CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

# 2015 ENVIRONMENTAL FILING FEE CASH RECEIPT

Complete the information and submit with each set of documents presented for filing. Please provide an original set and (3) three sets of copies for filing.

20150331-10006097-0 1/1
Ventura County Clerk and Recorder
MARK A. LUNN
03/31/2015 02:32:29 PM
923833 $2260.00 HA

Project Title: Ventura Botanical Gardens (VBG) Master Plan MND for CUP, Rezone, & Lease Agreement

Name of Agency filing attached document: City of San Buenaventura (Ventura)

The above named agency is filing as: (•) Lead Agency ( ) Responsible Agency ( ) Trustee Agency

Address of Filing Agency: 501 Poli Street, Ventura CA 93001

Document Type (check one): ( ) Environmental Impact Report ( ) Negative Declaration (•) Mitigated Neg. Declaration ( ) Exemption

Project Applicant: VBG, Inc. and City of Ventura

Project Applicant Address: VBG: P.O. Box 3127, Vta. CA 93006; City of Vta.: 501 Poli St.,Vta. CA 93001

Project Applicant Phone Number: VBG: (805) 323-3113; City of Vta.: (805) 677-3967

Project Applicant is (check one): (•) Local Public Agency ( ) School District ( ) Other Special District ( ) State Agency (•) Private Entity

If the agency presenting this document is filing as the responsible agency, **provide a copy** of the Lead Agency's filed documents and complete the following:

Lead Agency: City of Ventura

Lead Agency's Project Title: VBG Master Plan MND for CUP, Rezone, and Lease Agreement

Lead Agency's State Receipt #:

Lead Agency's Document #: PROJECT 5810, UP-1-13-14353, Z-4-15774, EIR-1-13-14355

Check Applicable Fees (check all that apply):

(•) Negative Declaration ($2,210.00)
( ) Environmental Impact Report ($3,069.75)
(•) County Administrative Fee ($50.00)
( ) Filed by responsible agency; fees paid by lead agency (Attach a copy of Lead Agency's filing & receipt).
( ) Fees have already been paid (Attach a copy of the prior filing and proof of payment).
( ) Categorically Exempt
( ) Statutorily Exempt
( ) No Effect Determination Form

Prepared by: Dave Ward, AICP (Print Name) — Planning Manager (Print Title)

**Signature:** D Ward — 03/31/2015 (Date) — (805) 677-3964 (Phone #)

**DO NOT WRITE BELOW THIS LINE**

**The following will be completed by the Ventura County Clerk's Office.**

Signature of person receiving payment: Kristi Hamlet, Deputy County Clerk, Total Received: $ 2260.00

Posted: MAR 31 2015 through

S:/2015 Forms REV 01/01/2015

FILED
MAR 31 2015
DATE:
MARK A. LUNN
Ventura County Clerk and Recorder
By: Kristi Hamlet, Deputy

Print Form

# Notice of Determination

Appendix D

**To:**

☐ Office of Planning and Research

*U.S. Mail:* P.O. Box 3044, Sacramento, CA 95812-3044

*Street Address:* 1400 Tenth St., Rm 113, Sacramento, CA 95814

☒ County Clerk
County of: VENTURA
Address: 800 S. VICTORIA AVENUE
VENTURA, CA 93009-1260

**From:**
Public Agency: CITY OF VENTURA
Address: 501 POLI STREET
VENTURA, CA 93001
Contact: DAVE WARD, AICP
Phone: (805) 677-3964

Lead Agency (if different from above):
Address:
Contact:
Phone:

***SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.***

State Clearinghouse Number (if submitted to State Clearinghouse):

Project Title: Ventura Botanical Gardens (VBG) Master Plan for CUP, Rezone, and Lease Agreement

Project Applicant: Ventura Botanical Gardens, Inc. and City of San Buenaventura (Ventura)

Project Location (include county): At Grant Park north Downtown at 398 Ferro Drive, Ventura located in Ventura County.

Project Description:

The VBG Master Plan is a master plan for the creation of a botanical gardens in Grant Park with an ecological emphasis on the Ventura Coasts & its relationship to region of the world which share its Mediterranean biome. The gardens & associated facilities would be developed in phases over 30-year implementation of the master plan. The VBG, Inc. proposes to lease the land from the City through a Lease Agreement. The master plan includes gardens, trails; & support facilities including bldgs., & vehicular circulations & parking areas. The project also includes a "consistency" rezone from Residential zoning (R-1-AC, R-1-7, & R-3-5) to Park (P) zoning for entirety of Grant Park lands inclusive of the project site.

This is to advise that the City of Ventura (☒ Lead Agency or ☐ Responsible Agency) has approved the above described project on March 30, 2015 (date) and has made the following determinations regarding the above described project.

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☒ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☒ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☒ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final MND with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
Planning Counter at 501 Poli Street, Room 117, Ventura CA 93001 or www.cityofventura.net/page/ventura-botanical-gardens

Signature (Public Agency): Dave Ward Title: Planning Manager

Date: March 31, 2015 Date Received for filing at OPR:

POSTED
MAR 31 2015
MARK A. LUNN
Ventura County Clerk and Recorder
By: _____, Deputy

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2011

STATE OF CALIFORNIA )
)
COUNTY OF VENTURA ) ss.
)
CITY OF SAN BUENAVENTURA )

I, Cynthia M. Rodriguez, City Clerk of the City of San Buenaventura, do hereby certify the attached is a true and correct copy of **City Council Resolution No. 2015-015** adopted on March 30, 2015.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the official seal of said City to be affixed on March 31, 2015.

Cynthia M. Rodriguez

Cynthia M. Rodriguez, MMC
City Clerk

CITY OF SAN BUENAVENTURA
1866
EUREKA
1905
CALIFORNIA

**RESOLUTION NO. 2015-015**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SAN BUENAVENTURA APPROVING A MITIGATED NEGATIVE DECLARATION FOR THE VENTURA BOTANICAL GARDENS PROJECT**

**WHEREAS** Ventura Botanical Gardens, Inc. ("VBG") has proposed the Ventura Botanical Gardens Project ("Project"), which includes a Master Plan for the creation of a botanical garden with an ecological emphasis on the Ventura Coast and its relationship to regions of the world which share its Mediterranean biome and a rezone of the Project site from Single Family Residential (R-1 and R-1-1AC) and Multiple Family Residential (R-3) to Park (P). The Project Master Plan is for gardens and associated facilities that would be developed in phases over a roughly 30-year implementation of the Master Plan as funding is secured; and

**WHEREAS**, the project site is located within Grant Park, just north of Downtown at 398 Ferro Drive; and

**WHEREAS,** on November 19, 2014, a proposed Mitigated Negative Declaration ("MND") prepared for the Project pursuant to the California Environmental Quality Act ("CEQA") (Public Resources Code sections 21000 *et seq.*) was distributed for public review; and

**WHEREAS,** City staff received four comment letters during the public review period from the Ventura County Air Pollution Control District, the Ventura County Planning Division, the Ventura County Public Works Agency Transportation Department, and VBG; and

**WHEREAS,** a Mitigation, Monitoring, and Reporting Program ("MMRP"), attached as Exhibit "A," has been prepared for the Project to implement mitigation measures required by the Project; and

**BE IT RESOLVED** by the City Council of the City of San Buenaventura as follows:

**SECTION 1:** All proceedings having been duly taken as required by law, and upon review of the information provided in the staff report for the public hearing, consideration of the testimony given at the public hearing, and on the basis of the entire record, the City Council hereby finds and declares the following:

A. The City Council has reviewed and considered Mitigated Negative Declaration EIR-1-13-14355 together with any comments received during the public review process.

B. Mitigated Negative Declaration EIR-1-13-14355 is accurate, objective, complete, and in compliance with CEQA and the State CEQA Guidelines thereto (California Code of Regulations, Title 14, Chapter 3, Section 15000 *et seq.*), and Procedures of the State of California and the City of San Buenaventura, and reflects the City's independent judgment and analysis.

C. Project revisions now mitigate potentially significant effects on the environment previously identified in the Initial Study, that there is no substantial evidence that the Project will have a significant effect on the environment, and that a mitigated negative declaration may therefore be adopted for the Project.

**SECTION 2:** Based on the above findings, the City Council hereby adopts Mitigated Negative Declaration EIR-1-13-14355 and associated MMRP to mitigate or avoid significant effects on the environment.

**PASSED AND ADOPTED** this 30 day of March, 2015.

Cynthia M. Rodriguez, MMC
City Clerk

APPROVED AS TO FORM
Gregory G. Diaz
City Attorney

Jennifer Lee
Assistant City Attorney

3-19-15
Date

Attachment: Exhibit "A" –Mitigation Monitoring and Reporting Program

# MITIGATION MONITORING AND REPORTING PROGRAM

CEQA requires adoption of mitigation monitoring and reporting program (MMRP) for the measures 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 included in the Ventura Botanical Gardens Master Plan Project Mitigated Negative Declaration (MND), 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 measures contained in the 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 compliance with the mitigation measures incorporated into the project during project implementation. The City Parks Manager, along with the City/VBG Coordination Team, will be the coordinator.

The following table will be used as the coordinator's checklist to determine compliance with required mitigation measures.

| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| ***BIOLOGICAL RESOURCES*** | | | | | | | | |
| ***Phase 1 Mitigation Measures:*** *the following mitigation measures are required to avoid and reduce potential impacts to biological resources during Phase 1 of the Project* | | | | | | | | |
| **BIO-1: Preconstruction Survey and Avoidance (Off-site Well Only)**<br>a. Prior to ground disturbing project activities associated with the construction of the well, a qualified biologist shall conduct a preconstruction survey for special status biological resources. The survey area shall include the impact area and a 50 foot buffer. The survey shall involve the biologist walking the area at equally spaced transects to ensure full coverage of the area. The survey shall be conducted no more than 30 days prior to the activity and/or be seasonally timed for areas with the potential to support any special status plant species.<br>b. A preconstruction survey report shall be submitted to the City detailing the results and potential impacts to biological resources.<br>c. If biological resources have the potential to be impacted by project activities, and those biological resources are not considered within the Phase 1 mitigation measures, appropriate avoidance and minimization measures shall be determined by a qualified biologist. | Verify that a qualified biologist has been retained to conduct the preconstruction survey and determine if additional minimization measures beyond those considered within the Phase 1 mitigation measures are necessary. | Prior to ground disturbing activities | VCPRCP | Project Applicant | Ground disturbing activities are monitored, significant impacts to biological resources in the vicinity of the off-site well are avoided, and additional minimization measures are determined and taken if necessary | | | |

**Key:**

| | | |
|---|---|---|
| | **VCD** | **City of Ventura Community Development Department** |
| | **VPRCPD** | **City of Ventura Parks, Recreation, & Community Partnerships Department** |
| | **VFD** | **City of Ventura Fire Department** |

| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| **BIO-2: Monarch Butterfly**<br>a. Due to the potential of Monarch Butterfly, no tree trimming or removal of trees considered suitable for winter roosting should be conducted between October 15 and February 28. Removal of trees should be conducted between June 15 and October 15 to the extent feasible.<br>b. Should tree trimming or removal activities occur between October 15 and February 28, a preconstruction survey shall be conducted by a qualified biologist seven days prior for monarch butterflies. If Monarch butterfly winter roost(s) are observed, trees shall not be trimmed or removed until the migrant butterflies have left the roost site.<br>c. If winter roosts are discovered within 100 feet of project activities (including non-occupied tree trimming or removal), a qualified biologist shall determine appropriate avoidance and minimization measures to avoid impacts to butterflies adjacent to project activities. | Verify that no tree trimming or removal of trees is conducted during the restricted periods, or if it is, verify that a qualified biologist has been retained to carry out the specified preconstruction surveys and determine appropriate avoidance and minimization measures if necessary. | Prior to tree trimming or tree removal | VCPRCP | Project Applicant | Tree trimming or removal is avoided during restricted periods, or if that is not feasible, then impacts to Monarch Butterfly winter roosts are avoided or minimized | | | |
| **BIO-3: Nesting Birds**<br>a. To prevent the loss of active special status bird nests, juveniles or adults, project activities including vegetation clearing should be conducted outside of the breeding season (i.e. February 1 to August 31) to the extent feasible.<br>b. If project activities will occur between February 1 to August | Verify that project activities including vegetation clearing are conducted outside of the bird breeding season, or if they are not, verify that a qualified biologist has been retained to carry out the preconstruction survey, complete and | At least 7 working days prior to project activities including vegetation clearing that will occur between February 1 to August 31 | VCPRCP | Project Applicant | Loss of active special status bird nests, juveniles or adults is prevented | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| 31, a preconstruction survey shall be conducted by qualified biologists no less than 7 working days prior to the activity to survey for special status bird and raptor nests. The survey area shall include the project footprint and a 100- foot buffer for passerine species and a 300-foot buffer for raptor species. Following the survey:<br>i. A nesting bird survey report shall be submitted to the City prior to the initiation of project activities. The report shall detail the results of the survey and make a determination if ongoing monitoring or nesting bird surveys should be conducted for project activities.<br>ii. If active nests are discovered during the survey and if work is scheduled to take place within 100 feet of passerine species and 300-feet of active raptor nests, a qualified biologist shall determine appropriate non-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.<br>iii. A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests or 300 | submit to the City the nesting bird survey report, and determine appropriate non-disturbance buffers if active nests are discovered during the survey. Verify that a qualified biological monitor is present if necessary and follows all the reporting requirements contained in the mitigation measure. | | | | | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
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| | | | | | | Initial | Date | Comments |
| feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.<br>iv. If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the City and CDFW detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season. | | | | | | | | |
| **BIO-4: Night time lighting**<br>a. Project related nighttime lighting shall be directed away from adjacent open space and native vegetation communities. | Verify that project related nighttime lighting is directed away from adjacent open space and native vegetation communities. | Before installation of project-related nighttime lighting | VCPRCP | Project Applicant | Project related nighttime lighting does not directly shine into adjacent open space and native vegetation communities. | | | |
| **BIO-5: Native or Special Status Vegetation and Special Status Plant Populations (Excluding Lemonade Berry Scrub habitat)**<br>a. Impacts to special status vegetation communities (excluding Lemonade Berry Scrub), areas that support special status species, and known populations of special status plants shall be avoided to the extent feasible in the design of trails, gardens, and building locations.<br>b. Additionally, the grading limits | a. Verify that the design of trails, gardens, and building locations comply with Mitigation Measure BIO-5a.<br>b. Verify that grading limits are clearly marked, and temporary fencing or other appropriate markers have been placed around any special status species adjacent to | a. Prior to construc-tion of trails and gardens, and prior to issuance of building permits for buildings.<br>b. Prior to the commence ment of any ground- | VCPRCP | Project Applicant | Impacts to Native or Special Status Vegetation and Special Status Plant Populations (Excluding Lemonade Berry Scrub habitat) are avoided to the extent feasible. | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal. | work areas. | disturbing activities or native vegetation removal. | | | | | | |
| **BIO-6: Invasive and Noxious Weed Management**<br>a. The Ventura Botanical Gardens Inc. will implement the Plant Species Management policy as outlined in the Master Plan document.<br>b. Precautions shall be taken to minimize the introduction of any invasive weeds. An invasive weed management plan shall be prepared and implemented to address and prevent the spread of invasive weed species prior to ground disturbing activities.<br>c. Only water-safe herbicides shall be used in riparian areas.<br>d. Herbicides shall not be applied when wind velocities exceed 6 mph.<br>e. Where manual and/or mechanical methods are used, weedy plant debris shall be disposed of properly.<br>f. The timing of the weed control treatment shall be determined for each plant species in consultation with qualified personnel with the goal of controlling populations before they start producing seeds. | Verify that VBG, Inc. is implementing the Plant Species Management policy as outlined in the Master Plan document, has developed an invasive weed management plan prior to ground disturbing activities, and is following all other requirements of Mitigation Measure BIO-6. | Prior to ground-disturbing activities and periodically throughout the life of the Master Plan. | VPRCPD | Project Applicant | Invasive and noxious weeds are not spread by project-related activities, and invasive and noxious weed control avoids other significant effects on the environment and human health. | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| **BIO-7: Pesticide and Rodenticide Use**<br>a. The VBG shall develop an Integrated Pest Management Program prior to conducting pest or rodent control. The IPMP shall address applicable regulations and targeted pests.<br>b. The IPMP will be subject to review and approval of the City of Ventura prior to conducting pest or rodent control.<br>c. The IPMP shall avoid the use of rodenticides containing anticoagulants.<br>d. The IPMP shall evaluate and address potential impacts to secondary poisoning of carnivores. | Review VBG, Inc.'s IPMP and verify that it is in compliance with Mitigation Measure BIO-7. | Prior to VBG, Inc. conducting pest or rodent control. | VCPRCP | Project Applicant | Effective pest control is employed by VBG, Inc. on the project site, while avoiding other significant effects on the environment, including secondary poisoning of wildlife that is not the intended target of the pest control, such as carnivores. | | | |
| ***Phases 2-10 Mitigation Measures:*** *the following mitigation measures are required to avoid and reduce potential impacts to biological resources during Phases 2-10 of the Project* | | | | | | | | |
| **BIO-1: Preconstruction Survey and Avoidance (Off-Site Well Only) – If Not Constructed During Phase 1 Years 2015-2017**<br>a. Prior to ground disturbing project activities, a qualified biologist shall conduct a preconstruction survey for special status biological resources. The survey area shall include the impact area and a 100 foot buffer and involve the biologist walking the area at equally spaced transects to ensure full coverage of the area. The survey shall be conducted no more than 30 days prior to the activity and / or be seasonally timed for areas with the potential to support any special status plant species. The biologist shall map any special | Verify that a qualified biologist has been retained to conduct the preconstruction survey, and review the preconstruction survey. Verify that applicable sections of Mitigation Measure BIO-1 for Phases 2-10 are being implemented and followed if necessary according to the findings of the preconstruction survey. | Prior to and during ground disturbing activities | VCPRCP | Project Applicant | Ground disturbing activities are monitored and significant impacts to biological resources in the vicinity of the off-site well are avoided | | | |

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| | | | | | | Initial | Date | Comments |
| status biological resource or vegetation community within the survey area.<br>i. A preconstruction survey report shall be submitted to the City detailing the results and potential impacts to biological resources.<br>ii. If biological resources have the potential to be impacted by project activities, see additional Mitigation Measures below as applicable:<br>1. **Special status reptile species.** A biological monitor shall be present for all earth moving / ground disturbing activities and shall relocate reptiles out of harm's way.<br>2. **Bryant's wood rat.** During pre-construction surveys, a qualified biologist shall identify any potential Bryant's woodrat middens within 50 feet of Project activities. At the discretion of a qualified biologist, an exclusion buffer shall be established around any woodrat middens that can be avoided, and these exclusion zones shall be flagged or fenced to protect the nest during the breeding season (October through June).<br>a. No impact to active middens shall be allowed during the breeding season. If active middens | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| would be directly impacted by project activities, prior or following the breeding season, a biologist shall carefully dismantle / excavate the midden and relocate resident species out of the impact area.<br>b. If coast prickly pear scrub is available onsite, middens and individuals shall be relocated to these areas to the extent feasible.<br>3. **Nesting birds.** If project activities are scheduled to occur between February 1 to August 31, or if nesting activity is observed, See MM Bio 3.<br>4. **Special Status Vegetation and Plant Species.** See MM Bio 5.<br>5. **Southern Riparian Scrub-Vegetation Trimming.** Vegetation trimming may be required within the retention basin for fire fuels management or storm water management. Vegetation trimming that results in temporary impacts to the vegetation community within the retention basin (north and adjacent to Summit Road), but that would allow the vegetation community to recover naturally, would not be considered an impact to this vegetation community, | | | | | | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| but would be subject to all other preconstruction survey and reporting requirements (See Tree and / or Vegetation Trimming and Removal MM Bio 5).<br>6. **Potential Jurisdictional Water features and associated habitats.** See MM Waters 1 through MM Waters 3.<br>7. **Special status Bats.** See RM 2.<br>8. **Tree and / or Vegetation Trimming and Removal.** See MM Bio 2, MM Bio 3 and MM Bio 5. | | | | | | | | |
| **BIO-2: Monarch Butterfly**<br>a. Due to the potential for Monarch Butterflies to utilize the site for winter roosts, no tree trimming or removal of trees considered suitable for winter roosting should be conducted between October 15 and February 28. Removal of trees should be conducted between June 15 and October 15 to the extent feasible.<br>b. Should tree trimming or removal activities occur between October 15 and February 28, a preconstruction survey shall be conducted by a qualified biologist seven days prior for monarch butterflies. If Monarch butterfly winter roost(s) are observed, trees shall not be trimmed or removed until the migrant butterflies have left the roost site.<br>c. If winter roosts are discovered within 100 feet of project | Verify that no tree trimming or removal of trees is conducted during the restricted periods, or if it is, verify that a qualified biologist has been retained to carry out the specified preconstruction surveys and determine appropriate avoidance and minimization measures if necessary. | Prior to tree trimming or tree removal | VCPRCP | Project Applicant | Tree trimming or removal is avoided during restricted periods, or if that is not feasible, then impacts to Monarch Butterfly winter roosts are avoided or minimized | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| activities (including non-occupied tree trimming or removal), a qualified biologist shall determine appropriate avoidance and minimization measures to avoid impacts to butterflies adjacent to project activities. | | | | | | | | |
| **BIO-3: Nesting Birds**<br>a. To prevent the loss of active special status bird nests, juveniles or adults, project activities including vegetation clearing should be conducted outside of the breeding season (i.e. February 1 to August 31) to the extent feasible.<br>b. If project activities will occur between February 1 to August 31, a preconstruction nesting bird survey shall be conducted by qualified biologists no less than 7 working days prior to the activity to survey for special status bird and raptor nests. The survey area shall include the project footprint and a 100-foot buffer for passerine species and a 300-foot buffer for raptor species. Following the survey:<br>i. A nesting bird survey report shall be submitted to the City prior to the initiation of project activities. The report shall detail the results of the survey and make a determination if ongoing monitoring, buffers, or nesting bird surveys should be conducted for project activities.<br>ii. If active nests are identified during the survey and / or work is scheduled to take place | Verify that project activities including vegetation clearing are conducted outside of the bird breeding season, or if they are not, verify that a qualified biologist has been retained to carry out the preconstruction survey, complete and submit to the City the nesting bird survey report, and determine appropriate non-disturbance buffers if active nests are discovered during the survey. Verify that a qualified biological monitor is present if necessary and follows all the reporting requirements contained in the mitigation measure. | At least 7 working days prior to project activities including vegetation clearing that will occur between February 1 to August 31 | VCPRCP | Project Applicant | Loss of active special status bird nests, juveniles or adults is prevented | | | |

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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Initial | Date | Comments |
| within 100 feet of active passerine nests or 300-feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.<br>iii. A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests or 300 feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.<br>iv. If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the City and CDFW detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season. | | | | | | | | |
| **BIO-4: Night time lighting**<br>a. Project related nighttime lighting shall be directed away from adjacent open space and native vegetation communities. | Verify that project related nighttime lighting is directed away from adjacent open space and native | Before installation of project-related nighttime lighting. | VCPRCP | Project Applicant | Project related nighttime lighting does not directly shine into adjacent open | | | |

**Key:**
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**VPRCPD** **City of Ventura Parks, Recreation, & Community Partnerships Department**
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| Mitigation Measure | Implementation Requirement | Timing | Monitoring Department | Funding | Standard for Success | Compliance Verification | | |
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| | vegetation communities. | | | | space and native vegetation communities. | | | |
| **BIO-5A: Native or Special Status Vegetation Communities**<br>a. Impacts to Purple Needle Grassland and Coast Prickly Pear scrub communities, and individual native bunch grass plants shall be avoided to the extent feasible in the design and development of gardens, associated exhibits, trails, buildings and associated facilities.<br>b. Additionally, grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status community or species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.<br>c. If impacts to Purple Needle Grass Grassland or Coast Prickly Pear Scrub are unavoidable, the project will be required to mitigate for the loss of these habitats. Due to the function of this project as a Botanical Garden, and the relatively small size of these communities relative to the size of the project site, mitigation for these habitats shall be conducted onsite. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, the VBG shall prepare a Mitigation and | a. Verify that the design and development of gardens, associated exhibits, trails, buildings and associated facilities comply with Mitigation Measure BIO-5A.<br>b. Verify that grading limits are clearly marked, and temporary fencing or other appropriate markers have been placed around any special status species adjacent to work areas.<br>c. If impacts to Purple Needle Grass Grassland or Coast Prickly Pear Scrub are unavoidable, verify that VBG, Inc. has prepared a MMP within its Long Term Adaptive Mitigation and Monitoring Plan (LMP) specifically for Purple Needle Grass Grassland or Coast Prickly Pear Scrub, and that it complies with Section i.-ix. of Mitigation Measure BIO-5A. | a. Prior to construc-tion of trails and gardens, and prior to issuance of building permits for buildings.<br>b. Prior to the commence ment of any ground-disturbing activities or native vegetation removal.<br>c. Prior to the commence ment of any ground-disturbing activities that would lead to loss of Purple Needle Grass Grassland or Coast Prickly Pear Scrub. | VCPRCP | Project Applicant | Impacts to Native or Special Status Vegetation and Special Status Plant Populations, including Purple Needle Grass Grassland and Coast Prickly Pear Scrub, are avoided to the extent feasible. If impacts to Purple Needle Grass Grassland and Coast Prickly Pear Scrub are unavoidable, these impacts are mitigated for in compliance with the Mitigation and Monitoring Plan (MMP) for Purple Needle Grass Grassland or Coast Prickly Pear Scrub prepared by the applicant. | | | |

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| Monitoring Plan (MMP) specifically for Purple Needle Grass Grassland or Coast Prickly Pear Scrub. The plan shall be prepared by a qualified biologist/restoration ecologist.<br>i. The plan shall include at a minimum: mitigation site location within the project site, native plant palette, planting plan, onsite seed and plant salvage, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist or qualified horticulturalist familiar with the restoration of native habitats.<br>1. Impacts to Purple Needle Grass Grassland and / or Coast Prickly Pear Scrub shall be mitigated at a ratio of 1:1.<br>2. Final acreage of restoration must equal the acreage identified in the preconstruction survey report for each habitat type or species for the impact to be considered fully mitigated.<br>3. Success criteria shall be based on the condition of the habitat as described in the preconstruction survey report. | | | | | | | | |

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| d. Site Selection:<br>i. If Mitigation cannot be conducted within the project site, the site shall be located in a dedicated open space area, or suitable adjacent off-site open space shall be obtained/purchased.<br>ii. Selected sites shall not result in the removal of a biologically valuable resource (e.g., native grassland or special status species).<br>1. Impacts to Purple Needle Grass Grassland and / or Coast Prickly Pear Scrub shall be mitigated at a ratio of 2:1.<br>iii. Site Selection shall be conducted in coordination with and require the approval of the City.<br>iv. The MMP shall include detailed descriptions of: Responsibilities and qualifications of the personnel to implement and supervise the plan, plant salvage, planting, invasive weed management, maintenance, monitoring requirements, success criteria and annual report requirements. The responsibilities of the landowner, specialists, and maintenance personnel that would supervise and implement the plan shall be specified.<br>v. The LMP shall include onsite seed and plant salvage to the | | | | | | | | |

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| greatest extent feasible.<br>vi. The LMP shall be submitted to CDFW for review.<br>vii. Final acreage of restoration must equal the acreage identified in the preconstruction survey report for each habitat type or species for the impact to be considered fully mitigated.<br>viii. Success criteria shall be based on the condition of the habitat as described in the preconstruction survey report.<br>ix. The LMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photodocumentation. | | | | | | | | |
| **BIO-5B: Special Status Plant Populations**<br>a. Impacts to special status plant species, including known populations of special status plants shall be avoided to the extent feasible in the siting of all physical facilities proposed under the Master Plan.<br>b. Additionally, grading limits shall be clearly marked, and temporary fencing or other | a. Verify that the design of trails, gardens, and building locations comply with Mitigation Measure BIO-5a.<br>b. Verify that grading limits are clearly marked, and temporary fencing or other appropriate markers have been | a. Prior to construc-tion of trails and gardens, and prior to issuance of building permits for buildings.<br>b. Prior to the commence | VCPRCP | Project Applicant | Impacts to Special Status Plant Populations are avoided to the extent feasible, and if such impacts are unavoidable, then they are mitigated at a 1:1 ratio in | | | |

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| appropriate markers shall be placed around any special status plant species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.<br>c. If CNPS List 1 and 2 species are observed during preconstruction surveys and removal is unavoidable, impacts shall be mitigated at a 1:1 ratio. Due to the function of this project as a Botanical Garden, and the relatively low occurrence of these species relative to the size of the project site, mitigation shall be conducted onsite. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, the VBG shall prepare a Mitigation and Monitoring Plan (LMP). The plan shall be prepared by a qualified biologist, restoration ecologist or qualified horticulturalist.<br>i. The plan shall include at a minimum: mitigation site location, seed and plant salvage, planting plan, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist or qualified horticulturalist familiar with native species. | placed around any special status species adjacent to work areas.<br>c. If CNPS List 1 and 2 species are observed during preconstruction surveys and removal is unavoidable, verify that impacts shall be mitigated at a 1:1 ratio in accordance with the Project's Long Term Adaptive Mitigation and Monitoring Plan and Mitigation and Monitoring Plan (LMP). | ment of any ground-disturbing activities or native vegetation removal.<br>c. Prior to the commence ment of any ground-disturbing activities or native vegetation removal. | | | accordance with the Project's Long Term Adaptive Mitigation and Monitoring Plan and Mitigation and Monitoring Plan (LMP), or at a 2:1 ratio and in compliance with Section d. of Mitigation Measure BIO-5B if they are mitigated offsite. | | | |

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| ii. Final replacement must equal the acreage and / or numbers of individuals identified in the preconstruction survey report for each species, for the impact to be considered fully mitigated.<br>iii. The LMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photodocumentation.<br>d. If Mitigation cannot be conducted within the project site, the site shall be located in a dedicated open space area, or suitable adjacent off-site open space shall be obtained/purchased; or the VBG shall propagate species within the project's associated greenhouses for use (free of charge) in restoration projects within Ventura County at a mitigation replacement ratio or 2:1.<br>i. Selected sites shall not result in the removal of a biologically valuable resource (e.g., native grassland or special status species).<br>ii. This plan shall be submitted | | | | | | | | |

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| for review to CDFW.<br>iii. Final replacement must equal the acreage and / or numbers of individuals identified in the preconstruction survey report for the impact to be considered fully mitigated.<br>iv. The LMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photodocumentation. | | | | | | | | |
| **BIO-6: Invasive and Noxious Weed Management**<br>a. The Ventura Botanical Gardens Inc. shall implement the Plant Species Management policy as outlined in the Master Plan Conditional Use Permit and Rezone Application.<br>b. Precautions shall be taken to minimize the introduction of any invasive weeds. An Invasive Weed Management Plan shall be prepared and implemented to address and prevent the spread of invasive weed species prior to ground disturbing activities.<br>c. Only water-safe herbicides shall be used in riparian areas.<br>d. Herbicides shall not be applied | Verify that VBG, Inc. is implementing the Plant Species Management policy as outlined in the Master Plan document, has developed an invasive weed management plan prior to ground disturbing activities, and is following all other requirements of Mitigation Measure BIO-6. | Prior to ground-disturbing activities and periodically throughout the life of the Master Plan. | VPRCPD | Project Applicant | Invasive and noxious weeds are not spread by project-related activities, and invasive and noxious weed control avoids other significant effects on the environment and human health. | | | |

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| when wind velocities exceed 6 mph.<br>e. Where manual and/or mechanical methods are used, weedy plant debris shall be disposed of properly.<br>f. The timing of weed control treatment shall be determined for each plant species in consultation with qualified personnel with the goal of controlling populations before they start producing seeds. | | | | | | | | |
| **BIO-7: Pesticide and Rodenticide Use**<br>a. The project shall develop an Integrated Pest Management Program prior to conducting pest or rodent control. The IPMP shall address applicable regulations and targeted pests.<br>b. The IPMP will be subject to review and approval of the City of Ventura prior to conducting pest or rodent control.<br>c. The IPMP shall avoid the use of rodenticides containing anticoagulants.<br>d. The IPMP shall evaluate and address potential impacts related to secondary poisoning of carnivores. | Review VBG, Inc.'s IPMP and verify that it is in compliance with Mitigation Measure BIO-7. | Prior to VBG, Inc. conducting pest or rodent control. | VCPRCP | Project Applicant | Effective pest control is employed by VBG, Inc. on the project site, while avoiding other significant effects on the environment, including secondary poisoning of wildlife that is not the intended target of the pest control, such as carnivores. | | | |
| **BIO-8: Arroyo Willow Thickets Avoidance**<br>a. No vegetation trimming or removal shall occur within Southern Riparian Scrub (Arroyo Willow Thickets), to the extent feasible.<br>b. If vegetation trimming is necessary, see MM BIO 1 and | Verify that no vegetation trimming or removal occurs within the Southern Riparian Scrub (Arroyo Willow Thickets), to the extent feasible, and that if it is necessary, that MM BIO 1 and MM BIO 9 | Prior to any activities in the vicinity of Southern Riparian Scrub (Arroyo Willow Thickets). | VCPRCP | Project Applicant | Impacts to Southern Riparian Scrub (Arroyo Willow Thickets) are avoided or properly mitigated. | | | |

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| MM BIO 9. | are complied with. | | | | | | | |
| **BIO-9: Regulated Waters**<br>a. Project activities shall avoid permanent impacts to potentially jurisdictional waters and associated habitats within the project site.<br>i. Temporary impacts other than vegetation trimming,(such as habitat enhancement, channel improvements) within regulated waters and/or wetlands may be subject to the permit requirements of the USACE, under Section 404 of the Clean Water Act (CWA), RWQCB, Section 401 of the CWA and the Porter-Cologne Water Quality Act, a Streambed Alteration Agreement from the CDFG pursuant to Section 1600 et. seq. of the California Fish and Game Code.<br>ii. If temporary impacts within potentially jurisdictional features are unavoidable, a jurisdictional delineation shall be conducted by qualified personnel to map the extent of regulated waters and potential impacts. Actual jurisdictional areas are determined by the state and federal authorities at the time that permits are requested. As part of the permit process, these agencies will request that the option selected be designed to avoid and/or minimize effects to onsite jurisdictional waters | Verify that, through compliance with this mitigation measure, project activities avoid permanent impacts to potentially jurisdictional waters and associated habitats within the project site, or that the applicant has provided written justification to the regulatory agencies detailing the infeasibility of avoidance. | Prior to ground-disturbing activities. | VCPRCP | Project Applicant | Permanent impacts to potentially jurisdictional waters and associated habitats within the project site are avoided if feasible. | | | |

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| and wetlands to the extent feasible.<br>1. On site, in-kind restoration shall occur for all temporarily disturbed areas within regulated waters at a mitigation ratio of 1:1.<br>iii. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, VBG, Inc. shall prepare a Habitat Mitigation and Monitoring Plan (HMMP). The plan shall be prepared by a qualified biologist, restoration ecologist, or qualified horticulturalist. The plan shall include at a minimum:<br>1. mitigation site location<br>2. native plant palette<br>3. planting plan<br>4. time of year planting will occur<br>5. irrigation plan<br>6. invasive species control program<br>7. success criteria<br>8. maintenance and monitoring program.<br>iv. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration ecologist or horticultural specialist familiar with the restoration of native habitats.<br>v. The HMMP shall include success criteria for monitoring the restoration effort over three years.<br>vi. Determination of mitigation adequacy shall be based on | | | | | | | | |

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| comparison of the restored habitat with onsite habitat conditions prior to impact.<br>vii. The HMMP shall include remedial measures in the event that the performance criteria are not met for a particular year. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.<br>b. Unavoidable, permanent impacts to jurisdictional waters and associated habitats shall require written justification to the regulatory agencies detailing the infeasibility of avoidance.<br>i. Project components within jurisdictional waters shall be designed to include a natural bottom that would minimize the effect on waters of the U.S. and State.<br>ii. If impacts within potentially jurisdictional features are unavoidable, a jurisdictional delineation shall be conducted by qualified personnel to map the extent of regulated waters and potential impacts. Actual jurisdictional areas are determined by the state and federal authorities at the time | | | | | | | | |

