approach Delay (s)	0.0	12.5	0.0			0.0		
Approach LOS	A	B						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	
Lane Util. Factor	1.00		1.00					0.91			0.91	
Frt	1.00		0.85					1.00			1.00	
Flt Protected	0.95		1.00					1.00			1.00	
Satd. Flow (prot)	1770		1583					5085			5085	
Flt Permitted	0.95		1.00					1.00			1.00	
Satd. Flow (perm)	1770		1583					5085			5085	
Volume (vph)	100	0	170	0	0	0	0	850	0	0	2620	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	0	185	0	0	0	0	924	0	0	2848	0
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	109	0	184	0	0	0	0	924	0	0	2848	0
Turn Type	Prot		custom						Free			Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	11.0		11.0					43.7			43.7	
Effective Green, g (s)	11.0		11.0					43.7			43.7	
Actuated g/C Ratio	0.18		0.18					0.70			0.70	
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	311		278					3544			3544	
v/s Ratio Prot	0.06							0.18			c0.56	
v/s Ratio Perm			0.12									
v/c Ratio	0.35		0.66					0.26			0.80	
Uniform Delay, d1	22.7		24.1					3.5			6.5	
Progression Factor	1.00		1.00					1.00			1.00	
Incremental Delay, d2	0.7		5.8					0.0			1.4	
Delay (s)	23.4		29.9					3.6			7.9	
Level of Service	C		C					A			A	
Approach Delay (s)		27.5			0.0			3.6			7.9	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	109	185	924	2848
v/c Ratio	0.32	0.61	0.26	0.79
Control Delay	19.9	24.0	4.4	10.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.9	24.0	4.4	10.6
Queue Length 50th (ft)	31	55	39	224
Queue Length 95th (ft)	66	107	70	#470
Internal Link Dist (ft)			1008	555
Turn Bay Length (ft)				
Base Capacity (vph)	429	384	3621	3621
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.48	0.26	0.79

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0					4.0			4.0	
Lane Util. Factor	1.00		1.00					0.91			0.91	
Frt	1.00		0.85					1.00			1.00	
Flt Protected	0.95		1.00					1.00			1.00	
Satd. Flow (prot)	1770		1583					5085			5085	
Flt Permitted	0.95		1.00					1.00			1.00	
Satd. Flow (perm)	1770		1583					5085			5085	
Volume (vph)	310	0	640	0	0	0	0	1320	0	0	1650	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	337	0	696	0	0	0	0	1435	0	0	1793	0
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	337	0	695	0	0	0	0	1435	0	0	1793	0
Turn Type	Prot		custom						Free			Free
Protected Phases	4							2			6	
Permitted Phases			4						Free			Free
Actuated Green, G (s)	22.9		22.9					19.0			19.0	
Effective Green, g (s)	22.9		22.9					19.0			19.0	
Actuated g/C Ratio	0.46		0.46					0.38			0.38	
Clearance Time (s)	4.0		4.0					4.0			4.0	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	812		726					1936			1936	
v/s Ratio Prot	0.19							0.28			c0.35	
v/s Ratio Perm			0.44									
v/c Ratio	0.42		0.96					0.74			0.93	
Uniform Delay, d1	9.0		13.0					13.3			14.8	
Progression Factor	1.00		1.00					1.00			1.00	
Incremental Delay, d2	0.3		23.3					1.6			8.2	
Delay (s)	9.4		36.3					14.9			22.9	
Level of Service	A		D					B			C	
Approach Delay (s)		27.5			0.0			14.9			22.9	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	337	696	1435	1793
v/c Ratio	0.42	0.96	0.74	0.93
Control Delay	11.0	41.1	16.2	25.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	41.1	16.2	25.6
Queue Length 50th (ft)	61	181	127	176
Queue Length 95th (ft)	111	#386	172	#276
Internal Link Dist (ft)			1008	555
Turn Bay Length (ft)				
Base Capacity (vph)	814	729	1938	1938
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.95	0.74	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix I

Sewer Study, Water Supply Assessment

PARKLANDS
TRACT MAP No. 5632

SEWER STUDY

REGISTERED PROFESSIONAL ENGINEER
ISABELLA DO VAL GAMBLE
No. 68224
EXP. 9/30/07
CIVIL
STATE OF CALIFORNIA

PREPARED BY:

DTR ENGINEERING
1695 MESA VERDE, SUITE 100
VENUTURA, CA 93003
805.676.1533

ISABELLA DO VAL GAMBLE
RCE 68224
EXP. 09-30-2007

INTRODUCTION

The purpose of this report is to analyze the existing sewer system to verify that there is enough capacity to adequately serve the increased flow from this project and to determine impacts on the City's sewer system, if any this may cause.

PROJECT SCOPE

This proposed project is located in East Ventura bounded on the North by Telegraph Road, the East by Wells Road, the South by Blackburn Road and the 126 Freeway, and on the West by an existing mobile home park and single family homes.

The Parklands project is a mixed use project consisting of 326 single family residences and 161 multi-family dwelling units with approximately 15,000 square feet of commercial space within the multi-family dwelling units.

The existing manhole to perform the flow monitoring on was determined by conversations with City Staff. It was determined that the manhole at Saticoy Golf Course located northwest of Wells Road and Telephone Road was selected as to where the test was needed.

The test was performed by Down Stream Services, Inc. during the week of September 20, 2006 to September 26, 2006. Their report is attached.

RESULT

The result of the flow monitoring study was as follow:

Maximum depth of flow = 2.58 inches
Maximum flow rate = 0.33209 mgd = 0.5138 cfs

The additional flow generated by this proposed project will add 0.4821 cfs (peak flow) to the existing 15" sewer line which will increase the capacity to 31.7% which is less than the maximum design capacity of 50%.

CONCLUSION

Based on this analysis, no significant impacts will occur because of the development of this project.

Proposed Flow

326 single family residences and 161 multi-family dwelling units = 487 units
Residential = 0.00013 cfs/capita
2.5 people x 487 = 1,217.5 people
1,217.5 x 0.00013 = **0.1583 cfs**

15,000 square feet of commercial space
Commercial = 0.0061 cfs/acre
15,000 sf = 0.34 acre
0.34 x 0.0061 = **0.0021 cfs**

Recreation Building
Recreation = 0.00031 cfs/acre
0.92 acres x 0.00031 = **0.0003 cfs**

Total flow = 0.1583 + 0.0021 + 0.0003 = 0.1607 cfs
Peak flow = 0.1607 x 3 = **0.4821 cfs**

Existing and Proposed Flow

Existing flow = 0.5138 cfs (maximum flow per Flow Monitoring Report)
Proposed flow = 0.4821 cfs
Total flow = 0.9959 cfs

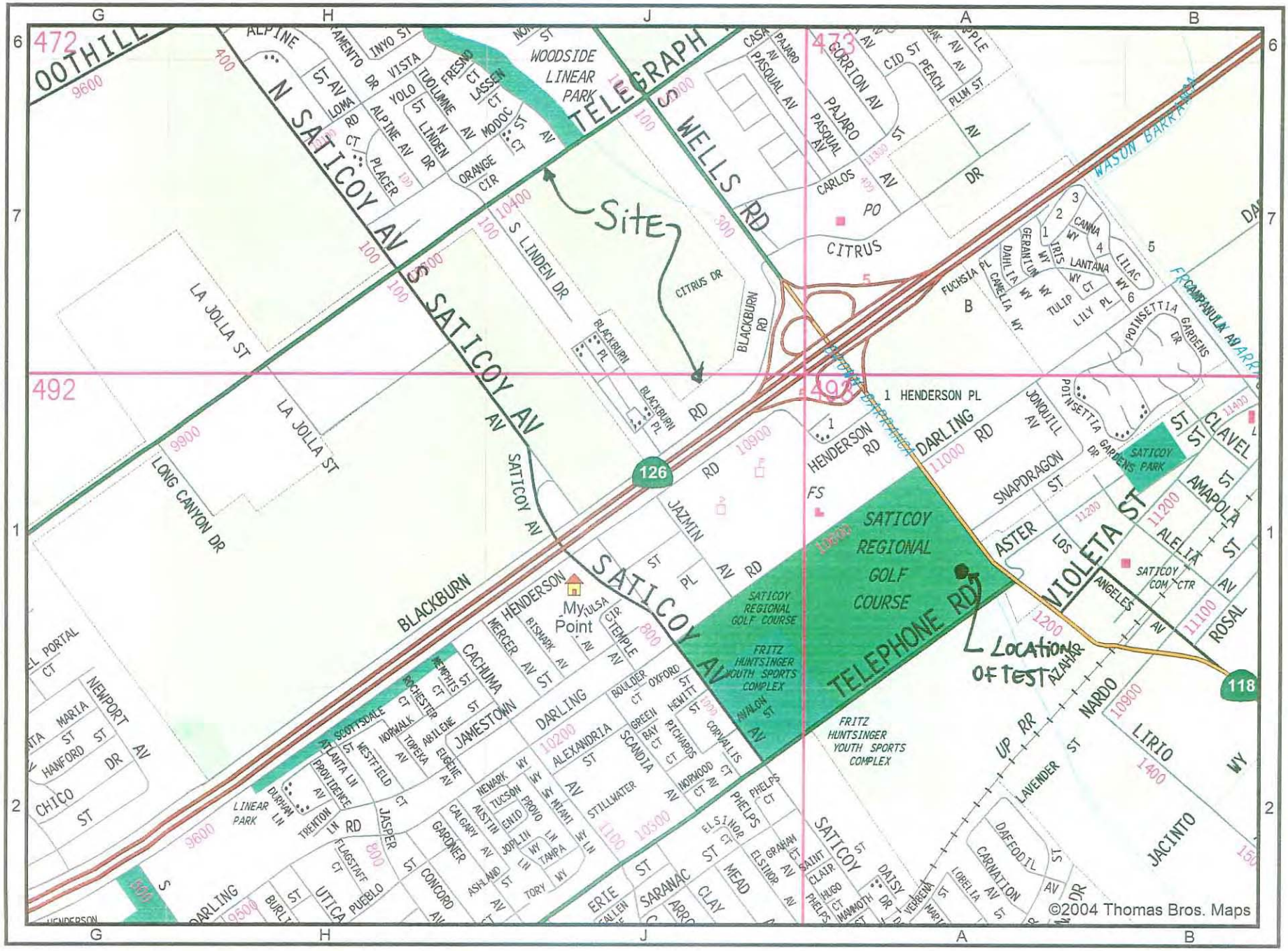
Manning Pipe Calculator

Given Input Data:

Shape	Circular
Solving for	Depth of Flow
Diameter	1.2500 ft
Flowrate	0.9959 cfs
Slope	0.0050 ft/ft
Manning's n	0.0130

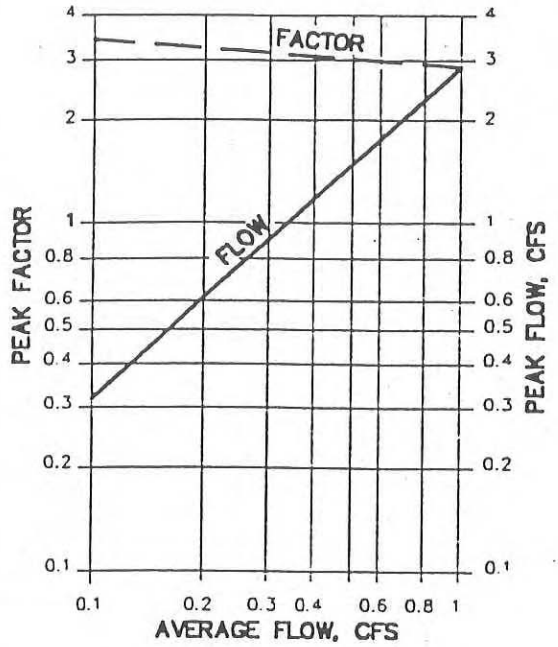
Computed Results:

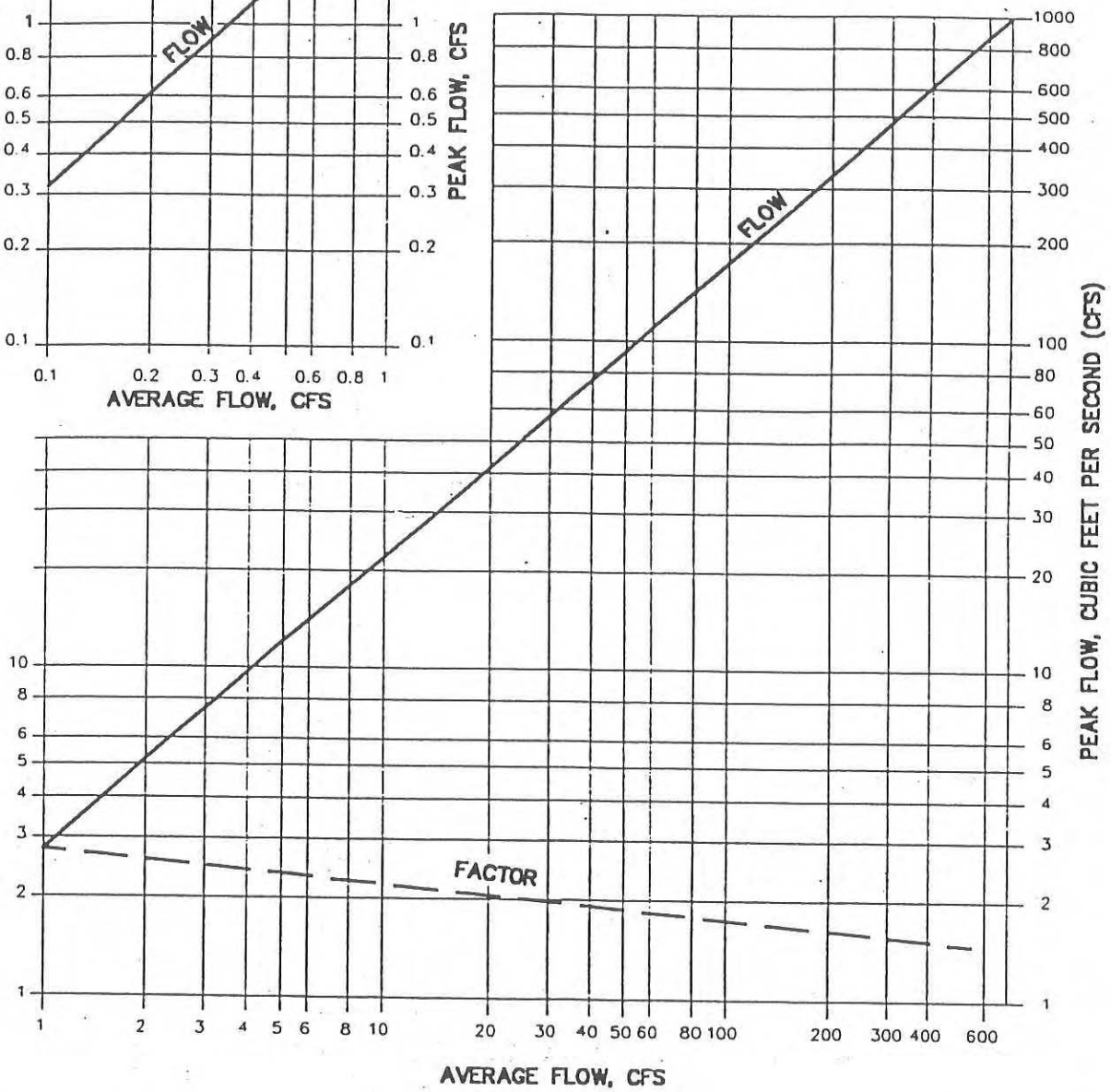
Depth	0.3965 ft
Area	1.2272 ft2
Wetted Area	0.3344 ft2
Wetted Perimeter	1.4956 ft
Perimeter	3.9270 ft
Velocity	2.9778 fps
Hydraulic Radius	0.2236 ft
Percent Full	31.7184 %
Full flow Flowrate	4.5678 cfs
Full flow velocity	3.7221 fps



My Point: 492J1

LAND USE	AVERAGE FLOW COEFFICENTS
RESIDENTIAL	0.00013 CFS/CAPITA
INDUSTRIAL	0.0081 CFS/ACRE
COMMERCIAL	0.0061 CFS/ACRE
PUBLIC STRUCTURES	0.0061 CFS/ACRE
RECREATION	0.00031 CFS/ACRE
HOSPITAL	0.039 CFS/100 BEDS
SCHOOL	0.031 CFS/1000 STUDENTS
COLLEGE	0.031 CFS/1000 STUDENTS