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| that permits are requested. As part of the permit process, these agencies will request that the option selected be designed to avoid and/or minimize effects to onsite jurisdictional waters and wetlands to the extent feasible.<br>1. On site, in-kind restoration shall occur for all temporarily disturbed areas within regulated waters at a mitigation ratio of 1:1. In addition, for those areas that are permanently impacted, the applicant shall provide for in-kind riparian restoration/ creation at a 3:1 mitigation ratio, or as otherwise indicated by the regulatory agencies during the permitting process, whichever is greater.<br>2. Onsite restoration is preferred; however, if onsite restoration is infeasible, mitigation can be completed by providing adequate funding to a third party organization, conservation bank or in lieu fee Program for the in- kind creation or restoration at the ratio defined within applicable permits, but no less than 3:1.<br>iii. If mitigation is implemented offsite, mitigation lands shall be located in the vicinity of the site or within the Ventura River Watershed | | | | | | | | |

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| iv. The HMMP shall identify an approach for funding assurance for the long-term management of the conserved land if applicable. | | | | | | | | |
| **BIO-10: BMPs for Regulated Waters**<br>a. Best Management Practices (BMPs) such as filtration devices and other approved methods that intercept runoff and prevent pollutants from discharging into regulated waters shall be implemented for all project activities within 50 feet of regulated water features. | Verify that BMPs in compliance with this mitigation measure have been implemented. | Prior to ground-disturbing activities associated with any project activity within 50 feet of regulated waters. | VCPRCP | Project Applicant | Discharge of pollutants into regulated waters is avoided. | | | |
| **BIO-11: Long Term Adaptive Mitigation and Monitoring Plan**<br>a. Due to the lifespan of this project, mitigation for impacts to biological resources could span many years. In order to track mitigation measures, mitigation success, and regulatory and legislative requirements, the VBG shall prepare and update a Long Term Mitigation and Monitoring Plan (LMP). The Long Term Mitigation and Monitoring Plan shall include:<br>i. Project phasing schedule<br>ii. Mapped biological resources and avoidance areas (e.g. restoration sites)<br>iii. Regulatory overview and listing of special status species with the potential to occur within the project site<br>iv. Mitigation Measures (MMRP) for the resource identified in this report and/or other | Review and approve LMP for compliance with this mitigation measure. | Annually | VCPRCP | Project Applicant | An LMP in compliance with this mitigation measure is reviewed and approved annually by the City. | | | |

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| resource identified in the VBG development to 2044<br>v. Survey requirements by phase<br>vi. Invasive Weed Management Plan<br>vii. Integrated Pest Management Program<br>viii. Status of the implementation of mitigation measures and performance standards<br>ix. Applicable reporting requirements and reporting schedule<br>b. The Plan shall be updated Annually<br>c. The Plan shall be submitted to the City for review and approval | | | | | | | | |
| ***CULTURAL RESOURCES*** | | | | | | | | |
| **CR-1:** Any excavation or geological/geotechnical testing conducted within the VBG project site within 25-feet of the maximum archaeological site boundary found adjacent to the existing Serra Cross Monument shall be avoided to minimize and avoid impacts to a known archaeological site. | Verify that no excavation or geological/geotechnical testing conducted within the VBG project site within 25-feet of the maximum archaeological site boundary found adjacent to the existing Serra Cross Monument occurs. | Prior to any excavation or geological/geo technical testing in the vicinity of the Serra Cross Monument. | VCPRCP | Project Applicant | No excavation or geological/geote chnical testing is conducted within the VBG project site within 25-feet of the maximum archaeological site boundary found adjacent to the existing Serra Cross Monument. | | | |
| **CR-2:** 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 | Verify that all requirements of this mitigation measure are complied with | During all earth disturbing work | VCPRCP | Project Applicant | Any archaeo-logical resources unearthed on the project site during construction are handled in | | | |

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| the nature and significance of the find. After the find has been appropriately mitigated to the satisfaction of the Community Development Director, work in the area may resume. A qualified Native American monitor shall oversee any mitigation work associated with prehistoric cultural material. | | | | | accordance with this mitigation measure. | | | |
| ***GEOLOGY*** | | | | | | | | |
| **GEO-1:** For structures that may be in areas subject to earthquake-induced landslides as shown on the 2003 California Geologic Survey (CGS) Seismic Hazards Zones Map of the Ventura Quadrangle, the final geotechnical investigation (required under the City's standard conditions of approval for grading and building permits issued by the City) shall determine if the structure or structures covered by the investigation would actually be subject to such earthquake-induced landslide hazards, and if they are, also include mitigation measures that would, consistent with established practice, reduce this and other potential seismic risks to acceptable levels, consistent with Section 2693 (c) of the Public Resources Code. | Verify that the final geotechnical investigation determines if structures in areas of potential earthquake-induced landslides would actually be subject to such hazards, and if so, it includes mitigation measures that would, consistent with established practice, reduce this and other potential seismic risks to acceptable levels, consistent with Section 2693 (c) of the Public Resources Code. | Prior to issuance of building permits | VCPRCP | Project Applicant | Construction of buildings in areas of actual earthquake-induced landslide hazards is either avoided, or buildings in these areas are constructed in such a way to reduce this and other potential seismic risks to acceptable levels, consistent with Section 2693 (c) of the Public Resources Code. | | | |
| ***HAZARDS AND HAZARDOUS MATERIALS*** | | | | | | | | |
| **HAZ-1:** Implement emergency planning policies and procedures through a VBG facility emergency plan. VBG shall prepare the facility emergency plan for review and comment by the City of Ventura Fire | Review and approve or disapprove the VBG facility emergency plan. | Prior to issuance of first certificate of final occupancy | VFD | Project Applicant | An acceptable facility emergency plan is reviewed and approved by the VFD. | | | |

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| Department, which shall approve or disapprove the plan. | | | | | | | | |
| **HAZ-2:** On an annual basis, the VBG shall conduct a fire relocation/fire drill to train staff on what to do during a wildfire and where to assemble. | Verify that the VBG annually conducts a fire relocation/fire drill in compliance this measure. | Annually | VFD | Project Applicant | The VBG annually conducts a fire relocation/fire drill in compliance this measure. | | | |
| ***NOISE*** | | | | | | | | |
| **NSE-1:** Special events at the Discovery Zone shall conclude (meaning all amplification equipment shall be turned off) no later than 10:00 p.m. | Verify that Special events at the Discovery Zone conclude (meaning all amplification equipment shall be turned off) no later than 10:00 p.m. | On an as-needed basis. | City of Ventura Building and Safety Division (Code Enforcement) | Project Applicant | Special events at the Discovery Zone conclude (meaning all amplification equipment shall be turned off) no later than 10:00 p.m. | | | |
| ***TRANSPORTATION/TRAFFIC*** | | | | | | | | |
| **TRA-1:** Prior to construction of any project-related improvements within the Discovery Zone, Australia Garden, or Cape Garden, an off-street trail shall be provided connecting the existing sidewalk on the north side of Summit Drive, which currently ends at the eastern boundary of the project site, to the interior trail system within the VBG or to the closest VBG tram stop. | Verify that off-street trails in compliance with this mitigation measure are provided in specified locations. | Prior to Discovery Zone, Australia Garden, or Cape Garden becoming accessible and open to the public | VCPRCP | Project Applicant | Off-street trails are provided in specified locations | | | |
| **TRA-2:** Pedestrian signage and way finding shall be provided at the Poli Street entrance to Ventura City Hall to direct pedestrians and bicycles to the Welcome Zone. | Verify that pedestrian signage and way finding in compliance with this mitigation measure is provided in the specified locations. | Prior to the first phase of the project and implemented with each phase of the project. | VCPRCP | Project Applicant | Pedestrian signage and way finding is provided in the specified locations. | | | |

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| **TRA-3:** Sidewalks or off-road trails shall be provided on the segments of Ferro Drive and Brakey Road within and leading to the project site to allow for better westside pedestrian connectivity. The pedestrian paths should connect to the interior trail system within the VBG or to the closest VBG tram stop. | Verify that sidewalks or off-road trails in compliance with this mitigation measure are provided in the specified locations. | Prior to construction of facilities or creation of gardens in the Heritage Zone or California Garden area, or prior to closure of Brakey Drive. | VCPRCP | Project Applicant | Sidewalks or off-road trails are provided in the specified locations. | | | |

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COUNTY OF VENTURA ) ss
CITY OF SAN BUENAVENTURA )

I, Roxanne Fiorillo, Deputy City Clerk of the City of San Buenaventura, California, certify that the foregoing Resolution was passed and adopted by the City Council of the City of San Buenaventura at a regular meeting on March 30, 2015, by the following vote:

AYES: Councilmembers Morehouse, Weir, Tracy, Andrews, Monahan, Deputy Mayor Nasarenko, and Mayor Heitmann.

NOES: None.

ABSENT: None.

IN WITNESS WHEREOF, I have set my hand and affixed the seal of the City of San Buenaventura on March 31, 2015.

Roxanne Fiorillo
Deputy City Clerk

CITY OF SAN BUENAVENTURA
1866
EUREKA
1905
CALIFORNIA

# RESPONSES to COMMENTS on the DRAFT MND

This section includes the comments received during circulation of the Draft Mitigated Negative Declaration (MND) for the Ventura Botanical Gardens Master Plan Project and responses to those comments. Corrections or additional text discussed in the responses to comments are also shown in the text of the Final MND in strikethrough (for deleted text) and underline (for added text) format. Additional minor clarifications and corrections to typographical errors not based on responses to comments may also be shown in strikeout/underline format in the Final MND. None of these changes introduce significant new information or affect the conclusions of the MND.

The MND was circulated for a 20-day public review period that began on November 19, 2014 and concluded on December 10, 2014. The City received five comment letters on the Draft MND. Each commenter and the page number on which each commenter's letter appears are listed below.

| Letter No. and Commenter | Page No. |
|---|---|
| Tricia Maier, Manager, Planning Program Section, County of Ventura Resource Management Agency (cover letter) | 2 |
| 1. Alicia Stratton, Ventura County Air Pollution Control District | 4 |
| 2. Transportation Department, County of Ventura Public Works Agency | 6 |
| 3. Whitney Wilkinson, County of Ventura Resource Management Agency | 9 |
| 4. Joseph Cahill, President of the Board, Ventura Botanical Gardens, Inc. | 17 |

The comment letters and responses follow. Each comment letter has been numbered sequentially and each separate issue raised by the commenter (if there was more than one issue raised) has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, would indicate that the response is for the first issue raised in comment Letter 1).

*Cover Letter*

**COMMENTER:** Tricia Maier, Manager, Planning Program Section, County of Ventura Resource Management Agency

**DATE:** December 10, 2014

This letter is a cover letter that references all County of Ventura comments provided on Draft MND.

Please refer to the responses to letters 1, 2, and 3 (the attachments to the County cover letter).

*Letter 1*

**COMMENTER:** Alicia Stratton, Ventura County Air Pollution Control District

**DATE:** December 8, 2014

The commenter summarizes the Project and Project air quality impacts. The commenter agrees with the analysis and indicates that further air quality mitigation beyond that identified in the Draft MND is not required.

This comment is noted and does not challenge the MND analysis or conclusions.

*Letter 2*

**COMMENTER:** Transportation Department, County of Ventura Public Works Agency

**DATE:** December 10, 2014

The commenter indicates that the applicant would be required to pay fees to the County to address the Project's contribution to cumulative impacts to County roads, and requests a copy of the Final MND when it is available.

If the Project is approved and built, the applicant would be required to pay applicable traffic impact fees in accordance with the City's reciprocal fee agreement with the County. The amount of the fee will be determined at such time as building permits are issued through the various phases of the Master Plan implementation. See Use Permit Condition No. 97 that implements this fee requirement. The Final MND will be made available on the City's website prior to any hearings or decisions on the Project.

*Letter 3*

**COMMENTER:** Whitney Wilkinson, County of Ventura Resource Management Agency

**DATE:** December 10, 2014

Response 3.1

The commenter states that while they recognize that the project site lies solely within the City of Ventura, that impacts on biological resources within the City may indirectly affect biological resources in adjacent open space areas within unincorporated areas of the County. The commenter also cites the potential off-site water well and pipeline that may be constructed as part of the project as an example of a component of the project that may have direct impacts on biological resources in the unincorporated County.

Impacts on biological resources outside the jurisdictional limits of the City of Ventura are analyzed in Section IV, *Biological Resources,* of the MND, as further explained in the responses below.

Response 3.2

The commenter requests that a map showing the locations of Phase 1 and Phases 2-10 of the project in relation to biological resources be provided. However, as stated by the commenter, "Table 5 'Project Phasing' in Attachment A of the MND provides an adequate description of what will occur in each phase…". Table 5 also lists the Option Areas within which these activities would occur. Comparing this information to Figure 2 of Attachment A, which shows these Option Areas on an aerial map of the site, allows the reader to see where these activities would occur. This information adequately demonstrates where project-related impacts would occur, and a separate map showing this information is not necessary.

Response 3.3

The commenter states that preconstruction surveys, monitoring, and fencing for special-status reptiles are not included for Phase 1 of the project. The commenter also correctly states that there are two iterations of Mitigation Measure (MM) BIO-1, one for Phase 1 of the project and one for Phases 2 - 10 of the project, but that it is not clear why BIO-1 contains more measures for Phases 2 - 10 than for Phase 1.

As discussed in the impact analysis for Phase 1 (page 36 of the MND), potential impacts to special-status reptiles were determined to be less than significant, and therefore no mitigation measures are necessary. These conclusions are based on the limited project impacts (i.e. installation of Welcome Zone facilities within existing disturbed areas, and trail work) and because the surrounding habitat would provide refuge for any individuals that might occur within impact areas. MM BIO-1 for Phases 2 – 10 contains more measures because it is programmatic and the timing and specific impacts are somewhat unknown; therefore, more stringent measures are necessary to ensure that potential impacts to special status species are

reduced to less than significant levels. This issue has therefore been adequately analyzed in the MND.

Response 3.4

The commenter asks for confirmation that the potential offsite water well is within the County unincorporated area; clarification of where the water supply pipelines would be placed; and if these water supply pipelines would be placed along existing fuel breaks to minimize disturbance to native habitat. The commenter also states that temporary and permanent impacts associated with the wells and pipeline construction and operation should be analyzed.

As stated on page 15 of the MND, the potential offsite water well is located in the unincorporated County. As shown by the red dashed line on the first page of Attachment D of the Master Plan CUP and Rezone Application, which is included as Attachment A of the MND, the proposed route of the water supply pipelines is in the Grant Park Fuel Break. The MND and the July 2014 Biological Effects Memorandums (Attachment D of the MND) both analyze this issue. Phase 1 Biological Resources Mitigation Measure BIO-1 requires preconstruction survey and avoidance measures prior to ground disturbing project activities associated with the construction of the off-site well. This issue has therefore been adequately analyzed in the MND.

Response 3.5

The commenter asks what sound control measures will be instituted to minimize sound intrusion to the project site and to unincorporated County lands to the north, as stated on page 37 of the MND, and if these measures will be applied only during phased construction of the project, or also during operational phases of the project.

Analysis of the potential noise-related impacts of the project area analyzed in Section XII, *Noise,* of the MND. This section analyzes both long term operational noise impacts (pages 87-91) and short-term construction noise impacts (pages 92-92). This analysis concludes that operational noise impacts would be less than significant with incorporation of Mitigation Measure NSE-1, and that short-term construction impacts would be less than significant without mitigation. This section of the MND adequately addresses the commenter's question, and no revisions to the MND are required.

Response 3.6

The commenter states that pre-construction surveys for nesting birds should include the period of January 1 – June 30. In addition, the commenter recommends that surveys be conducted within a 300-foot buffer for common nesting birds and 500-foot buffer for raptors.

The actual extent of the avian nesting season varies from year to year based on seasonal and annual climatic conditions. As referenced in MM BIO-3, the February 1 – August 31 dates are adequate for capturing the period in which bird species are most likely to be nesting. Surveys would be conducted in late January for any project activities that began in early February, and biological surveys would also be conducted for other species in January (e.g. Monarch butterflies) thereby capturing the January timeframe. The survey buffers are also considered

adequate considering the urban environment in which the project is located. Any species that may nest in the vicinity of the site are likely adapted to existing disturbances associated with adjacent development. This issue has therefore been adequately analyzed in the MND.

Response 3.7

The commenter states that the project site contains two sensitive plant communities, purple needlegrass grassland and coast prickly pear scrub, and encourages that mitigation for impacts to these communities occur in phases. In addition, the commenter recommends that offsite mitigation areas, if selected, be preserved through a conservation instrument.

As described in MM BIO-5A, mitigation for impacts to purple needlegrass grassland and coast prickly pear scrub will occur in phases, as stipulated by the timing requirement in the Mitigation, Monitoring, and Reporting Program (MMRP). The Project's Long Term Adaptive Management and Monitoring Plan also requires annual monitoring reports; therefore, mitigation would be tracked and accounted for on an annual basis. Specific requirements for off-site mitigation are unknown at this time; however, MM BIO-5A requires a 2:1 ratio for mitigating impacts (e.g. 2 units of mitigation per 1 unit impacted), which is adequate for reducing potential impacts to these communities to a less than significant level. This issue has therefore been adequately analyzed in the MND.

Response 3.8

The commenter encourages implementation of MM BIO RM-6: "Retain Healthy, Mature Trees". The commenter also states that Monterey cypress trees could replace eucalyptus trees that are removed, as they provide over-wintering habitat for Monarch butterflies.

As described on page 57 of the MND, the City also recommends implementation of MM BIO RM-6; however, the measure is not required to reduce potential impacts sensitive biological resources to a less than significant level. Further, although Monterey cypress is an option for replacing non-native trees such as eucalyptus, the species does not occur naturally in this region, and other trees could also provide the same benefit. A requirement to replace eucalyptus trees with Monterey cypress trees is therefore unnecessary.

Response 3.9

The commenter asks that the locations for permanent fencing on the project site be defined in order to assist in the identification of potential barriers to wildlife movement, and recommends that Mitigation Measure BIO RM-7 "Permanent Fencing" be revised to include design specifications to facilitate wildlife movement to and through the property to maintain existing wildlife access.

Consistent with Mitigation Measure BIO RM-7, the City has incorporated this measure into the project's conditions of approval as Measure K under Condition No. 113. This condition states that "…avoidance and minimization measures should be developed to address the potential to entrap and/or attract wildlife that may travel through or around the Project Area." However, no significant impact related to such fencing was identified in the MND, and the commenter's

request for this measure to include design specifications is therefore unnecessary. Additionally, due to security issues associated with the Police Gun Range fence, which is the only fencing that may currently have a well-defined location, it is not appropriate to share technical specifications for this fencing with the public. For these reasons, no revisions to the MND are required.

Response 3.10

The commenter states that the cumulative impacts associated with the degradation or removal of special status species, communities, wetlands, and wildlife corridors in a regional context is not specifically addressed.

The analysis of species and habitats contained in the Biological Effects Memorandums (Attachment D of the MND) and Section IV, *Biological Resources* of the MND does adequately address cumulative impacts, for several reasons. Firstly, the analysis of potential impacts to species and habitats employs information regarding the status of these species, such as their status in the California Natural Diversity Database (CNDDB), which takes into their status at the local, regional, and statewide levels. Secondly, the analysis specifically discusses potential offsite impacts, such as potential impacts from the proposed potential offsite well. Thirdly, the analysis also includes discussion of the project's potential impacts on habitat connectivity and wildlife corridors, including the fact that the project site is surrounded on three sides by urban areas, and thus is unlikely to have significant impacts in these regards outside its own boundaries. For all these reasons, and because the commenter does not specify what biological resources might be exposed to cumulative impacts from this project, this impacts has been adequately addressed in the MND, and edits to the MND or further response to this comment is required.

*Letter 4*

**COMMENTER:** Joseph Cahill, President of the Board, Ventura Botanical Gardens, Inc.

**DATE:** December 10, 2014

Response 4.1

The commenter (who is also the applicant) summarizes their involvement in the project to this point, states that some concerns they have raised through this process have been addressed but others remain to be resolved, and states that they have "no additional concerns at this time". They also state that they will continue to work together with the City to ensure that the project will serve as an asset to the community. These comments are noted, but do not directly state what these unresolved issues are (other than, presumably, Comment 4.2, which is responded to below), so they cannot be directly addressed in this response.

Response 4.2

The commenter states, in regards to Mitigation Measure BIO-5B(d) (Phases 2-10) that, while there may be good reasons to conduct replacement mitigation for special status plant populations within the site, it would be highly preferable to conduct mitigation in suitable adjacent offsite areas, taking into consideration light, soil, habitat, future planning, and other factors.

The commenter does not state why off-site replacement mitigation is highly preferable to onsite mitigation. Both onsite and offsite mitigation are included in Mitigation Measure BIO-5B, but, as stated in section c of the mitigation measure, onsite mitigation is feasible because of "…the function of this project as a Botanical Garden, and the relatively low occurrence of these species relative to the size of the project site…". Under Mitigation Measure BIO-5B, onsite mitigation would be required to be carried out at a 1:1 ratio, but if it cannot be conducted onsite, the mitigation measure does allow offsite replacement, but at a 2:1 ratio. This reflects the fact that onsite mitigation is preferable to offsite mitigation because it will occur as close to the impact as feasible; thereby benefiting the plants and wildlife that utilize the impacted habitat. Therefore, no change to this mitigation measure is required.

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# VENTURA COUNTY
# AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: Laura Hocking/Lori Gaines, Planning DATE: December 8, 2014

FROM: Alicia Stratton

SUBJECT: Request for Review of Mitigated Negative Declaration for the Ventura Botanical Gardens Master Plan, City of Ventura (Reference No. 14-024)

Air Pollution Control District staff has reviewed the subject mitigated negative declaration, which is a Master Plan for the creation of a botanical garden with an ecological emphasis on the Ventura Coast and its relationship to regions of the world sharing its Mediterranean biome. The Master Plan represents the botanical Garden's plan for gardens and associated facilities that would be developed in phases over the 30-year implementation of the Master Plan, as funding is secured and the needs of the botanical garden and the public evolve. VBG, Inc. proposes to lease the land from the City through a Lease Agreement. The Master Plan includes: gardens, trails, support facilities including buildings and vehicular circulation, and parking areas. The project location is within Grant Park, located north of downtown Ventura at 398 Ferro Drive.

Section III of the mitigated negative declaration addresses air quality issues pertaining to the project. We concur with the findings of this discussion that significant air quality impacts would not result from the project. The assumptions and emissions shown in the CalEEMod model output and in Table 1, *Projected Daily Operational and Area Emissions*, are appropriate for this land use. Operational, long-term air emissions would be below the APCD's 25 lbs/day threshold of significance for ROG and NOx (7.1 lbs/day and 12.3 lbs/day, respectively). Construction related, short-term emissions may result from use of heavy construction equipment and potential generation of fugitive dust, as grading for the facilities would occur on 7.5 acres. Implementation of the standard building and grading permit conditions described on Pages 31-32 will ensure minimization of short-term air emissions from the project. No further air quality mitigation is needed.

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

RESOURCE MANAGEMENT AGENCY

# county of ventura

**Planning Division**
Kimberly L. Prillhart
Director

December 10, 2014

City of Ventura
Community Development Department
Attn: Dave Ward, AICP, Planning Manager
501 Poli Street
Ventura, CA 93001

Email: dward@ci.ventura.ca.us

Subject: Comments on the Draft Mitigated Negative Declaration for the Ventura Botanical Gardens Master Plan

Dear Mr. Ward:

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 Laura Hocking, 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 Laura Hocking at (805) 654-2443.

Sincerely,

TRICIA MAIER

Tricia Maier, Manager
Planning Programs Section

Attachments

County RMA Reference Number 14-024

Comment 4

# Memorandum

**County of Ventura • Resource Management Agency • Planning Division**
*800 S. Victoria Avenue, Ventura, CA 93009-1740 • (805) 654-2478 • ventura.org/rma/planning*

**DATE:** December 10, 2014

**TO:** Laura Hocking, Ventura County Planning Division

**FROM:** Whitney Wilkinson, Ventura County Planning Division

**SUBJECT:** City of Ventura Botanical Garden Master Plan MND (RMA 14-024)

I have reviewed the City of Ventura's Mitigated Negative Declaration (MND) for the Ventura Botanical Gardens Master Plan (RMA 14-024). It is recognized that the project lies solely within the City of Ventura; however, impacts on biological resources within the City can indirectly affect the biological resources in adjacent open space areas within the County unincorporated area. For instance, many biological resources, such as migrating wildlife, have the ability to move across jurisdictional boundaries. In addition, It appears the proposed offsite well and pipeline may be located in unincorporated areas. 4.1

1. **Project Phase Map**. Impacts and mitigation measures are addressed separately for Phase I and for Phases 2-10 respectively. A map showing the locations of Phase 1 and Phases 2-10 of the project in relation to biological resources would be beneficial in determining what resources will be impacted from all phases of the project. This will also assist in determining if the proposed mitigation is adequate in addressing these impacts. Table 5 "Project Phasing" in Attachment A of the MND provides an adequate description of what will occur in each phase by providing percentage of each project component planned for construction and the option areas involved; however, because of the spatial nature of biological resources and the project's implementation over time, a map demonstrating project-related disturbance and biological resources would better demonstrate the impacts that will occur and mitigation measures (if any) that will be required for the project. 4.2

2. **Pre-Construction Surveys.**

   Sensitive Reptile Species: Pre-construction surveys are included for Phase I areas for Bryant's woodrat and for bats; however, none are planned to address potential impacts to sensitive reptile species. Implementation of pre-construction surveys and temporary exclusionary fencing for sensitive species such as coastal western whiptail, coast horned lizard, and silvery legless lizard could prevent dire circumstances in which "some individuals may be killed by the initial development" (Page 36). Factors such as preferred habitat or prior observation of 4.3

these species in the area may make fencing more or less applicable and could be left to the discretion of a qualified biological monitor.
BIO-1: There are two iterations of Mitigation Measure BIO-1 for preconstruction surveys and avoidance measures that only apply to the offsite well area; one iteration applies if well construction occurs in Phase I and the other version applies if well construction occurs in Phases 2-10. It is unclear why BIO-1 contains more avoidance measures for specific sensitive species, habitats, and wetlands on the project site only if the construction occurs in Phases 2-10. Impacts associated with well and pipeline construction will not differ whether they occur in Phase 1 or in Phases 2-10. Additionally, the iteration of BIO-1 that addresses construction occurring in Phases 2-10 more thoroughly addresses potential impacts to biological resources. 4.3 Cont.

3. **Off-Site Well.** Attachment D ("Off-site Well Concept") of the MND provides a figure of off-site well site locations. It appears that this location is within the County unincorporated area; please confirm this. Also it is unclear where the water supply pipelines will occur and if they will occur along existing fuel breaks to minimize disturbance to native habitat. Temporary and permanent impacts associated with the wells and pipeline construction and operation should be analyzed. 4.4

4. **Sound Control Measures.** The MND proposes using "measures ensuring sound control that will minimize sound intrusion to its own gardens and to the neighboring properties and will be in compliance with adopted City noise ordinances" (Page 37). However, it is not clear from the previous sentence whether these measures will be applied only during phased construction activities or during operational phases of the project. As sound has the potential to travel to areas within the County unincorporated area, please specify the measures that will be employed. 4.5

5. **Breeding and Nesting Birds.** Per recent direction from the California Department of Fish and Wildlife (CDFW), pre-construction surveys for breeding and nesting birds should include the period of January 1- June 30th when raptors have the potential to be present. For this reason, it is recommended the survey period within BIO-3 be extended from January 1- August 31 to account for passerine breeding bird season from February 1 – August 31 and raptor nesting season. In addition, it is recommended surveys be conducted within a 300 foot buffer area of disturbance activities for breeding and nesting bird surveys and 500 feet if raptors have the potential to nest. 4.6

6. **Protection of Special Status Species.** The project site contains two sensitive plant communities including purple needlegrass grassland and coast prickly pear scrub both defined as Vulnerable (S3) by CDFW and NatureServe. Mitigation measures intended to avoid or offset impacts to these sensitive plant 4.7

communities are essential because of their status as vulnerable and because they support sensitive wildlife that may use adjacent open space areas within the County unincorporated area. In addition, the mitigation for impacts to these communities as determined by a Long Term Adaptive Mitigation and Monitoring Plan (LMP) is strongly encouraged and would be most effective if restoration and preservation occurred in phases so that impacted areas are efficiently offset and there are no substantial periods of time with a loss of sensitive communities prior to installation of mitigation sites. Finally, if offsite mitigation sites are chosen pursuant to BIO-5A.d., it is recommended these areas be subject to a deed restriction, conservation easement, or similar conservation instrument to ensure mitigation sites remain in perpetuity.

4.7 cont

7. **Protection of Mature Trees that support Wildlife Species.** Mitigation Measure BIO RM-6: "Retain healthy, Mature Trees" is strongly encouraged for all non-invasive trees as these trees have been shown to support sensitive wildlife such as Monarch butterflies and breeding birds and bats. Because these species can be migratory by nature, any measures to support the retention of habitat in areas adjacent to County open space areas are encouraged and supported. The recommendation from the Opportunities and Constraints Analysis conducted in 2011 by Sespe Consulting states "If eucalyptus trees are to be removed, they could be replaced with Monterey cypress or other trees that serve the same monarch over-wintering function." This option provides the benefit of Monarch overwintering habitat and is propagating a rare native species.

4.8

8. **Wildlife Movement and Permanent Fencing.** It is understood that the project will be implemented over time; however, defining the locations planned for permanent fencing would assist in the identification of potential barriers to wildlife movement. Also, it is recommended that Mitigation Measure BIO RM-7 "Permanent Fencing" include design specifications to facilitate wildlife movement to and through the property to maintain existing wildlife access. Wildlife permeable fencing that facilitates movement within the project area and to adjacent open space areas would be beneficial to sensitive species such as coast horned lizard, silvery legless lizard, coastal whiptail, and Bryant's woodrat, as well as larger and more common species that possess larger territories such as coyotes and bobcats. Because the project site will continue to provide some habitat value and will likely have very little human presence during night hours, measures to facilitate wildlife movement to and from County lands adjacent to the project site are encouraged.

4.9

9. **Cumulative Impacts Analysis**
The MND states that cumulatively considerable impacts are less than significant with mitigation incorporated. Additionally, it states that the project "largely provides a cumulative benefit by protecting natural resource areas" (Page 110). However, the cumulative impacts associated with the degradation or removal of

4.1

special status species, special status communities, wetlands, and wildlife corridors in a regional context is not specifically addressed.

4.10 cont.

Thank you for the opportunity to comment on the MND. If you have questions regarding this submittal, please contact Whitney Wilkinson at 805-654-2462 or whitney.wilkinson@ventura.org.

**PUBLIC WORKS AGENCY**
**TRANSPORTATION DEPARTMENT**
**Traffic, Advance Planning & Permits Division**

# MEMORANDUM

**DATE:** December 10, 2014

**TO:** RMA – Planning Division
Attention: Laura Hocking

**FROM:** Transportation Department Ben

**SUBJECT:** **REVIEW OF DOCUMENT 14-024** Draft Mitigated Negative Declaration (DMND)
Project: **Ventura Botanical Gardens Master Plan**
Lead Agency: **City of Ventura**
Planned 106.98-acre botanical garden with up to nine separate garden types on twelve parcels near and around Grant Park in the City of Ventura (city).

Pursuant to your request, the Public Works Agency Transportation Department has reviewed the DMND for the Ventura Botanical Gardens Master Plan.

The project is a planned 106.98-acre botanical garden with up to nine separate garden types as shown on the Master Plan on Page 10 of the DMND. The project involves twelve parcels and is solely accessed via Grant Park and public roadways under the city's jurisdiction. The project will generate traffic on the Regional Road Network and local public roadways.

We offer the following comment:

1. The cumulative impacts of the development of this project, when considered with the cumulative impact of all other approved (or anticipated) development projects in the County, will be potentially significant. To address the cumulative adverse impacts of traffic on the County Regional Road Network, the appropriate Traffic Impact Mitigation Fee (TIMF) should be paid to the County when development occurs. Based on the information provided in the Traffic Study for the DMND for the Ventura Botanical Gardens Master Plan, and the reciprocal agreement between the City of Ventura and the County of Ventura, the fee due to the County would be:

   1,126 ADT** x $52.76/ADT*** = $59,407.76

   ** 1,126 ADT per Page 9 of Traffic Study by ATE dated June 12, 2014
   *** TIMF for Ventura Traffic District #10

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 is an estimate only, based on information provided in the DMND.

2. Please send us the final MND when it is available for our review and comment.

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

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VENTURA BOTANICAL
# GARDENS

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RECEIVED
DEC 10 2014
PLANNING DIVISION

December 10, 2014

Mr. Dave Ward, AICP
Community Development Planning Manager
City of Ventura
501 Poli Street
Ventura, Ca 93001

Re: Review of Draft Conditions for the Ventura Botanical Gardens Master Plan

Dear Dave,

As you know, the Ventura Botanical Gardens team members have been working with City Staff and consultants for many months to create a long term master plan for the improvement of significant portions of Grant Park as a non-profit community botanical garden.

The draft MND issued on November 19 summarizes the key components of the master plan and provides proposed mitigations. In addition, city staff has provided us with draft conditions of approval related to the use permit currently being processed.

Regarding the MND, we have offered a number of comments through several iterations of the planning process. Some of those comments have been addressed and incorporated into the document, while some remain to be resolved, with the expectation that VBG and city staff will continue to work together to satisfy the concerns of each. We have no additional concerns to add at this time.

Regarding the draft Master Plan CUP, we have no additional concerns to add at this time.

We will continue to work in partnership with city staff to assure that this project will function as well-planned asset to the community. Please let me know if you have any outstanding questions regarding our responses to these documents.

Regards,

Joseph Cahill, President of the Board
Ventura Botanical Gardens, Inc.

Ventura Botanical Gardens, Inc. • P.O. Box 3127 • Ventura, CA 93006-3127
Ventura Botanical Gardens, Inc. is a 501(c)3 Public Benefit Corporation. Tax ID #20-8416864
Phone: 805.232.3113 • www.VenturaBotanicalGardens.com

**Page 54 of 112.**
BIO-5B regarding part d). The condition reads "If mitigation cannot be conducted within the project site,..."
VBG feels that there may be good reasons where it is possible to conduct mitigation within the site, but highly preferable to conduct mitigation in suitable adjacent off-site areas, taking into consideration light, soil, habitat, future planning, and other factors.

**MITIGATED NEGATIVE DECLARATION**
**FOR THE VENTURA BOTANICAL GARDENS MASTER PLAN**
**(Certified by the Ventura City Council on March 30, 2015)**

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**I.** The City of Ventura has reviewed an application for the following proposed project:

**A. Project Description for Case No. UP-1-13-14353; Z-4-13-15774; EIR-1-13-14355:** The proposal is a botanical garden facility by the applicant, Ventura Botanical Gardens, Inc. (VBG). This environmental review considers a request for a Conditional Use Permit and Lease Agreements to authorize the range of uses and support facilities identified in Section A *Project Information* of the proposed project's Initial Study; and a request for a "consistency" rezone from Residential zoning (R-1-1-AC, R-1-7, and R-3-5) to Park (P) zoning for the entirety of Grant Park lands inclusive of the project site in the proposal, in order to match the 2005 General Plan land use designation of Parks and Open Space. The site consists of mostly vacant, modestly disturbed land measuring 106.98 acres in size. Grant Park is a City-owned facility that includes a one-acre-in-holding parcel owned by the Serra Cross Conservancy. The Conservancy owned portion is accessed from internal park roads within Grant Park. It includes landscaping, paving and parking areas, as well as a cross monument. The in-holding parcel is not included as a part of the Ventura Botanical Gardens project.

To implement the Master Plan CUP, each option area of the property will be acquired by the VBG under separate Lease Agreements. New permanent buildings and structures, as well as interim structures which require a grading permit, are all subject to future Design Review approval by the City. Additionally, there will be future building and grading permits issued by the City to construct the phased development of the Master Plan CUP. Further, temporary events by the VBG shall receive special event permits from the Parks Department and any temporary water use would require Memorandum of Understanding between Ventura Water and VBG. Therefore, lease agreements, Design Review approvals, building/grading permits, and special event permits will all rely upon this MND for future CEQA compliance, unless the project is altered at a future date. Alterations to the Master Plan would be evaluated pursuant to CEQA to determine whether new environmental analysis, beyond that contained in this document, would be required for those alterations at the time they are proposed.

**B. Proposed Finding:** In accordance with Section 15070 of the California Code of Regulations, the Planning Division of the City of Ventura has determined that there is no substantial evidence that the proposed project would have a significant effect on the environment, and that a mitigated negative declaration (MND) may be adopted.