CITY OF SAN BUENAVENTURA

COMMUNITY SERVICES DEPARTMENT
ENGINEERING DIVISION

DESIGNED BY:
DRAWN BY: T. MEISNER
CHECKED BY: B. EMADI
APPROVED BY: SANITATION SUPT. 6/13/95

AVERAGE SEWER DISCHARGE COEFFICIENTS AND PEAK FLOW CHARTS

APPROVED BY CITY ENGINEER R.C.E. 37064 DATE 6-13-95

FIGURE 7

SHEET 1 of 1

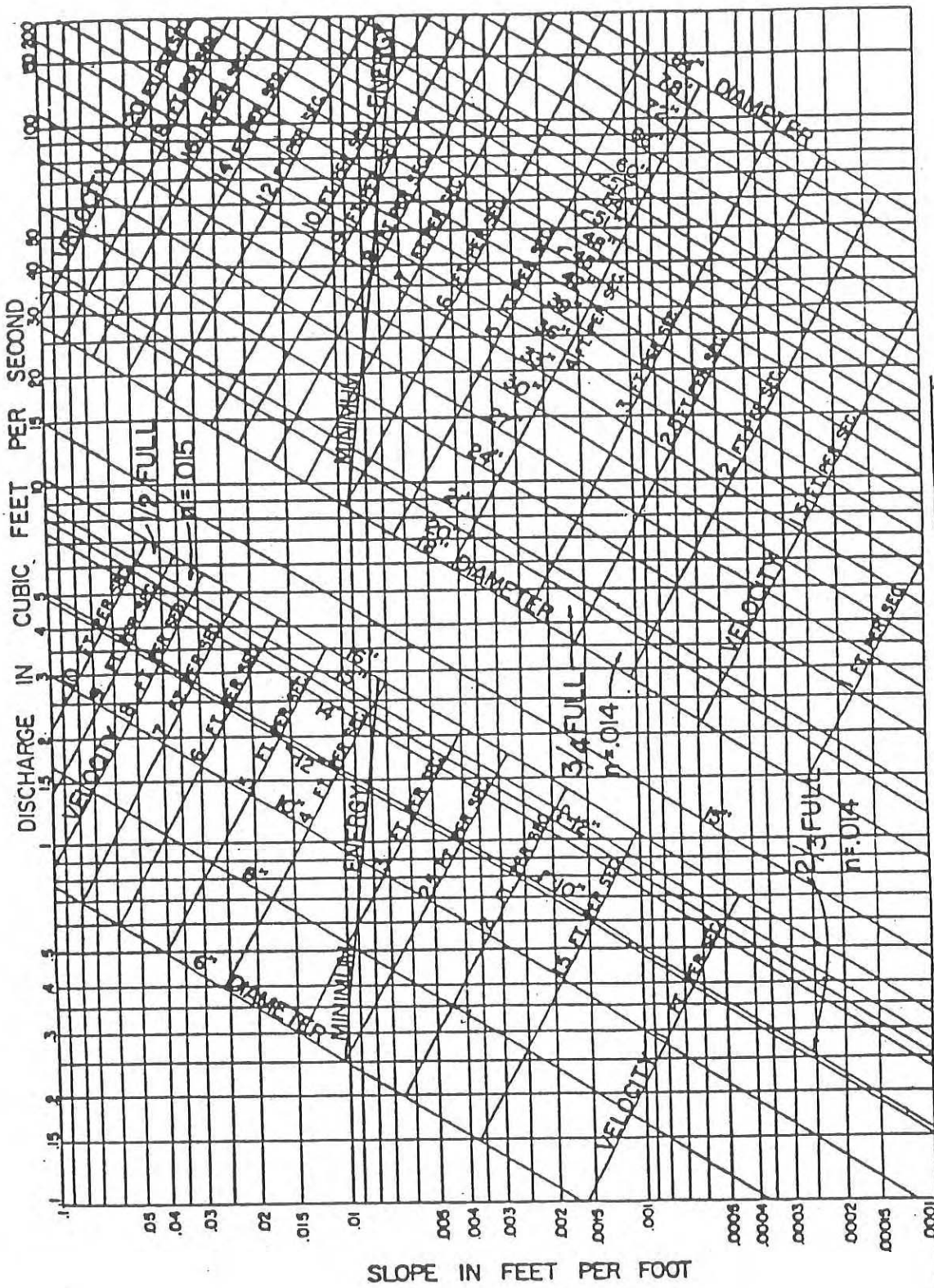


CHART IS BASED ON MANNING'S FORMULA

$V = \frac{1.486}{n} R^{2/3} S^{1/2}$

FOR PIPES 15" DIA. OR LESS - FLOW AT 1/2 DEPTH - n = .015
FOR PIPES 18" DIA. OR GREATER - FLOW AT 3/4 DEPTH - n = .014

POINTS ABOVE THE MINIMUM ENERGY LINE INDICATE FLOW BELOW CRITICAL DEPTH.

CITY OF SAN BUENAVENTURA

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

DRAWN BY T. M.
CHECKED BY D.S.
RECM'D BY J.B.
APPROVED BY [signature] 7/19/91
CONSTRUCTION SUPERINTENDENT

CHART OF DESIGN CAPACITY CIRCULAR SEWERS

APPROVED BY [signature] DATE 2-26-91
CITY ENGINEER R.C.E. 23761 exp 12-31-93

FIGURE 6

1 OF 1

PARKLANDS
CITY OF SAN BUENAVENTURA
SPECIFIC PLAN NO. 6

SB 610 Water Supply Assessment

Prepared by:

City of San Buenaventura
Public Works Department
501 Poli Street
Ventura, CA 93002
Contact: Iain Holt, City Planner

Prepared with the assistance of:

Rincon Consultants, Inc.
790 East Santa Clara Street, Suite 103
Ventura, California 93001

January 14, 2008

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WATER SUPPLY ASSESSMENT INFORMATION

This water supply assessment is provided for the proposed Parklands Specific Plan in the City of Ventura, pursuant to the requirements of Section 10910 of the State Water Code, as amended by Senate Bill No. 610, Chapter 643 (2001).

BACKGROUND

Senate Bill No. 610 (Costa) became effective January 1, 2002. The bill requires a city or county which determines that a "project" (as defined in Water Code § 10912) is subject to the California Environmental Quality Act (CEQA) to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment. The assessment is required to include an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. The assessment must be approved by the governing body of the public water system supplying water to the project. If the projected water demand associated with the project was included as part of the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in the water supply assessment. The bill requires the city or county, if it is not able to identify any public water system that may supply water for the project, to prepare the water supply assessment after a prescribed consultation. If the public water system concludes that water supplies are, or will be, insufficient, plans for acquiring additional water supplies are required to be submitted to the city or county. The city or county must include the water supply assessment in any environmental document prepared for the project pursuant to the act. It also requires the city or county to determine whether project water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.

PROJECT SUMMARY

The proposed Parklands Specific Plan Project encompasses about 66.7 acres in the Wells Community. The applicant's proposal would involve annexation of three parcels currently under agricultural production from the County to the City and a zone change from R-1 (County Single-Family Residential) to R-P-D (Residential Planned Development) and to M-X-D (Mixed Use Zone). Development under the Parklands Specific Plan would generally include predominantly residential uses, with supporting infrastructure, green space, community recreational space, and a small amount of service commercial development. The specific plan could accommodate up to 499 dwelling units, 25,000 square feet of commercial space and a 6,560 square foot community center.

The proposed project meets the definition of "project" within Water Code section 10912 and is subject to the California Environmental Quality Act (CEQA). Pursuant to CEQA, the City of Ventura, acting as lead agency, prepared a Draft Mitigated Negative Declaration (MND) for the project. The City of Ventura is the public water system that would supply water to the Parklands Specific Plan Project if it is approved by the City of Ventura.

WATER SUPPLY ASSESSMENT

The following is a discussion of local water supply planning as it relates to the applicable requirements of Section 10910 of the State Water Code.

SB 610 APPLICABILITY

Water Code Section 10910(a) states that projects, as defined in Section 10912, are subject to the requirement to prepare a water supply assessment. A "project" under Section 10912 includes a development "that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project". Therefore, since the proposed project includes up to 499 dwelling units, 25,000 square feet of commercial space and a 6,560 square foot community center, the requirements of Section 10910 of the California Water Code apply to the proposed project.

WATER SUPPLIER

Water Code Section 10910(b) requires the identification of the public water system that would serve the project. The project site is located within the City of Ventura service area and would be served by the City of Ventura if approved. The City of Ventura obtains its water from several sources, including the Ventura River, Casitas Municipal Water District, the Mound Groundwater Basin, the Oxnard Plain Groundwater Basin, the Santa Paula Groundwater Basin, and the Saticoy Yard Well.

UWMP APPLICABILITY

Water Code Section 10910(c)(l) requires a determination of whether or not the proposed project was included in the most recently adopted urban water management plan (UWMP). The most recently adopted UWMP (2005) for the City of Ventura projects future demand based on General Plan buildout to the year 2025, with an estimated population increase of 21,208 persons, the addition of 8,258 residences, and the addition of 2,655,000 square feet of commercial development. The proposed project includes up to 499 residential units, 25,000 square feet of commercial space and a 6,560 square foot community center. The General Plan land use designation for the site is residential low (0-8 dwelling units per acre). The Plan Area is 66.7 acres; therefore, the density proposed (499 residential units with 25,000 square feet of commercial space and a 6,560 square foot community center) is about the same as the maximum density envisioned under the General Plan Land Use designation (533 residential units). Therefore, the project has been accounted for in water demand figures included in the City's 2005 UWMP.

WATER SUPPLIES AND DEMAND

According to the 2006 Biennial Water Supply Report, the City of Ventura obtains water from the following sources:

1. Ventura River surface and subsurface water intakes and four shallow wells (Foster Park)
2. Casitas Municipal Water District (Casitas)
3. Mound Groundwater Basin
4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)

5. Santa Paula Ground Water Basin
6. Saticoy Yard Well

The City also holds a State Water Project entitlement of 10,000 acre-feet per year (AFY). To date, the City has not received delivery of its allotment, and it is not certain if or when facilities will be constructed to transport SWP water to the City. The City manages its water resources conjunctively. Conjunctive use is the practice of first utilizing surface supplies (which are lost to the ocean if not used when they are available) before groundwater supplies (which can be stored for use when the surface supplies are not plentiful). Groundwater is used to provide for seasonal demands and as a source during drought periods. Therefore, the City will generally utilize its water supplies in the following order: Ventura River, Lake Casitas, and groundwater basins. In addition, the City provides reclaimed water from the Ventura Water Reclamation Facility to two municipal golf courses, the Ventura Marina area and private customers for landscape irrigation. The City's Historic and Projected Water Source Supply Availability is shown in Table 1.

Table 1 Historic and Projected Water Source Supply Availability (Acre Feet) [1]

Year	Surface Water		Ground Water				Total Water Supply
	Lake Casitas [2]	Ventura River [3]	Mound Basin [4]	Oxnard Plain Basin [5]	Santa Paula Basin [6]	Saticoy County Yard Well [7]	
1980	7,544	7,276	0	5,198	2,129	0	22,147
1985	9,099	5,493	2,360	6,172	46	0	23,170
1990	6,175	2,859	4,365	5,749	0	0	19,148
1995	1,622	9,042	2,169	2,603	2,594	0	18,030
2000	5,836	6,779	4,579	2,674	1,698	0	21,566
2001	6,292	5,727	4,030	905	2,006	0	18,960
2002	7,127	5,951	3,721	1,978	1,157	0	19,934
2003	4,912	6,722	5,546	2,898	316	0	20,394
2004	6,833	6,118	4,773	2,391	2,183	0	22,298
2005	8,000	2,400	5,700	4,600	2,600	0	23,300
2010	8,000	2,400	5,700	4,600	2,600	2,400	29,900
2015	8,000	2,400	5,700	4,600	2,600	2,400	29,900
2020	8,000	2,400	5,700	4,600	2,600	2,400	29,900
2025	8,000	2,400	5,700	4,600	2,600	2,400	29,900
2030 [8]	8,000	2,400	5,700	4,600	2,600	2,400	29,900

Source: City of San Buenaventura, 2005 UWMP, Table 3-6

[1] Includes treated and raw water; excludes reclaimed water supply

[2] Lake Casitas is the City's total past supply including raw water and oil users; projected supply is the City's anticipated water availability for in-district use.

[3] Ventura River future supply is the average long-term production per the Evaluation of Long Term Alternative Water Sources, James M. Montgomery, June 1993. Reduced value in 2005 reflect lost and damaged wells caused by 2005 storm.

[4] Mound Basin Future supply is 75 percent of well pump capacity within basin.

[5] Oxnard Plain Basin future supply is based on GMA restricted extraction limits (rounded to nearest 100 AF from Table 3-2 in 2005 UWMP)

[6] Santa Paula Basin 2005 water supply reflects estimated year-end actuals. Future production reflects 75% of maximum design capacity for one well at 2500 gpm.

[7] Saticoy County Yard Well is 75% of well pump capacity.

[8] Projections for 2030 were not included in the 2005, UWMP; however, to assure a 20-year projection is included in this analysis, water supply is assumed to remain as allocated in the preceding years.

The City's current water supply is about 23,300 AFY (2005 UWMP). The installation of the Saticoy County Yard Well and Saticoy Well #3 will increase redundancy and increase supply by 2,400 acre-feet/year (2005 UWMP). The Saticoy Yard Well was anticipated for production in 2007 (2006 Biennial Water Supply Report); however, the raw water pipeline to the Saticoy Conditioning Facility is not anticipated to be constructed until late 2008. Saticoy Well #3 is still in the design process and planned operation is anticipated in late 2009 (City of San Buenaventura Public Works Department, 2008).

Historic water use by the City's population is estimated at 0.22 AF per capita prior to mandatory water conservation measures such as low-flow plumbing fixtures. Following implementation of these measures, per capita annual water usage for the period between 1994 and 2004 is 0.18 AF. Future projected demand within the City based on population growth is shown in Table 2.

Table 2
Projected Water Demand (Acre Feet)
(Normal Year, Weatherwise)

Year	Est. Water Service Area Population [1]	Per Capita Usage AFY [2]	Treated Water Demand [2]	Raw Water Demand [3]	Total Water Demand
2005	109,812	0.18	19,766	1,000	20,766
2010	114,629	0.18	20,633	1,000	21,633
2015	119,659	0.18	21,539	1,000	22,539
2020	124,913	0.18	22,484	1,000	23,484
2025	130,400	0.18	23,472	1,000	24,472
2030 [4]	136,072	0.18	24,493	1,000	25,493

Source: Table 4-4, 2005 UWMP.
[1] Service Area population from DOF reflecting an average annual growth rate of 0.88%, consistent with the 2005 General Plan, plus a 0.35% average annual growth rate for unincorporated areas that are served by the City's supply and infrastructure (2005 UWMP).
[2] Treated water demand is estimated population multiplied by 0.18 AF/capita based on 1994-2004 average post mandatory water conservation per capita use from Table 4-1, 2005 UWMP
[3] Raw water is utilized in the petroleum industry.
[4] Assumes growth continues at the rate of 0.88% within the City and 0.35% within unincorporated areas served by the City.

A comparison of the supply as indicated in Table 1 with demand as indicated in Table 2 results in a determination that projected available supplies are adequate to meet projected demands (see Table 3). The residential sector of the City is comprised of single and multi-family residential customers. Residential uses comprise about 64% of the overall consumption (2005 UWMP). The commercial sector is comprised of gas stations, large shopping complexes, auto dealerships, restaurants, business parks, office buildings, hotels, and hospitals. The commercial sector comprises about 23% of the overall consumption (2005 UWMP). The industrial sector is comprised of the food industry and oil production, both of which constitute about 1% of the City's overall consumption (2005 UWMP). The institutional and governmental sectors are relatively stable and consist of the County Seat offices, a jail complex, City offices and yards as

well as school facilities and churches. The institutional and governmental sector comprises about 4% of the overall consumption (2005 UWMP). Landscape, Agricultural and Other uses consist of 34 developed parks and 45 miles of linear parkways. In addition there are two 18-hole tournament class public golf courses served by reclaimed water for all turf areas. Agricultural uses served by the City comprise about 0.46% of the overall consumption, while the entire Landscape, Agricultural and Other sector utilizes about 8% of the total consumption (2005 UWMP).

Table 3
Projected Surplus (AFY)
(Normal Year, Weatherwise)

Year	Projected Supply	Projected Demand	Surplus
2005	23.300	20.766	2,534
2010	29.900	21.633	8,267
2015	29.900	22.539	7,361
2020	29.900	23.484	6,416
2025	29.900	24.472	5,428
2030	29.900	25.493	4,407

The projected water supply in years 2005 through 2030 appears adequate to serve the demands of the City pursuant to planned growth increases, consistent with the 2005 General Plan, as the surplus of available water ranges from a low of 2,534 AFY in 2005 to a high of 7,361 AFY in 2015.