**C. Fish and Wildlife Impacts:** On the basis of the information contained in the Initial Study and on the record as a whole, there is no evidence that there would

be an adverse effect on fish or wildlife habitats or resources because none of the factors listed in Section 2R.450.530 of the Municipal Code are present.

D. **Hazards:** The project site is not on any of the lists enumerated under California Government Code Section 65962.5 including, but not limited to, lists of hazardous waste facilities, land designated as hazardous waste property, and hazardous waste disposal sites.

E. **Document Review and Comment: The public review and comment period of the draft begins on November 19, 2014 and ends on December 10, 2014.** To view the draft document, please visit the city's website at http://www.cityofventura.net/cd/planning/EIRs. Alternatively, the draft and referenced documents are available for review Monday through Friday between 8:00 a.m. to 5:00 p.m., beginning **November 19, 2014** through **December 10, 2014**, at the Planning Counter, City Hall, 501 Poli Street, Ventura CA 93001.

F. **Public Hearing and Comments. A public hearing on the project described above is tentatively scheduled before the Planning Commission on January 14, 2015 at 6:00 pm in the City Council Chambers at City Hall located at 501 Poli Street, Ventura, CA 93001.** Separate public noticing, confirming the date, time and location will be provided prior to the public hearing. All comments concerning the draft Mitigated Negative Declaration should be provided in writing and received before 5:00 p.m. on December 10, 2014. Inquiries should be directed to Dave Ward, Planning Manager, at (805) 677-3964. Written comments may be mailed or faxed [(805)654-7560] to the City of Ventura, Planning Division, 501 Poli Street, CA 93001, or emailed directly dward@ci.ventura.ca.us.

**November 19, 2014**
Date

Dave Ward, Planning Manager

Attachments:

VBG Master Plan MND

**MITIGATED NEGATIVE DECLARATION (MND)**
**FOR THE VENTURA BOTANICAL GARDENS MASTER PLAN**

## A. PROJECT INFORMATION:

1. PROJECT TITLE:
   **Ventura Botanical Gardens Master Plan**
   **Project-5810; Case Numbers UP-1-13-14353; Z-4-13-15774; EIR-1-13-14355**

2. LEAD AGENCY NAME AND ADDRESS:
   **City of San Buenaventura**
   501 Poli Street
   Ventura, CA 93001

3. CONTACT PERSON AND PHONE NUMBER:

   Dave Ward, AICP, Community Development Planning Manager
   805-677-3964
   dward@ci.ventura.ca.us

   Greg Martin, AICP, Contract Planner
   805-644-4455
   gmartin@rinconconsultants.com

4. PROJECT LOCATION:
   The project site is located in Grant Park, 398 Ferro Drive, Ventura, CA 93001, as shown in Figure 1. The roughly triangular, approximately 106.98 acre site is intersected by Ferro Drive, Brakey Road, and Summit Drive. The site is bounded by Poli Street to the south, Cedar Street to the west, North Kalorama Street to the East, and undeveloped hilly open space to the north. The project site is comprised of twelve contiguous legal parcels, listed in Table 1. The nearest major intersection is Main Street/Ventura Avenue approximately 1,220 feet (1/4 mile) to the southwest.

5. PROJECT SPONSOR'S NAME AND ADDRESS:
   Ventura Botanical Gardens, Inc.
   Contact: Joseph Cahill, President
   P. O. Box 3127
   Ventura, California 93006

Figure 1. General Location/Vicinity
E Lewis St
E Vince St
El Medio St
Bell Way
Kellogg St
E Ramona St
GUN RANGE FENCE
Sheridan Way
W Harrison Ave
W Park Row Ave
Milling Rd
Cedar St
Poli St
E Main St
Hemlock Ln
Church St
Buena Vista St
Marisol
Crimea St
Also St
N Kalorama St
N Fir St
N Ash St
S Olive St
S Garden St
S Ventura Ave
Figueroa St
S Palm St
S Oak St
S California St
S Chestnut St
S Fir St
S Ash St
S Kalorama St
S Laurel St
S Ann St
S Hemlock St
S Crimea St
Chrisman Ave
Live Oak Dr
W Harbor Blvd
Main St
E Front St
Ventura Promenade
Shoreline Dr
101B
S Pacific Ave
Hunsaker Ave
Sanjon Rd
Ocean Ave
Vista Del Mar Dr
E Harbor
FEB 2014

**Table 1**

**Project Parcels**

| Parcel | Size (Acres) | Zoning | General Plan Land Use Designation |
|---|---|---|---|
| 064-0-150-040 | 6.75 | R-1-1 AC | NL |
| 072-0-103-025 | 3.65 | R-1-7 | NM |
| 0710-112-110 | 0.06 | R-1-7 | P&OS |
| 071-0-120-050 | 7.61 | R-1-7 | P&OS |
| | 1.83 | T6.1 | SP (T6.1) |
| 071-0-120-160 | 67.31 | R-1-7 | P&OS |
| 071-0-151-080 | 2.13 | R-3-5 | NH |
| 071-0-192-010 | 2.60 | R-1-7 | NH |
| 071-0-201-130 | 0.26 | R-1-7 | NL |
| 072-0-271-010 | 3.67 | R-1-7 | NL |
| 072-0-272-010 | 3.67 | R-1-7 | NL |
| 072-0-273-010 | 3.67 | R-1-7 | NL |
| 072-0-274-015 | 3.77 | R-1-7 | NL |
| **Gross Acreage** | **106.98** | | |

6. GENERAL PLAN/SPECIFIC PLAN DESIGNATIONS:

- Parks & Open Space (P&OS)
- Neighborhood Low, up to 8 Units/Acre (NL)
- Neighborhood Medium, 9-20 Units/Acre (NM)
- Neighborhood High, 20-54 Units/Acre (NH)
- Specific Plan: Downtown Specific Plan (DTSP), T6.1 Urban Core, with Civic Building Overlay

Parks & Open Space (P&OS) designates lands for public recreation and leisure and visual resources, and can range from neighborhood tot lots and pocket parks, to urban squares and plazas and playgrounds, to large regional parks and natural preserves. The majority of the project site, an area of 74.98 acres, is designated P&OS.

Neighborhood Low (NL) emphasizes detached houses with some attached units in a small mix of building types from 0 up to 8 dwelling units per acre. Predominantly residential, with opportunity for limited home occupation and neighborhood services sensitively located along corridors and at intersections. 21.79 acres of the project site are designated NL, including

most of the eastern edge of the site, plus a small parcel in the southwestern part of the site on the north side of Ferro Drive.

Neighborhood Medium (NM) anticipates a mixture of detached and attached dwellings and higher building types at approximately 9 to 20 dwelling units per acre. Predominantly residential with small scale commercial at key locations, primarily at intersections and adjacent to corridors. 3.65 acres in the southeast corner of the project site have this designation.

Neighborhood High (NH) accommodates a broader mix of building types, primarily attached, from 21 to 54 dwelling units per acre, including a mix of residential, commercial, office, and entertainment that includes mixed-use buildings. 4.73 acres in the southwest corner of the project site have this designation.

Specific Plan (Downtown Specific Plan, T6.1 Urban Core, with Civic Building Overlay) is the General Plan designation for the T6 Urban Core transect designation, which is identified in the General Plan as the equivalent of a downtown. It contains the densest urbanism – the tallest buildings and the greatest variety of uses, particularly unique ones such as financial districts and important civic buildings. This is the least naturalistic of all the transect zones; street trees are formally arranged or non-existent. A 1.83-acre portion of parcel 071-0-120-050, located on the southern boundary of the project site in an area in and immediately around the western end of the upper City Hall parking lot, has this designation. This area also has a Civic Building Overlay, which requires Design Review for new civic buildings and/or alterations to existing civic buildings.

7. ZONING:

- R-1-1AC, Single Family Residence, Minimum Lot Size – 1 Acre
- R-1-7, Single Family Residence, Minimum Lot Size – 7,000 Square Feet
- R-3-5, Multiple Family, 1 unit/2,400 Square Feet of Land Area
- T6.1, Urban Core

THE R-1 SINGLE FAMILY ZONE, including both the R-1-1AC and R-1-7 zones, provides for single family residential development, with the suffix after the R-1 denoting the minimum allowable lot area. R-1-1AC has a minimum lot area of 1 acre, and R-1-7 has a minimum lot size of 7,000 square feet. Other than single family residential uses, permitted uses include government services, public parks and playgrounds, consumer recycling collection points, and mini and minor wireless telecommunications facilities. Conditionally permitted uses include farm employee housing, parking, community meeting, cultural and library services, day care centers, general education services, group care, bed and breakfast inns, nursery sales, safety services, utility or equipment substations, and major wireless telecommunications facilities.

THE R-3 MULTIPLE FAMILY ZONE, including the R-3-5 zone, provides for multiple family residential development, with a minimum lot area of 6,000 square feet. The suffix after the R-3 denotes the minimum allowable lot area for each dwelling unit as designated in Section 24.200.070 of the Zoning Ordinance. The R-3-5 zone has a minimum lot area for each dwelling unit of 2,400 square feet. Other than multiple family residential uses, permitted uses include government services, public parks and playgrounds, consumer recycling

collection points, and mini and minor wireless telecommunications facilities. Conditionally permitted uses include group residential, parking, community meeting, cultural and library services, day care centers, general education services, group care, bed and breakfast inns, nursery sales, safety services, utility or equipment substations, and major wireless telecommunications facilities.

THE T6.1 URBAN CORE ZONE is intended to implement policies, standards, and guidelines in the Downtown Specific Plan by, among other things, promoting buildings, renovations, and uses that facilitate dense commercial, retail, and mixed-use development. The uses permitted in the Urban Core Zone are those listed as "permitted by right" in Article II, Section E of the Downtown Specific Plan, and include various commercial, professional, and civic uses, including parks and recreation. Multi-family residential uses are permitted by right, while single family/carriage house uses are not allowed.

8. DESCRIPTION OF PROJECT:

Project Background and Overview

This environmental review considers a request for a Conditional Use Permit (CUP) and Rezone for the Ventura Botanical Gardens (VBG) Master Plan (the "Project", or the "Master Plan"), as described in the VBG Master Plan Conditional Use Permit and Rezone Application, dated November 2014 (Attachment A). The applicant is Ventura Botanical Gardens, Inc. (VBG, Inc.). The CUP is required in order to authorize the range of uses and support facilities described in the Master Plan and below under *Project Characteristics*. The CUP and associated environmental review is subject to review and approval by the Planning Commission. The rezone is required in order to authorize the proposed change of zoning from residential zoning (R-1-1-AC, R-1-7, and R-3-5) and urban zoning (T6.1) to Parks & Open Space zoning (P&OS) in order to match the 2005 General Plan land use designation of Parks and Open Space that applies to most of Grant Park, and its current use as parks and open space. The consistency rezone requires a recommendation by the Planning Commission and adoption by the City Council.

The Project represents VBG Inc.'s plan for gardens and associated facilities they plan to develop in phases over a period of approximately 30 years as funding is secured and the needs of VBG and the public evolve (see Table 5 of Attachment A for the full phasing plan). The basic physical layout of the VBG Master Plan is shown in Figure 3. VBG, Inc. would lease portions of the project site from the City as they carry out the Project through City Lease Agreements. The project site is therefore organized into eight potential City lease areas, as shown in Figure 2.

To implement the Master Plan CUP, each option area of the property will be acquired by the VBG, Inc. under separate Lease Agreements. New permanent buildings and structures, as well as interim structures which require a grading permit, are all subject to future Design Review approval by the City. Additionally, there will be future building and grading permits issued by the City to construct the phased development of the Master Plan CUP. Further, temporary events by the VBG shall receive special event permits from the Parks Department and any temporary water use would require amendments to a Temporary Water Service Agreement and Memorandum of Understanding between Ventura Water and VBG, Inc. Therefore, lease agreements, Design Review approvals, building/grading permits, and

special event permits will all rely upon this MND for future CEQA compliance, unless the project is altered at a future date. Alterations to the Master Plan would be evaluated pursuant to CEQA to determine whether new environmental analysis, beyond that contained in this document, would be required for those alterations at the time they are proposed.

Project Characteristics

**THE GARDENS.** The primary mission of VBG is education and appreciation of plants and their relationship to humans and the environment. As such, the principal organizational pattern of VBG is the distribution of the five representative climate regions (California, Chile, Cape of Africa, South Australia, and Mediterranean) and a garden section identified as "The Ramble" as illustrated in Figure 3. The Ramble will comprise native California plantings, sometimes displayed to compare with plants of other Mediterranean biomes, and arrayed in a progression from south to north (and therefore uphill) that generally represents a geographical transect of California plant communities from the Coastal Prairie plant community to the Upper Montane plant community.

Gardens evolve over time. Therefore, the actual location, size and composition of each biome and garden section, including trails and associated garden features, will be modified as needed by the VBG horticultural staff over the life of the project to fit site-specific conditions relating to micro-climates, soils, display opportunities, educational opportunities, and other factors.

Figure 2. Project Area with Option Areas
GUN RANGE FENCE
1
1
2
3
3
3
1
4
5
6
7
7
8
8
5
3 Option Area Designation
0 160 320 480
FEB 2014

Figure 3. Ventura Botanical Garden Master Plan
Mediterranean Garden
The Ramble
Chilean Garden
California Garden
Heritage Zone
Discovery Zone
Horticulture Zone
Australia Garden
Cape Garden
Welcome Zone
GUN RANGE FENCE
COM TOWER
WATER TANK
SERRA CROSS
SUMMIT DR
FERRO DR
BRAKEY RD
Mechanized Vertical Access
CITY HALL
Image U.S. Geological Survey
Imagery Date: Sep 30, 2007
FEB 2014
SCALE

**SUPPORT FACILITIES.** In addition to laying out the primary garden sections, the VBG Master Plan identifies the future buildings, vehicular circulation and parking areas that would likely be required to maintain and support the VBG. The Master Plan was developed based on VBG Inc.'s current staffing and programmatic projections and estimated public attendance, derived from the experience of other significant botanical gardens, such as the Atlanta Botanical Gardens. VBG, Inc. anticipates that the Master Plan would be altered somewhat over time in response to changing public needs, funding availability, and other priorities, but VBG Inc. has evaluated its future needs to the maximum extent practical. The Master Plan therefore represents a realistic and reasonable projection of such needs over approximately 30 years. Alterations to the Master Plan would be evaluated pursuant to CEQA to determine whether new environmental analysis, beyond that contained in this document, would be required for those alterations at the time they are proposed.

Facilities proposed for inclusion in the Master Plan are shown in Figure 4. These facilities are located within four zones: Welcome, Discovery, Heritage, and Horticultural. Table 2 shows a detailed description of facilities within each zone. Staffing is based on a mix of VBG employees, volunteers, docents, and vendor staff. The purpose and function of each zone is briefly described below, and facilities within each zone are further described in Attachment A.

The Welcome Zone would be located adjacent to the existing upper parking lot behind City Hall and within easy walking distance of downtown Ventura. It is anticipated to be the primary entrance and point of arrival for the majority of VBG visitors. A grouping of visitor serving buildings will be arranged with welcoming gardens, walks and a plaza to greet, orient, and welcome visitors to the VBG. VBG Inc. plans to promote walk-in visitors from downtown, but also provide parking for daily VBG visitors at the existing upper City Hall parking lot, which would be upgraded to include appropriate trees and other landscaping. This area would also contain a mechanized vertical transport system or other device to assist in VBG internal circulation.

The Discovery Zone would be located adjacent to an existing parking lot that currently has two large, unused barbeque pits. The site for the Discovery Zone would provide a vantage point for visitors to the VBG. The Master Plan groups six proposed buildings, primarily dedicated to the display and education aspects of VBG's mission, in previously disturbed portions of this area. The buildings would be used in conjunction with the grounds of the gardens to conduct classes, provide art and botanic exhibits, conduct ongoing research on environmental management, and host lectures. In addition to serving as classrooms, community rooms, and lecture space, one of these buildings would also include a restaurant with an outdoor dining terrace. This adjacency of food service and community rooms would support a wide variety of events in addition to the primary function of the community rooms as classrooms. VBG, Inc. envisions the revenue from the restaurant and the events it would support as critical to the financial viability of the VBG.

Figure 4. Facilities
LEGEND
WELCOME ZONE
A - Visitor Center
B - Book & Gift Shop
C - Plant Sales
D - Café
DISCOVERY ZONE
G - Event & Lecture Center
H - Restaurant
I - Headquarters
J - Conservation Center
K - Discovery Center
L - Children's Center
M - Public Seedling "Cage"
HERITAGE ZONE
N - Heritage Center
HORTICULTURE ZONE
O - Lath House (2)
P - Shade House (4)
Q - Seed & Propagation Center
R - Equipment & Storage Garages
S - Workshops
T - Horticulture & Maintenance Offices
U - Growing Areas
V - Materials Storage
W - Stone Storage & Handling
X - Service Yards
Y – Tram Service & Storage
GUN RANGE FENCE
Restored Service Road
SUMMIT DR
FERRO DR
BRAKEY RD
Event Meadow
Entry Plaza
Restored Service Road
Entry Plaza
Mechanized Vertical Access
W Simpson St
W Prospect St
W Harrison St
Cedar St
Buena Vista St
Church
Image U.S. Geological Survey
© 2010 Google
Imagery Date: Sep 30, 2007
34°17'12.71" N 119°17'30.81" W elev 363 ft
Eye alt 4882 ft
0 160 320 480
FEB 2014

## Table 2 Ventura Botanical Gardens Facility Summary

| | | Building | Function | Bldg. Area S.F. * | Stories | Bldg. Footprint S.F. ** | Exterior Space S.F. | Use of Outdoor Space | Staff **** |
|---|---|---|---|---|---|---|---|---|---|
| WELCOME ZONE | A | Visitor Center | Visitor admissions & orientation, restrooms, lost & found, first aide, etc. | 1,256 | 1 | 1,256 | 600 | Visitor orientation terrace. | 2 |
| | B | Book & Gift Shop | Cashier stations, ample storage and retail display areas for books, art, pottery, ceramics, garden objects, hats, t-shirts, and other items. | 2,228 | 1 | 2,228 | 200 | Patio sales area. | 2 |
| | C | Plant Sales | Lathhouse like plant sales building with all-weather cashier stations, potting work benches, tool storage, and adjacent outdoor sale patio with | 1,620 | 1 | 1,620 | 1,000 | Plant sales patio; 2/3 shaded. | 2 |
| | D | Snack Bar | Coffee, pastry, soup, sandwich & snack venue with little or no indoor seating adjacent to a small "dining" patio. | 662 | 1 | 662 | 400 | "Dining" patio. | 1 |
| DISCOVERY ZONE | G | Event & Lecture Center | Lecture, classroom, and community event venue. Main room (which can be subdivided) capable of hosting an event of 250-350 people. Also includes catering/demonstration kitchen, arrival foyer, restrooms, storage and direct access to the event meadow. | 11,570 | 1*** | 11,570 | 6,250 | Event meadow, small stage, and service area. | 0 |
| | H | Restaurant | Indoor seating for 35-45 for dining, 20-25 in the bar area, and 35-60 terrace dining, as well as a small gift shop. | 6,048 | 1*** | 0*** | 2,200 | Dining terrace & patio. | 8 |
| | I | Headquarters | Administrative and fund raising offices. | 6,710 | 2 | 3,355 | 800 | Entry forecourt and patio | 18 |
| | J | Conservation Center | Botanic laboratory and collection space for the advancement of the understanding, use, and preservation of plants of the world. | 9,060 | 2 + Basement | 3,020 | | | 9 |
| | K | Discovery Center | The main educational building of VBG it will include an exhibition space, botanic lab classroom for adult education, offices for staff educators, and a volunteer center. Also houses the main security | 7,992 | 2 | 3,996 | 1,600 | Exhibit and patio areas. | 9 |
| | L | Children's Center | Children's education including a botanic lab designed for kids, a discussion classroom, and access to adjacent outdoor classroom. | 2,288 | 1 | 2,288 | 800 | Outdoor classroom and demonstration area. | 0 |
| | M | Public Seedling "Cage" | A lathhouse like building for education about plant propagation. | 1,200 | 1 | 1,200 | | | 0 |
| HERITAGE ZONE | N | Heritage Center | An exhibit space for orientation to the human history of the region in relationship to the natural and cultivated botanic environment. | 3,186 | 1 | 3,186 | 1,000 | Visitor orientation terrace. | 1 |
| HORTICULTURE ZONE | O-1 | Lath House #1 | Garden Stock | 600 | 1 | 600 | | | 0 |
| | O-2 | Lath House #2 | Plant Sales Stock | 600 | 1 | 600 | | | 0 |
| | P-1 | Shade House # 1 | Garden Stock | 300 | 1 | 300 | | | 0 |
| | P-2 | Shade House # 2 | Garden Stock | 600 | 1 | 600 | | | 0 |
| | P-3 | Shade House # 3 | Plant Sales Stock | 600 | 1 | 600 | | | 0 |
| | P-4 | Shade House # 4 | Plant Sales Stock | 400 | 1 | 400 | | | 0 |
| | Q | Seed & Propagation Center | Seed handling, storage and propagation building. | 1,450 | 1 | 1,450 | | | 2 |
| | R | Equipment & Storage Garages | Truck and tractor storage as well as tractor attachments and hand tools. | 2,338 | 1 | 2,338 | | | 0 |
| | S | Workshops | General maintenance, equipment maintenance, and wood working plus general storage. | 2,313 | 1 | 2,313 | | | 2 |
| | T | Horticulture & Maintenance Staff | Offices, meeting rooms, and support space for operational staff. | 2,754 | 1 | 2,754 | | | 14 |
| | U | Growing Areas | Can yards and other open space to develop nursery stock. | 0 | 0 | 0 | 9,500 | Plant development; some with shade cloth. | 0 |
| | V | Material Storage | Sand, gravel, mulch, wood, etc. in bins + room for tractor maneuvering | 0 | 0 | 0 | 1,800 | Outdoor material storage | 0 |
| | W | Stone Storage & Handling | Stone materials + crafting and maneuvering space | 0 | 0 | 0 | 5,000 | | 2 |
| | X | Service Yards | Bulk materials, trash/recycle area, fuel storage, wood chipping, compost, firewood, lumber, brush burning. | 0 | 0 | 0 | 8,000 | | 0 |
| | Y | Tram Service & Storage | Storage area for on-site public transport vehicles | 875 | 1 | 875 | 500 | | 3 |
| | | | | 66,650 | | 47,211 | 39,650 | | 75 |

***** Building Area is the total area of the building including all levels.
****** Building Footprint is the area of the building at ground level.
******* Event & Lecture Center is below the Restaurant; building appears as two stories from the west, a single story from the north, east, and south.
******** Staff represents largest number on site at one moment from 9AM to 6PM and includes employees, volunteers, and concessionaires.

**SPECIAL DISCOVERY ZONE EVENTS IN EARLY PHASES.** Prior to, and after completion of, the Discovery Zone development, VBG Inc. also proposes to continue to use the Discovery Zone area as a host site for special events, such as an annual state wide exhibit by the floriculture industry, known as the California Spring Trials (CAST). This multi-day series of invitation-only events showcases the gardens and provides an opportunity for further fundraising to benefit the ongoing improvement and maintenance of the VBG. During each day of CAST (8AM to 6PM), the number of attendees on the site ranges from 10 to 60, with an average per hour attendance of 31 guests. Staff and volunteers on the site vary from 6 to 18 during operating hours with an average of 10 at any given time. The 2014 CAST event hosted approximately 1,800 guests over 6 days. The event requires approximately one week of setup of event rental tents, temporary "planter boxes," irrigation water trucks, mobile restroom trailer (with self-contained holding tanks), and small generators (one for each tent plus one for the restroom trailer). No permanent structures are proposed as part of the CAST event at this time, but CAST has indicated a desire to improve water supply (the temperature of water in the tank trucks was too warm for roots) and reduce the cost of tent rental by building an interim structure or structures. VBG Inc. has begun conversations with CAST in hopes of defining a useful structure or structures that would support VBG uses at the site throughout the year when CAST is not present.

To provide water for CAST events and other temporary events in the Discovery Zone, VBG Inc. will truck water to storage tanks. Water trucks would fill up from a temporary meter at a fire hydrant via amendments to a Temporary Meter Service Agreement and Memorandum of Understanding as approved by Ventura Water. VBG, Inc. would install interim water tanks in the Discovery Zone where the CAST Events are to be held. These tanks would have 6,000 gallons total storage, which could be contained in three tanks approximately 90" (7'6") in diameter and 80" (6'8") tall, or in two tanks approximately 96" (8') in diameter and 96" (8') tall.

Placed adjacent to the Serra Cross Conservancy property, and with views to the Ventura River and agricultural lands to its west, the Heritage Zone is located to take advantage of these reference points. A component of the VBG's mission is recognizing and teaching human cultural connections with plants. The Heritage Zone will emphasize ethno-botany while discussing and displaying the relationships of humans to plants and the environment in the past and present. The Heritage Zone will include the Heritage Center, a building serving as an interpretive exhibit center. Because of the site's adjacency to the Serra Cross Conservancy (SCC) existing lease of the one-acre parcel in Grant Park, VBG has committed to working with SCC on the following coordination items. Operation of the tram on SCC property will be conditional; if an event is occurring during tram hours which will prevent the safe operation of the tram on SCC property, it will unload and load in a different location. Overflow parking for SCC events will be allowed on VBG grounds on Summit and Brakey Drive given proper notice and coordination. Further, the VBG and SCC will work together on issues surrounding the operational use of Summit Drive that will allow continued access to the SCC site from Summit Drive. VBG and SCC will work together to identify and implement mutually agreeable modifications to the existing roadways that would slow traffic and improve the safety and tranquility of existing and future pedestrian zones adjacent to the roadway. Lastly, before the VBG's Heritage Center is approved and constructed, a shared parking MOU will be required and VBG will need SCC approval for any access through the Serra Cross parking lot.

Accessed by an existing abandoned access road that will be restored for VBG staff vehicular access, the Horticulture Zone is approximately 500 feet north of Summit Drive near the eastern boundary of the VBG. The primary purpose of this zone is to propagate and grow new plants for use in the gardens and for sale to the public. It will also be the hub of ongoing maintenance of the entire garden property.

**SERVICES TO PROJECT**

Utility service to the project site would be provided by the following entities:

- Water: Ventura Water, and/or on- or off-site well
- Sewer: Ventura Water
- Electricity: Southern California Edison
- Natural Gas: Southern California Gas Company
- Solid Waste: E.J. Harrison

According to the Master Plan CUP and Rezone Application (Attachment A), preliminary investigations by VBG, Inc. indicate that well water suitable for irrigation is likely to occur at reasonably accessible depths on an adjacent property, negotiations are under way to drill an exploratory well at that location, and it is also likely that a similar well site or sites may be discovered within the bounds of the project site. A well source irrigation system would include a pumping station at the source and a tank or tanks, ideally situated at an elevation to allow for gravity outflow. An offsite well concept is described in the Master Plan CUP (Attachment D of that document) which is located just north of Grant Park, in the unincorporated county. While this MND addresses the physical impacts of this concept, permitting and any regulatory requirements to implement such water supply to the VBG would be subject to further review by the City, including Ventura Water, County and any other required agencies.

According to a Water System Evaluation completed for the project (RBF Consulting, November 2014), included in Attachment H, City water could be provided to the proposed project by gravity service from the City's existing 605K Zone. This is referred to in the Water System Evaluation as Alternative 4, and is the preferred alternative selected by VBG (Attachment I) and deemed acceptable by Ventura Water for the proposed project, and is therefore the alternative analyzed throughout this MND. The 605K Zone is located to the east of the project site, separated by a valley, but joined by Summit Drive. Storage for the 605K Zone currently consists of two above grade steel water storage tanks (the Kalorama tanks), each with a capacity of 0.15 million gallons (MG), for a combined capacity of 0.30 MG, located approximately 1,030 feet north of the northern terminus of Kalorama Drive and approximately 680 feet east of the VPD gun range. According to the RBF report, the regulatory storage required for the project is 175 percent of maximum day demand, which is equivalent to approximately 0.32 MG, which would result in requiring roughly double the amount of storage currently available at the Kalorama Tanks, although provision of this required storage could be gradually phased in as demand increase over time. The proposed project analyzed in this MND therefore includes constructing two additional 0.16 MG storage tanks at the site of the Kalorama tanks, subject to reaching an agreement with the City. The RBF report also states that a tank siting study and geotechnical investigation would need to be done to confirm that the site can physically accommodate the new tanks, and an eight-foot tall retaining wall may be required on the north side of the site, as the hill continues to slope upward where the new tanks are proposed. It is anticipated that the tank would be

above grade welded steel meeting all the design requirements specified in the City's latest version of the Engineering Design Standards.

The RBF report also concludes that, in addition to the new storage tanks, service must be brought from the 605K Zone over to the project site. In order to accomplish this, a connection must be made to the existing 12-inch asbestos cement pipe (ACP) in Summit Drive. Service would be completed by installing a backflow preventer and flow meter. The existing piping configuration, exact zone break location, and pipe rated working pressures should be verified prior to performing any improvements. The RBF report did not include analysis of any on-site or off-site well option, because supply from such a source is speculative at this time.

Implementation of the recommendations of the RBF report regarding extension of service from the 605K Zone have been made a condition of approval of this project by the City, as has requiring extension of water service from Poli Street to the Welcome Zone as part of Phase 1, including a water line, meter, and fire hydrant near the Welcome Center.

Regardless of which water supply source is used, or combination of supply sources, the onsite irrigation system would include a 2" to 3"diameter subterranean main piping distribution system would distribute to two manifolds. Manifold 1 would serve the Ramble as well as Cape and Australia Gardens, each with a 1" diameter sub-main. Manifold 2 would serve the Mediterranean, California, and Chilean Garden each with a 1" diameter sub-main. Both the main and sub-main piping will be buried in an approximate 36" deep x 12" wide trench. From the sub-mains in each garden several additional ¾" diameter branch distribution zones will take water to additional manifolds needed to route ½" diameter and smaller drip irrigation tubing to the plants of the living collections. The branch distribution will be buried approximately 6" deep and the drip irrigation tubing will have 6" to 1" of cover except at the surface level drip emitters.

The following Public Services would be provided to the project site by the City of Ventura: Fire, Police, and Parks. The Project does not include any residential or growth-inducing component, so School services would not be required.

No formally designated Biological Resources Areas are located within the project site.

9. EXISTING AND SURROUNDING LAND USES AND SETTING:

The project site is currently occupied by Grant Park, a City owned-facility consisting of mostly undeveloped, modestly disturbed land. The project site portion of Grant Park is 106.98 acres, not including a one-acre in-holding parcel owned by the Serra Cross Conservancy (see Figures 1 and 2). The Conservancy-owned portion is accessed from internal park roads within Grant Park. It includes landscaping, paving and parking areas, as well as a cross monument. The in-holding parcel is not included as a part of the VBG project.

Development within Grant Park includes paved roads, including extensions of Ferro Drive, Brakey Road and Summit Drive, a few parking areas, two water tanks and associated pumps, cellular communication tower relay sites, a group barbeque area, a City-owned water reservoir, a gun range operated by the Ventura Police Department (VPD), and limited hiking trails.

Surrounding land uses include public facility development, residential uses, and open space. Multi-family and single-family residential neighborhoods are located east of the site at Kalorama Street and Summit Drive, west of the site at Cedar Street, and south of the site at Poli Street and Ferro Drive. Ventura City Hall is located at the center of the southern boundary. The northern tip of the project site includes a gun range that is currently operated by the VPD. The northern tip of the project site is adjacent to open space that is outside the City corporate boundary. Table 3 lists the surrounding land uses, current site conditions, public services and City planning and zoning attributes.

**Table 3 Existing Site Characteristics**

| | | |
|---|---|---|
| Site Size | 106.98 gross acres | |
| 2005 General Plan Land Use Designation, 2007 Downtown Specific Plan Zones | Parks & Open Space, Neighborhood High, Neighborhood Medium, Neighborhood Low; and Specific Plan Urban Core City Building | |
| Zoning Designations | R-1-1AC (Single Family Residence, Minimum Lot Size – 1 Acre), R-1-7 (Single Family Residence, Minimum Lot Size – 7,000 Square Feet), and R-3-5 (Multiple Family, 1 unit/2,400 sq. ft. of land area ); T6.1 – Urban Core | |
| Current Use and Development | Open space, gun range, water tanks and pump, public roadways, parking, fire roads, cell and communication tower site, arch and rock walls along Brakey Road, and barbeque area. | |
| Surrounding Uses/Zoning | North: | Vacant land/open space |
| | South: | Residential (T4.1 - Urban General 1 Zone, R-1-7, RPD-8) and Ventura City Hall (T6.1 – Urban Core) |
| | East: | Residential (RPD-1 – Residential Planned Development, 1 unit per acre, RPD-5– Residential Planned Development, 5 units per acre, RPD-8– Residential Planned Development, 8 units per acre, RPD-12– Residential Planned Development, 12 units per acre) |
| | West: | Cedar Street and adjacent Residential (T4.1, R-3-5, R-3-4) |
| Access | Ferro Drive, Summit Drive, Brakey Road | |
| Public Services | Water: | Ventura Water |
| | Natural Gas: | Southern California Gas Company (limited to no service inside park boundaries) |
| | Electricity: | Southern California Edison (limited to no service inside park boundaries) |
| | Sewer: | Ventura Water; Limited gravity flow lines to street mains, condition unknown (limited to no service inside park boundaries) |

10. ENVIRONMENTAL BASELINE DETERMINATION:

The 106.98-acre project site is currently used as a public park, with the majority of the site being undeveloped semi-disturbed natural area, with the exception of the facilities listed in Table 3 above. The 2005 Ventura General Plan EIR included the project site in its analysis; however, no projects at the project site were analyzed in the 2005 General Plan EIR.

11. DIRECTLY RELATED PROJECTS:

There is one other project that has direct bearing on the proposed project. The proposed Pilot Concert Series project, for which a Final EIR was certified in July 2014, would use a portion of the Upper City Hall parking lot for up to twelve outdoor concerts, which are expected to occur over a period of about six months during one calendar year within the next two to three years. This project would include installation of a temporary fabric tent of approximately 20,000 square feet to provide seating for up to 1,900 individuals, including a stage, office building, restrooms, concession stand, VIP-parking area, and an open picnic area. Prior to concert events, vegetation on adjacent slopes would be cleared to provide 100-foot fire clearance. The Pilot Concert Series, as approved, allows amplified music to a noise level of 95 decibels measured at the sound board (Ordinance 2014-011).

12. OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED: None

13. CIRCULATE TO THE FOLLOWING AGENCIES/PERSONS:

**VENTURA COUNTY**

| | | | |
|---|---|---|---|
| **Agricultural Commissioner** | ☐ | **Ventura County Clerk/Recorder *** ***1 original, 4 copies, unstapled (hand deliver to County)*** | ☒ |
| **Local Agency Formation Commission (LAFCO)** | ☐ | **Ventura County Transportation Commission* (VCTC)** | ☐ |
| **Ventura County Resource Management Agency, Attn: Planning* Director *(6 hard copies)*** | ☒ | | |

**ADJACENT COUNTIES**

| | | | |
|---|---|---|---|
| **Kern County Planning & Development Services** | ☐ | **County of Santa Barbara Planning Division** | ☐ |
| **County of Los Angeles Dept. of Regional Planning Impact Analysis Section** | ☐ | | |

## ADJACENT CITIES

| | | | |
|---|---|---|---|
| **City of Oxnard** | ☐ | **City of Ojai** | ☐ |

## OTHER PUBLIC AGENCIES

| | | | |
|---|---|---|---|
| **Air Pollution Control District*** | ☒ | **Ventura County Organization of Government (VCOG)** | ☐ |
| **Ventura County Solid Waste Management Department** | ☐ | **Ventura Regional Sanitation District*** | ☒ |
| **Casitas Mutual Water District (LAFCO)** | ☐ | **Gold Coast Transit** | ☐ |
| **Ventura Unified School District** | ☐ | | |

## LIBRARIES

| | | | |
|---|---|---|---|
| **Avenue Branch Library*** | ☒ | **E.P. Foster Branch Library*** | ☒ |

## STATE AGENCIES

| | | | |
|---|---|---|---|
| **California Coastal Commission South Central Coast Area Office** | ☐ | **Southern California Association of Government (SCAG)*** ***(3 copies)*** | ☒ |
| **California Dept. of Fish & Game (Santa Barbara)** | ☐ | **Caltrans District 7 Environmental Section** | ☐ |
| **California Regional Water Quality Control Board** | ☐ | **State Department of Parks and Recreation** | ☐ |
| **California Integrated Waste Management Board, Permits Section** | ☐ | **Department of Boating & Waterways** | ☐ |
| **California Department of Toxic Substances Control** | ☐ | **CA State Clearinghouse** ***(15 copies)*** | ☐ |

## FEDERAL AGENCIES

| | | | |
|---|---|---|---|
| **U.S. Army Corps of Engineers (LAFCO)** | ☐ | **U.S. Fish and Wildlife Services** | ☐ |

## CITIZEN GROUPS

| | | | |
|---|---|---|---|
| **Audubon Society** | ☐ | **Sierra Club** | ☐ |
| **Building Industry Association Greater Los Angeles/ Ventura Region of Southern California Inc.** | ☐ | **California Trout** | ☐ |
| **Environmental Coalition** | ☐ | **Surfrider Foundation** | ☐ |

| | | | |
|---|---|---|---|
| **Environmental Defense Center** | ☐ | **Friends of the Ventura River** | ☐ |
| **Friends of the Santa Clara River** | ☐ | **League of Women Voters** | ☐ |
| **Ventureano Canaliano Chumash** | ☐ | **Santa Ynez Band of Mission Indians** | ☐ |
| **Candelaria American Indian Council** | ☐ | **Owl Clan Consultants** | ☐ |
| **Ventura County Archaeological Society** | ☐ | **Montalvo Property Owners Assn.** | ☐ |
| **Westside Community Council** | ☒ | **Foothill Road Homeowners Assn.** | ☐ |
| **Downtown Ventura Organization** | ☒ | **East Ventura Community Council** | ☐ |
| **Pierpont Community Council** | ☐ | **Midtown Community Council** | ☐ |
| **Southern California Edison** | ☒ | **CAUSE** | ☒ |
| **Ventura Hillside Conservancy** | ☒ | | |

**(*) Indicates agency/person always receives notice**

**B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agriculture / Forestry Resources | ☐ Air Quality |
| ☒ Biological Resources | ☒ Cultural Resources | ☒ Geology /Soils |
| ☐ Greenhouse Gas Emissions | ☒ Hazards & Hazardous Materials | ☐ Hydrology / Water Quality |
| ☐ Land Use / Planning | ☐ Mineral Resources | ☒ Noise |
| ☐ Population / Housing | ☐ Public Services | ☐ Recreation |
| ☒ Transportation/Traffic | ☐ Utilities / Service Systems | ☐ Mandatory Findings of Significance |

**C. DETERMINATION:**

This MND has been prepared in accordance with the CEQA Guidelines and relevant provisions of the California Environmental Act (CEQA) of 1970, as amended, and in accordance with the City of San Buenaventura Community Development Department CEQA process and procedures. The analysis below is presented in the form of an Initial Study. 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.

This MND and Initial Study for the Ventura Botanical Gardens Master Plan Project has been prepared by the City of Ventura, with assistance from Contract Planner Greg Martin, on November 19, 2014.

Based upon review of this evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

David B Ward

Signature

November 19, 2014

Date

David B. Ward

Planning Manager (print)

## D. EVALUATION OF ENVIRONMENTAL IMPACTS:

A brief explanation is provided for all answers. Responses take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

A "No Impact" answer is adequately supported if the referenced information source(s) 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 is explained where it is based on project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

When determined that a particular physical impact may occur, the checklist response indicates 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.

When determined that a physical impact may occur, but that the level of effect has been demonstrated to be less than potentially significant, the checklist response may indicate if the impact is “Less Than Significant Impact” based on substantial evidence. “Less Than Significant With Mitigation Incorporated" would apply where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." As appropriate, mitigation measures are identified along with a brief explanation how they reduce the effect to a less than significant level.

Earlier CEQA analyses may be relied upon to provide the necessary analysis for the project when a project potential environmental effect has been adequately analyzed in an earlier EIR or negative declaration (pursuant to CEQA Guidelines Section 15063(c)(3)(D)). Mitigation measures from earlier CEQA analyses may be incorporated to make a finding that a potential environmental impact of the project will be “Less Than Significant With Mitigation Incorporated.” References to information sources for potential impacts (e.g., general plans, zoning ordinances) and/or previously prepared CEQA documents are identified in each environmental issue category, with the full reference list at the end of the analysis.

## E. ENVIRONMENTAL ISSUES:

| **I. AESTHETICS** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |

| | | | | |
|---|---|---|---|---|
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☒ | ☐ |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☐ | ☒ | ☐ |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a. Less Than Significant Impact.** The 2005 Ventura General Plan FEIR lists the following major visual components of the community: hillsides; shorelines; rivers and barrancas; and agricultural lands and windrows. It states the following regarding the hillsides running along the northern edge of the city: "In addition to providing distinctive views from the urban core looking north, the hillsides provide residents and visitors panoramic views of the City and the ocean. Grant Park affords the best public access to vista points." The Ventura Hillside Voter Participation Act (included as an appendix to the City's General Plan) also states that "The City of Ventura Hillside Area, with its unique topography, viewsheds, watershed lands; its unique microclimate and hydrology, and its diversity of plant and wildlife resources, is one of the finest scenic resources in the Southern California region." The project site is therefore both itself part of a scenic vista (the hillsides), as well as offering a vista point from which to view scenic vistas of the city and the ocean, and other scenic elements such as the Ventura River Valley (including both urban and agricultural land), distant mountain ranges, and the Channel Islands. Views throughout the project site vary widely, depending on elevation and topography, but all of the major visual components listed above are visible from certain locations. For example, the ridgeline above the Serra Cross overlook offer panoramic vistas in almost every direction, with vistas including all of the elements mentioned above.

Brakey Road, Ferro Drive, Poli Street/Foothill Road, and Summit Drive are identified in the General Plan FEIR as roads with particular scenic value, and therefore as view corridors. The General Plan FEIR states that Brakey, Summit, and Ferro Drives within Grant Park offer views of the hillsides, Pacific Ocean, and the City; and that the Poli Street/Foothill Road corridor has aesthetic value because of views of historic structures such as Ventura City Hall and the San Buenaventura Mission, and because of unobstructed views of the hillsides. For a map of scenic corridors in the City, see Figure 4.1-1 of the General Plan FEIR.

The VBG Vision Plan show both photographs of specific viewpoints from and to the project site (on page 24, 25 of the Vision Plan), as well as a schematic illustration of the various vistas available of and from the project site (on page 40 of the Vision Plan). It illustrates that, from the Heritage Zone, vistas would include views of agricultural uses in the Ventura River Valley, cross canyon vistas (through the VBG), and ocean views. From the Discovery Zone, vistas would include urban vistas of Downtown Ventura, and "valley vistas" of canyons on either side of the Discovery Zone. From the Summit Drive entrance to the VBG (shown on this figure as the "Urban Zone"), vistas would include "slope" vistas looking uphill to the northwest towards the Cape Garden and the Discovery Zone, and urban vistas towards Downtown Ventura. The Vision Plan illustrates that views of the project site would be available mainly from urban areas downslope from it. These would include views from Downtown Ventura and West Ventura. Views into the distance (vistas) from the Welcome Zone would be limited because it is a

relatively low-lying area surrounded by steep slopes and tall buildings. Views from this location include the back of City Hall and a limited view of the other parts of downtown Ventura, with partially obstructed views of the ocean in the distance, and slope views of the Chilean Garden looking into the VBG.

Facilities proposed to be developed under the Master Plan CUP are shown in Figure 4 of the Project Description section of this Initial Study. Figure 7 of the Master Plan CUP and Rezone Application (Attachment A), also reproduced in this Initial Study as Figure 6 in Section VI, *Geology and Soils* shows these facilities superimposed on a topographic map of the area showing areas of greater than 30% slope and less than 30% slope. As shown on this figure, these facilities are clustered in portions of the project site with less than 30% slope, in relatively flat parts of the site. Section A.6 of the VBG Design Principles (also included in Attachment A) state that "The forms of buildings and improvements shall be integrated into the topography and landscape of the site…". Section A.6.a states that "Grading shall be minimized. Where grading is necessary it shall be done with respect for the topographic character of the site…". As shown in Table 2, none of the proposed structures would be greater than two stories, and none of the proposed structures outside the Discovery Zone would be greater than one story.

As noted in the Offsite Visual Survey, Attachment B, photo reconnaissance from City designated scenic roadways to views of the project site identifies that only upper ridgelines and portions of lower hillsides are readily visible. However, views up towards portions of the Discovery Zone where building placements are anticipated, visibility would be mostly obscured by terrain and vegetation. Due to the fact that the proposed facilities would be limited to one or two stories in height, would be integrated into the topography, and would not be located on ridgelines, they would not block scenic vistas from or through the site. These facilities would only degrade scenic vistas of the site if they degraded the visual character and quality of the site to the point that they had a significant negative aesthetic impact on the vista as a whole. Impacts related to visual character and quality are discussed under Impact Ib,c below, and have been determined to be less than significant. The proposed project would therefore not degrade scenic vistas of the site.

In addition to these structural facilities, the VBG will also require a water supply source and delivery system. The applicant proposes to accomplish through one of two options:

<u>Water Supply Option No. 1. Connection to City System</u>. As described in Section 8, *Description of Project,* of this MND, this option would involve providing water service to the proposed project by gravity service from the City's existing 605K Zone. As analyzed in the Water System Evaluation (RBF Consulting, November 2014), this would also require constructing two additional 0.16 MG storage tanks at the site of the Kalorama tanks, subject to reaching an agreement with the City. Utilizing currently unused capacity in the existing Kalorama tanks may also be an option, but the construction of the new tanks is analyzed in this MND as a worst-case scenario.

<u>Water Supply Option No. 2. Offsite Well.</u> Under this option, VBG would provide an offsite well source irrigation system with a pumping station at the source and a tank or tanks. These tanks would ideally be situated at elevation to allow for gravity outflow. VBG anticipates needing at least two tanks, likely four tanks, to provide irrigation water to the VBG. The size and number of tanks however, is dependent upon the flow rate of the well, which has not yet been tested. A slow flowing well will take much longer to fill than a fast flowing well and will therefore require larger storage capacity. Past experience indicates that a botanic garden of this size will need a

minimum of 40,000 gallons of storage capacity and optimally would have twice that. Placement of four 10,000 gallon tanks, approximately 12 feet diameter x 12 feet high could be accommodated off-site, along an existing fire break road to the northeast of the northern most parcel boundary.

Either water supply option described above would require the construction of new water tanks. Given the low stature of these type of water tanks and their remote location, they would not be significantly visible nor would they block scenic vistas. In order to provide water for CAST and other special events, VBG, Inc. may also install interim water tanks in the Discovery Zone where the CAST Events are to be held, consisting of either three tanks approximately 90" (7'6") in diameter and 80" (6'8") tall, or two tanks approximately 96" (8') in diameter and 96" (8') tall. These tanks would be no taller than the other structures proposed in this zone, would be subject to the same regulations discussed above, and would therefore have a similarly less than significant impact on scenic vistas. While not a change in the impact classification, to further ensure that these tanks blend visually into their hillside surroundings, the following Recommended Mitigation Measure (**AES RM-1**) would require the tanks be painted.

Although installation of new trees and vegetation would improve the overall aesthetic of the project site, it is likely that some specimen trees will be planted in the emerging new gardens that will grow to substantial height and would have potential to block scenic vistas, but would not result in a significant impact. However, the placement of these species should be carefully considered so as to optimize and frame views, and not block existing views. The following Recommended Mitigation Measure (**AES RM-2**) would ensure careful placement of new specimen trees to preserve the views afforded by the site.

As discussed above, the proposed project would not block or degrade scenic vistas from on or off the project site. It would therefore have a **less than significant** aesthetic impact on on-site scenic view corridors (Brakey, Summit, and Ferro Drives), and off-site scenic view corridors (Poli Street/Foothill Road), as identified in the General Plan FEIR.

**b. Less Than Significant Impact.** The physical changes anticipated under the proposed project that could affect scenic resources would occur within the boundaries of the project site, and potentially at the site of the off-site well facilities. The Ventura General Plan FEIR lists hillsides as one of the major visual components of the community, and the Ventura Hillside Voter Participation Act describes the hillsides as a major scenic resource. The project site as a whole, which is within the hillsides, could therefore be considered a scenic resource. Additionally, certain individual elements within the project site, such as trees, could be considered scenic resources. The project site as a scenic resource would only be significantly impacted by the project if the project had a significant negative impact on its visual character and quality.

Trees are the predominant individual scenic resource within the project site, due to the fact that the project site is otherwise almost uniformly vegetated with low-lying vegetation such as grasses, chaparral, and coastal sage scrub that contribute to the visual character and quality of the project site as a whole, but do not stand out visually as individual scenic resources. Trees within the project site tend to stand out visually, being the visual elements of greatest height. The proposed Master Plan, however, would in general retain on-site trees. In fact, many of the Gardens are programmed to take advantage of existing on-site trees. For example, an existing grove of eucalyptus trees would be incorporated into the Australia Garden in the eastern part of

the site. The project would therefore not have a significant negative impact on trees as a scenic resource.

While the Serra Cross and other structures within the area owned by the Serra Cross Conservancy may be considered scenic resources, these areas are surrounded by but not within the project site, and the project would not have a significant direct effect on them as scenic resources. Likewise, Ventura City Hall, which is a registered California Historic Landmark (#847) and is listed on the National Register of Historic Places (NPS-71000211), is located near the southern boundary of the project site, but is not within the project site, and the project would not have a significant direct effect on it as a scenic resource.

As discussed above, the proposed Project would have a **less than significant** impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway.

**c. Less Than Significant Impact.** Implementation of the proposed Master Plan CUP would lead to changes in land use and development within the project site over the 30-year life of the Master Plan that would change its visual character and quality. The visual character of the project site would gradually transition from a park made up of mostly undeveloped natural areas, to a botanical garden retaining some of these areas, but also including large areas of conversion to garden areas and associated facilities. Buildings within the Discovery Zone would be built into slopes with a gradient of 30% or less and, due to the overall topography of the site, would have limited visibility from the Downtown and surrounding vicinity, similar to existing hillside residential structures to the east. The project site would in general retain its open space character. Additionally, the project includes a change in zoning for the majority of the project site from residential zoning to Parks & Open Space zoning in order to match the 2005 General Plan land use designation of Parks and Open Space that applies to most of Grant Park, and its current use as parks and open space. This action would, if anything, tend to increase the likelihood that this portion of the project site would retain its character as open space rather than become more developed with residential uses.

The Master Plan CUP also includes Design Guidelines (Attachment C of this MND's Attachment A) designed to ensure a high level of visual character and quality. These Design Guidelines contain Design Principles, Design Guidelines, and Sign Guidelines intended to help guide the development of the facilities associated with the VBG throughout the implementation of the Master Plan. The Design Principles and Guidelines provide a framework for design that encourages connectedness between the various facilities while promoting unique design solutions appropriate to the various needs and functions of each. The VBG Sign Standards serve a similar function for signage. The VBG Design Principles are the following:

1. Improvements, including buildings, structures, walls, paving, seating and other construction should emphasize materials of local origin suitable to this climate and site through authentic, durable and intriguing design.
2. Sustainability in the Botanical Garden should be a common attribute, inherent and demonstrable in the use and experience of the buildings and gardens.
3. Built improvements should express permanence and respect for the Garden and environs.
4. The Gardens shall be designed to accommodate a variety of activities, large and small.

5. Art shall compliment the Garden experience through integration within the architecture of built improvements, as well as both permanent and temporary installations.
6. The forms of buildings and improvements shall be integrated into the topography and landscape of the site, and embody a balance of rustic, contemporary and sophisticated design.
7. The orientation of structures and open spaces shall respond to the unique conditions and environmental factors of the site, including prevailing winds from the west, sweeping views of the site and coastline, and topography.
8. Lighting shall be limited to that which is necessary to the safe enjoyment of the gardens.

The VBG Sign Standards cover the following topics:

- Sign Types and Uses
- Sign Sizing
- Sign Placement, Height and Lighting

The VBG Design Guidelines would be enforced by the City through its design review process. The applicant would be required to bring all proposals for interim structures (only those that require grading) and permanent structures to be constructed pursuant to the Master Plan before the City's Design Review Committee (DRC) for review. Any interim structure that later the applicant decides to retain as permanent would also require DRC review. The DRC would review all of these types of development for consistency with the VBG Design Guidelines, and make Design Review findings. City Code compliance would also be required, separately, for building and grading permits. Interim structures, defined as structures that would eventually be replaced by permanent structures, would not require DRC review unless they were later proposed to remain as permanent structures, at which time they would require Design Review. In addition, installation of art, either as permanent features or during VBG Expositions, would be subject to review and approval by the City's Public Art Commission. Both of these processes would be contained as a condition of approval in the CUP for the project. Thus, the project's impact on visual character and quality would be **less than significant**.

**d. Less Than Significant Impact.** During the day, sunlight reflecting from roadways and structures is a primary source of glare, while nighttime light and glare can be divided into both stationary and mobile sources. Stationary sources of nighttime light include structure illumination, interior lighting, decorative landscape lighting and streetlights. The principal mobile source of nighttime light and glare is vehicle headlights. The ambient light environment can be accentuated during periods of low clouds or fog. In general, nighttime lighting levels within and adjacent to the project site are low to moderate. The proposed Project would potentially introduce new sources of light and glare to the project site from increased on-site lighting from new buildings and facility grounds within the Welcome, Discovery, Heritage and Horticultural Zones, as well as light and glare from an increase in vehicle trips to the project site.

Section A.8 of the VBG Design Guidelines would require that the VBG implement the following lighting standards:

8. Lighting shall be limited to that which is necessary to the safe enjoyment of the gardens. The following standards shall apply
    a. Exterior lighting shall be fully shielded or fitted with opaque hoods, shields, louvers, shades, and other devices to insure that light generated by the light

source is directed downward and not outward horizontally, and so fitted that no portion of the light source is visible when the light fixture is viewed from the property line.

b. No exterior light source, including fixtures not mounted on the primary structure, shall be mounted higher than 12 feet measured from the grade at the light location.
c. No exterior light source shall illuminate, reflect, spill over, or otherwise create a nuisance upon adjoining property.
d. No flashing, laser, searchlight, strobe, tracing, pulsating, or neon exterior lighting is permitted.
e. Lighting intended to illuminate foliage, trees, landscape, or architectural structures shall be limited to low voltage lighting.
f. Outdoor light fixtures operated by a "dusk to dawn" timer or sensor, shall be motion-sensor activated, and programmed to shut off after 10 minutes. Such sensors shall not be triggered by activity located off the property.

Use of these lighting standards would minimize overall glow within the proposed development Zones and nighttime views of the property site from the surrounding community would be less than significant. Although nighttime glare from car headlights already exists within the project site and area, the project could increase such glare by increasing vehicular traffic in and around the project site. However, the project is anticipated to produce a relatively low overall increase in average daily trips (ADT) (see Section XVI, *Transportation/Traffic*), and thus would not produce a significant increase in glare from this source.

New facilities proposed under the Master Plan CUP in the Discovery, Welcome, Heritage, and Horticultural Zones could also produce daytime glare from reflective surfaces, and daytime glare could also be produced by reflective surfaces on vehicles parked at and travelling through the project site. Section A.1 of the VBG Design Guidelines lists materials that would be well suited to the intent of the Guidelines (fieldstone, quarried stone, rammed earth, masonry of brick clay, adobe, or concrete block), and materials that would be complimentary to the intent of the Guidelines (weathering steel, woods of a natural finish, metal and metal cladding or panels with natural finish or colors complimentary to the intent of the Guidelines, non-reflective glass, and materials from recycled sources). Such materials would not tend to produce high levels of glare. Additionally, any permanent structures would require Design Review through the DRC. New daytime glare from vehicles would not significantly increase because traffic levels would not significantly increase.

Through implementation of the standards contained in the VBG Design Guidelines, as enforced through DRC review and required design review findings, as well as the City's existing policies and standards as discussed above, the project would have a **less than significant** impact related to light and glare.

Recommended Mitigation Measures. The following mitigation measures are recommended to address general aesthetic resources of the project, but are not required in order to reduce aesthetic impacts to a less than significant level.

**AES RM-1: Water Tank Painting.** Water tanks shall be painted by the VBG a natural color, as approved by the Ventura Water General Manager and Community Development Director, to blend with the hillside vegetation.

**AES RM-2: Placement of Specimen Trees.** Installation of any new specimen trees shall preserve and enhance existing vistas. No tree species that could grow to a height to block a scenic vista shall be installed.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.1 Aesthetics). August 2005.

Mia Leher and Associates. *VBG Master Vision Plan*. September 2010.

RBF Consulting. *Water System Alternatives Evaluation, Water System Hydraulic Evaluation, and Supply Discussion for the Ventura Botanical Gardens in the City of Ventura.* November 2014.

| **II. AGRICULTURE AND FORESTRY RESOURCES** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | ☐ | ☐ | ☐ | ☒ |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

**Explanation**:

**a-e. No Impact.** The proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use, nor would it conflict

with existing zoning for agricultural use, or a Williamson Act contract, because the project site is not under Williamson Act contract nor located on lands that are designated as prime or important farm lands. Further, the proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, nor would it result in loss of forest land or conversion of forest land to non-forest use as the project site is not located on forest land, timberland or timberland zoned Timberland Production. As discussed in Section XIII, *Population and Housing,* the project would not have any growth-inducing effects, and it would thus not result in indirect or cumulative land use compatibility and market pressures that would result in conversion of farmlands to non-agricultural uses. The project would thus have **no impact** on prime or important agricultural lands or forestlands.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.2 Agriculture). August 2005.

| **III. AIR QUALITY** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☐ | ☒ | ☐ |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☐ | ☐ | ☒ | ☐ |
| d) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| e) Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☐ | ☒ |

**Explanation**:

**a. Less Than Significant Impact.** The analysis of the Project air quality impacts follows the guidance and methodologies recommended in the Ventura County Air Quality Assessment Guidelines (Ventura County Air Pollution Control District, October 2003). This analysis is based on information provided by the 2005 General Plan EIR for existing and buildout figures. Based on the guidelines adopted by the VCAPCD, the California Emission Estimator Model (CalEEmod) (Version 2013.2.2) software program was utilized to calculate both expected construction and operational related air emissions for the Project to analyze if the Project would

conflict with or obstruct implementation of the AQMP. The output of the CalEEMod modeling is included in Attachment C.

For purposes of identifying established air quality impact thresholds, the VCAPCD and the City consider operational air quality impacts to be significant if more than 25 pounds per day of Reactive Organic Compounds (ROC) or Nitrogen Oxides (NOx) would result from a project. Significant construction-related air quality impacts would result if fugitive dust emissions are generated in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public.

Construction Impacts: Construction of the proposed Project would result in temporary, though less than significant, air quality impacts due to the use of heavy construction equipment and potential generation of fugitive dust. Grading for the planned facilities would take place on approximately 7.5 acres of the sites. The implementation of standard building and grading permit conditions, however, assures that these impacts are less than significant. Those conditions to be imposed upon the Project per policy include the following:

1) In order to reduce impacts associated with NOx emissions (a precursor to ozone) the following measures shall be implemented:

   a) Equipment engines should be maintained in good condition and in proper tune, as per manufacturer's specifications.

   b) During the smog season (May through October), the construction period should be lengthened so as to minimize the number of vehicles and equipment operating at the same time.

2) During clearing, grading, earth moving, or excavation operation, excessive fugitive dust emissions shall be controlled by regular watering, paving construction roads, or other dust preventive measures using the following procedures:

   a) All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day.

   b) All clearing, grading, earth moving, or excavation activities shall cease during periods of high winds (i.e., greater than 20 mph averaged over one hour) so as to prevent excessive amounts of dust.

   c) All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.

   d) Facemasks shall be used by all employees involved in grading or excavation operations during dry periods to reduce inhalation of dust, which may contain the fungus that causes San Joaquin Valley Fever.

   e) The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized so as to prevent excessive amounts of dust.

3) After clearing, grading, earth moving, or excavation operations, and during construction activities, fugitive dust emissions shall be controlled using the following procedures:

a) All inactive portions of the construction site shall be seeded and watered until vegetative cover is grown.

b) All active portions of the construction site shall be sufficiently watered to prevent excessive amounts of dust.

4) At all times, fugitive dust emissions shall be controlled by assuring that streets adjacent to the project site shall be swept as needed to remove silt, which may have accumulated from construction activities, so as to prevent excessive amounts of dust.

5) Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible.

Operational Impacts: Both the proposed Project's vehicular and non-vehicular operational related impacts were calculated using the California Emission Estimator Model (CalEEMod) (Version 2013.2.2) software program. Non-vehicular sources include fuel combustions emissions from solvent use, propellants as well as those contained within aerosol and non-aerosol consumer products, pesticide applications and mobile utility equipment such as lawn and garden equipment. The CalEEMod model output (Attachment B) indicates that the proposed Project would not exceed the VCAPCD recommended significant threshold for ROC and NOx. Conservative parameters were used in the model in order to determine a "worst-case" scenario. Therefore, the model assumes that all construction would occur at once, instead of being phased over decades, which is the more likely outcome per the Project Phasing Plan. Also, a conservative assumption was made that all buildings would be commercial structures which produce more emissions than the horticultural and educational facilities that are proposed. The only exception to this assumption was made for the proposed restaurant in the Discovery Zone, which was modeled as a restaurant due to the fact that this land use produces more emissions than commercial structures. The results in Table 1 indicate Project-related daily operational emissions (adjusted total) would not exceed the 25 lbs/day VCAPCD significance threshold for ROC or 25 lbs/day NOx threshold even under the modeled worst-case scenario. As such, the Project's daily operational emissions are not considered significant.

**Table 1**
**Projected Daily Operational and Area Emissions**

| **Project Component** | **Emissions (lbs/day)** | |
|---|---|---|
| | **ROC** | **$NO_X$** |
| Area | 1.9 | 0.0 |
| Energy | 0.1 | 0.6 |
| Mobile | 5.2 | 11.7 |
| Total | 7.1 | 12.3 |
| *Threshold* | *25* | *25* |

The proposed project does not include any housing units and thus would not impact population forecasts such as the 2005 General Plan EIR or Ventura County AQMP population forecasts. Therefore, impacts related to consistency with the AQMP are less than significant.

**b. Less Than Significant.** As shown in Table 1, air quality emissions associated with the proposed project are expected to be below VCAPCD thresholds and thus will not interfere with the County's plans to meet state and federal air quality thresholds. Therefore, the impact is expected to be less than significant.

**c. Less Than Significant**. The proposed project does not exceed VCAPCD thresholds and therefore would not contribute to a cumulatively considerable increase in criteria pollutant emissions. Impacts are expected to be less than significant.

**d. Less Than Significant.** Sensitive Receptors refer to the segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The sensitive receptors closest to the proposed grading sites are single family residences along Tioga Drive and Buena Vista Street. The nearest residences are approximately 250 feet from areas which will be graded as part of the proposed project. However, impacts to these sensitive receptors will be less than significant as the proposed project would adhere to the implementation of standard building and grading permit conditions mentioned above. Additionally, project emissions fall below the VCAPCD thresholds of significance. Therefore, impacts to sensitive receptors are expected to be less than significant.

**e. No impact.** No objectionable odors would be expected to be generated from the proposed botanical gardens.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.3 Air Quality). August 2005.

Ventura County Air Pollution Control District. *Ventura County Air Quality Assessment Guidelines*. October 2003.

| **IV. BIOLOGICAL RESOURCES** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |

| | | | | |
|---|---|---|---|---|
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☒ | ☐ | ☐ |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☐ | ☒ | ☐ |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☒ | ☐ |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a-f. Less Than Significant Impact With Mitigation Incorporated.** The natural habitat and potential for sensitive biological resources to exist on the project site were described as part of the Opportunities and Constraints Analysis prepared by Sespe Consulting, Inc. in November 2011. In order to update the findings of this portion of this previous study, and to develop both a near-term and long-term mitigation strategy for the proposed Project, a follow-up biological resources survey was conducted by Rincon Consultants, Inc. in April 2014, and the findings of this survey, along with the previous findings contained in the Opportunities and Constraints Analysis, were incorporated into two “Biological Effects” memorandums submitted to the City by Rincon in July 2014. One of these memos laid out a near-term mitigation strategy for Phase 1 of the proposed Project, while the other laid out a longer-term mitigation strategy for Phases 2-10 of the proposed Project. These memos are included in Attachment D of this report.

The project site is largely undeveloped, with the exception of improved roadways, unimproved dirt trails, fire roads, two water tanks, a communications tower, and a police gun range. The site is immediately adjacent to Ventura’s urban downtown to the south, residential development to the east and west, and undeveloped open space to the north. Tables 2 and 3 summarize Project activities and their potential impacts on biological resources. Project impacts are organized into direct and indirect impacts. Direct impacts are those involving ground disturbance and loss of original ground cover due to grading, construction, and related activities such as maneuvering or staging. Ground disturbance would include all areas affected by construction of the proposed Project. Indirect impacts are those that do not cause ground disturbance, but are related to secondary effects such as dust, noise, ground vibration, and visual disturbance.

Tables 2 and 3 are followed by a narrative regarding specific issues of biological concerns, for both Phase 1 of the proposed Project (Table 2), which is proposed to occur from about 2015-2017, and Phases 2-10 of the proposed Project (Table 3), which are proposed to occur from about 2018-2044. Project phasing has been analyzed in this way because near-term impacts to biological resources can be characterized with greater certainty than long-term impacts, due to the fact that the special status species present on the project site may change over time in

various ways including location, population density, and even whether or not they continue to be present on the site. Also, the status of what is or is not a special status species may also evolve over time. For example, some species may cease to be considered special status and other species may become special status that do not currently have that classification. Special status animals are those listed, proposed for listing, or candidates for listing as threatened or endangered by the United States Fish and Wildlife Service (USFWS) under the federal Endangered Species Act; those listed or proposed for listing, or candidates for listing as threatened or endangered by the California Department of Fish and Wildlife (CDFW, formerly CDFG) under the state Endangered Species Act; and animals designated as "Fully Protected" or "Species of Special Concern" by the CDFW (CDFW, January 2011).

**Table 2**
**Summary of Phase 1 Impacts to Biological Resources**

| **Project Activities** | |
|---|---|
| 1. Construction- Trails | 8. Vegetation trimming and removal |
| 2. Construction- Buildings (temporary and permanent) | 9. Planting |
| 3. Construction- Well | 10. Tree trimming and removal |
| 4. Construction- Irrigation | 11. Invasive species control |
| 5. Fire Fuels Management | 12. Pest control |
| 6. Trails and facilities maintenance | 13. Construction or temporary fencing per phase |
| 7. Events (greater than 50 people) | 14. Temporary water tank |
| | |
| **Phase 1 Potential Impacts** | |
| **Direct** | **Indirect** |
| • Removal of special status species during construction | • Pedestrian disturbance (noise) |
| • Removal of special status species habitats | • Trail erosion |
| • Removal of special status habitats | • Night lighting |
| • Construction noise | • Spread of invasive weeds |
| • Construction of well (direct removal) | • Pest control - secondary poisoning |
| • Wildlife entrapment in excavations | • Wildlife attraction (food and water sources) |
| | • Fire Fuels Management |

**Table 3**
**Summary of Phases 2-10 Impacts to Biological Resources**

| **Project Activities** | |
|---|---|
| 1. Construction- Trails | 8. Events (greater than 50 people) |
| 2. Construction- Buildings temporary and permanent | 9. Vegetation trimming and removal |
| 3. Construction-Well | 10. Planting |
| 4. Construction- Irrigation, sewer, utilities | 11. Tree trimming and removal |
| 5. Construction- Fencing | 12. Invasive species control |
| 6. Fire Fuels Management | 13. Pest control |
| 7. Trails and facilities maintenance | 14. Permanent fencing |
| | |
| **Phase 2 through 10 Potential Impacts** | |
| **Direct** | **Indirect** |
| • Removal of special status species | • Pedestrian disturbance (noise) |

| | |
|---|---|
| • Removal of special status species habitats | • Trail erosion |
| • Removal of special status habitats | • Night lighting |
| • Construction noise | • Edge effects to adjacent open space |
| • Spread of invasive weeds | • Spread of invasive weeds |
| • Construction- Fencing permanent | • Pest control- secondary poisoning |
| • Construction-Well | • Construction- Fencing, temporary |
| • Wildlife entrapment- excavations | • Construction- Fencing, permanent |
| • Construction- Buildings temporary | • Wildlife attraction (food and water sources) |
| • Construction-Buildings permanent | |

Special Status Species Present within the Project Site. As part of the Opportunities and Constraints Analysis, three biological field reconnaissance surveys were conducted between April and June 2011 by Sespe Consulting, Inc. to document existing site conditions and the potential presence of sensitive wildlife resources. A subsequent biological field reconnaissance survey was conducted by Rincon Consultants, Inc. in April 2014 to confirm previously documented biological resources. Special status species with a moderate to high potential to occur, and thus be impact by the proposed project, include Monarch butterfly (*Danaus plexippus*), Silvery legless lizard (*Anniella pulchra pulchra*), Coastal whiptail (*Aspidoscelis tigris stejnegeri*), Coast horned lizard (*Phrynosoma blainvillii*), Cooper's hawk (*Accipiter cooperii*), Pallid bat (*Antrozous pallidus*), Mexican long-tongued bat (*Choeronycteris Mexicana*), Western mastiff bat (*Eumops perotis californicus*), and Bryant's [San Diego desert] woodrat (*Neotoma bryanti [N. lepida] intermedia*).

**Phase 1 Impacts and Mitigation Measures**

Phase 1 project activities include installation of interim facilities at the Welcome Zone, development of a well for irrigation, temporary water tank or tanks for CAST or other temporary events, and partial development of the Chilean, Mediterranean, and Ramble gardens, as described in the Master Plan CUP Phasing Plan. Potential effects from implementation of Phase 1 of the proposed Project on biological resources are discussed below. The mitigation measures mentioned in this section are listed at the end of this discussion of Phase 1 impacts.

Effects on Sensitive or Special Status Species, Phase 1. Western whiptail (*Aspidoscelis tigris*) was observed in the native grassland in the northern portion of the site in 2011. This species is relatively common throughout much of California, but because of habitat lost throughout coastal California, populations of the southern subspecies (*A. t. stejnegeri*) are considered at risk. Because these subspecies cannot be identified without close observation and usually comparison to museum specimens, for the purpose of this analysis, the whiptail observed was presumed to be the sensitive subspecies. While the whiptail was found in grassland, individuals would be expected to occur throughout the Phase 1 project site. Other special status reptile species such as, silvery legless lizard (*Anniella pulchra pulchra*) and coast horned lizard (*Phrynosoma blainvillii*) may also occur within the Phase 1 project site. Given local habitat conditions, the Phase 1 area is not expected to contain a substantial population of these reptiles, who are likely to move in and out of the project site and throughout both native and non-native habitat communities. While some individuals may be killed by the initial development, the types of botanical gardens to be developed could still support these species and their populations would be expected to return to similar levels after development. Therefore, impacts to special status reptiles are expected to be less than significant.

During surveys in 2011, Bryant's woodrat (*Neotoma bryanti [N. lepida] intermedia*) middens (nests) were observed in the Coast Prickly Pear Scrub (*Opuntia littoralis*) patches in the southwestern portion of the project site. However these areas are outside of the Phase 1 area, therefore no impacts to this species are expected by Phase 1 project activities.

Other special-status animals with a moderate potential to occur within the site (reported within at least 5 miles of the site by CNDDB and moderately suitable habitat exists) or high potential to occur onsite (reported within at least 5 miles of the site [or tracked onsite] and suitable habitat and habitat features/resources present to support inhabitation by the species) include monarch butterfly overwintering roost sites and bat species.

Monarch butterflies are widespread and very common throughout North America, but along the Pacific Coast, their overwintering roosts have become rarer. Monarchs over-winter within dense, sheltered groves of various trees, often eucalyptus (*Eucalyptus* sp.). Stands of eucalyptus and other trees are located within the project site including limited portions of the Phase 1 area. If Monarch butterflies are actively over-wintering in the eucalyptus groves within the project site during the removal of eucalyptus trees, impacts to the local overwintering population may be considered significant. Mitigation actions have been included below to reduce this adverse effect (**BIO-2**).

Several bat species, which as a group have declining populations, may be expected to forage within the site, and occasionally roost in the denser tree groves, but generally are not expected to breed within the site. Special status bat species may roost in stands of eucalyptus and other trees located within the project site including limited portions of the Phase 1 area; however the project is not expected to have a substantial impact on these species. While not a change in the impact classification, potential adverse effects could be reduced by Recommended Avoidance and Minimization Measure (**BIO RM-2**) below.