In drought conditions, water supplies may be reduced as a result of reduced precipitation. The 2005 UWMP evaluated a three-year drought scenario to determine the City's ability to supply water under drought conditions. The City assumed that severe drought conditions (no rain and above average temperatures) would begin immediately and continue for three consecutive years. Planned water sources for fiscal year 2005, reflecting capacity of current facilities were used as an average normal water year base for estimating purposes. It was also assumed that demand would not be reduced in response to the drought conditions. Available water supplies during the three year period were projected considering: 1) the current status of each existing source; and 2) the past response of each existing source to similar drought conditions. The single dry and multiple dry year supply and demand comparisons are shown in Table 4. In addition, analysis of single dry water year supply vs. projected demand over a 20-year period is shown in Table 5.

Table 6 provides a summary of single dry water years in 5-year increments over twenty years, compared to projected water demand. As indicated in Table 6, the existing groundwater banking program would allow the City to draft from the existing banked water, which would meet multiple dry year demands until the year 2030, assuming 5 droughts, each having multiple dry year demands. This scenario assumes that the banked groundwater supply is

Table 4
Single and Multiple Dry Year
Supply Reliability and Demand Comparison (Acre Feet)

Source	Average/Normal Water Year [1]	Single Dry Water Year [2]	Multiple Dry Years		
			Year 1	Year 2	Year 3
Ventura River [3]	6,700	2,859	2,859	1,430	700
Casitas [4]	8,000	7,090	7,090	7,090	4,960
Oxnard Plain GW [5]	4,600	4,400	4,400	4,400	4,400
Mound Basin GW [6]	5,700	4,365	4,365	2,838	2,270
Santa Paula GW [7]	2,600	3,000	3,000	3,000	3,000
Saticoy County Yard Well [8]	0	1,800	1,800	900	675
Total Source Capacity	27,600	23,514	23,514	19,658	16,005
Less Raw Water Demand [9]	1,000	1,000	1,000	1,000	1,000
Available Treated Water	26,600	22,514	22,514	18,658	15,005
Total Treated Water Demand [10]	**19,766**	**19,766**	**19,766**	**19,937**	**20,109**
Demand Delta	6,834	2,748	2,748	-1,279	-5,104
Banked Groundwater Used [11]	0	0	0	1,300	5,120
Surplus Available for Banking [12]	**6,834**	**2,748**	**2,748**	**21**	**16**

Source: Table 6-1, 2005 UWMP

[1] From Table 3-6, 2005 UWMP (See Table 1). Year 2005 data with adjustment to Ventura River to reflect capacity of current facilities with a full basin.

[2] Rainfall in 1990 was 5.53 inches, well below the yearly average of 15 inches. For a single dry water year, 1990 historical data is used for the Ventura River and Mound Basin (ref. Table 3-6). Casitas reflects Stage 2 allocation, Oxnard source reflects the future available supply per GMA Ordinance. Santa Paula Basin reflects allocated amount per UWCD agreement and Saticoy Yd Well reflects 75% of average year (see Table 3-8).

[3] Ventura River available supply in Year 1 reflects the single dry water year. Year 2 is 50% of Year 1. Year 3 is the worst-case available annual yield per the Comprehensive Water Resources Management Plan.

[4] Casitas available supply during Year 1 and 2 reflects stage 2 allocation with year 3 reflecting stage 5 allocation.

[5] Oxnard Plain available supply assumed to be the City's allocation at 80% per GMA Extraction Reductions (Table 3-2).

[6] Mound Basin available supply for year 1 is assumed to be the single dry water year, decreasing in Year 2 by 35% based on 1990/1991 historical data. Year 3 reflects a 20% decrease of year 2.

[7] Santa Paula Basin Available supply assumed to be City's allocated amount per agreement with UWCD.

[8] Saticoy County Yard Well year 1 is assumed to be 75% of average year. Year 2 at 50% of year 1 and year 3 at 75% of year 2.

[9] From Table 4-4, 2005 UWMP (see Table 2).

[10] From Table 4-4, 2005 UWMP (see Table 2). Average and Single Dry Year reflects per capita use of 0.18 to projected 2005 population. The three multiple dry years also reflect 0.18 per capita water uses to extrapolated population estimates. (Population year 1 = 109,812; year 2 = 110,759; year 3 = 111,714).

[11] Reduced water demands have allowed the City to store 35,447 AF in the GMA bank at the end of year 2004. The use of banked groundwater would reduce our reserve but allow the City to meet its treated water demand.

[12] Surplus for banking is the lesser of net supply or GMA allocation amount.

Table 5
Summary of Projected Single Dry Water Year Demand and Supply
(Five Year Increments in Acre Feet)

Year	Projected Planning Area Population [1]	Projected Water Demand [2]	Projected Single Dry Water Year Supply [3]	Difference (Supply-less-demand)
2010	114,629	21,633	25,464	3,831
2015	119,659	22,539	25,464	2,925
2020	124,913	23,484	25,464	1,980
2025	130,400	24,472	25,464	992
2030	136,072	25,493	25,464	-29

Source: Table 6-2, 2005 UWMP

[1] *Projected planning area population is from Table 4-3, 2005 UWMP (see Table 2).*

[2] *Projected water demand is from Table 4-4 (see Table 2).*

[3] *Projected water supply is from Table 6-1, 2005 UWMP (see Table 4). For a Single Dry Water Year (23,514 a/f) reduced by 300 a/f, per GMA Extraction Requirement. Plus the New Saticoy Well #3 (Ref. Table 3-8, 2005 UWMP - 2,250 a/f).*

Table 6
Summary of Projected Multiple-Dry Three Year Water Demand and Supply
(Five Year Increments in Acre Feet)

Year	Projected Planning Area Population[1]	Projected Water Demand[2]	Projected Supply Multiple-Dry Water Years[3]	Difference (Supply-less-Demand)	Banked Groundwater December 2004	
					Standalone[4] 35,447	CUM[5] 35,447
2008	112,677	21,282	25,764	4,482	39,929	39,929
2009	113,648	21,457	20,783	-674	39,256	39,256
2010	114,629	21,633	16,549	-5,084	34,171	34,171
2013	117,621	22,172	25,464	3,292	38,739	37,464
2014	118,635	22,354	20,483	-1,871	36,868	35,592
2015	119,659	22,539	16,549	-5,990	30,878	29,603
2018	122,784	23,101	25,464	2,363	37,810	31,965
2019	123,844	23,292	20,483	-2,809	35,001	29,157
2020	124,913	23,484	16,549	-6,935	28,066	22,221
2023	128,177	24,072	25,464	1,392	36,839	23,613
2024	129,284	24,271	20,483	-3,788	33,051	19,825
2025	130,400	24,472	16,549	-7,923	25,128	11,902
2028	133,755	25,076	25,464	388	35,835	12,290
2029	134,909	25,284	20,483	-4,801	31,034	7,489
2030	136,072	25,493	16,549	-8,944	22,091	-1,454

Source: Table 6-4 (2005 UWMP); data for years 2028 through 2030 was extrapolated based on planned population growth increase of 0.88% annually.

[1] Projected planning area population is from Table 4-3 (2005 UWMP) with population estimates extrapolated to fit three multi dry years.

[2] Projected water demand is estimated population multiplied by 0.18 AF/capita based on 1994-2004 average post mandatory water conservation per capita use from Table 4-1 plus 1,000 AF/yr raw water demand.

[3] Projected water supply reflects Total Source Capacity from Table 6-1 (2005 UWMP) Multiple Dry Water Years plus the New Saticoy Well #3 (Ref. Table 6-3). Additionally, 2010 forward reflects Fox Canyon GMA Extraction Requirements (Ref. Table 3-2, 2005 UWMP)

[4] Each consecutive three year period reflects a standalone snapshot over the next twenty years ending in five year increments. Assumes only one of the three-year drought periods occur. For example if a drought occurred in 2013 through 2015 it is assumed that banked GMA credits would be available to support the water demand delta. As of December 2004, the City's banked groundwater was 35,447 a/f.

[5] Reflects a cumulative reduction of banked groundwater for each five-year period over the next twenty years. This assumes five (5), three-year drought periods occur in the next twenty years. In this example the use of banked GMA credits would reduce the reserve, but allow the City to meet its treated water demand until the year 2030.

frozen at the December 2004 supply of 35,447 AF and that groundwater bank contributions do not increase beyond single and multiple dry year banking deposits (maximum of 2,748 AF/Year). However, if normal year groundwater bank deposits occur, such as the 6,834 AF/year surplus (surplus avail. for banking in an Average/Normal Water Year – See Table 4), banked groundwater supplies would be expected to exceed demand in 2030, indicating no cumulative shortage even with a three-year drought every five years.

CONTINGENCY PLANS/WATER CONSERVATION

The City has developed a five-stage water shortage plan that would include voluntary and mandatory stages. The stages are intended to be fair to all water customers with the minimum impact on business, employment and quality of life. The water shortage stages and the reduction goals for each stage are outlined in Table 7.

Table 7
Water Shortage Stages and Reduction Goals

Shortage	Stage	Demand Reduction Goal	Program Type
Up to 10%	Stage 1	10% reduction	Voluntary
10-15%	Stage 2	15% reduction	Mandatory
15-20%	Stage 3	20% reduction	Mandatory
20-30%	Stage 4	30% reduction	Mandatory
30-50%+	Stage 5	50%+ reduction	Mandatory

Source: Table 6-5, 2005 UWMP.

In addition to its continuing water conservation efforts, the City implemented a Toilet Rebate Program and the Water Demand Reduction Offset Program (Water DROP) during the mandatory conservation period (1990-1993). Through the City's Toilet Rebate Program, a water customer received $80 for replacing each 5 gallon per flush or larger toilet with an ultra low volume toilet. The Water DROP program is designed to promote both economic vitality and water use efficiency. New non-residential construction, additions, or alterations are now allowed if the developer offsets their increased water demand at a 3:1 ratio through retrofitting. A 2:1 ratio is required for residential projects. With the lifting of mandatory water conservation, these programs have been discontinued. However, future drought conditions could reactivate these programs once more.

Significant measures of the five-stage water shortage plan include:

Stage 1: 0-10 Percent Reduction Goal (Voluntary)

<u>Public Agency Actions</u>

- Monitor conservation levels and increase public awareness

- Notify customers of shortage conditions and disseminate literature
- Publish customer use goals
- Identify Water Shortage Contingency Plan stages and the possible actions per stage
- Distribute water conservation brochures, information, and conservation kits
- Conduct exterior and interior water audits upon customer requests
- Request voluntary water consumption reduction
- Maintain tiered rate structure to promote water conservation
- Establish/enforce water waste ordinance
- Establish/enforce ordinance prohibiting watering from 9 am to 6 pm

Water Customer Actions

- Monitor own meter for usage
- Implement conservation measures to reduce usage
- Comply with water waste ordinance
- Comply with prohibited watering during 9 am to 6 pm

Stage 2: 10-15 Percent Reduction Goal (Mandatory)

Public Agency Actions (In addition to actions established in previous Stage):

- Initiate Mandatory Water Conservation Regulations of Ordinance No. 92-07
- Enforce mandatory water consumption goals and allocations for all customers
- Enact water rate surcharge for water consumption over customer allocation. Water in excess of allocation is billed at four time the City's highest water rate. For the third consecutive excessive bill, surcharge is ten times the City's highest water rate. Beyond a third billing period, restrictors placed on meters, at the customer's expense.
- Enactment of allocation adjustment and penalty review programs. Customers can apply for an allocation adjustment for the reasons specified in ordinance.
- Customers may appeal in writing for a waiver of penalties incurred due to a leak or break, incorrect allocation or hardship.

Water Customer Actions (In addition to actions established in previous Stage):

- Comply with mandatory water conservation regulations.
- All water customers requesting an increase in their water allocation must undergo a water audit and install water efficient plumbing for all fixtures at their business or residence.

Stage 3: 15-20 Percent Reduction Goal (Mandatory)

Public Agency Actions (In addition to actions established in previous Stage)

- Initiate Mandatory Water Conservation Regulations as an Ordinance.
- Establish and enforce mandatory water consumption goals and allocations for all customers.

Water Customer Actions (In addition to actions established in previous Stage)

- Comply with mandatory water conservation guidelines.

Stage 4: 20-30 Percent Reduction Goal (Mandatory)

Public Agency Actions (In addition to actions established in previous Stage)
- Initiate Mandatory Water Conservation Regulations as an Ordinance.
- Establish and enforce mandatory water consumption goals and allocations for all customers.

Water Customer Actions (In addition to actions established in previous Stage)
- Comply with mandatory water conservation guidelines.

Stage 5: 30-50+ Percent Reduction Goal (Mandatory)

Public Agency Actions (In addition to actions established in previous Stage)
- Initiate Mandatory Water Conservation Regulations as an Ordinance.
- Establish and enforce mandatory water consumption goals and allocations for all customers.
- All water use not required for health and safety is prohibited.

Water Customer Actions (In addition to actions established in previous Stage)
- Comply with mandatory water conservation regulations.
- Prohibition of all outside water use unless necessary for the preservation of health and safety and the public welfare.
- Watering with hand-held five gallon maximum bucket, filled at exterior hose bib or interior faucet (not by hose) shall be allowed at any time. This will assist in preserving vegetable gardens or fruit trees. Outdoor use of bath water, dishwater, and laundry water for irrigation purposes is encouraged to the extent this practice is allowed under local health and safety regulations.
- The filling, refilling or adding of water to swimming and/or wading pools is prohibited.
- The operation of any ornamental fountain or similar structure is prohibited.

ENTITLEMENTS/REGULATORY APPROVALS

Water Code Section 10910(d)(2) requires the identification of existing water supply entitlements, water rights, or water service contracts, federal, state, and local permits for construction of necessary infrastructure, and any regulatory approvals required in order to be able to deliver the water supply. The provision of water for the proposed project would require approval from the City of Ventura. The City of Ventura would review the project plans to ensure that there is adequate infrastructure and water supply to serve the project. Building/grading permits would be required from the City of Ventura to install or conduct improvements to water distribution facilities to serve the proposed development. No other federal, state, or local permits for construction of necessary infrastructure associated with delivering the water supply would be required. No regulatory approvals are required in order to convey the water supply to the proposed project. If approved, the proposed project would be served by the City of Ventura, which obtains water from various sources including the Ventura River, Casitas

Municipal Water District, the Mound Groundwater Basin, the Santa Paula Groundwater Basin, the Oxnard Plain Groundwater Basin, and the Saticoy Yard Well (Oxnard Forebay Basin). Existing allotments allow for continued production to meet demand over the 20 year planning horizon. In addition, a State Water Project entitlement of 10,000 AFY also exists, but has not been incorporated into the delivery system.

PROJECT IMPACTS

The proposed Parklands Specific Plan would allow for development of up to 499 dwelling units, up to 25,000 square feet of commercial space and a 6,560 square foot community center. The City of Ventura characterizes overall water usage based on per capita consumption, and the 2005 UWMP indicates that per capita consumption is about 0.18 AFY (Table 4-4, 2005 UWMP). The 2005 UWMP further characterizes water consumption by user groups including commercial, industrial, etc.; however, the totals for the sum of user groups is equal to the demand generated based on population (Table 4-4 and Table 4-5, 2005 UWMP). In addition, demand forecasts presented in the 2005 General Plan and the 2006 Biennial Water Supply Report are likewise based on population, without reference to demand factors for other individual uses such as commercial, industrial and institutional. Therefore, though the project includes up to 25,000 square feet of commercial space and up to 6,560 square feet of community center, the overall demand for the project is characterized based on population, consistent with projections contained in the UWMP, 2005 General Plan Update, and Biennial Water Supply Report. The proposed project would add up to 499 dwelling units. Based on a household size of 2.6 persons per dwelling unit (2005 General Plan), the proposed project would add 1,297 persons to the population. The water demand generated by full development of the proposed Parklands Specific Plan would be about 234 AFY (0.18 AFY x 1,297 persons). This amount represents about 1% of the projected 2010 annual demand (20,633 AF).

CONCLUSION

The proposed project was accounted for in the 2005 General Plan, proposed at an intensity consistent with the Residential Low designation (up to 8 du/acre). The 2005 General Plan land use development patterns were accounted for in the 2005 UWMP, as evidenced by the population projections that are consistent between the two documents. Therefore, the proposed project is consistent with the 2005 General Plan, which is accounted for in the 2005 UWMP, and future supplies are adequate to meet the needs of development under the General Plan over a 20-year horizon. As such, project development would not adversely affect the water supply in normal, single dry, or multiple dry years.

REFERENCES

PUBLICATIONS

City of San Buenaventura, Department of Public Works. December 2005. Urban Water Management Plan

City of San Buenaventura. 2005. General Plan Final Environmental Impact Report.

City of San Buenaventura. 2006. Biennial Water Supply Assessment Report.

City of San Buenaventura. August 30, 2007. *Draft* Parklands Specific Plan No. 6.

Senate Bill No. 610, Approved by the Governor and filed with the Secretary of State October 9, 2001.