Suitable nesting habitat for special status avian species including raptors, occur within the Phase 1 project site. Causing the abandonment or removing active nests (with eggs or young) of any special status, migratory birds and raptors violates the State Fish and Game Code and the federal MBTA. Raptors and other protected bird species are expected to nest and forage within the project site, therefore project activities could have substantial impact on nesting birds through direct take of active nests without avoidance and minimization measures. These impacts are considered significant and require mitigation as discussed below.

The project area is situated between open space and developed lands with a low to moderate amount of human activity, therefore nesting species are not expected to be indirectly impacted by pedestrian traffic (meaning they will not experience impacts associated with active construction or ground disturbing activities), vehicle traffic or other activities associated with recreational use of the area. In addition, the project will institute measures ensuring sound control that will minimize sound intrusion to its own gardens and to neighboring properties and will be in compliance with adopted City noise ordinances. Therefore no avoidance or minimization measures are proposed for indirect impacts (those not associated with active construction, or ground disturbing activities) to special status nesting birds.

Pest and rodent control within the project site have the potential to impact special status species. On March 22nd, 2005, the Ventura County Board of Supervisors voted to support legislative efforts (AB 1548) to restrict or eliminate the use of anticoagulant rodenticides in the County. The anticoagulants of concern include brodifacoum, bromadiolone, diphacinone, and

difethialone. Pesticide and rodent control have the potential to impact special status species or violate CDFG code if unregulated. If Phase 1 project activities include pest control, the possible use of pesticides would have indirect adverse effects on adjacent sensitive animals (such as Bryant's woodrat) and such impacts would be potentially significant and require mitigation as discussed below.

Project activities involving excavation have the potential to entrap special status species and other wildlife, however due to the nature of the proposed activity (limited building areas, trails and gardens), the overall mortality would likely be low, therefore impacts related to excavations associated with Phase 1 would be considered to be less than significant. While not a change in the impact classification, Recommended Avoidance and Minimization Measures (**BIO RM-3**) have been included below to reduce the potential for wildlife to be injured or become entrapped in excavations.

Sensitive or Special Status Flora, Phase 1. No federal or state listed plant species are present within the property or likely to be present. Three seasonally timed rare plant surveys were conducted in 2009, and special status plant species discovered within the site include Plummer's Baccharis and Catalina mariposa lily. Both of these plants are of limited sensitivity, as they are on the CNPS "Watch List" (List 4.2 = plants of limited distribution, fairly endangered in California (20-80% occurrences threatened; and List 4.3 = plants of limited distribution, not very endangered in California). Plummer's Baccharis does occur within the Phase 1 project site in the Chilean garden development area and would be directly affected by removal to provide space for the plants. Given the extent of Plummer's Baccharis within Grant Park and its population in the hillsides further east and outside of the Park, and its "watch list" status, impacts are considered adverse, but not significant. California mariposa lily may occur in the vicinity of the proposed off-site well location, but is not expected to occur within the Phase 1 project site. No other special status plant species are expected to occur within the Phase 1 project site, therefore impacts to this species are considered adverse, but not significant. While not a change in the impact classification, impacts to these special status plant species would be reduced through Recommended Avoidance and Minimization Measures (**BIO RM-4**) described below.

Effects on Sensitive or Special Status Habitats or Natural Communities, Phase 1. Four sensitive plant communities were identified within the project site boundaries; Coast Prickly Pear Scrub, Lemonade Berry Scrub, Purple Needle Grass Grassland, and Southern Riparian Scrub (Arroyo Willow Thickets). All are considered to be vulnerable at a state level because of past habitat alteration, but of these, the most sensitive locally is the Purple Needle Grass Grassland because most native grasslands have become supplanted by annual grasslands dominated by exotic grasses that originate from the Mediterranean area. Sensitive plant communities in the vicinity of Phase 1 includes Purple Needle Grass Grassland and Lemonade Berry Scrub. However, Phase 1 activities will avoid Purple needle grass plants, and activities will be conducted outside of the 2011 mapped grassland areas. Since activities will avoid this habitat, project activities associated with Phase 1 will have no impact to this habitat community. Lemonade Berry Scrub habitats will be impacted by Chilean garden development and fire fuels management related to the Welcome Zone. Lemonade Berry Scrub is relatively widespread through the site and Ventura County, therefore impacts to this habitat are not considered significant.

Plant Species Management, Phase 1. The project has the potential to spread or introduce exotic, invasive and/ or noxious weeds that could have a substantial impact on habitat

communities within the project site and the adjacent open space areas. In particular, the project would introduce exotic plants from other regions that are adapted to the climatic conditions present. Because a variety of parameters that control the spread of these plants in their native climes (animals, soil limitations, specific weather patterns) would be lacking at the site, these plants could “escape” and successfully out-compete native plants. To address the potential of introduced species escaping, VBG, Inc. has incorporated a seven step plant species management procedure into their proposed use permit (Attachment A). The seven steps of the VBG plant species management procedure are the following (quoted directly from the Master Plan CUP):

1. Life cycle traits analysis. Indices: fecundity traits, distribution mechanisms, plasticity, and preferences for disturbed environments. A weed risk assessment system uses information on a taxon's current weed status in other parts of the world, climate and environmental preferences, and biological attributes. Australian Weed Risk Assessment (WRA) system is commonly used. http://www.daff.gov.au/ba/reviews/weeds/system/ (Note: This step has led Ventura Botanical Gardens, Inc. to eliminate several species and groups of species from consideration, such as ALL Chilean grass species.)
2. Review scientific literature for indications of invasiveness of species, hybridization potential.
3. Compare to lists of known weedy/invasive taxa, for California as well as other Mediterranean climate regions.
4. Search California herbarium records database for indications of invasive presence in state. (Note: This is a powerful tool that was not available in the past. It has already resulted in Ventura Botanical Gardens, Inc. eliminating species from our proposed list to import from Chile in 2013.)
5. Exercise caution in taking unknown species from wild. Prefer species already available in horticulture (in Chile and elsewhere) and have a track record to review by communicating with horticulture experts in country.
6. Controlled setting of Ventura Botanical Gardens, Inc. with intensity of observation allows us to monitor closely. This can be done in a scientific manner. Specimens are not permanent and can be removed as other gardens have done based on results of monitoring. (Note: as a part of the global botanic garden network, observations on newly discovered potential for invasiveness will add to the knowledge base and Ventura Botanical Gardens, Inc. will also receive updates from other institutions on their experiences.)
7. Ventura Botanical Gardens, Inc. will sell plants, but not those that have legal restrictions associated with them and/or those plants with invasive potential. Ventura Botanical Gardens, Inc. will not sell specimen propagules, seeds, or plants to the public in plant sales with weedy potential, CBD (Convention on Biological Diversity) issues, or liability for Ventura Botanical Gardens, Inc. analogous to what other gardens have dealt with. Stewardship includes monitoring to determine if our specimens were illicitly entered into the commercial nursery trade. (Note: Not introducing new species into horticultural trade, including selling at plant sales or distributing to growers is the single most important impact component of this policy.)

It is expected that the VBG plant species management procedure would be sufficient to reduce the risk of spread of exotic plant species to a less than significant level.

Invasive weeds are already present within the site and could be spread in greater number into the adjacent open areas through project development, which could have a substantial impact on habitat communities within the project site and the adjacent open space areas. This impact would be less than significant with the plant selection criteria listed above and incorporated mitigation described in **BIO-6**.

Effects on Protected Waters and Wetlands, Phase 1. The project site is located along the upper hillslopes above downtown Ventura, which are dissected into a series of steep and deep canyons separated by ridges. Because of this topographic location, the site is generally located in the "headwaters" portion of the local watershed and jurisdictional waters are limited to the southeastern portion of the site where sufficient inflow from the watershed and past development has created a small basin that is primarily vegetated by willows (Sespe Consulting, November 2011). No jurisdictional areas occur within the Phase 1 project site, therefore no impacts to regulated waters would occur during this phase of development.

Effects on Wildlife Movement and Migration Corridors, Phase 1. Wildlife corridors are identified to the north of the project site on the California Department of Fish and Wildlife's California Essential Habitat Connectivity project website (CDFW, July 2014. Wildlife may be temporarily displaced due to project activities into the native habitats to the north, but project activities would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites . The project is located directly between open space and developed urban areas, and is the southwestern extent of the natural habitats extending from the mountains to the north into Grant Park. Due to the presence of the native habitats, it is likely that wildlife utilize the area, but it would not be considered a migratory corridor as the urban portion of Ventura blocks any connectivity to the oceanic environment. Furthermore, project activities associated with Phase 1 would not limit wildlife ability to more through the area, therefore no impact is associated with this phase of the project.

Potential to Conflict with Local Plans and Policies, Phase 1. Current arboricultural resources within the project site include a range of upland, riparian and introduced trees, the majority of which are non-native. Dense stands of eucalyptus trees are found along the southwest section, within drainages or along the roadsides. Pine trees (Pinus sp.) are found along the ridgeline with pepper (Schinus molle) and olive trees (Olea europaea) scattered across the project site. A few native coast live oak (Quercus agrifolia) are sparsely located within the edges of the coastal sage scrub habitats. The City of Ventura has no ordinances that protect the trees within the project site. Therefore, Phase 1 of the project would not conflict with any tree preservation regulations, or other local policy or ordinance protecting biological resources.

Potential to Conflict with Approved Habitat Conservation Plans, Phase 1. The project site is not located within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Required Mitigation Measures. The following mitigation measures are required to avoid and reduce potential impacts to biological resources during Phase 1 of the proposed Project.

**BIO-1: Preconstruction Survey and Avoidance (Off-site Well Only)**

a. Prior to ground disturbing project activities associated with the construction of the well, a qualified biologist shall conduct a preconstruction survey for special status biological resources. The survey area shall include the impact area and a 50 foot buffer. The survey shall involve the biologist walking the area at equally spaced transects to ensure full coverage of the area. The survey shall be conducted no more than 30 days prior to the activity and/or be seasonally timed for areas with the potential to support any special status plant species.

b. A preconstruction survey report shall be submitted to the City detailing the results and potential impacts to biological resources.

c. If biological resources have the potential to be impacted by project activities, and those biological resources are not considered within the Phase 1 mitigation measures, appropriate avoidance and minimization measures shall be determined by a qualified biologist.

**BIO-2: Monarch Butterfly**

a. Due to the potential of Monarch Butterfly, no tree trimming or removal of trees considered suitable for winter roosting should be conducted between October 15 and February 28. Removal of trees should be conducted between June 15 and October 15 to the extent feasible.

b. Should tree trimming or removal activities occur between October 15 and February 28, a preconstruction survey shall be conducted by a qualified biologist seven days prior for monarch butterflies. If Monarch butterfly winter roost(s) are observed, trees shall not be trimmed or removed until the migrant butterflies have left the roost site.

c. If winter roosts are discovered within 100 feet of project activities (including non-occupied tree trimming or removal), a qualified biologist shall determine appropriate avoidance and minimization measures to avoid impacts to butterflies adjacent to project activities.

**BIO-3: Nesting Birds**

a. To prevent the loss of active special status bird nests, juveniles or adults, project activities including vegetation clearing should be conducted outside of the breeding season (i.e. February 1 to August 31) to the extent feasible.

b. If project activities will occur between February 1 to August 31, a preconstruction survey shall be conducted by qualified biologists no less than 7 working days prior to the activity to survey for special status bird and raptor nests. The survey area shall include the project footprint and a 100- foot buffer for passerine species and a 300-foot buffer for raptor species. Following the survey:

    i. A nesting bird survey report shall be submitted to the City prior to the initiation of project activities. The report shall detail the results of the survey and make a determination if ongoing monitoring or nesting bird surveys should be conducted for project activities.

ii. If active nests are discovered during the survey and if work is scheduled to take place within 100 feet of passerine species and 300-feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.

iii. A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests or 300 feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.

iv. If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the City and CDFW detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season.

**BIO-4: Night time lighting**

a. Project related nighttime lighting shall be directed away from adjacent open space and native vegetation communities.

**BIO-5: Native or Special Status Vegetation and Special Status Plant Populations (Excluding Lemonade Berry Scrub habitat)**

a. Impacts to special status vegetation communities (excluding Lemonade Berry Scrub), areas that support special status species, and known populations of special status plants shall be avoided to the extent feasible in the design of trails, gardens, and building locations.
b. Additionally, the grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.

**BIO-6: Invasive and Noxious Weed Management**

a. The Ventura Botanical Gardens Inc. will implement the Plant Species Management policy as outlined in the Master Plan document.
b. Precautions shall be taken to minimize the introduction of any invasive weeds. An invasive weed management plan shall be prepared and implemented to address and prevent the spread of invasive weed species prior to ground disturbing activities.
c. Only water-safe herbicides shall be used in riparian areas.
d. Herbicides shall not be applied when wind velocities exceed 6 mph.
e. Where manual and/or mechanical methods are used, weedy plant debris shall be disposed of properly.
f. The timing of the weed control treatment shall be determined for each plant species in consultation with qualified personnel with the goal of controlling populations before they start producing seeds.

**BIO-7: Pesticide and Rodenticide Use**

a. The VBG shall develop an Integrated Pest Management Program prior to conducting pest or rodent control. The IPMP shall address applicable regulations and targeted pests.
b. The IPMP will be subject to review and approval of the City of Ventura prior to conducting pest or rodent control.
c. The IPMP shall avoid the use of rodenticides containing anticoagulants.
d. The IPMP shall evaluate and address potential impacts to secondary poisoning of carnivores.

Recommended Mitigation Measures. The following mitigation measures are recommended to address biological resources of the project during Phase 1, but are not required in order to reduce these impacts to a less than significant level.

**BIO RM-1: Bryant's Woodrate Middens.** During the pre-construction surveys, a qualified biologist shall identify any potential Bryant's woodrat middens within 50 feet of Project activities. At the discretion of a qualified biologist, an exclusion buffer shall be established around any woodrat middens that can be avoided, and these exclusion zones shall be flagged or fenced to protect the nest during the breeding season (October through June). If a woodrat midden cannot be avoided by project's activities, the City and appropriate resource agencies shall be consulted regarding potential relocation strategies.

**BIO RM-2: Maternity colony or hibernaculum surveys for roosting bats.** VBG shall conduct a pre-activity (e.g., vegetation removal, grading) survey for roosting bats within 200 feet of project activities within 15 days prior to any grading of rocky outcrops or removal of towers or trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). VBG shall also conduct surveys for roosting bats during the maternity season (1 March to 31 July) within 300 feet of project activities. Trees and rocky outcrops shall be surveyed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). Surveys shall include a minimum of one day and one evening.

- If active maternity roosts or non-breeding bat hibernacula are found in trees scheduled to be removed, relocation or other measures shall be determined in consultation with the City and a qualified biologist.

**BIO RM-3: Trenches and excavations.** All excavations in excess of 2 feet deep shall be sloped, have escape ramps installed that are suitable for the escape of wildlife, or be thoroughly covered at the end of the day. All trenches and excavations shall be inspected for wildlife at the beginning of the work day and prior to backfilling. If a special-status species is discovered in a trench or excavation, work in the area shall be redirected, and the special-status species shall be allowed to leave the trench and the area of its own accord. In the event any special-status species is trapped in a trench or an excavation and unable to leave on its own accord, the USFWS and the CDFW shall be contacted to relocate the special-status species or VGB, Inc. shall identify an individual with

appropriate permits (for example, a CDFW collecting permit) to relocate the special status species.

**BIO RM-4: Native plants.** Native plants, including CNPS RPR 4, are an asset to the ecosystem and could be salvaged for propagation particularly within the California Garden area of the Project.

a. Plummer's Baccharis occurs within the Phase 1 development area (mapped in the 2011 Biological Constraints and Opportunities analysis). If impacts within the mapped Plummer's Baccharis area are unavoidable, or additional plants are discovered and unavoidable, the VBG, Inc. shall mitigate for impacts to this species by replacing at a ratio of 1:1 within the project site. A Plummer's Baccharis Mitigation and Monitoring Plan (MMP) shall be developed for this replanting/restoration effort. The plan shall be prepared by a qualified biologist/ restoration ecologist and provided to the City for review. The plan shall include the following:

    i. The plan shall include the number of plants removed, site where plants are to be replanted/ replaced, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program.

    ii. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist familiar with the restoration of native habitats.

    iii. Existing plants shall be salvaged to the extent feasible.

    iv. Mitigation for impacts to Plummer's Baccharis shall be implemented within one year of the time of the disturbance activity.

**BIO RM-5: Best Management Practices.** Best Management Practices (BMPs) including, but not limited to, erosion prevention measures, including the use of temporary soil stabilizers (terracing, mulching blankets) and structures such as berms or swales, to prevent and/or slow runoff across disturbed areas and/or divert runoff to sediment traps or basins; and sediment control measures, including the use of straw bales, silt fences, sediment traps, and/or sediment basins shall be implemented for all project activities within 50 feet of non-regulated water features and storm drains.

**Phases 2-10 Impacts and Mitigation Measures**

Phases 2-10 project activities include installation of permanent structures, sewer and water infrastructure, and expansion and final buildout of the Chilean, Mediterranean, Ramble, Cape, California, Australian gardens, as described in the Master Plan CUP Phasing Plan. Potential effects from implementation of Phases 2-10 of the proposed Project on biological resources are discussed below. The mitigation measures mentioned in this section are listed at the end of this discussion of Phases 2-10 impacts.

Effects on Sensitive or Special Status Species, Phases 2-10. A western whiptail lizard (*Aspidoscelis tigris*) was observed in the native grassland in the northern portion of the site in 2011. This species is relatively common throughout much of California, but because of habitat lost throughout coastal California, populations of the southern subspecies (*A. t. stejnegeri*) are

considered at risk. Because these subspecies cannot be identified without close observation and usually comparison to museum specimens, for the purpose of this analysis, the whiptail observed was presumed to be the sensitive subspecies. While the whiptail was found in grassland, individuals would be expected to occur throughout the proposed project site. Other special status reptile species such as silvery legless lizard (*Anniella pulchra pulchra*) and coast horned lizard (*Phrynosoma blainvillii*) may also occur within the proposed project site. Given the size of the area, and local habitat conditions, the project site is not expected to contain a substantial population of these reptiles, and it is likely that species, if present, would move in and out of the project site and throughout both native and non-native habitat communities. While project activities may result in the mortality of some individuals, the future Botanical Garden could still support some of these species/populations. Therefore, impacts to special status reptiles are expected to be less than significant with avoidance and minimization measures (**BIO-1**).

During surveys in 2011, Bryant's woodrat (*Neotoma bryanti [N. lepida] intermedia*) middens (nests) were observed in the Coast Prickly Pear (*Opuntia littoralis*) Scrub patches in the southwestern portion of the project site. Due to the low number and small size of suitable habit within the project site, it is not expected that the project site supports a significant population of this species. In addition, this species likely occurs in the adjacent open space to the north and west of the project site. The project may also choose to maintain some or all of the existing coastal prickly pear scrub habitat within the project site, and could continue to support this species throughout the life of the proposed project. Therefore, impacts to Bryant's woodrat are expected to be less than significant with avoidance and minimization measures (**BIO-1**).

Other special-status animals with a moderate potential to occur within the site (reported within at least 5 miles of the site by CNDDB and moderately suitable habitat exists) or high potential to occur onsite (reported within at least 5 miles of the site [or tracked onsite] and suitable habitat and habitat features/resources present to support inhabitation by the species) include monarch butterfly overwintering roost sites and bat species.

Monarch butterflies are widespread and very common throughout North America, but along the Pacific Coast, their overwintering roosts have become rarer. Monarchs over-winter within dense, sheltered groves of various trees, often eucalyptus (*Eucalyptus* sp.). Stands of eucalyptus and other trees are located within the proposed project site. If Monarch butterflies are actively over-wintering within the project site during the removal of eucalyptus trees, impacts to the local overwintering population may be considered significant. Mitigation actions (**BIO-2**) have been included below to reduce this adverse effect.

Several bat species, which as a group have declining populations, may be expected to forage within the project site, and occasionally roost in the denser tree groves (including the stands of eucalyptus and other trees located within the project site), but generally are not expected to breed within the proposed project site. Because these species are not expected to breed within the proposed project site, the project is not expected to have a substantial impact on these species. While not a change in the impact classification, potential adverse effects could be reduced by Recommended Avoidance and Minimization Measure (**BIO RM-2**) below.

Suitable nesting habitat for special status avian species including raptors, occur within the project site. Causing the abandonment of or removing active nests (with eggs or young) of any special status migratory birds and/or raptors violates the State Fish and Game Code and the federal Migratory Bird Treaty Act (MBTA). Raptors and other protected bird species are

expected to nest and forage within the project site, therefore project activities could have substantial impact on nesting birds through direct take of active nests without avoidance and minimization measures. Impacts are considered significant and require mitigation (**BIO-1, BIO-3, BIO-4**) as discussed below.

The project site is situated between open space and developed lands with a low to moderate amount of human activity, therefore nesting species are expected to be habituated to a low to moderate level of human activity, and are not expected to be indirectly (activities not associated with active construction, or ground disturbing activities) impacted by pedestrian traffic, vehicle traffic or other activities associated with recreational use of the area. As stated in the applicant's Conditional Use Permit and Rezone Application (Attachment A), the project will institute measures ensuring noise and sound control that will minimize sound intrusion to its own gardens and to neighboring properties, and will be required to comply with adopted City noise ordinances. Therefore, no avoidance or minimization measures are proposed for indirect impacts to special status nesting birds.

Pest and rodent control within the project site have the potential to impact special status species. On March 22nd, 2005, the Ventura County Board of Supervisors voted to support legislative efforts (AB 1548) to restrict or eliminate the use of anticoagulant rodenticides in the County. The anticoagulants of concern include brodifacoum, bromadiolone, diphacinone, and difethialone. Pesticide and rodent control have the potential to impact special status species or violate CDFW code if unregulated. If project activities include pest control, the possible use of pesticides would have indirect adverse effects on sensitive animals (such as Bryant's woodrat and raptors) within and adjacent to the project site, and such impact would be potentially significant and require mitigation (**BIO-7**) as discussed below.

Project activities involving excavation have the potential to entrap special status species and other wildlife; however, due to the nature of the proposed activity, and the implementation of avoidance and minimization measures, the overall mortality would likely be low, therefore impacts related to excavations would be less than significant. While not a change in the impact classification, additional Recommended Avoidance and Minimization Measure **BIO RM-3** has been included below to reduce the potential for wildlife to be injured or become entrapped in excavations.

<u>Effects on Sensitive or Special Status Habitats or Natural Communities, Phases 2-10.</u> Four sensitive plant communities were identified within the site boundaries; Coast Prickly Pear Scrub, Lemonade Berry (Rhus integrifolia) Scrub, Purple Needle Grass (Stipa pulchra) Grassland, and Southern Riparian Scrub (Arroyo Willow [Salix lasiolepis] Thickets). These areas were mapped in 2011 (Sespe Consulting, Inc., 2011). The biological reconnaissance survey conducted in April 2014 by Rincon, Inc. found the sensitive plant communities to be generally similar to their 2011 mapped size (it was also found that nonnative grassland and black mustard communities have increased in size within the project site since 2011). Coast Prickly Pear Scrub, Lemonade Berry Scrub, Purple Needle Grass Grassland, and Southern Riparian Scrub are all considered to be vulnerable at a state level because of past habitat alteration, but of these, the most sensitive locally is the Purple Needle Grass Grassland because most native grasslands have become supplanted by annual grasslands dominated by exotic grasses that originate from the Mediterranean area. The project applicant may choose to avoid impacts to this species and habitat by avoidance during various phases of the project, however it is assumed that the proposed project may remove up to 100% (approximately 1.7 acres) of the existing Purple Needle Grassland habitat within the project site, therefore impacts to this vegetation community

would be considered significant without the incorporation of mitigation (**BIO-5**). Coast Prickly Pear Scrub is considered sensitive in part because of limited distribution and because it provides habitat for several animals with declining populations. Approximately 1 acre was mapped within the project site in 2011, and was associated with woodrat middens. Impacts to this habitat would be less than significant with mitigation incorporated (**BIO-5**). Lemonade Berry Scrub is relatively widespread through the site and Ventura County. The lemonade Berry Scrub habitats within the project site would be impacted by the proposed project, including fire fuels management, however portions of this community type are expected to remain untouched on the steeper slopes and within the Ramble, therefore impacts to this habitat are not considered significant. Southern Riparian Scrub within the project site is a vegetation community associated with Riparian habitats and therefore under the regulatory jurisdiction of CDGW. Impacts to this vegetation community are discussed further below under *Protected Waters and Wetlands*.

Sensitive or Special Status Flora, Phases 2-10. No federal or state listed plant species are present within the property or likely to be present. Three seasonally timed rare plant surveys were conducted in 2009, and special status plant species discovered within the site included Plummer's Baccharis and Catalina mariposa lily. Both of these plants are currently of limited sensitivity, as they are on the CNPS “Watch List” (List 4.2 = plants of limited distribution, fairly endangered in California [20-80% occurrences threatened]; and List 4.3 = plants of limited distribution, not very endangered in California), but could become rarer in the future. Plummer's Baccharis does occur within the development area of the Chilean, California and Australian Gardens, and would be directly affected by removal to provide space for the plants, trails, and fire fuel management. Given the extent of Plummer’s Baccharis within Grant Park, its population in the hillsides further east and outside of the Park, and its “watch list” status, impacts are considered adverse, but not significant. California mariposa lily may occur within multiple habitats in the vicinity of the project including the proposed off-site well site. Given the overall low sensitivity of this species, impacts to these species are considered adverse, but not significant. While not a change in the impact classification, impacts to these special status plant species could be reduced through Recommended Avoidance and Minimization Measures (**BIO RM-4**) described below. No other special status plant species are expected to occur within the project site, however given the duration of the project, flora sensitivity ranking could change, or previously unobserved species could be discovered during preconstruction surveys. As part of the Long Term Adaptive Mitigation and Monitoring Plan for this project, potentially adverse impacts to CNPS Rare Plant Rank 1 and 2 species would be mitigated as described below (**BIO-5**).

Plant Species Management, Phases 2-10. The project has the potential to spread or introduce exotic, invasive and / or noxious weeds that could have a substantial impact on habitat communities within the project site and the adjacent open space areas. In particular, the project would introduce exotic plants from other regions that are adapted to the climatic conditions present. Because a variety of parameters that control the spread of these plants in their native climates (animals, soil limitations, specific weather patterns) would be lacking at the site, these plants could “escape” and successfully out-compete native plants. To address the potential of introduced species escaping, VBG, Inc. has incorporated a seven step plant species management procedure into the Master Plan CUP, (Attachment A). This management procedure has already been discussed and fully listed in the discussion of Phase 1 impacts above, and will therefore not be reproduced here.

It is expected that the VBG plant species management procedure would be sufficient to reduce the risk of spread of exotic plant species to a less than significant level.

Invasive weeds are already present within the site and could be spread in greater number into the adjacent open areas through project development, which could have a substantial impact on habitat communities within the project site and the adjacent open space areas. This impact would be less than significant with the plant selection criteria listed above and incorporated mitigation described in **BIO-6**.

Protected Waters and Wetlands. The project site is located along the upper hillslopes above downtown Ventura, which are dissected into a series of steep and deep canyons separated by ridges. Because of this topographic location, the site is generally located in the "headwaters" portion of the local watershed, and jurisdictional waters are limited to the southeastern portion of the site where, sufficient inflow from the watershed and past development has created a small basin that is primarily vegetated by willows. This basin is shown on the Potential Jurisdictional Waters and Special Status Plants and Wildlife Map in the Opportunities and Constraints Analysis (Sespe Consulting, Inc., November 2011). This basin is a created wetland that is the result of the construction of Summit Drive. It is drained by a corrugated metal pipe (CMP) that discharges into a canyon area below Summit Drive, from whence it is collected into the City's storm drain system and discharged to the beach northwest of Sanjon Road. Although this basin is a manmade feature, the basin has a delimited extent with a definable bank and contains wetland vegetation, and so is subject to Section 1602 of the Fish and Game Code. The downstream channel into which the CMP discharges also has a definable bank and so is potentially within CDFG jurisdiction. The basin and the downstream channel are considered potential "waters of the US" and so subject to USACE jurisdiction. The Ordinary High Water Mark (OHWM), which defines the extent of waters of the US, was a width of approximately two feet within the downstream channel. The edge of the basin as shown on the map would also mark the edge of waters of the US. Because the basin holds water for at least some period of time, it contains "waters of the State" subject to RWQCB jurisdiction. Southern Riparian Scrub occurs within and adjacent to the basin described above. This is a vegetation community associated with Riparian habitats and therefore under the regulatory jurisdiction of CDGW. Project activities could result in substantial impacts to regulated waters and associated habitat onsite, but impacts would be reduced to less than significant with mitigation incorporated (**BIO-8 through BIO-10; and RM 5 which does not change the impact classification**).

Wildlife Movement and Migration Corridors. Wildlife corridors are identified to the north of the project site (CDFW, July 2014). Wildlife may be temporarily displaced into adjacent areas by project activities, but it is not expected that project activities would interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The project is located directly between open space and developed urban areas, and is the southwestern extent of the natural habitats extending from the mountains to the north into Grant Park. Due to the presence of the native habitats, it is likely that wildlife utilize the area, but it would not be considered a migratory corridor as the urban portion of Ventura blocks any connectivity to the oceanic environment. Furthermore, most residential wildlife would be expected to utilize the established garden habitats similarly to the area's current function. Temporary construction fencing could have an effect on the movement of local wildlife, but this impact is not expected to be substantial. Permanent fencing could entrap wildlife attempting to move through the area, which, along with attractive nuisances such as food trash and available water, could lead to the entrapment of wildlife, including large mammals. This impact is considered less than significant since it is expected that wildlife could move through some of the area unconstrained. While not a change in the impact classification, implementation of

avoidance and minimization measures should be developed to reduce the potential to entrap and / or attract wildlife that may travel through or around the project site (**BIO RM-7**).

Conflict with Local Plans and Policies Protecting Biological Resources. Current arboricultural resources in the project site include a range of upland, riparian, and introduced trees, the majority of which are non-native. Six primary tree genera were identified onsite including eucalyptus (*Eucalyptus* spp.), Peruvian pepper tree (*Schinus molle*), nonnative pine (*Pinus* sp.), European olive (*Olea europaea*), blue elderberry (*Sambucus mexicana*), and coast live oak (*Quercus agrifolia*). Native coast live oak trees are sparsely located within the edges of the coastal sage scrub habitats. Native willows exist on site as large shrubs as opposed to trunked trees. Dense stands of eucalyptus trees are found along the southwest section of the project site, within drainages or along the roadsides. Pine trees (*Pinus* sp.) are found along the ridgelines with pepper and olive trees scattered across the project site. The City of Ventura has no ordinances that protect the trees or other biological resources within the project site, therefore, the project is not expected to conflict with any tree preservation regulations, or other local plans, policies, or ordinances protecting biological resources. Due to the duration of this project, it is possible that local ordinances and polices regulating biological resources within the project site could be developed in the future. Per the project's **Long Term Adaptive Mitigation and Monitoring Plan**, regulatory policies would be evaluated and updated annually and incorporated into the Plan. Through preparation and implementation and of the Plan, conflicts with local plans and policies are expected to be mitigated. While not a change in the impact classification, the impacts to trees could be further reduced with implementation of **BIO RM-6**.

Conflict with Approved Habitat Conservation Plans. The project is not located within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Required Mitigation Measures. The following mitigation measures are required to avoid and reduce potential impacts to biological resources during all project sites of Phases 2-10.

**BIO-1: Preconstruction Survey and Avoidance (Off-Site Well Only) – If Not Constructed During Phase 1 Years 2015-2017**

a. Prior to ground disturbing project activities, a qualified biologist shall conduct a preconstruction survey for special status biological resources. The survey area shall include the impact area and a 100 foot buffer and involve the biologist walking the area at equally spaced transects to ensure full coverage of the area. The survey shall be conducted no more than 30 days prior to the activity and / or be seasonally timed for areas with the potential to support any special status plant species. The biologist shall map any special status biological resource or vegetation community within the survey area.

   i. A preconstruction survey report shall be submitted to the City detailing the results and potential impacts to biological resources.

   ii. If biological resources have the potential to be impacted by project activities, see additional Mitigation Measures below as applicable:

      1. **Special status reptile species.** A biological monitor shall be present for all earth moving / ground disturbing activities and shall relocate reptiles out of harm's way.

2. **Bryant's wood rat.** During pre-construction surveys, a qualified biologist shall identify any potential Bryant's woodrat middens within 50 feet of Project activities. At the discretion of a qualified biologist, an exclusion buffer shall be established around any woodrat middens that can be avoided, and these exclusion zones shall be flagged or fenced to protect the nest during the breeding season (October through June).

   a. No impact to active middens shall be allowed during the breeding season. If active middens would be directly impacted by project activities, prior or following the breeding season, a biologist shall carefully dismantle / excavate the midden and relocate resident species out of the impact area.

   b. If coast prickly pear scrub is available onsite, middens and individuals shall be relocated to these areas to the extent feasible.

3. **Nesting birds.** If project activities are scheduled to occur between February 1 to August 31, or if nesting activity is observed, See MM Bio 3

4. **Special Status Vegetation and Plant Species.** See MM Bio 5

5. **Southern Riparian Scrub- Vegetation Trimming.** Vegetation trimming may be required within the retention basin for fire fuels management or storm water management. Vegetation trimming that results in temporary impacts to the vegetation community within the retention basin (north and adjacent to Summit Road), but that would allow the vegetation community to recover naturally, would not be considered an impact to this vegetation community, but would be subject to all other preconstruction survey and reporting requirements (See Tree and / or Vegetation Trimming and Removal MM Bio 5).

6. **Potential Jurisdictional Water features and associated habitats.** See MM Waters 1 through MM Waters 3.

7. **Special status Bats.** See RM 2

8. **Tree and / or Vegetation Trimming and Removal.** See MM Bio 2, MM Bio 3 and MM Bio 5.

**BIO-2: Monarch Butterfly**

a. Due to the potential for Monarch Butterflies to utilize the site for winter roosts, no tree trimming or removal of trees considered suitable for winter roosting should be conducted between October 15 and February 28. Removal of trees should be conducted between June 15 and October 15 to the extent feasible.

b. Should tree trimming or removal activities occur between October 15 and February 28, a preconstruction survey shall be conducted by a qualified biologist seven days prior for monarch butterflies. If Monarch butterfly winter roost(s) are observed, trees shall not be trimmed or removed until the migrant butterflies have left the roost site.

c. If winter roosts are discovered within 100 feet of project activities (including non-occupied tree trimming or removal), a qualified biologist shall determine appropriate avoidance and minimization measures to avoid impacts to butterflies adjacent to project activities.

**BIO-3: Nesting Birds**

a. To prevent the loss of active special status bird nests, juveniles or adults, project activities including vegetation clearing should be conducted outside of the breeding season (i.e. February 1 to August 31) to the extent feasible.

b. If project activities will occur between February 1 to August 31, a preconstruction nesting bird survey shall be conducted by qualified biologists no less than 7 working days prior to the activity to survey for special status bird and raptor nests. The survey area shall include the project footprint and a 100-foot buffer for passerine species and a 300-foot buffer for raptor species. Following the survey:

   i. A nesting bird survey report shall be submitted to the City prior to the initiation of project activities. The report shall detail the results of the survey and make a determination if ongoing monitoring, buffers, or nesting bird surveys should be conducted for project activities.

   ii. If active nests are identified during the survey and / or work is scheduled to take place within 100 feet of active passerine nests or 300-feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.

   iii. A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests or 300 feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.

   iv. If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the City and CDFW detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season.

**BIO-4: Night time lighting**

a. Project related nighttime lighting shall be directed away from adjacent open space and native vegetation communities.

**BIO-5A: Native or Special Status Vegetation Communities**

a. Impacts to Purple Needle Grassland and Coast Prickly Pear scrub communities, and individual native bunch grass plants shall be avoided to the extent feasible in the design and development of gardens, associated exhibits, trails, buildings and associated facilities.

b. Additionally, grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status community or species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.

c. If impacts to Purple Needle Grass Grassland or Coast Prickly Pear Scrub are unavoidable, the project will be required to mitigate for the loss of these habitats. Due to the function of this project as a Botanical Garden, and the relatively small size of these communities relative to the size of the project site, mitigation for these habitats shall be conducted onsite. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, the VBG shall prepare a Mitigation and Monitoring Plan (MMP) specifically for Purple Needle Grass Grassland or Coast Prickly Pear Scrub. The plan shall be prepared by a qualified biologist/restoration ecologist.

   i. The plan shall include at a minimum: mitigation site location within the project site, native plant palette, planting plan, onsite seed and plant salvage, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist or qualified horticulturalist familiar with the restoration of native habitats.

      1. Impacts to Purple Needle Grass Grassland and / or Coast Prickly Pear Scrub shall be mitigated at a ratio of 1:1.

      2. Final acreage of restoration must equal the acreage identified in the preconstruction survey report for each habitat type or species for the impact to be considered fully mitigated.

      3. Success criteria shall be based on the condition of the habitat as described in the preconstruction survey report.

d. Site Selection:

   i. If Mitigation cannot be conducted within the project site, the site shall be located in a dedicated open space area, or suitable adjacent off-site open space shall be obtained/purchased.

   ii. Selected sites shall not result in the removal of a biologically valuable resource (e.g., native grassland or special status species).

      1. Impacts to Purple Needle Grass Grassland and / or Coast Prickly Pear Scrub shall be mitigated at a ratio of 2:1.

   iii. Site Selection shall be conducted in coordination with and require the approval of the City.

   iv. The MMP shall include detailed descriptions of: Responsibilities and qualifications of the personnel to implement and supervise the plan, plant salvage, planting, invasive weed management, maintenance, monitoring requirements, success criteria and annual report requirements. The responsibilities of the landowner, specialists, and maintenance personnel that would supervise and implement the plan shall be specified.

v. The LMP shall include onsite seed and plant salvage to the greatest extent feasible.

vi. The LMP shall be submitted to CDFW for review.

vii. Final acreage of restoration must equal the acreage identified in the preconstruction survey report for each habitat type or species for the impact to be considered fully mitigated.

viii. Success criteria shall be based on the condition of the habitat as described in the preconstruction survey report.

ix. The LMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

**BIO-5B: Special Status Plant Populations**

a. Impacts to special status plant species, including known populations of special status plants shall be avoided to the extent feasible in the siting of all physical facilities proposed under the Master Plan.

b. Additionally, grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status plant species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.

c. If CNPS List 1 and 2 species are observed during preconstruction surveys and removal is unavoidable, impacts shall be mitigated at a 1:1 ratio. Due to the function of this project as a Botanical Garden, and the relatively low occurrence of these species relative to the size of the project site, mitigation shall be conducted onsite. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, the VBG shall prepare a Mitigation and Monitoring Plan (LMP). The plan shall be prepared by a qualified biologist, restoration ecologist or qualified horticulturalist.

i. The plan shall include at a minimum: mitigation site location, seed and plant salvage, planting plan, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist or qualified horticulturalist familiar with native species.

ii. Final replacement must equal the acreage and / or numbers of individuals identified in the preconstruction survey report for each species, for the impact to be considered fully mitigated.

iii. The LMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative

assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

d. If Mitigation cannot be conducted within the project site, the site shall be located in a dedicated open space area, or suitable adjacent off-site open space shall be obtained/purchased; or the VBG shall propagate species within the project's associated greenhouses for use (free of charge) in restoration projects within Ventura County at a mitigation replacement ratio or 2:1.

   i. Selected sites shall not result in the removal of a biologically valuable resource (e.g., native grassland or special status species).

   ii. This plan shall be submitted for review to CDFW.

   iii. Final replacement must equal the acreage and / or numbers of individuals identified in the preconstruction survey report for the impact to be considered fully mitigated.

   iv. The LMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

**BIO-6: Invasive and Noxious Weed Management**

a. The Ventura Botanical Gardens Inc. shall implement the Plant Species Management policy as outlined in the Master Plan Conditional Use Permit and Rezone Application.
b. Precautions shall be taken to minimize the introduction of any invasive weeds. An Invasive Weed Management Plan shall be prepared and implemented to address and prevent the spread of invasive weed species prior to ground disturbing activities.
c. Only water-safe herbicides shall be used in riparian areas.
d. Herbicides shall not be applied when wind velocities exceed 6 mph.
e. Where manual and/or mechanical methods are used, weedy plant debris shall be disposed of properly.
f. The timing of weed control treatment shall be determined for each plant species in consultation with qualified personnel with the goal of controlling populations before they start producing seeds.

**BIO-7: Pesticide and Rodenticide Use**

a. The project shall develop an Integrated Pest Management Program prior to conducting pest or rodent control. The IPMP shall address applicable regulations and targeted pests.
b. The IPMP will be subject to review and approval of the City of Ventura prior to conducting pest or rodent control.
c. The IPMP shall avoid the use of rodenticides containing anticoagulants.
d. The IPMP shall evaluate and address potential impacts related to secondary poisoning of carnivores.

**BIO-8: Arroyo Willow Thickets Avoidance**

a. No vegetation trimming or removal shall occur within Southern Riparian Scrub (Arroyo Willow Thickets), to the extent feasible.

b. If vegetation trimming is necessary, see **MM BIO 1** and **MM BIO 9**.

**BIO-9: Regulated Waters**

a. Project activities shall avoid permanent impacts to potentially jurisdictional waters and associated habitats within the project site.

   i. Temporary impacts other than vegetation trimming,(such as habitat enhancement, channel improvements) within regulated waters and/or wetlands may be subject to the permit requirements of the USACE, under Section 404 of the Clean Water Act (CWA), RWQCB, Section 401 of the CWA and the Porter-Cologne Water Quality Act, a Streambed Alteration Agreement from the CDFG pursuant to Section 1600 et. seq. of the California Fish and Game Code.

   ii. If temporary impacts within potentially jurisdictional features are unavoidable, a jurisdictional delineation shall be conducted by qualified personnel to map the extent of regulated waters and potential impacts. Actual jurisdictional areas are determined by the state and federal authorities at the time that permits are requested. As part of the permit process, these agencies will request that the option selected be designed to avoid and/or minimize effects to onsite jurisdictional waters and wetlands to the extent feasible.

      1. On site, in-kind restoration shall occur for all temporarily disturbed areas within regulated waters at a mitigation ratio of 1:1.

   iii. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, VBG, Inc. shall prepare a Habitat Mitigation and Monitoring Plan (HMMP). The plan shall be prepared by a qualified biologist, restoration ecologist, or qualified horticulturalist. The plan shall include at a minimum:

      1. mitigation site location
      2. native plant palette
      3. planting plan
      4. time of year planting will occur
      5. irrigation plan
      6. invasive species control program
      7. success criteria
      8. maintenance and monitoring program.

   iv. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration ecologist or horticultural specialist familiar with the restoration of native habitats.

v. The HMMP shall include success criteria for monitoring the restoration effort over three years.

vi. Determination of mitigation adequacy shall be based on comparison of the restored habitat with onsite habitat conditions prior to impact.

vii. The HMMP shall include remedial measures in the event that the performance criteria are not met for a particular year. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

b. Unavoidable, permanent impacts to jurisdictional waters and associated habitats shall require written justification to the regulatory agencies detailing the infeasibility of avoidance.

i. Project components within jurisdictional waters shall be designed to include a natural bottom that would minimize the effect on waters of the U.S. and State.

ii. If impacts within potentially jurisdictional features are unavoidable, a jurisdictional delineation shall be conducted by qualified personnel to map the extent of regulated waters and potential impacts. Actual jurisdictional areas are determined by the state and federal authorities at the time that permits are requested. As part of the permit process, these agencies will request that the option selected be designed to avoid and/or minimize effects to onsite jurisdictional waters and wetlands to the extent feasible.

1. On site, in-kind restoration shall occur for all temporarily disturbed areas within regulated waters at a mitigation ratio of 1:1. In addition, for those areas that are permanently impacted, the applicant shall provide for in-kind riparian restoration/creation at a 3:1 mitigation ratio, or as otherwise indicated by the regulatory agencies during the permitting process, whichever is greater.

2. Onsite restoration is preferred; however, if onsite restoration is infeasible, mitigation can be completed by providing adequate funding to a third party organization, conservation bank or in lieu fee Program for the in- kind creation or restoration at the ratio defined within applicable permits, but no less than 3:1.

iii. If mitigation is implemented offsite, mitigation lands shall be located in the vicinity of the site or within the Ventura River Watershed

iv. The HMMP shall identify an approach for funding assurance for the long-term management of the conserved land if applicable.

**BIO-10: BMPs for Regulated Waters**

a. Best Management Practices (BMPs) such as filtration devices and other approved methods that intercept runoff and prevent pollutants from discharging into regulated waters shall be implemented for all project activities within 50 feet of regulated water features.

**BIO-11: Long Term Adaptive Mitigation and Monitoring Plan**

a. Due to the lifespan of this project, mitigation for impacts to biological resources could span many years. In order to track mitigation measures, mitigation success, and regulatory and legislative requirements, the VBG shall prepare and update a Long Term Mitigation and Monitoring Plan (LMP). The Long Term Mitigation and Monitoring Plan shall include:

   i. Project phasing schedule

   ii. Mapped biological resources and avoidance areas (e.g. restoration sites)

   iii. Regulatory overview and listing of special status species with the potential to occur within the project site

   iv. Mitigation Measures (MMRP) for the resource identified in this report and/or other resource identified in the VBG development to 2044

   v. Survey requirements by phase

   vi. Invasive Weed Management Plan

   vii. Integrated Pest Management Program

   viii. Status of the implementation of mitigation measures and performance standards

   ix. Applicable reporting requirements and reporting schedule

b. The Plan shall be updated Annually

c. The Plan shall be submitted to the City for review and approval

Recommended Mitigation Measures. The following mitigation measures are recommended to address biological resources of the project during Phases 2-10, but are not required in order to reduce these impacts to a less than significant level. For Phases 2-10, Phase 1 Mitigation Measure BIO-RM1 has been replaced by Mitigation Measure BIO-1.a.ii.2.

**BIO RM-2: Maternity colony or hibernaculum surveys for roosting bats.** VBG shall conduct a pre-activity (e.g., vegetation removal, grading) survey for roosting bats within 100 feet of project activities within 15 days prior to any removal of trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). VBG shall also conduct surveys for roosting bats during the maternity season (1 March to 31 July) within 100 feet of project activities. Trees shall be surveyed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). Surveys shall include a minimum of one day and one evening.

- If active maternity roosts or non-breeding bat hibernacula are found in trees scheduled to be removed, avoidance, relocation or other measures shall be determined in consultation with a qualified biologist.

**BIO RM-3: Trenches and excavations:** All excavations in excess of 2 feet deep shall be sloped, have escape ramps installed that are suitable for the escape of wildlife, or be thoroughly covered at the end of the day. All trenches and excavations shall be inspected for wildlife at the beginning of the work day and

prior to backfilling. If a special-status species is discovered in a trench or excavation, work in the area shall be redirected, and the special-status species shall be allowed to leave the trench and the area of its own accord. In the event any special-status species is trapped in a trench or an excavation and unable to leave on its own accord, the USFWS and the CDFW shall be contacted to relocate the special-status species or the VBG, Inc. shall identify an individual with appropriate permits (for example, a CDFW collecting permit) to relocate the special-status species.

**BIO RM-4: Native plants**: Native plants including CNPS RPR 4 are an asset to the ecosystem and could be salvaged for propagation particularly within the California Garden area of the Project.

a. Plummer's Baccharis occurs within the Phase 1 development area (mapped in the 2011 Biological Constraints and Opportunities analysis). If impacts within the mapped Plummer's Baccharis area are unavoidable, or additional plants are discovered and unavoidable, the VBG, Inc. shall mitigate for impacts to this species by replacing at a ratio of 1:1 within the project site. A Plummer's Baccharis Mitigation and Monitoring Plan (MMP) shall be developed. The plan shall be prepared by a qualified biologist/ restoration ecologist and provided to the City for review. The plan shall include the following:

    i. The plan shall include the number of plants removed, site where plants are to be replanted/ replaced, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program.

    ii. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist familiar with the restoration of native habitats.

    iii. Existing plants shall be salvaged to the extent feasible.

    iv. Mitigation for impacts to Plummer's Baccharis shall be implemented within one year of the time of the disturbance activity.

**BIO RM-5: Best Management Practices:** Best Management Practices (BMPs) shall be implemented for all project activities within 50 feet of non-regulated water features and storm drains.

**BIO RM-6: Retain Healthy, Mature Trees:** Retain as many of the healthy, mature trees as possible onsite as part of the overall garden design.

**BIO RM-7: Permanent Fencing:** Permanent fencing activities are associated with Phases 2-10, and avoidance and minimization measures should be developed to address the potential to entrap and/or attract wildlife that may travel through or around the project site, including but not limited to trash containment to avoid attracting wildlife, a "no feeding wildlife" policy, avoiding ponding water or creating open water areas, and prevention of animal access to the fountain area.

With implementation of the mitigation measures listed above, the proposed Project's potential to have a significant adverse impact on biological resources would be **less than significant with mitigation incorporated**.

**Reference**:

California Department of Fish and Wildlife (CDFW). California Essential Habitat Connectivity project website (https://www.wildlife.ca.gov/Conservation/Planning/Connectivity). July 2014.

California Department of Fish and Wildlife, Habitat Conservation Division, Wildlife and Habitat Data Analysis Branch. *Special Animals*. January 2011.

City of Ventura. *2005 General Plan FEIR* (Section 4.4 Biological Resources). August 2005.

Rincon Consultants, Inc.. *Ventura Botanical Gardens Biological Effects Memorandums*, July 2014.

Sespe Consulting, Inc.. *Opportunities and Constraints Analysis Ventura Botanical Gardens*. November 2011.

| **V. CULTURAL RESOURCES** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | ☐ | ☒ | ☐ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ☐ | ☒ | ☐ | ☐ |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☒ | ☐ | ☐ |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, b, c. Less Than Significant Impact with Mitigation Incorporated.** As part of the Opportunities and Constraints Analysis (Sespe Consulting, Inc., November 2011), a Phase 1 Archaeological Study was prepared by Historical, Environmental, Archaeological, Research, Team (HEART) in May 2011 with the goal of identifying any archaeological or cultural resources that could constrain the development of the botanical gardens or present an opportunity to enhance the gardens. The scope of work consisted of:

- Performing a records search at the South Central Coastal Information Center, California State University Fullerton;
- Contacting the Native American Heritage Commission (NAHC), Sacramento, California; and,
- Conducting a pedestrian reconnaissance of the project site.

The Phase 1 Archaeological Study found no archaeological sites within the project site. It found that any proposed improvements or modifications to the remaining portions of the project site where no visible cultural resources were encountered would have no adverse impacts on known cultural resources. However, the Phase 1 Study did record the following cultural resources:

**California Historical Landmark #113 (Grant Park Cross Site).** This historic resource occurs in the Serra Cross Monument property, which is surrounded by but outside of the project site (see Project Description).

**One prehistoric archaeological site (Grant Park #1)** was recorded within the Serra Cross Monument property adjacent to and south of the Serra Cross monument in an area 30 meters north-south by 15 meters west-east. The site consisted of at least 15 shell fragments (95% sandy shoreline and bay-estuary clam), one sea mammal bone, one chert flake and one bifacial mano fragment. The Phase 1 determined that this heavily disturbed area probably represents a redeposited site.

The Phase 1 found no constraints that would prohibit the use of Grant Park for public botanical gardens, but suggested the following measures to avoid potential impacts to cultural resources:

- Any excavation or geological/geotechnical testing conducted within the VBG project site that is within 25-feet of the maximum archaeological site boundary found adjacent to the existing Serra Cross Monument should be avoided to minimize and avoid impacts to a known archaeological site.

- Should unanticipated cultural resource remains be encountered during land modification activities work must stop, and the appropriate Lead Agency contacted immediately to determine the appropriate measures to mitigate adverse impacts to the discovered resources. Cultural resource remains may include artifacts, shell, bone, features, foundations, and trash pits, etc.

**Mission Aqueduct.** In addition to the registered sites discussed above, the City is also aware of Mission Aqueduct remnants occurring in the area. Dependent upon a reliable supply of fresh water, the San Buenaventura Mission built an aqueduct to convey water from the confluence of San Antonio Creek and the Ventura River into a settling basin and the reservoir at the main church complex.

The southern boundary of the project site is located approximately 260 feet north of Ventura City Hall, which is an officially-designated historic landmark (National Register of Historic Places NPS-71000211). The closest area in which a structure is proposed to be built under the Master Plan CUP (within the proposed Welcome Zone) is located approximately another 110 feet to the north of this southern boundary, approximately 370 feet from City Hall. The project site is also separated from City Hall by a five-story addition that is not part of the original historic structure, and by the lower City Hall parking lot. Because of the fact that City Hall, the lower City Hall

parking lot, and the upper City Hall parking lot in which the Welcome Zone would be located have been cut into the hillsides, each of these features is located on a "terrace", a flat area that is not highly visible from any public area except from the nearest edge of each terrace. The buildings proposed for the Welcome Zone would be one story in height, are not proposed to be located near the southern edge of the upper City Hall parking lot, and thus would have little or no visibility to or from City Hall.

The DRC recommended in its meeting on May 19th, 2014, in which it and the Historic Preservation Committee (HPC) reviewed the proposed VBG Design Guidelines, that the following item be added to Section 1 of the VBG Design Guidelines:

> *6f. Any structures or improvements within the Welcome Zone shall respect and not compromise the historic setting of City Hall as defined by the National Register of Historic Places Bulletin 15.*

While this item may be added to the VBG Design Guidelines before project approval, there is no evidence that the project as proposed would cause a substantial adverse change in the significance of City Hall as a historical resource, as defined in CEQA Guidelines Section 15064.5. However, because the Phase 1 Archaeological Study suggested measures to avoid potential impacts to other cultural resources, this impact is potentially significant, and Mitigation Measures CR-1 and CR-2 are required.

Mitigation Measures. The following mitigation measures would be required to avoid and reduce potential impacts to cultural resources.

**CR-1:** Any excavation or geological/geotechnical testing conducted within the VBG project site within 25-feet of the maximum archaeological site boundary found adjacent to the existing Serra Cross Monument shall be avoided to minimize and avoid impacts to a known archaeological site.

**CR-2:** 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 to the satisfaction of the Community Development Director, work in the area may resume. A qualified Native American monitor shall oversee any mitigation work associated with prehistoric cultural material.

With implementation of Mitigation Measures CR-1 and CR-2, the proposed project's potential to cause a substantial adverse change in the significance of a historic resource, archaeological resource, or paleontological resource/site or unique geologic feature, would be **less than significant with mitigation incorporated**.

In the analysis of the project's impact to *Transportation and Traffic*, Section XVI, the need for a non-paved surface parking lot at the trailhead off of Cedar Street is identified as a Recommended Mitigation Measure to increase traffic safety as trail users access the site. Although not currently a part of the project, should a parking lot be incorporated as part of the project off of Cedar Street, the parking lot may be in proximity to remnants of the Mission

Aqueduct. As such, the following Recommended Mitigation measure is proposed to protect cultural resources relating to the Mission Aqueduct.

**CR RM-1:** Prior to approval of development plans for a non-paved surface parking lot at the Cedar Street trailhead, VBG shall consult an archeologist or other qualitied professional to 1) identify the location of the Mission Aqueduct in relation to the project boundaries, and 2) work with the VBG to design the parking lot to avoid disturbance to the Mission Aqueduct.

**d. Less Than Significant Impact.** The Phase 1 Archaeological Study found no evidence of human remains within the project site, and therefore no disturbance of human remains is anticipated. In the unlikely event that human remains are discovered during construction or operation of the proposed project, State law establishes notification and recovery procedures if human remains are discovered during the development process. Therefore, implementation of the project would have a **less than significant** impact related to potential disturbance of human remains.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.5 Cultural and Historic Resources). August 2005.

Sespe Consulting, Inc.. *Opportunities and Constraints Analysis Ventura Botanical Gardens*. November 2011.

| **VI. GEOLOGY AND SOILS** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | ☐ | ☐ | ☒ | ☐ |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☒ | ☐ |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ |
| iv) Landslides? | ☐ | ☒ | ☐ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ |

| | | | | |
|---|---|---|---|---|
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☐ | ☐ | ☒ | ☐ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | ☐ | ☐ | ☐ | ☒ |

**Explanation**:

**a(i)-a(iv). Less Than Significant Impact.** A Soils and Geological Hazards evaluation for the proposed project was prepared by Rincon Consultants, Inc. in November 2011 as part of the Ventura Botanical Gardens Opportunities and Constraints Analysis (Sespe Consulting, Inc., November 2011); a Geotechnical Feasibility Assessment for the proposed project was prepared by Earth Systems Southern California in May 2011; and an update to the Geotechnical Feasibility Report was also produced by Earth Systems Southern California in March 2014 (Earth Systems Southern California, March 2014). The Soils and Geological Hazards evaluation found that there are no mapped faults that run through the site, but the Ventura Fault is located directly south of the site at the base of the foothills. It determined that the building locations included in the proposed Vision Plan at that time were outside the Alquist-Priolo zone of the Ventura fault, which means that it is outside the area considered to be at high risk of surface rupture from an earthquake on this fault.

The geotechnical feasibility assessment presents findings and recommendations from a feasibility-level geotechnical evaluation of potential building sites as shown on the Vision Plan for the proposed project. It confirmed that the project site, except for a small area in its southwest part that is not the site of any structures proposed under the Master Plan CUP, is outside the Alquist-Priolo fault zone. Both these studies also found areas of potential landslide hazards within the project site. The geotechnical feasibility assessment also identified potential soil instability issues associated with areas of artificial fill and steep slopes. These features are shown in comparison to facilities proposed under the Master Plan CUP in Figure 5 of this section. The geotechnical feasibility assessment also mapped areas of potential liquefaction in the vicinity, but found that these areas were all outside the project site. As shown in Figure 5, certain structures within the Horticulture Zone, as well as the Heritage Center building in the Heritage Zone, are located in areas of earthquake induced landslide potential as shown on the "Regional Seismic Hazard Zones" map from the May 2011 Earth Systems Geotechnical Feasibility Assessment, which in turn is in turn taken from the 2003 California Geologic Survey (CGS) Seismic Hazards Zones Map of the Ventura Quadrangle. As shown on the Regional Seismic Hazards Zone Map, the CGS defines these areas as "Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacement such that mitigation as defined in Public Resources Code Section 2693 (c) would be required". Section 2693 (c) of the Public Resources Code defines mitigation as "…those measures that are consistent with established practice and that will reduce seismic risk to acceptable levels."

New construction carried out under the proposed project would also be required to comply with California Building Code requirements, and the following standard conditions required for grading and building permits issued by the City are included in the Master Plan CUP for the project including all Phases 1-10:

1) Structures in Zones (applies to all structures to be constructed under the Master Plan including, but not limited to, buildings, water tanks, and all interim and permanent facilities).

    a. All buildings shall be designed in accordance with the City's currently adopted California Building Code, California Green Building Code, California Electric Code, California Plumbing and Mechanical Codes, California Energy Code and all other appropriate sections of the City of Ventura Ordinance Code. This compliance shall include, but not be limited to, compliance in terms of occupancy classification, allowable height and area, fire-resistance rating requirements, type of construction, accessibility, egress, and Green Building Code requirements.

    b. Complete architectural plans and appropriate engineering calculations shall be prepared for all buildings by a California Licensed Architect and/or Engineer and be submitted to the Building and Safety Division for plan check and plan approval.

    c. All buildings shall be designed and built in accordance with California Title 24 handicap accessibility standards. Appropriate details and specifications shall be incorporated into the plans and submitted at time of plan check.

    d. An accessibility analysis that complies with current California Building Code must be prepared by a CASp (**Certified Access Specialist)** and submitted to the City of Ventura Building and Safety Department prior to the initiation of each phase of construction of the Master Plan as defined in Table 5 of the Master Plan CUP.

    e. All buildings shall be designed in accordance with State of California energy conservation standards for non-residential buildings. All necessary plans and documentation shall be submitted to the City of Ventura at the time of plan check.

    f. A final geotechnical investigation report prepared by a California Certified Engineering Geologist and Geotechnical Engineer must be submitted for each structure prior to issuance of building permits. The Final geotechnical investigation must meet all requirements of the current Building Code and City of Ventura Ordinance.

2) Gardens (applies to all garden facilities including, but not limited to, trails, parking, service yards, equipment areas structures, lights, and fencing).

    a. All buildings shall be designed in accordance with the City's currently adopted California Building Code, California Green Building Code, California Electric Code, California Plumbing and Mechanical Codes, California Energy Code and all other appropriate sections of the City of Ventura Ordinance Code. This

compliance shall include, but not be limited to, compliance in terms of occupancy classification, allowable height and area, fire-resistance rating requirements, type of construction, accessibility, egress, and Green Building Code requirements.

b. Complete architectural plans and appropriate engineering calculations shall be prepared for all buildings by a California Licensed Architect and/or Engineer and be submitted to the Building and Safety Division for plan check and plan approval.

c. All buildings shall be designed and built in accordance with California Title 24 handicap accessibility standards. Appropriate details and specifications shall be incorporated into the plans and submitted at time of plan check.

d. An accessibility analysis that complies with current California Building Code must be prepared by a CASp (Certified Access Specialist) and submitted to the City of Ventura Building and Safety Department prior to the initiation of each phase of construction of the Master Plan as defined in Table 5 of the Master Plan CUP.

e. All buildings shall be designed in accordance with State of California energy conservation standards for non-residential buildings. All necessary plans and documentation shall be submitted to the City of Ventura at the time of plan check.

f. A final geotechnical investigation report prepared by a California Certified Engineering Geologist and Geotechnical Engineer must be submitted for each structure prior to issuance of building permits and for each area of phased trail development. The Final geotechnical investigation must meet all requirements of the current Building Code and City of Ventura Ordinance Code.

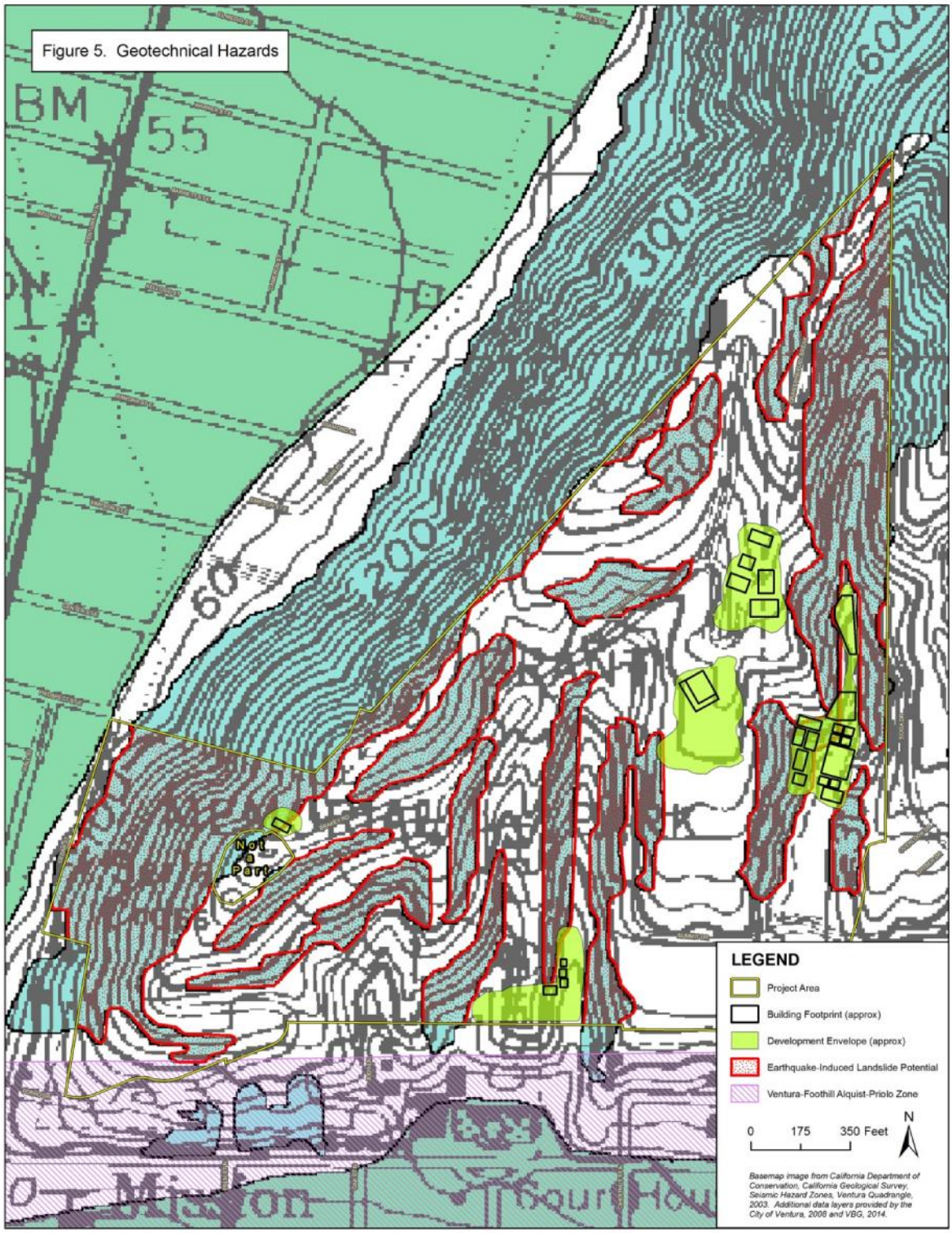


Figure 5. Geotechnical Hazards
BM
55
60
200
300
Not a Park
LEGEND
Project Area
Building Footprint (approx)
Development Envelope (approx)
Earthquake-Induced Landslide Potential
Ventura-Foothill Alquist-Priolo Zone
0 175 350 Feet
N
Basemap image from California Department of Conservation, California Geological Survey, Seismic Hazard Zones, Ventura Quadrangle, 2003. Additional data layers provided by the City of Ventura, 2008 and VBG, 2014.

As shown in 1)f above, a final geotechnical investigation report prepared by a California Certified Engineering Geologist and Geotechnical Engineer, meeting all requirements of the current Building Code and City of Ventura Ordinance, must be submitted for each structure prior to issuance of building permits. In order to ensure that potential hazards from structures located within areas of earthquake induced landslide potential are properly studied and fully mitigated, Mitigation Measure GEO-1 is required.

Mitigation Measures. The following mitigation measures would be required to avoid and reduce potential impacts related to earthquake-induced landslides.

**GEO-1:** For structures that may be in areas subject to earthquake-induced landslides as shown on the 2003 California Geologic Survey (CGS) Seismic Hazards Zones Map of the Ventura Quadrangle, the final geotechnical investigation (required under the City's standard conditions of approval for grading and building permits issued by the City) shall determine if the structure or structures covered by the investigation would actually be subject to such earthquake-induced landslide hazards, and if they are, also include mitigation measures that would, consistent with established practice, reduce this and other potential seismic risks to acceptable levels, consistent with Section 2693 (c) of the Public Resources Code.

With implementation of these standard development project conditions and Mitigation Measure GEO-1, the proposed Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, or seismic-related ground failure, including liquefaction and landslides, and this impact would be **less than significant with mitigation incorporated**.

**b-d. Less Than Significant Impact.** As discussed in Impact Discussion a(i)-a(iv), the project site includes areas that may be subject to earthquake-induced landslide hazards. However, Figure 4.6-2 of the 2005 General Plan FEIR, which shows areas with both "defined" and "questionable" landslide morphology, does not show any such areas within the project site. Implementation of the proposed project would therefore not expose people or structures to potential substantial adverse effects from non-seismically-induced landslides.

The geotechnical feasibility assessment found potential erosion hazards in some areas planned at that time for project structures, and the November 2011 Constraints Analysis identified areas of steep slopes as subject to "severe erosion". However, project facilities are not proposed to be located on steep slopes. As shown in Figure 6 of this section, the development envelope of facilities proposed under the Master Plan CUP is outside areas of 30% or greater slope. The City requires that no structures be built on greater than 30% slope, pursuant to the City's Hillside Management Program, Section II.6 – Grading and Site Design and Municipal Code Section 12.210.010.C. Erosion hazards are analyzed in Section IX, *Hydrology and Water Quality,* of this Initial Study, and have been found to be less than significant with implementation of standard conditions and best management practices (BMPs) already required through the City's grading and building permit review process, which are also included in the Master Plan CUP for the proposed project. These conditions and BMPs minimize any potential for substantial soil erosion.

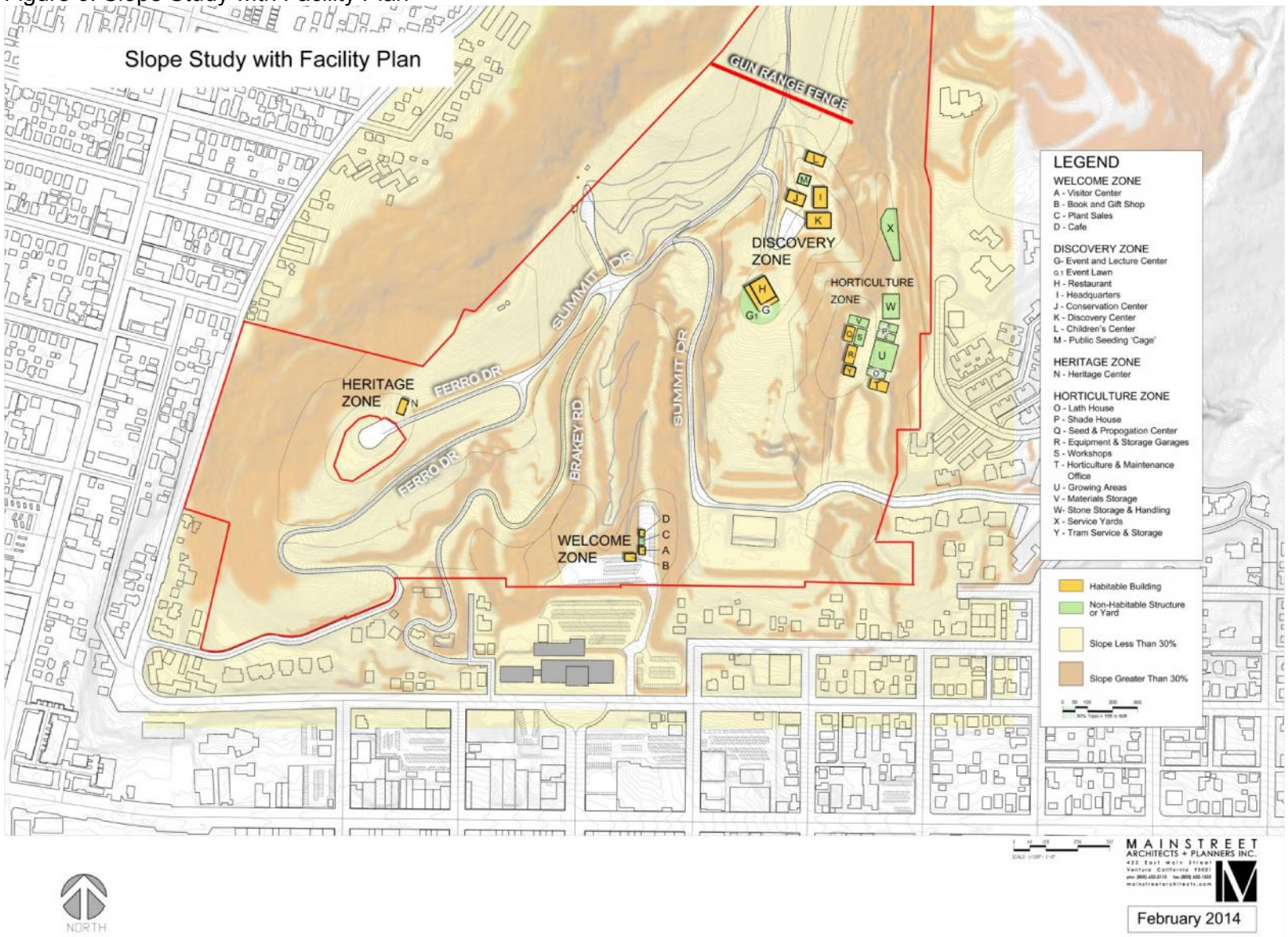
The project site, like most of the city, is located in a “moderate” expansive soil zone, as identified in the 2005 General Plan Final EIR, Figure 4.6-5. Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of slabs-on-grade, pavements, and structures on shallow foundations. The General Plan Final EIR found that risks from expansive soils in these “moderate” expansive soil zones would be less than significant with implementation of the California Building Code (CBC) and Action 7.7 from the General Plan, which is listed below.