PERSONS CONTACTED

City of San Buenaventura, Public Works Department. Gary Lee. November 20, 2007.

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Appendix J

Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment (Public Resources Code 21081.6). The mitigation monitoring and reporting program is designed to ensure compliance with adopted mitigation measures during project implementation. For each mitigation measure recommended in the Environmental Impact Report, specifications are made herein that identify the action required and the monitoring that must occur. In addition, a responsible agency is identified for verifying compliance with individual conditions of approval contained in the Mitigation Monitoring and Reporting Program (MMRP).

To implement this MMRP, the City of Ventura will designate a Project Mitigation Monitoring and Reporting Coordinator ("Coordinator"). The coordinator will be responsible for ensuring that the mitigation measures incorporated into the project are complied with during project implementation. The coordinator will also distribute copies of the MMRP to those responsible agencies identified in the MMRP, which have partial or full responsibility for implementing certain measures. Failure of a responsible agency to implement a mitigation measure will not in any way prevent the lead agency from implementing the proposed project.

The following table will be used as the coordinator's checklist to determine compliance with required mitigation measures.

Mitigation Measure/Condition of Approval	Implementation Responsibility	Timing	Monitoring Division	Funding	Standard for Success	Compliance Verification		
						Initial	Date	Comments
AESTHETICS								
AES-1 Soundwall Aesthetics. Views of the proposed sound wall abutting SR 126 shall be softened through installation of landscaping such as trees, shrubs and climbing vines, resulting in a variety of textures and colors. Prior to Final Map approval, the Design Review Committee shall review and approve landscaping and irrigation plans. Prior to occupancy of any dwelling unit within the plan area, the sound wall, landscaping and irrigation shall be installed.	Applicant and Design Review Committee	Twice. Once prior to Final Map approval. Once, prior to occupancy.	PCD and Design Review Committee	Applicant	Approval of plans by Design Review Committee and PCD; Field verify installation of soundwall, landscaping, and irrigation			
AIR QUALITY								
AQ-2 (a) Energy Efficiency. The residential and commercial structures proposed for development under the Parklands Specific Plan shall be designed to increase energy efficiency 20% beyond Title 24 requirements to partially offset the operational emissions associated with daily operation of the proposed project following buildout. Proposed energy conservation measures shall be specified in individual building plans and shall be subject to review and approval by the Inspection Services Division.	Applicant and Inspection Services Department	Once, prior to issuance of a building permit	PCD and Inspection Services Division	Applicant	Verify approval of plans by Inspection Services Division			
AQ-2(b) Air Quality Mitigation Fund. The applicant shall contribute toward an air Quality	Applicant	Once, prior to issuance of a building permit	PCD	Applicant	Verification of payment of funding by			

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Mitigation Measure/Condition of Approval	Implementation Responsibility	Timing	Monitoring Division	Funding	Standard for Success	Compliance Verification		
						Initial	Date	Comments
Mitigation fund to be used to develop regional programs to offset air pollutant emissions associated with implementation of the Parklands Specific Plan. The total amount that would be contributed to this fund shall be calculated based upon the methodology described in Ordinance 93-37. Fees may be adjusted by the City over time if development totals or emission or cost factors change. The fund shall be used to finance City programs to reduce regional air pollutant emissions. Specific mitigation measures that could be undertaken using the fund include, but are not limited to, enhanced public transit service, vanpool programs/subsidies, rideshare assistance programs, clean fuel programs, improved pedestrian and bicycle facilities, and park-and-ride facilities.					applicant.			
BIOLOGICAL RESOURCES								
BIO-1(a) Pre-Construction Surveys. A qualified biologist shall conduct pre-construction field surveys for arroyo chub, southwestern pond turtle, two-striped garter snake, San Diego mountain kingsnake, California red legged frog. If observed, these species shall be relocated to suitable habitat areas up- or downstream of the plan area.	Applicant	Once prior to issuance of a grading permit	PCD and BD	Applicant	Verification of field survey and results.			
BIO-1(b) Construction Timing. Work within 500 feet of Brown	Applicant	Once, prior to issuance of a	PCD and BD	Applicant	Verify construction			

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Mitigation Measure/Condition of Approval	Implementation Responsibility	Timing	Monitoring Division	Funding	Standard for Success	Compliance Verification		
						Initial	Date	Comments
Barranca shall be planned to avoid the breeding bird season if feasible, which generally runs from March 1 to August 31, as early as February 1, for raptors. If avoidance of the breeding bird season is infeasible, BIO-1(c) shall be implemented.		grading permit			schedule coincides with requirements.			
BIO-1(c) Nesting Bird Surveys. If avoidance of the breeding bird season is not feasible, beginning 30 days prior to the disturbance of suitable nesting habitat, the project proponent should arrange for weekly bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The surveys shall be conducted with emphasis on Cooper's hawk, yellow warbler, yellow-breasted chat, Allen's hummingbird, California horned lark and other riparian-dependent special-status bird species. The surveys shall be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys shall continue on a weekly basis with the last survey being conducted no more than three days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent shall delay all	Applicant	If necessary (see BIO-1 (b)): Twice. Once, 30 days prior to grading disturbance; once, upon submittal of results.	PCD	Applicant	If necessary. Verify surveys completed and submittal of results.			

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Mitigation Measure/Condition of Approval	Implementation Responsibility	Timing	Monitoring Division	Funding	Standard for Success	Compliance Verification		
						Initial	Date	Comments
clearance/construction disturbance activities within 300 feet of suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet of raptor nests) or as determined by a qualified biological monitor, must be postponed until the nest is vacated and the juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing marking the protected area 300 feet (or 500 feet) from the nest. Construction personnel shall be instructed on the sensitivity of the area. The project proponent should record the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to the protection of native birds.								
BIO-2(a) Invasive Plant Removal. The applicant shall remove invasive or non-native plants from the Brown Barranca Preserve area, including (but not	Applicant	Once, prior to grading	PCD	Applicant	Verification invasive plants removed prior to grading.			

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Mitigation Measure/Condition of Approval	Implementation Responsibility	Timing	Monitoring Division	Funding	Standard for Success	Compliance Verification		
						Initial	Date	Comments
limited to) castor bean, German ivy, garden blackberry, free tobacco, garden nasturtium, and palm trees.								
BIO-2(b) Wetland Creation. The applicant shall mitigate the removal of riparian vegetation (CDFG defined wetlands) at a minimum ratio of 1:1. The mitigation may be done on-site by increasing the area of the Brown Barranca preserve where feasible to eliminate landscape specimens and incorporate native riparian species between the bikepath/footpath and the preserve such that the total area of the preserve is increased by 0.27 acres or the applicant may mitigate off-site through in-kind mitigation banks within the same watershed subject to review and approval by the Planning Division or their designee.	Applicant and PCD	Twice. Once for plan review; once for field verification.	PCD	Applicant	Verify approval of plans and construction of wetland area.			
BIO-2(c) Barranca and Basin Maintenance Plan. The applicant shall develop and implement a maintenance plan to assure that future maintenance of the detention basin, Brown Barranca and associated slopes for permanent erosion control measures, which will minimize adverse effects to vegetation and promote maturation of wetland vegetation such that a Corps defined wetland, is formed.	Applicant	Twice. Once for plan review; once for field verification.	PCD	Applicant	Verify approval of plans and implementation.			
BIO-3(a) Proper Erosion Control Device Installation.	Applicant	Ongoing during construction.	PCD	Applicant	Verify erosion control devices			

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Mitigation Measure/Condition of Approval	Implementation Responsibility	Timing	Monitoring Division	Funding	Standard for Success	Compliance Verification		
						Initial	Date	Comments
The applicant shall install erosion control devices in areas that have the potential to drain to Brown Barranca throughout the construction duration and prior to vegetation establishment. These devices should include silt fencing, sandbags, straw wattles, and/or straw bales.					are installed properly during construction.			
BIO-3(b) Split-Rail Fencing. The applicant shall install aesthetic (split-rail) fencing between the proposed footpath and Brown Barranca to reduce disturbance of habitat.	Applicant	Once for field verification	PCD	Applicant	Field verify construction of split-rail fencing.			
BIO-3(c) Biological Resource Signage. The applicant shall provide signage and written materials to all property owners describing biological resources and prohibiting entry into the Brown Barranca Preserve.	Applicant	Once for field verification	PCD	Applicant	Field verify appropriate signage.			
BIO-3(d) Oil/Grease Traps. The applicant shall fit inlets of all storm drains with easily accessible trash excluders approved for use by the City and the Regional Water Quality Control Board. Low Impact Development (LID) principles established in the City's Municipal (MS4) Stormwater Permit shall be used to manage street runoff to meet stormwater quality objectives. Other than litter exclusion, stormwater quality objectives shall not be accomplished in the storm drain inlets. Rather, the objectives	Applicant	Twice. Once during plan review; once for field verification	PCD and BD	Applicant	Verify plans and field verify oil/grease traps installed properly.			