> *Action 7.7: Require project proponents to perform geotechnical evaluations and implement mitigation prior to development of any site:*
>
> - *with slopes greater than 10 percent or that otherwise have potential for landsliding,*
> - *along bluffs, dunes, beaches, or other coastal features*
> - *in an Alquist-Priolo earthquake fault zone or within 100 feet of an identified active or potentially active fault,*
> - *in areas mapped as having moderate or high risk of liquefaction, subsidence, or expansive soils,*
> - *in areas within 100-year flood zones, in conformance with all Federal Emergency Management Agency regulations.*

The proposed project would also be subject to the City’s standard conditions of approval relating to expansive soils, which have been incorporated into the Master Plan CUP for this project to address the building and trail development, such as in and downslope of the Heritage Zone, and will be required in the City grading and building permits for the project.

With implementation of the standard requirements and conditions of approval discussed above, the proposed project would have a **less than significant** impact relative to erosion and soil hazards.

Figure 6: Slope Study with Facility Plan



**e. No Impact.** The proposed project would not involve the use of septic tanks, as discussed in Section XVII, *Utilities and Service Systems,* of this Initial Study, and would thus have **no impact** related to potential soil compatibility issues with septic tanks.

**References**:


City of Ventura. *2005 General Plan FEIR* (Section 4.6 Geologic Hazards). August 2005.

Earth Systems Southern California. *Geotechnical Feasibility Assessment, Buildings at Ventura Botanical Gardens Ventura, California, May 25, 2011*. Earth Systems Southern California. March 2014.

Mia Leher and Associates. *VBG Master Vision Plan*. September 2010.

Sespe Consulting, Inc.. Opportunities and Constraints Analysis Ventura Botanical Gardens. November 2011.


| **VII. GREENHOUSE GAS EMISSIONS** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, b. Less Than Significant Impact.** Neither the Ventura County Air Pollution Control District (VCAPCD) nor the City of Ventura has adopted a plan, policy or regulations for the purpose of reducing Greenhouse Gas (GHG) emissions to a level that would be considered less than significant under CEQA. As no such plan, policy or regulation has been adopted, the proposed Project cannot conflict with an adopted plan, policy or regulation for the purpose of reducing the emissions of greenhouse gases. However, the South Coast Air Quality Management District (SCAQMD) and California Air Quality Pollution Control Officers Association (CAPCOA) have each proposed thresholds of significance for GHGs.

The SCAQMD has proposed quantitative significance thresholds for GHGs. The SCAQMD has also convened a GHG CEQA Significance Threshold Working Group, the goal of which is to develop and reach consensus on an acceptable CEQA significance threshold for GHG emissions that would be utilized on an interim basis until CARB or another state agency developed statewide guidance on assessing the significance of GHG emissions under CEQA. In September 2010, the Working Group announced its latest iteration of the draft thresholds, which

recommended a single numerical threshold for all non-industrial projects of 3,000 MT $CO_2E$/year (Million Metric Tons Carbon Dioxide Equivalent per year). The California Emissions Estimator Model (CalEEMod) Version 2013.2.2 was used to estimate the GHG emissions that would be expected due to the completion of the VBG Master Plan CUP project. The CalEEMod results are shown in Attachment C. Using conservative estimates for construction duration, construction activities are expected to result in approximately 401 MT $CO_2e$. Amortized over 30 years this equates to 13.4 MT of $CO_2e$/year. Annual operational emissions were estimated to be 1,914 MT $CO_2e$. Therefore, the proposed project is expected to produce a total of 1,927 MT $CO_2e$/year, which is 36% below the numerical threshold of 3,000 MT $CO_2e$/year used in this analysis, although it should be reiterated that no numerical threshold for GHG emissions has been adopted for Ventura County. Therefore, the proposed project's impacts from GHG emissions would be less than significant.

**References**:

South Coast Air Quality Management District, 2010.

| **VIII. HAZARDS AND HAZARDOUS MATERIALS** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☒ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☒ | ☐ |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☒ | ☐ |
| e) Result in a safety hazard for people residing or working in a project area located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? | ☐ | ☐ | ☐ | ☒ |
| f) Result in a safety hazard for people residing or working in a project area within the vicinity of a private airstrip? | ☐ | ☐ | ☐ | ☒ |

| | | | | |
|---|---|---|---|---|
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☒ | ☐ |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | ☐ | ☒ | ☐ | ☐ |

**Explanation**:

**a-c. Less Than Significant Impact.** The only existing or proposed school located within one-quarter mile of the project site is Holy Cross School, which is located approximately 308 feet south of the southern tip of the project site behind the Ventura Mission. The proposed project would involve development of botanical gardens on land that is currently used as a city park, which could lead to an increase in the amount of chemicals (such as fertilizers and pesticides) used within the project site to maintain vegetation. Such materials could be used throughout the project site, but are planned to be stored, at project buildout, in the Horticulture Zone. The proposed project could also lead to increased use of potentially hazardous materials such as gasoline and motor oil to maintain and operate on-site machinery, during construction and also during on-going operation and maintenance. These materials could be used (within machinery) throughout the site, and potentially stored in small amounts in the Horticulture Zone. The Horticulture Zone is located approximately ½ mile east of Holy Cross School. The proposed project could also involve use of chemicals for operation, maintenance, and cleaning at certain proposed on-site facilities, such as the proposed restaurant in the Discovery Zone. However, use of such materials would not pose a significant hazardous materials risk, since they would be used and stored in relatively small amounts. Additionally, the proposed project would be required to comply with any applicable local, state, and federal, regulations for the routine transport, use, storage, and disposal of hazardous materials.

The Ventura Fire Department is responsible for the enforcement of all local, state, and federal codes related to the safe occupancy of buildings. This includes the safeguarding of life and property from the hazards of fire and explosion arising from the storage, handling, and use of hazardous materials and devices as well as hazardous conditions due to the use or occupancy of buildings. This also includes the storage of fertilizers and pesticides. The Fire Department completes this during building permit occupancy and the annual Business License review processes, which the VBG would be subject to even during the earlier years of operation. The proposed project's impacts related to the generation, disposal, or release of hazardous materials, substances or emissions is therefore **less than significant**.

**d. Less Than Significant Impact.** Since the time of the founding of the Ventura Mission in the late 1700s, the project site was first used for agricultural purposes, then became pasture for grazing in the 1800s, then was used for arboriculture, then returned to a more natural state after it was dedicated to the City in 1918. The current vegetation within the project site has colonized the area since the last fire in the 1950's. As part of the Opportunities and Constraints Analysis (Sespe Consulting, Inc., November 2011), a Phase I Environmental Site Assessment (ESA) for the project site was prepared by Sespe Consulting, Inc. in August 2011. The Phase I ESA was prepared to ASTM standard 1527-05. It provides a description of the property, structures, and other improvements within the project site; descriptions of current uses of adjoining properties; and an opinion regarding the potential presence and impact of "environmental conditions" within

the project site. The term environmental conditions means the presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate an existing release, a past release, or a material threat of a release into structures on the property or into the ground, groundwater, or surface water of the property. The assessment found that there were no environmental conditions that would constrain plans for development of the proposed project. It did identify various locations of un-compacted fill soil within the project site, but found that these areas would not present a constraint to development of the proposed project because it assumed that any formal project designs would address any concerns related to these areas during their development as required by applicable codes, regulations, and requirements. The potential for facilities proposed under the VBG Master Plan to be located on unstable soils (including areas of artificial fill) is addressed in Section VI, *Geology and Soils,* of this Initial Study, and has been found to be less than significant.

In addition to the information in the Phase I ESA, the Geotracker database (California State Water Quality Control Board, May 2014) and the Envirostor database (California Department of Toxic Substance Control, May 2014) were checked in May 2014. This search confirmed that the project site is not on a list of hazardous materials sites in these databases, which are compiled pursuant to Government Code Section 65962.5. There are some closed case sites within ½ mile of the project site, but they are all within downtown Ventura or west Ventura at significantly lower elevations than the project site, with little or no potential to have contaminated near-surface soils underlying the project site. The potential for the proposed project to have significant adverse impacts from exposure to on or off site hazardous materials would therefore be **less than significant**.

**e, f. No Impact.** The project site is not located near an airport. The closest airport is located in Oxnard, approximately 7 miles to the southeast. The project would therefore have **no impact** related to airport hazards.

**g. Less Than Significant Impact.** As shown on the Access/Parking/Circulation Plan for the proposed project (see Figure 5 of the Master Plan CUP and Rezone Application in Attachment A), roads that would be converted to pedestrian use could also be used by emergency vehicles and for fire access/evacuation routes in the case of an emergency. The on-site roadways of Summit and Ferro Drives would connect to Poli Street, Kalorama Street, and from there to the rest of the downtown and the regional roadway network. The project site is not in an area within an emergency evacuation route identified in any adopted emergency response plan or emergency evacuation plan. While the proposed project could lead to increased visitation to the project site, the on-site roadways discussed above would allow people to safely evacuate the site in an emergency. Implementation of the proposed Project would therefore not conflict with the implementation of adopted emergency response plans or emergency evacuation plans, and this impact would be **less than significant.**

**h. Less Than Significant Impact With Mitigation Incorporated** As identified in the 2005 General Plan FEIR, Figure 4.11-2, portions of the project site are located in areas identified as having fire hazards per the SEMS (Standardized Emergency Management System) Area Report. Although Figure 4.11-2 does not show the project site as being in a “high” or “very high” wildfire risk area, a Wildland-Urban Interface Fire Study prepared by Rincon Consultants, Inc. in November 2011 as part of the Opportunities and Constraints Analysis (Sespe Consultants, Inc., November 2011) determined that the project site lies within a Very High Fire Hazard Severity Zone, as defined and determined by the California Department of Forestry. The Wildland-Urban

Interface Study made the following recommendations in order to address this issue (numbering has been added for easier reference):

1. *A detailed fire service analysis should be prepared once formal VBG development plans with occupancy schedules are finalized. This assessment should consider the anticipated population growth within Ventura City Fire Department's Sector 1 service area, including the potential fluctuation in VBG visitation and special event populations, to determine whether the Project would upset the City's ideal population to fire fighter ratio.*
2. *Structure placement planning within the VBG project site, should consider existing vegetation, slopes, ingress and egress, proximity to existing neighboring structures, and proximity to existing fuel modification zones as a way to reduce fire hazards as much as possible. To the extent feasible, new structures and accessory structures proposed as part of the VBG should be designed and located pursuant to the following design recommendations:*
    a. *Site structures away from ridge tops, canyons, and areas between high points on a ridge*
    b. *Site structures on the most level portions of the property*
    c. *Provide easy access in and out of the structure*
    d. *Accommodate 100 feet of defensible space around the structure in accordance with Ventura City Fire Department standards;*
    e. *Keep structures away from existing vegetation that has not been thinned pursuant to a fuel modification plan and away from vegetation characterized as a high fuel load source*
    f. *Establish a minimum 30-foot setback from any ridge or cliff for a single-story structure, increasing this distance as the building height increases.*
3. *Based upon review of guidelines, VBG conceptual development plans, and site topography, the following site specific structure placement guidelines are recommended:*
    a. *Create a flat building area of sufficient size to include at least a 30-foot setback from all sides of the proposed structure, especially where proposed on/near a ridgeline.*
    b. *Locate structures adjacent to previously developed areas and/or existing vegetated areas having undergone fuel modification.*
4. *Avoid planting highly flammable plant species adjacent to onsite structures, remote pedestrian areas adjacent to wildland areas, steep canyons, or other areas with limited access.*
5. *The fuel modification areas (typically 100 feet around any inhabitable structure) should work in tandem with the other components of the VBG fire protection system, including enhanced ignition-resistive construction required by code, infrastructure upgrades, and water supply/fire flow, amongst others.*
6. *The design of structures should incorporate "ignition-resistant" construction techniques for all new structures. Enhanced construction features should*

*establish "structural hardening" as described in the City's "Ready Set Go!" brochure.*

7. *Implement emergency planning policies and procedures.*
8. *On an annual basis, the VBG should conduct a fire relocation/fire drill to train staff on what to do during a wildfire and where to assemble.*

Since the preparation of the Wildland-Urban Interface Study, the applicant has prepared formal VBG development plans incorporating a number of the recommended measures. These plans were also reviewed by the City of Ventura Fire Department, and are subject to standard fire conditions relating to fire prevention, hazardous material usage and storage, and safety design standards. As discussed in the analysis in Section XIV, *Public Services*, of this Initial Study, firefighter staffing levels were analyzed against the projected staffing, visitor and special event populations anticipated for the proposed project and were determined to be sufficient (Recommendation #1). Consistent with Recommendations #2, #4, and #6, the project has been designed to comply with Fire Department safety design requirements and is subject to standard fire conditions, including setbacks, fuel modification zones, and emergency access. Additionally the project buildings in the Welcome, Discovery, and Horticulture Zones have been clustered, and sited in areas of less than 30% slopes, avoiding ridgelines and proximity to steep slopes (Recommendation #3).

However, ongoing implementation of emergency planning policies and procedures, including trainings for staff are not included as part of the standard conditions, therefore the following Mitigation Measures (HAZ-1 and HAZ-2) are required.

Mitigation Measures. The following mitigation measures would be required to avoid and reduce potential impacts related to the project site's location in a Very High Fire Hazard Severity Zone.

**HAZ-1:** Implement emergency planning policies and procedures through a VBG facility emergency plan. VBG shall prepare the facility emergency plan for review and comment by the City of Ventura Fire Department, which shall approve or disapprove the plan.

**HAZ-2:** On an annual basis, the VBG shall conduct a fire relocation/fire drill to train staff on what to do during a wildfire and where to assemble.

With implementation of these measures, the proposed project's potential to expose people or structures to wildland fires would be **less than significant with mitigation incorporated**.

**References**:

California State Water Quality Control Board. Geotracker database website. http://geotracker.waterboards.ca.gov/. May 2014.

California Department of Toxic Substance Control. Envirostor database website. http://www.envirostor.dtsc.ca.gov/public/. May 2014.

City of Ventura. *2005 General Plan FEIR* (Section 4.7 Hazards and Hazardous Materials, and Section 4.11 Public Services).

Sespe Consulting, Inc.. *Opportunities and Constraints Analysis Ventura Botanical Gardens*. November 2011.

| **IX. HYDROLOGY AND WATER QUALITY** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Violate any water quality standards or waste discharge requirements? | ☐ | ☐ | ☒ | ☐ |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | ☐ | ☐ | ☒ | ☐ |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | ☐ | ☐ | ☒ | ☐ |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | ☐ | ☐ | ☒ | ☐ |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ☒ | ☐ |
| f) Otherwise substantially degrade water quality? | ☐ | ☐ | ☒ | ☐ |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | ☐ | ☐ | ☒ | ☐ |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | ☐ | ☐ | ☒ | ☐ |

| | | | | |
|---|---|---|---|---|
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☐ | ☒ | ☐ |
| j) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, c, d, e, f. Less Than Significant.** A Soils and Geological Hazards evaluation completed for the proposed project by Rincon Consultants, Inc. in November 2011 as part of the Opportunities and Constraints Analysis (Sespe Consultants, Inc., November 2011) made the following findings relevant to the site's hydrological characteristics:

- Parts of the site with steep slopes are subject to severe erosion. Based on a site reconnaissance performed as part of the geological hazards evaluation, it appears that erosion is a geologic concern at the site.
- During high intensity long duration precipitation events, excessive runoff can exist causing severe erosion, especially areas with steep slopes and un-vegetated soils.
- Potential impacts associated with topographical alteration include excessive runoff causing severe erosion.

Section 1.6.a of the VBG Design Guidelines (Attachment C of this MND's Attachment A) states that "Grading shall be minimized. Where grading is necessary it shall be done with respect for the topographic character of the site, and with conscious attention to establishing non-erosive drainage patterns. Grading is subject to review and approval by the City of Ventura."

Additionally, the Applicant/Developer and Property Owner shall comply with the requirements of the Ventura Countywide Stormwater Quality Management Program (VCSQMP), National Pollutant Discharge Elimination System (NPDES) Permit No. CAS004002, applicable NPDES permits issued by the State of California Regional Water Quality Control Board including the State General Permit for Construction Activity, and the City of San Buenaventura Municipal Stormwater Code, also known as the MS-4 permit.

Crabtree Group, Inc. prepared a letter on February 22, 2013 addressing MS4 compliance for the proposed project (Crabtree Group, Inc., February 2013), in which specific hydromodifcation recommendations were identified for the proposed project. The MS-4 permit requires the Applicant/Developer to comply with the Technical Guidance Manual for Stormwater Control Measures, with attention directed to Sections 3, 4, & 5 (available for download on the County's website at: http://www.vcstormwater.org), to design and construct stormwater control measures. The BMPs shall be designed specifically for the treatment of the pollutants of concern as identified in the referenced documents. All MS4 permit requirements and measures must be addressed, but may be built in phases corresponding to the phases described in Table 5 of the Master Plan CUP, as approved by the City Engineer. Therefore, construction-related impacts to water quality would be addressed through compliance with the requirements of the MS-4 permit through the issuance of City grading and building permits.

The proposed project does not include any substantial alteration of the existing drainage pattern of the project site or its surroundings, and would not alter the course of a stream or river in a manner which would result in substantial erosion, siltation or flooding on- or off-site.

Runoff pollutants such as petroleum hydrocarbons and heavy metals generally associated with urban developments are typically washed off streets during the first storm of the winter season, provided at least one-half inch of rain falls. Although the proposed project would not lead to a significant increase in impermeable surfaces in the project site considering the areas of the site to be dedicated to gardens, development within the Welcome, Discovery, Heritage and Horticultural zones is subject to the requirements of the City's MS-4 permit for Municipal storm water runoff, the conditions of which limit the volume of contaminants allowed to enter the storm drain system.

Increased activity within the project site under the proposed project, including increased visitation by the public, as well as on-site activities carried out by VBG staff, could result in runoff containing pollutants of concern, such as sediment, metals, nutrients, fertilizers, pesticides, pathogens, trash and debris that are typically washed off streets and other hard surfaces during the first storm of the winter season. The MS-4 permit also contains requirements for the incorporation of applicable BMPs such as landscaped areas for infiltration, filters and/or basins, and/or other approved methods that intercept stormwater and effectively prohibit pollutants from discharging into the storm drain system. Collectively, compliance with the requirements of the MS-4 permit through issuance of City grading and building permits and other City policies would minimize water quality impacts to a **less than significant** level.

**b. Less Than Significant.** The applicant's Master Plan CUP and Rezone Application (Attachment A) characterizes the state of current water supply infrastructure to the project site in the following way:

> *What little water infrastructure exists on the site presently is in very poor condition and the project will therefore need to develop a functional distribution system for potable water and fire protection. Summit Drive, Brakey Road, and Ferro Drive represent favorable routes for extending existing potable water from the city to the interior of the project and connection to water at Poli Street would be available to support the Welcome Zone.*
>
> *As a large land holding whose primary purpose is production, planting, and maintenance of ornamental plants, the project site will be agricultural in nature. As with agricultural operations of this size, VBG proposes to supply some or all of its irrigation needs through development of a well or wells on the property.*
>
> *… Preliminary investigations indicate that well water suitable for irrigation is likely to occur at reasonably accessible depths on an adjacent property and negotiations are under way to drill an exploratory well at that location. It is also likely that a similar well site or sites may be discovered within the bounds of the lease option areas.*

The applicant is therefore proposing to use some mix of City-supplied water and on- or off-site well water, with its preferred option being to supply as much of its water through on- or off-site wells as feasible. The physical improvements necessary for implementing either of these options are described in Section 8, *Description of Project,* of this MND.

There are presently five distinct water sources providing water to the City water system:

- Casitas Municipal Water District (Casitas)
- Ventura River Foster Park Area (Foster Park)
- Mound Groundwater Basin
- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)
- Santa Paula Groundwater Basin

The City also provides reclaimed water from the Ventura Water Reclamation Facility. In addition, the City has a 10,000 acre feet per year (AFY) contract amount from the California State Water Project, which is not utilized within the City service area because there are no facilities to deliver the water to the City.

The City's existing water use is currently estimated to be 17,343 AFY as stated in the 2014 Comprehensive Water Resources Report (RBF Consulting, May 2014). The 2005 General Plan FEIR estimated the total water available for City use in 2015 to be 28,262 AFY. This number was based on the 2000 Urban Water Management Plan (UWMP). Furthermore, the 2010 UWMP (Ventura Water, June 2011) estimated the total water available for City use to be 22,000 AFY (based on Casitas MWD demands declining from 6,000 to 5,000 AFY). The 2010 UWMP estimated a 6.5% annual water loss (due to leaks in the infrastructure and evaporation) and therefore the current total water available for City is estimated to be approximately 19,600 AFY. The Water System Evaluation (RBF Consulting, November 2014) contained in Attachment H found that future water supply projections under non-drought conditions range from 19,535 AFY to 24,284 AFY, and that existing water use, plus projects under construction and approved projects, is projected to be 18,428 AFY. Adding this to the proposed project's estimated annual water demand of 134.05 AFY, total water demand at project buildout is estimated to be 18,562 AFY. This is less than the City's conservative estimate of water supply of 19,824 AFY.

Therefore, the proposed project would not cause the City's water demand to exceed the projected supply and groundwater supplies would not be depleted. **Impacts would be less than significant.**

**g-j. Less Than Significant.** The Federal Emergency Management Agency (FEMA) has defined the 100- and 500-year flood hazard areas within the project site through the publication of Flood Insurance Rate Maps (FIRMs), which establish base flood heights and flood zones for 100-year and 500-year storm events. The 100-year storm event is defined as a storm that has a 1% probability of occurring in any given year, while a 500-year storm event has a 0.2% chance of occurring in any given year. A "floodplain", also called a flood zone, is the lowland adjacent to a river, lake or ocean and is designated by the frequency of the flood that is large enough to cover it. For example, a 100-year floodplain would be covered by a 100-year flood, while a 500-year floodplain would be covered by a 500-year flood. While urban development is typically prohibited within 100-year flood zones, development is not usually restricted within the 500-year flood zone because of the low probability of flood occurrence. As shown on Figure 4.8-4 of the General Plan Final EIR, the project site, because of its higher elevation compared to its surroundings and its sloping topography, is located outside of any 100- or 500-year flood zone, and therefore has a low probability of flood occurrence. Because the project site is located outside the 100-year flood hazard area, the proposed project would not place people or other structures within a 100-year flood hazard area and/or impede or redirect flood flows.

The 2005 General Plan FEIR, Table 4.8-1, identifies dams that would have impacts in Ventura should they fail. All of these dams meet applicable safety requirements and are inspected by the Division of Dam Safety, California Department of Water Resources, twice per year to ensure they meet all safety requirements and that necessary maintenance is performed. As shown on Figure 4.8-5 of the General Plan FEIR, the project site is not located within the inundation area of any of these dams. Additionally, implementation of the proposed project would not significantly affect emergency evacuation procedures at the City or regional level, as explained in Impact VIII.g. Potential flooding impacts due to dam inundation would therefore be less than significant.

As identified in the 2005 General Plan FEIR, Figure 4.6-6, the Tsunami Risk Area is located approximately ¼ mile from the project site, and at a much lower elevation. The project site is also not in any area identified as being at risk from seiche or significant mudflows. The exposure of people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of inundation by seiche, tsunami, or mudflow is **less than significant**.

**References**:


City of Ventura. *2005 General Plan FEIR* (Section 4.6 Geologic Hazards, Section 4.8 Hydrology and Water Quality). August 2005.

Crabtree Group, Inc. *MS4 Compliance memo*. February 2013.

RBF Consulting. *Water System Alternatives Evaluation, Water System Hydraulic Evaluation, and Supply Discussion for the Ventura Botanical Gardens in the City of Ventura.* November 2014.

RBF Consulting. *2014 Comprehensive Water Resources Report.* May 2014.

Sespe Consulting, Inc.. *Opportunities and Constraints Analysis Ventura Botanical Gardens*. November 2011.

Ventura Water. *2010 Urban Water Management Plan*. June 2011.

Ventura Water. *Estimated Wastewater Flows*. June 2014.


| **X. LAND USE AND PLANNING** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |

| | | | | |
|---|---|---|---|---|
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☒ | ☐ |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☐ | ☐ | ☐ | ☒ |

**Explanation**:

**a. No Impact.** The majority of the project site is located within the hillsides portion of the Downtown Community, while the far western portion of the project site fronting on Cedar Street is located within the Westside Community, as shown on Figure 3-3 of the City's 2005 General Plan. The proposed project would retain the fundamentally park-like physical setting of the project site. It would involve closing portions of Brakey Road within the project site to vehicular traffic (other than emergency vehicles and a proposed on-site tram), but this action would not eliminate access to any neighborhood because all roads leading into Grant Park end within the park, and neighborhoods on the perimeter of the park have better options for vehicular access to surrounding areas than travelling through the park. Therefore, the project would not physically divide an established community, and would have **no impact** in this regard.

**b. Less Than Significant Impact.** The proposed project includes no residential units and would therefore not exceed or conflict with the growth forecasts of the 2005 General Plan. Also, the proposed project would leave the project site's fundamentally recreational land use unchanged. The proposed project would therefore not induce substantial population growth that was unforeseen in the 2005 General Plan, nor would it result in induced population growth impacts greater than those analyzed in the 2005 General Plan FEIR.

Under the General Plan and Downtown Specific Plan, parks are allowed uses in designated parks (P&OS), residential/neighborhood (NL, NM, NH) and specific plan (DTSP) land use areas. Therefore the project is consistent with the current General Plan and Downtown Specific Plan designations. However, the proposed project includes a rezone to make the project consistent with the site's land use designations, per request of the Parks Department. The rezone would change the zoning from residential zoning (R-1-1-AC, R-1-7, and R-3-5) and urban zoning (T6.1) to Parks & Open Space zoning (P&OS) in order to match the 2005 General Plan land use designation of Parks and Open Space that applies to most of Grant Park, and its current use as parks and open space. This change in zoning would be consistent with the project site's current recreational use, and would not, as analyzed below, conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect.

The project site is also subject to the Hillside Management Program, per the 2005 General Plan which states that "all that area north of Foothill and Poli Street, and east of Cedar Street and within the City limits…is subject to the Hillside Management Program."

The proposed Project would also be consistent with the General Plan's following applicable policies, including those in the Hillside Management Program:

- *Policy 1C Improve protection for native plants and animals.*

- *Policy 2D Expand tourism opportunities.*
- *Policy 3A Sustain and complement cherished community characteristics*
- *Action 3.2: Enhance the appearance of districts, corridors, and gateways (including views from highways) through control on building placement, design elements and signage.*
- *Action 3.4: Require preservation of public view sheds and solar access.*
- *Policy 4B Help reduce dependence on the automobile.*
- *Policy 4D Protect views along scenic routes*
- *Action 4.18: Promote the development and use of recreational trails as transportation routes to connect housing with services, entertainment, and employment.*
- *Action 4.21: Require new development to provide pedestrian and bicycle access and facilities as appropriate, including connected paths along the shoreline and watercourses.*
- *Action 4.36: Require development along the following roadways – including noise mitigation, landscaping, and advertising – to respect and preserve views of the community and its natural context…Brakey Road…Poli Street/Foothill Road…*
- *Policy 6A Expand the park and trail network to link shoreline, hillside, and watershed areas.*
- *Action 6.1: Develop new neighborhood parks, pocket parks, and community gardens as feasible and appropriate to meet citizen needs, and require them in new development.*
- *Action 6.3: Work with the County to plan and develop trails that link the City with surrounding open space and natural areas, and require development projects to include trails when appropriate.*
- *Action 6.18: Offer programs that highlight natural assets, such as surfing, sailing, kayaking, climbing, gardening, and bird watching.*
- *Action 6.12 Update and carry out the Grant Park Master Plan.*
- *Policy 6C Provide additional gathering spaces and recreation opportunities.*
- *Policy 8B Increase the availability and diversity of learning resources.*
- *HMP Development/Timing Policy 1:All of the Hillside Area may be considered for development, subject to the Comprehensive Plan and this Program*
- *HMP Development/Timing Policy 4: The City will support qualified property owners who request to enter into County Land Conservation Act contracts or similar measures which will preserve the views and wildlife habitats, oak woodlands and general undeveloped characteristics of the Hillside Area.*
- *HMP Land Use Objective B: To project the natural and scenic resources of the Hillside Area in conjunction with future hillside development.*
- *HMP Land Use Objective E: To ensure that public access to the Hillside Area is not unduly restricted by future development.*
- *HMP Land Use Policy 2: Cluster development is encouraged as a means of preserving the natural appearance of the hillside, and maximizing the amount of usable open space.*
- *HMP Fire Zone Regulation Policy: All areas preserved in a natural state will be subject to applicable fire regulations (i.e. "Fire Zone 4" regulations) to ensure that natural vegetation does not pose a fire threat to nearby structures.*
- *HMP Circulation Objective A: To provide public access to the scenic features of the City.*

- *HMP Circulation Policy 6: Hiking trails, which may be required within the Hillside Area, should be dedicated and improved in conjunction with hillside development. In addition, public hiking trails should be provided within a development, wherever feasible, to provide connections with any designated hillside trail system and the City's linear park system.*
- *HMP Resource Protection Policy 1: Scenic resource areas, such as skyline ridges and significant natural landmarks, as designated on the Land Use Plan Map, should be preserved in a natural state.*
- *HMP Resource Protection Policy 4: Hillside development should be designed, whenever possible, to preserve existing trees and areas of significant natural vegetation, and wildlife migration routes.*
- *HMP Grading and Site Design Policy 3: No grading is permitted on any slope greater than 30%, except in limited cases for street or access purposes as approved by the City Engineer and City Planner.*

As discussed in Sections I *Aesthetics*, IV *Biological Resources*, and VI *Geology and Soils*, the proposed project has been designed to integrate the VBG into the natural landscape, and provide recreational and educational opportunities, as well as pedestrian and trail access throughout while retaining scenic vistas and natural resources. Buildings are sited away from ridgelines and in areas that do not exceed 30% slopes, with no or only limited offsite visibility from scenic roadways of the community. Therefore, the proposed project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and would thus have **no impact** in this regard.

As noted in the project description, Section 8 of this document, the applicant's concept for potential water supply from an off-site well has been evaluated for physical impacts in this MND, but permitting and any regulatory requirements to implement such water supply to the VBG would be subject to further review by the City, including Ventura Water, Ventura County, and any other required agencies. Attachment E of the Master Plan CUP document contains initial research conducted by the applicant regarding this regulatory framework.

**c. No Impact.** The project site is not included within an area covered by a habitat conservation plan or natural community conservation plan. Therefore, it would have **no impact** in this regard.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.14 Land Use and Planning). August 2005.

City of Ventura. *2005 General Plan* (Chapter 3 Our Well Planned Community). August 2005.

City of Ventura. *Hillside Management Program*. August 1989.

| **XI. MINERAL RESOURCES** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |

| | | | | |
|---|---|---|---|---|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☒ | ☐ |
| b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, b. Less Than Significant Impact.** As identified in the 2005 General Plan FEIR, Figure 4.9-2, portions of the project site are located within the "MRZ-3a" Aggregate Resources area, designated by the State as an area potentially containing aggregate mineral deposits, the significance of which cannot be evaluated from available data, but which are judged to have higher potential than other deposits classified "MRZ-3". However, the site's hilly topography and its proximity to Downtown Ventura and neighboring residential communities would make it unsuitable and impractical for aggregate mining activities. Moreover, the project site has been a park since the early 20th century, and is designated on the City's General Plan as mostly parks and open space, and a remaining easterly portion as residential. It is therefore not currently available as a mineral resource recovery site. Furthermore, the 2005 General Plan FEIR concluded that urban development that is consistent with the General Plan would ensure that potential conflicts between future uses and mineral extraction activity would be less than significant. For these reasons, the proposed project would have a **less than significant impact** on the availability of mineral resources.

**References**:

City of Ventura. *2005 General Plan EIR* (Section 4.9 Mineral Resources). August 2005.

| **XII. NOISE** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project result in: | | | | |
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☒ | ☐ | ☐ |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ☒ | ☐ |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Project? | ☐ | ☐ | ☒ | ☐ |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project? | ☐ | ☒ | ☐ | ☐ |

| | | | | |
|---|---|---|---|---|
| e) Exposure of people residing or working in a project area, which is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |
| f) Exposure of people residing or working in the project area, which is within the vicinity of a private airstrip, to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |

**Explanation**:

**Fundamentals of Noise and Vibration.** Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Because of the logarithmic scale of the decibel unit, sound levels cannot be added or subtracted arithmetically. If a sound's physical intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example, 60 dB plus 60 dB equals 63 dB, 80 dB plus 80 dB equals 83 dB. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, 70 dB ambient noise levels are combined with a 60 dB noise source the resulting noise level equals 70.4 dB.

Noise that is experienced at any receptor can be attenuated by distance or the presence of noise barriers or intervening terrain. Sound from a single source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance. For acoustically absorptive, or soft, sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receiver, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (such as hills and dense woods) and human-made features (such as buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction.

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where, although the motion may be discernible, without the effects associated with the shaking of a building, there is less adverse reaction. Typically, groundborne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB) in the U.S.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by

sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel wheeled trains, and traffic (especially from heavy vehicles) on rough roads. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans, which is around 65 VdB. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception (approximately 65 VdB) by 5 to 10 decibels. This vibration level is an order of magnitude below the damage threshold for normal buildings (approximately 100 VdB).

The project site is located in a natural area surrounded on three sides by urban uses. However, the urban uses immediately surrounding the project site consist mostly of low-density residential neighborhoods and parking lots behind Ventura City Hall. The project site is therefore currently in an environment of relatively low noise levels compared to surrounding urban areas such as Downtown Ventura.

The City of Ventura has adopted a Noise Ordinance and a General Plan Noise Element to regulate noise. The Downtown Specific Plan also includes policy guidance relevant to noise, however the noise-generating uses of the VBG site is outside of the DTSP. Applicable policies and standards are described below.

The City of Ventura Noise Ordinance (Municipal Code § 10.650) prohibits unnecessary, excessive, or annoying noise in the City. The Ordinance does not control traffic noise on public rights-of-way, but applies to all noise sources located on private property, including traffic noise. As part of the Ordinance, properties within the City are assigned a noise zone based on their corresponding land use. “Noise-sensitive” properties are designated as Noise Zone I; residential properties are designated Noise Zone II; commercial properties are included in Noise Zone III, and industrial/agricultural districts are designated as Noise Zone IV. The Ordinance also limits the amount of noise generated by uses during normal operation that may affect surrounding areas. Table 4 shows the allowable exterior noise levels and corresponding times of day for each of the identified noise zones.

**Table 4**
**Noise Zone Exterior Noise Limits**

| Designated Zone | | Time Interval | Exterior Noise Levels (dBA) |
|---|---|---|---|
| **Zone I** | Noise sensitive properties | 7 a.m.—10 p.m. | 50 |
| | | 10 p.m.—7 a.m. | 45 |
| **Zone II** | Residential properties | 7 a.m.—10 p.m. | 50 |
| | | 10 p.m.—7 a.m. | 45 |
| **Zone III** | Commercial properties | 7 a.m.—10 p.m. | 60 |
| | | 10 p.m.—7 a.m. | 55 |
| **Zone IV** | Industrial and agricultural | Anytime | 70 |

*Source: City of Ventura Municipal Code, Section 10.650.130B*

The noise standards shown in Table 4 apply to any noise-generating activity that exceeds the applicable level for a cumulative period of more than 30 minutes in any hour. For noise levels that last less than 30 minutes, the standards are as follows:

- *The exterior noise levels plus 5 dB for a total period of more than 15 minutes in any consecutive 60 minutes;*
- *The exterior noise levels plus 10 dB for a total period of more than 5 minutes in any consecutive 60 minutes; or*
- *The exterior noise levels plus 15 dB for a total period of more than 1 minute in any consecutive 60 minutes; or*
- *The exterior noise levels plus 20 dB for any period of time.*

Noise Zone II standards would apply to the noise-sensitive receptors closest to the project site, since the project site is bordered by residential properties to the east, south, and west. Current noise standards for Zone II permit noise levels less than 50 dBA between 7:00 AM and 10:00 PM and noise levels less than 45 dBA between 10:00 PM and 7:00 AM.

**General Plan Noise Element.** The Ventura General Plan Noise Element includes policies and standards regarding noise. Figure 7 below shows acceptable noise levels (in CNEL) for land uses in the City, taken from the Noise Element (which in turn were taken from State of California guidelines). Normally acceptable noise exposure for residential – low density single family or duplex is 60 dBA CNEL, with conditionally acceptable noise exposure up to 70 dBA CNEL. Normally acceptable noise exposure for residential – multi-family is 65 dBA CNEL, with conditionally acceptable noise exposure up to 70 dBA CNEL.