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shall be accomplished through LID practices.								
CULTURAL RESOURCES								
CR-1(a) Temporary Work Suspension if Resources Unearthed. In the event that archaeological or paleontological resources are unearthed during project construction, all earth disturbing work within the vicinity of the find must be temporarily suspended or redirected until an archaeologist or paleontologist as appropriate has evaluated the nature and significance of the find. After the find has been appropriately mitigated, work in the area may resume. A Chumash representative shall monitor any mitigation work associated with Native American cultural material.	Applicant	As needed during grading and upon discovery of an unknown archaeological resource during grading	PCD and NAHC	Applicant	Stop work if unknown archaeological resources are found and measures to mitigate are executed. Confirm resources are evaluated by a qualified Archaeologist (if necessary)			
CR-1(b) Human Remains Procedures. If human remains are unearthed, State Health and Safety Code Section 7070.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin an disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC).	Applicant	As needed during grading and upon discovery of an archaeological resource.	PCD, County Coroner, NAHC	Applicant	Stop work if unknown archaeological resources are found and measures to mitigate are executed. Confirm site evaluated by a county coroner and NAHC representative (if necessary).			

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HAZARDS AND HAZARDOUS MATERIALS								
HAZ-1 Contaminated Soil. Two areas of soil contamination necessitate either onsite sequestration, or offsite disposal or some combination of both as described below. These include soils in the following locations. 1) The upper ½ foot of soil in the northwest quadrant of the plan area (see Figure 4.5-1) due to contamination with TDE, including the upper ½ foot of soils in the western part of the NW storage location (see Figure 4.5-1). 2) The upper ½ foot of soils within a 10-foot radius of SS-220 (see Figure 4.5-2) due to contamination with TDE. **Onsite Sequestration.** The upper ½ foot of soil (or as recommended by the Ventura County Environmental Health Division) shall be removed from both locations, and shall be sequestered on-site in a manner approved by the Ventura County Environmental Health Division. Sequestration necessitates isolation from human and wildlife contact and would require that the soil be buried onsite at depths unlikely to be disrupted, or would require capping by	Applicant and BD	Once, prior to issuance of a grading permit	PCD and BD	Applicant	Verification that needed remediation has been implemented.			

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pavement or asphalt. Areas suitable for capping might include beneath the parking garages, or beneath roadways. Onsite sequestration shall be conducted as directed by Ventura County Environmental Health. **Offsite Disposal.** The upper ½ foot of soil shall be removed from both areas and shall be transported off site and disposed of as hazardous waste at an approved facility in accordance with applicable rules and regulations.								
HAZ-2. Asbestos Cement. Prior to any demolition or renovation, the identified asbestos cement piping located in the southern field area in a pile of agricultural debris (see Figure 4.5-1) and any other AC piping discovered during construction shall have the asbestos containing material removed according to proper abatement procedures recommended by the asbestos consultant and as required by the VCAPCD. All abatement activities shall be in compliance with California and Federal OSHA, and with the VCAPCD requirements. Only asbestos trained and certified abatement personnel shall be allowed to perform asbestos abatement. All asbestos containing material	Applicant and BD	Once, prior to issuance of a grading permit	PCD and BD	Applicant	Verification that asbestos containing material has been removed properly.			

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removed from onsite shall be transported by a licensed to handle asbestos-containing materials and disposed of at a licensed receiving facility and under proper manifest.								
HAZ-3 Underground Storage Tank. The underground storage tank (see OB-3 on Figure 4.5-2) shall be properly excavated and disposed of according to the guidelines of the Ventura County Fire Department and the Ventura County Environmental Health Division. These guidelines require the following: 1) Preparation of an application for permanent closure available for download at http://www.ventura.org/rma/envhealth/programs/cupa/hzustpgm.htm 2) Excavation oversight by a Ventura County Environmental Health Division Inspector 3) A permanent closure report submitted to the Ventura County Certified Unified Program Agency (CUPA) with copies of all receipts, manifests, transport documents, sample results, chain of custody, plot plans, and unauthorized release form	Applicant and BD	Once, prior to issuance of a grading permit	PCD and BD	Applicant	Verification UST has been removed according to identified guidelines.			

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(if necessary). 4) Soil samples must be collected in approved containers for analysis pursuant to Environmental Protection Agency Method 5035 for hydrocarbon samples. Los Angeles Regional Water Quality Control Board								
DRAINAGE AND FLOOD HAZARDS								
HYD-1 Letter of Map Revision. Prior to issuance of building permits, a Letter of Map Revision (LOMR) from FEMA shall be obtained and the final development shall be sited to assure that no structures are placed within the redefined 100-year Flood Zone.	Applicant and BD	Once, prior to issuance of a building permit	PCD and BD	Applicant	Verify FEMA LOMR is obtained			
NOISE								
N-3(a) Sound Wall. Prior to grading permit issuance, the applicant shall incorporate a sound wall along the southeastern boundary of the plan area as indicated on Figure 4.8-2 (Figure 3 of the Barrier Analysis, Rincon Consultants, 2008), or some combination of walls as also indicated on Figures 1 and 2 of the Barrier Analysis (see Appendix G). Construction material, height, and location shall be sufficient, at a minimum, to intercept the freight truck line of sight on SR 126. Adequate wall height and	Applicant and BD	Twice. Once prior to issuance of a grading permit; once for field verification	PCD and BD	Applicant	Verify addition of sound wall addition to plans; field verification soundwall has been constructed			

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placement shall be determined by the Planning Manager in consideration of the following parameters: (1) CMU wall height, material, and location consistent with Caltrans sound walls within the City; (2) proposed building pad elevations in relation to SR 126; and (3) vertical distance between CMU wall height and lowest roof eave and window.								
N-3(b) Lot 132. The residence and garage at this location shall be linked with a solid block wall and oriented, such that the exterior usable space is buffered from noise generated along Wells Road.	Applicant and BD	Twice. Once prior to issuance of a building permit; once for field verification	PCD and BD	Applicant	Verify plan approval; field verification of requirements			
N-3(c) Interior Noise Attenuation. Plans submitted to the Inspection Services Division for purposes of obtaining building permits shall illustrate that residences fronting Telegraph Road, Wells Road, and Blackburn Road/SR 126 shall ultimately be constructed to include the following: a) Windows facing the street shall be dual pane, laminated with a Sound Transmission Class (STC) rating of at least 40; b) Windows facing the street on multiple-family structures shall be minimized and non-	Applicant and BD	Twice. Once for building plan review, once for field verification	PCD and BD	Applicant	Review and approval of building plans; field verification of compliance with building plan requirements			

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opening. c) Exterior walls facing the street shall be constructed of staggered wood studs, or equipped with a resilient channel between the studs and wallboard, or any other wall system with an STC rating of at least 50; d) Exterior doors facing the street shall be of a sound insulating design with a STC rating of at least 38; and e) All exterior doors and windows shall be installed with proper weather stripping. f) Roof construction of concrete tile with 15/32-inch plywood, R-30 batt insulation in the attic, and a layer of ½-inch thick gypsum board separating the attic from living areas; g) Northernmost homes shall not have courtyard access doors facing Telegraph Road.								
N-3(d) Noise Measurements. Prior to final building permit inspection of residences facing Telegraph Road, Wells Road and Blackburn Road/SR 126, the applicant shall submit a 24-hour	Applicant, BD, PCD	Once for noise verification prior to occupancy. Once for contingency plan	PCD and BD	Applicant	Verification that measured noise levels are within specified levels Review and			

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CNEL internal noise measurement for those bedrooms closest to Telegraph Road, Wells Road and Blackburn Road/SR 126 to be reviewed and approved by the Planning Manager. Future noise levels shall be projected based upon measured existing levels. In the event that the noise measurement and/or projection identifies noise levels that exceed 45 dBA CNEL, the applicant shall develop a contingency plan for additional measures to reduce noise to 45 dBA CNEL or lower. The contingency plan may include, without limitation, the modification of constructed residences with materials/methods that reduce interior noise to 45 dBA CNEL. Prior to occupancy of affected units, the applicant shall obtain approval of the contingency plan from the Planning Manager.		(if needed)			approval of contingency plan (if needed).			

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