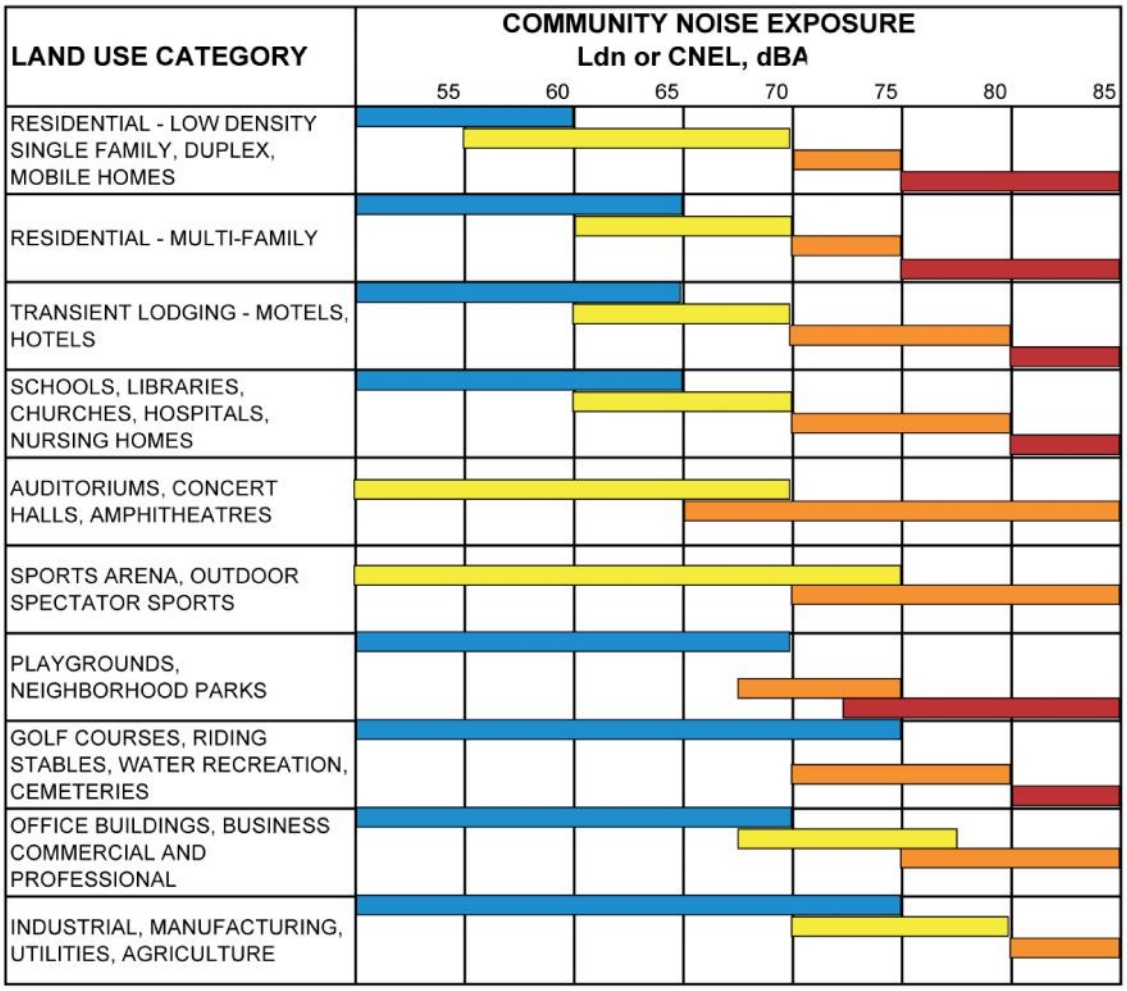
**a-d (long term operational) Less Than Significant Impact with Mitigation Incorporated.** Land uses surrounding the project site (described in the *Physical Setting* section above) are relatively low-intensity in nature, and would not expose people visiting the project site to noise or vibration levels in excess of standards established in the Ventura General Plan or Noise Ordinance, or applicable standards of other agencies. However, if facilities and events included in the proposed project, such as large group events that could be held in the Discovery Zone,

generate excessive noise levels, they could have the potential to expose noise-sensitive receptors at nearby residences to noise levels in excess of locally adopted standards. The following analysis is based, in part, on a noise evaluation dated July 2011, carried out for the proposed project by Rincon Consultants, Inc. as part of the Opportunities and Constraints Analysis (Sespe Consulting, Inc., November 2011).

The Discovery Zone is the part of the project site most likely to host large group events that would generate the highest noise levels within the VBG. The nearest residence is located approximately 500 feet east of the Discovery Zone. Noise levels typically attenuate (drop off) at a rate of 6 dBA per doubling of distance from point sources such as loudspeakers. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance. At a distance of 500-700 feet, noise levels from typical human speech (which normally does not exceed approximately 65 dBA at a few feet), while still distinctly audible, would attenuate to the point that it would not exceed the thresholds of acceptability listed above. Noise levels from groups of people talking, such as may occur in crowds of people gathered together at outdoor locations within the Discovery Zone, may attenuate at a slightly lower rate, but at 500-700 feet would still attenuate sufficiently to not exceed these thresholds. However, special events at the Discovery Zone could also include noise sources such as amplified music that would have the potential to be louder and/or more sustained than crowd noise.

As described above under City of Ventura Noise Standards, the City of Ventura's noise standard for usable outdoor recreation space (patios, gardens, etc) of both new single and multi-family residential structures drops down to 45 dBA after 10 p.m. Although the VBG proposes to allow special events until 12 a.m., the noise levels produced by the special events including amplified music could exceed this standard. Therefore Mitigation Measure NSE-1 is required.

Figure 7: Acceptable Noise Levels in Ventura General Plan




NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

*Guidelines for the Preparation and Content of Noise Elements of the General Plan, California Office of Planning and Research, 2003.*

Parking lot noise (such as intermittent noise from car door slams and car alarms) would be another potential source of noise from the project site. However, as shown in Figure 5 and Table 5 below, all but three of the parking lots included in the proposed project (Lot P3, Lot P8 and new Lot P9 resulting from **TRA RM-2** of Section XVI. TRANSPORTATION/TRAFFIC) would be in the same location as a current parking lot already being used in Grant Park. The project would therefore not introduce a new noise source in these locations. Parking Lot P3 would create six parking spaces at the Lower Ferro Turnout. This location does not have a direct line of sight to any nearby residence or other noise-sensitive receptor, and such receptors would therefore be shielded from such noise by topography. Parking Lot P8 would create 10 parking spaces at the Horticultural Zone. However, these spaces would be located at the bottom of the canyon in which the Horticultural Zone is located, and would not have a direct line of sight to the residences located approximately 230 feet to its east. The only exception is a home located on Overlook Drive, just north of Summit Drive. Because of its location at the edge of the canyon, rather than set back from it as the rest of the homes in the vicinity, this home may have a direct line of sight to this parking lot. However, this home is located approximately 200 feet to the southeast of the proposed parking lot, and noise from this lot would be intermittent and would not tend to extend into the evening hours because the maintenance and other "back of house" activities that would occur in the Horticultural Zone would not tend to extend past 7:30 p.m., according to Table 3 of the VBG Master Plan CUP and Rezone Application (Attachment A).

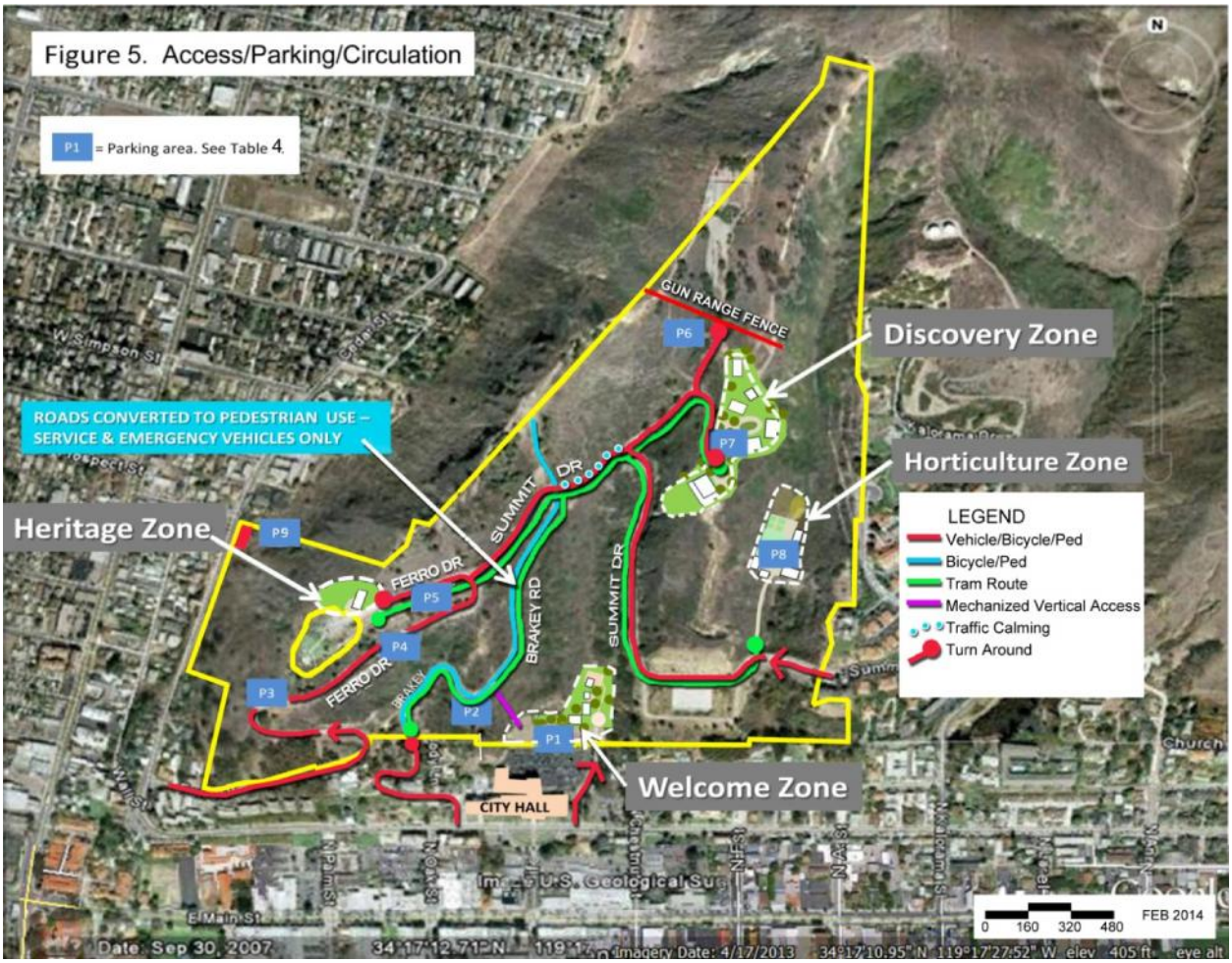


**Table 5**
**Parking Lots Within VBG**

| Lot Number | Description | Existing | Proposed |
|---|---|---|---|
| P1 | Main Lot- Exist. City Hall Upper | 153 | 106 |
| P2 | Lower Brakey Turnout | 7 | 0 |
| P3 | Lower Ferro Turnout | 0 | 6 |
| P4 | Mid- Ferro Turnout | 15 | 15 |
| P5 | 2011 Stone rampart near cross | 15 | 28 |
| P6 | Adjacent to Gun Range | 0 | 10 |
| P7 | Exist. BBQ Lot - Future Discovery | 30 | 72 |
| P8 | Horticulture/Maintenance | 0 | 10 |
| *P9* | *Cedar Street* | *0* | *5* |
| | **TOTAL** | **220** | **252** |

Parking Lot P9 results from City Policy analysis to ensure better route identification and provide safer access to the proposed trail from Cedar Street to the Heritage Zone. It is the smallest parking lot, anticipated to serve up to 5 vehicles for individuals seeking trailhead access, and is located immediately adjacent to the Cedar Street and Prospect Road intersection with residences to the north and west. As noted in the above analysis, this location would have intermittent use during daylight hours and would not significantly change the existing condition of noise associated with vehicles decelerating, stopping and accelerating through the intersection.

The Ventura Municipal Code does not directly regulate vibration outside of industrial zones. However, because operation of the proposed project would not include regular use of heavy-duty industrial machinery, a significant increase in heavy-duty vehicles on rough roads in close proximity to residences, or other uses that would produce significant levels of groundborne vibration, the proposed project's vibration-related impacts would be less than significant.

All noise generated within the project site would be subject to the standards of the City's Noise Ordinance as discussed above. These standards, enforced through the City's Code Enforcement process, allow the City to limit noise levels from any use, including the uses include in the proposed project, to a level consistent with nearby residential land uses.

Mitigation Measures. The following mitigation measure would be required to avoid and reduce potential operational noise impacts of the proposed project on nearby residences.

**NSE-1:** Special events at the Discovery Zone shall conclude (meaning all amplification equipment shall be turned off) no later than 10:00 p.m.

Compliance with Mitigation Measure NSE-1 would aid the project in complying with City standards and criteria, and would reduce the project's operational noise impacts to a level of **less than significant with mitigation incorporated**.

**a-d (short-term construction). Less than Significant Impact.** Section 10.650.150 of the City of Ventura Noise Ordinance exempts construction activities from the long-term operational standards discussed above, provided that they are conducted between 7 A.M. and 8 P.M. Construction activity is permitted between the hours of 8 P.M and 7 A.M., provided that construction noise levels do not exceed the City's standard noise limits for exterior uses at the nearest sensitive receptor as shown in Table 4. Noise levels typically associated with construction, such as electric saws, backhoes, dump trucks, etc., can exceed 65 dBA CNEL. However, these noises are considered short-term, and the City's Noise Ordinance (No. 87-19) only exempts construction activity from the exterior noise limits shown in Table 4 above between 7 A.M. and 8 P.M., when people are generally less sensitive to noise. Between 8 P.M. and 7 A.M., the standards in Table 4 would apply. The primary vibration source generally associated with the development of facilities to be constructed under the proposed project would result from the use of construction equipment such as earthmover, graders, and backhoes used to grade pads and prepare foundations. Vibration could also result from heavy truck trips on roadways in and around the project site. Table 6 shows typical vibration levels from such construction equipment. As discussed above, 75 VdB is the is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people, and 100 VdB is the general threshold at which minor damage can occur in fragile buildings.

As stated above, the area in which construction of facilities would occur under the proposed project that is closest to existing residences is the Horticulture Zone and the Welcome Zone, where homes are located approximately 200 feet from each area. At this distance, the only on-site construction equipment that would produce distinctly perceptible vibration levels of 75 VdB or more would be pile drivers. While it is unlikely that pile drivers would be used at either location, due to the low-rise nature of the proposed structures, as well as potential geologic constraints, even if pile drivers were used and produced distinctly perceptible off-site vibration, these impacts would be temporary and would not cause any damage to even fragile buildings. Loaded construction trucks would use roadways on and around the project site, and may produce distinctly perceptible vibration levels while they pass residences and other properties along their travel route, but each truck would only produce such vibration momentarily as it passed the receptor, and this impact would also be a temporary construction-related impact. For these reasons, construction-related vibration impacts of the proposed Project would be less than significant. Construction-related noise and vibration impacts of the proposed Project would therefore be **less than significant**.

**Table 6**
**Vibration Levels for Construction Equipment**

| Equipment | | Approximate VdB | | | |
|---|---|---|---|---|---|
| | | 25 Feet | 50 Feet | 100 Feet | 200 Feet |
| Pile Driver (impact) | upper range | 112 | 106 | 100 | 96 |
| | typical | 104 | 98 | 92 | 86 |
| Pile Driver (sonic) | upper range | 105 | 99 | 93 | 87 |
| | typical | 93 | 87 | 81 | 75 |
| Large Bulldozer | | 87 | 81 | 75 | 69 |
| Loaded Trucks | | 86 | 80 | 74 | 68 |
| Jackhammer | | 79 | 73 | 67 | 61 |
| Small Bulldozer | | 58 | 52 | 46 | 40 |

*Source: Federal Transit Administration, May 2006*

**f. No Impact.** The project site is not located within 2 miles of a public or private airport (the nearest airport is located in Oxnard, approximately 7 miles to the southeast), or exposed to excessive noises generated by an airport use.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.10 Noise). August 2005.

FTA (Federal Transit Administration). *Noise and Vibration Impact Assessment*. May 2006.

Sespe Consulting, Inc.. *Opportunities and Constraints Analysis Ventura Botanical Gardens*. November 2011.

| **XIII. POPULATION AND HOUSING** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☐ | ☒ |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

**Explanation**:

**a-c. No Impact.** The proposed project has no residential component, and would thus not directly induce population growth. The only change in land use designation that would be carried out under the proposed project would be a change in the designation of some peripheral parts of the project site from residential designations to Parks & Open Space (P&OS). This change would not cause the city's population to increase above SCAG or General Plan population or housing projections. The proposed project does not include the demolition of any existing housing and would not displace any people. The proposed project would therefore have **no impact** related to population and housing.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.15 Population and Housing). August 2005.

| **XIV. PUBLIC SERVICES** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental 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: | | | | |

| | | | | |
|---|---|---|---|---|
| i) Fire protection? | ☐ | ☐ | ☒ | ☐ |
| ii) Police protection? | ☐ | ☐ | ☒ | ☐ |
| iii) Schools? | ☐ | ☐ | ☒ | ☐ |
| iv) Parks? | ☐ | ☐ | ☒ | ☐ |
| v) Other public facilities? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a i). Less Than Significant.** Fire - The City of Ventura Fire Department (VFD) provides fire protection services to areas within the City's corporate boundary. The VFD responds to fire, rescue, medical, and hazardous materials emergencies. The VFD is comprised of three Divisions—Administration, Operations, and Fire Prevention. The Operations Division is responsible for activities and emergency responses of the Department's firefighting force. The VFD operates six fire stations in Ventura, each of which contains a fire engine company, plus administrative offices at 1425 Dowell Drive. While staff at any of the fire stations can respond to a call for service, the primary station responding to the project site would be Fire Station #1, which is the fire station closest to project site, and is located at 717 N. Ventura Avenue, about ¼ mile northwest of the western edge of the project site. The City of VFD has long sought to reach the national standard staffing goal of 1 firefighter per 1,000 residents. Currently, at 72 sworn positions and a population of 108,294 that ratio is 1 firefighter per 1,504 residents or 0.66 firefighters per 1,000 residents.

Construction of structures proposed under the Master Plan CUP would include framing and installation of electrical, plumbing, communications, and ventilation systems. Although unlikely, there is the potential for fire to occur at the construction site. In addition, construction sites would be subject to City requirements related to water availability and accessibility to firefighting equipment. Adherence to these requirements during construction would reduce the potential for fire hazards during construction to a less than significant level. The Water System Evaluation (RBF Consulting, November 2014), determined that, with the system improvements called for in that study, adequate fire flow would be available to serve the proposed project.

Construction activity would increase traffic both within and adjacent to the project site during working hours because commuting construction workers, trucks, and other large construction vehicles would be added to normal traffic during the construction period. Slow moving construction-related traffic along local roadways may reduce optimal traffic flows on these roadways and could conceivably delay emergency vehicles or contribute to a vehicle accident. This potential impact is considered to be less than significant due to the short-term nature of any construction-related traffic, and implementation of standard traffic control plans associated with grading and public improvement permits (i.e., flagmen, detours, etc.).

During the proposed project's operational phase, it can be generally assumed that the frequency and nature of future emergency calls would increase as the intensity of activity in the project site increases. For a recreational project such as the proposed project, the majority of calls would likely be due to emergency medical and rescue. The proposed project would be required to conform to the California Building Code (CBC) and Uniform Fire Code (UFC). Fire safety features such as sprinklers would be provided in proposed on-site habitable structures in accordance with these codes, and adherence to these requirements would reduce the potential for fire hazards during the project's operational phase to a less than significant level. Building access points for the proposed project would be reviewed and approved by the City, and would

also be required to conform to the CBC and UFC. Proper installation of the electrical, plumbing, and mechanical systems for such structures would be ensured by required building inspections during framing operations, thus reducing the potential for fire during the operational phase of the project.

Collectively, the new facilities would contribute to a cumulative demand for additional VFD facilities within the City. However, implementation of General Plan Action 7.13, shown below, would provide the requisite funding to new facilities and equipment needed to serve all new development within the City through 2025.

*Action 7.13: Resolve extended response time problems by:*

- *adding a fire station at the Pierpont/Harbor area,*
- *relocating Fire Station #4 to the Community Park site,*
- *increasing firefighting and support staff resources,*
- *reviewing and conditioning annexations and development applications, and*
- *require the funding of new services from fees, assessments, or taxes as new subdivisions are developed.*

While it is known that the VFD plans to relocate Fire Station #4 to the Community Park site, it is also possible that additional stations may be needed in the future in order to maintain acceptable service ratios, response times or other performance objectives for the VFD. It would be speculative to guess where additional VFD stations may be located in the future, and it is therefore not possible to determine if the provision of new or physically altered fire station would cause potentially significant environmental impacts. However, given that construction of a new VFD facility or expansion of an existing VFD facility would require appropriate environmental review, the proposed Project's impact related to VFD facilities would be less than significant. The proposed project's overall impact on VFD staffing and facilities would therefore be **less than significant**.

**aii). Less Than Significant.** Police - The City of Ventura Police Department (VPD) provides a wide variety of law enforcement services in the incorporated City, including patrol, traffic enforcement, SWAT, school resource officers, and dispatch. VPD headquarters is located at 1425 Dowell Drive, in the Thille neighborhood between the 101 and 126 freeways. The VPD divides the City into four geographic beats, which are created based on the number of crimes reported and calls for service within the City of Ventura. The project site is located within Beat 1, which generally includes Ventura's west end and portions of the Downtown area (VPD website, June 2014).

According to LAFCO's 2012 MSR, the VPD had 127 sworn officers in 2012, as shown in Table 7.

**Table 7**
**2012 VPD Staffing Levels**

| | | Sworn | Non-Sworn |
|---|---|---|---|
| Administration | Chief | 1 | 0 |
| | Assistant Chief | 1 | 0 |
| | Secretaries | 0 | 3 |
| Field Operations | Commanders | 3 | 0 |
| | Sergeants | 8 | 0 |
| | Corporals | 8 | 0 |
| | Police Officers | 67 | 0 |
| Investigations | Commander | 1 | 0 |
| | Sergeants | 2 | 0 |
| | Detectives | 22 | 0 |
| | Police Services Officers | 0 | 3 |
| | Crime Analyst | 0 | 1 |
| Dispatch | Sergeant | 1 | 0 |
| | Corporals | 4 | 0 |
| | Dispatchers | 0 | 12 |
| | Police Services Officers | 0 | 2 |
| Records | Supervisor | 0 | 1 |
| | Records Specialists | 0 | 10 |
| | Dictation clerks | 0 | 2 |
| Professional Standards | Commander | 1 | 0 |
| | Sergeants | 2 | 0 |
| | Police Service Officers | 0 | 1 |
| Traffic | Sergeant | 1 | 0 |
| | Corporal | 1 | 0 |
| | Officers | 4 | 0 |
| Business Services | Business Services Officer | 0 | 1 |
| | Payroll Specialist | 0 | 1 |
| | Total | 127 | 37 |

With 127 sworn officers and a city population of 107,166, the VPD had a ratio of 1.19 police officers per 1,000 residents in 2012. 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.

VPD is separated into two divisions: Operations and Administrative Services. The Operations Division is comprised of patrol officers, specialty assignment officers, and Police Service Officers (PSOs), as well as a traffic division, gang enforcement unit, and resource officers. The Administrative Services Division consists of a Investigation Bureau, an Information Technology Bureau, and a Professional Standards Bureau. According to VPD's website, VPD uses the most advanced equipment available, coupled with an ambitious training program for all employees. VPD uses a computer-aided dispatch system with mobile digital computers in each patrol car, modern Records Management and Crime Analysis systems, and all officers dictate their reports for transcription. On average the VPD handles over 88,000 calls for service a year and

processes nearly 40,000 reports. According to the 2012 LAFCO MSR, response times to emergency calls are below VPD's goal of arriving on scene within 5 minutes 90% of the time, with the VPD currently meeting this goal only 62% of the time.

Any intensification of land use, and the resulting increase in the concentration of people in an area, would increase the statistical probability of the occurrence of criminal incidents, with a corresponding increase in the statistical probability of traffic-related calls for service due to increased traffic. Nevertheless, because the proposed project would not exceed growth projections contemplated by the General Plan (see Section XIII, Population and Housing), and the General Plan contains policies designed to improve community safety through enhanced police service as the community grows, potential incidents arising as a result of increased activity at the project site could be effectively addressed by the VPD.

Collectively, the new facilities and uses envisioned under the proposed project would contribute to a cumulative demand for additional VPD facilities within the City. Implementation of General Plan Action 7.13 would provide the requisite funding for new facilities and equipment needed to serve new development through 2025. Additionally, General Plan Policy 2 calls for expanding the VPD headquarters as necessary to accommodate staff growth. It is possible that additional VPD stations and other facilities beyond those identified in the General Plan may be needed in the future in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. It would be speculative to guess where additional VPD stations or other facilities may be located in the future, and it is therefore not possible to determine if the provision of new or physically altered VPD facilities would cause potentially significant environmental impacts. However, given that construction of a new VPD facility or expansion of an existing VPD facility would require appropriate environmental review, the proposed project's impact related to VPD facilities would be less than significant. The proposed project's overall impact on VPD staffing and facilities would therefore be **less than significant**.

**a, iii). Less Than Significant.** School - Ventura Unified School District boundaries extend from the Santa Clara River west to include the entire City of Ventura, north along Highway 33 to include most of the Oak View community, and west to the Santa Barbara County line. District schools are organized as kindergarten through fifth grade elementary schools, sixth through eighth grade middle schools, and ninth through twelfth grade high schools. According to the VUSD website, VUSD manages 16 elementary schools in the City (plus Open Classroom, Homestead Homeschooling at Blanche Reynolds Elementary, and Sunset Elementary and Middle School in Oak View), four middle schools (plus Open Classroom and Sunset Elementary and Middle School in Oak View), four high schools, one continuation high school, Opportunity and Independent Study programs, and an adult education program.

The VUSD has divided the City into four geographic attendance areas to direct a student's progression from elementary to high school: Westside, Midtown, Montalvo, and East End. The plan site is located within the Westside 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 magnet school.

The 2005 General Plan FEIR concluded that growth impacts from new school facilities identified in the City's General Plan and Specific Plans would be less than significant citywide. Additionally, no residential units are included in the proposed project, and it would therefore not generate students. Therefore, the proposed project's impact on schools would be **less than significant**.

**a, iv), v). Less Than Significant.** The General Plan designates the majority of the project site and immediate adjacent area (74.98 acres out of 106.98 acres) as Parks and Open Space (P&OS). Grant Park, in which the project site is located, is already a recreational facility. No residential units are included in the proposed project, and it would therefore not induce population growth that would lead to significantly increased demand on existing recreational facilities or require the construction of new facilities. The implementation of the proposed project would provide new improvements within an existing park that would maintained by VBG, Inc.. The environmental impacts of the proposed project are discussed throughout this study, and have been found to be less than significant, in some cases with mitigation incorporated. Because the proposed project would not induce substantial population growth, would not change the existing land use of the project site, and would not include any new improvements that would not be maintained by VBG, Inc., it would have a **less than significant** impact related to recreational or other public facilities not already discussed above.

**References**:


California Department of Finance. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2013 and 2014.* May 2014.

City of Ventura. *2005 General Plan FEIR* (Section 4.11 Public Services). August 2005.

City of Ventura Fire Department website. http://www.cityofventura.net/fire. June 2014.

City of Ventura Police Department website. http://www.cityofventura.net/pd. June 2014.

Ventura Local Agency Formation Commission. *Municipal Services Reviews, Nine Ventura County Cities*. November 2012.

Ventura Unified School District website. http://www.venturausd.org/Schools.aspx. June 2014.


| **XV. RECREATION** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project; | | | | |
| a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ |
| b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, b. Less Than Significant Impact.** The General Plan designates the majority of the project site (74.98 acres out of 106.98 acres) as Parks and Open Space (P&OS). Grant Park, in which the project site is located, is already a recreational facility. The implementation of the proposed project would provide new improvements within an existing park that would maintained by VBG, Inc., and physical deterioration of existing recreational facilities would not be expected to occur or be accelerated. While there will be new trail improvements and gardens installed, installation of those facilities will be done in such a manner to preserve the existing resources, as discussed in Section IV, Biological Resources. The park improvements to be carried out under the proposed project would therefore not have an adverse physical effect on the environment. Implementation of the proposed project would provide new recreational amenities that would be maintained by VBG, Inc. directly, or as authorized in the lease agreement between VBG and the City's Park Department, and physical deterioration of existing recreational facilities would not be expected to occur or be accelerated. Therefore, the proposed Project would have a **less than significant** impact on recreational facilities.

**References**:

City of Ventura. *2005 General Plan FEIR* (Section 4.11 Public Services). August 2005.

| **XVI. TRANSPORTATION/TRAFFIC** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☐ | ☐ | ☒ | ☐ |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☐ | ☒ |

| | | | | |
|---|---|---|---|---|
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☒ | ☐ | ☐ |
| e) Result in inadequate emergency access? | ☐ | ☐ | ☒ | ☐ |
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, b, f. Less than Significant.** A Traffic, Circulation, and Parking Study was completed for the proposed project in June 2014 by Associated Transportation Engineers (ATE). The ATE Study is included in this MND as Attachment E. The ATE Study analyzes traffic (including estimates of the potential vehicular trip generation and distribution of the proposed project); site access and circulation; and parking. While the City of Ventura has no adopted roadway standards, the ATE Study does analyze how project-generated traffic, in combination with existing traffic (travelers to Grant Park, including Serra Cross), would affect the function and vehicular capacity of roadways in and around the project site, using Ventura County level of service (LOS) thresholds for County roads. The ATE Study determined that the project's trip generation would be 1,126 ADT in an average attendance year, and 1,370 ADT in Peak Exposition Years. The ATE Study found that traffic levels generated by the proposed project, even during Peak Exposition Years, would not significantly impact the operation of surrounding roadways, which would continue to operate at LOS D or better. For the same reason, the project would not conflict with any congestion management program. The ATE Study also notes that VBG, Inc. plans to encourage the use of pedestrian and bicycle access and promote connectivity to other attractions in the downtown Ventura area to reduce vehicle trips to and from the site.

The "Our Accessible Community" Section of the Ventura General Plan includes policies and actions to balance automobile use with other means of travel and provide safe and enjoyable routes for pedestrians and bicyclists. Those policies include:

- *Policy 4A: Ensure that the transportation system is safe and easily accessible to all travelers*
- *Action 4.6: Require new development to be designed with interconnected transportation modes and routes to complete a grid network.*
- *Action 4.13: Require project proponents to analyze traffic impacts and provide adequate mitigation in the form of needed improvements, in-lieu fee, or a combination thereof.*
- *Policy 4B: Help reduce dependence on the automobile.*
- *Action 4.18: Promote the development and use of recreational trails as transportation routes to connect housing with services, entertainment, and employment.*
- *Action 4.24: Require sidewalks wide enough to encourage walking that include ramps and other features needed to ensure access for mobility-impaired persons.*
- *Action 4.26: Establish a parking management program to protect the livability of residential neighborhoods, as needed.*

The proposed project would not create any new roadways, instead using, and extending, the existing roadway network within the project site--including trails and bike paths. It would, however, eventually alter this network through closure of Brakey Road within the project site to vehicular traffic other than the proposed internal tram and emergency vehicles. The ATE Study included an analysis of site access and circulation for the proposed project, including vehicular access, pedestrian access, bicycle access, and the proposed tram system and ADA access. The ATE Study concluded that the existing circulation system, as modified by the proposed project, would be adequate to accommodate all modes of travel.

The project would not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, or decrease the performance or safety of public transit, bicycle or pedestrian facilities, and this impact would be **less than significant**.

**c. No Impact.** Implementation of the proposed project would not result in a change in air traffic patterns because the nearest airport is located in Oxnard, approximately 7 miles to the southeast, and no Airport Land Use Plan or associated approach or clear zones overlay the City of Ventura. Therefore, the proposed project would have **no impact** on air traffic patterns.

**d. Less Than Significant with Mitigation Incorporated.** The proposed project is a compatible use with the current use of the site and surrounding uses in that it would be consistent with the continued recreational use of Grant Park. Therefore it would not lead to any design hazards associated with incompatible uses.

As discussed above, the proposed project would not create any new roadways, but would eventually alter this network through closure of Brakey Road within the project site to vehicular traffic other than the proposed internal tram and emergency vehicles. The traffic counts for the ATE Study were taken Friday March 21, 2014 through Monday March 24, 2014 to capture typical operations and general visitors to Grant Park, including a special event at the Serra Cross site. City traffic counts are normally conducted during the spring months to represent a "typical" condition (neither low or high peak) Since the time frame of this traffic count included a wedding special event, which is a common occurrence during spring and summer months, this further verifies that the analysis is based on a "typical" day. The ATE Study concluded that the existing circulation system, as modified by the proposed project, would be adequate to accommodate all modes of travel, and would not substantially increase hazards due to a design feature or incompatible uses. Additionally, emergency access to the site would be fully maintained in its current state by allowing emergency vehicles to continue to access the site via Brakey Road, as well as the other currently available access points of Ferro Drive and Summit Drive.

While the proposed project does not introduce any design features such as sharp curves or dangerous intersections to the project site, it would likely lead to an increase in the number of people visiting the project site, many of whom may walk into the site along Ferro Drive, Brakey Road, Summit Drive, Cedar Street, or the Welcome Zone via the pedestrian access connection to Poli Street. The ATE Study (page 18) makes the following observations and recommendations regarding pedestrian access:

1. *A sidewalk is [currently] provided on the north side of Summit Drive from Kalorama Street to the eastern boundary of the Grant Park site. Pedestrians are*

*then required to walk in the roadway to enter the site. It is recommended that an off-street trail be provided connecting from the existing sidewalk to the interior trail system within the VBG or to the closest VBG tram stop.*

2. *Pedestrian signage and way finding should be provided at the Poli Street entrance to Ventura City Hall to direct pedestrians and bicycles to the Welcome Zone.*

3. *It is anticipated that pedestrians would use Brakey Road, and Ferro Drive to enter the site. There are no sidewalks currently provided on Brakey Road or Ferro Drive, and the roadways are somewhat narrow. Sidewalks or off-road trails should be provided on the segments of Ferro Drive and Brakey Road to allow for better westside pedestrian connectivity. The pedestrian paths should connect to the interior trail system within the VBG or to the closest VBG tram stop.*

In order to make sure that pedestrian access via these routes does not result in potentially hazardous pedestrian/vehicle conflicts, and in order to provide better pedestrian connectivity to the project site, these recommendations have been incorporated into this MND as mitigation measures TRA-1 through TRA-3 below.

Mitigation Measures. The following mitigation measures would be required to avoid and reduce potential pedestrian safety hazards on roadways accessing the project site.

**TRA-1:** Prior to construction of any project-related improvements within the Discovery Zone, Australia Garden, or Cape Garden, an off-street trail shall be provided connecting the existing sidewalk on the north side of Summit Drive, which currently ends at the eastern boundary of the project site, to the interior trail system within the VBG or to the closest VBG tram stop.

**TRA-2:** Pedestrian signage and way finding shall be provided at the Poli Street entrance to Ventura City Hall to direct pedestrians and bicycles to the Welcome Zone.

**TRA-3:** Sidewalks or off-road trails shall be provided on the segments of Ferro Drive and Brakey Road within and leading to the project site to allow for better westside pedestrian connectivity. The pedestrian paths should connect to the interior trail system within the VBG or to the closest VBG tram stop.

With implementation of these measures, the proposed project's potential related to potentially hazardous design features would be **less than significant with incorporated mitigation**.

In order to implement City Policy 4-A and Action 4.6, the following Recommended Mitigation measure is proposed to support better route identification, provide safer travel throughout the park and safer access to the trail from Cedar Street to the Heritage Zone, but are not required in order to reduce transportation/traffic impacts to a less than significant level.

**TRA RM-1:** VBG shall develop a Wayfinding Signage Program to aid pedestrian, bicycle and vehicular access throughout the VBG.

**TRA RM-2:** VBG shall provide an off-street parking lot at the Cedar Street trailhead, for the trail that goes from Cedar Street up the hill to the Heritage Zone, shown as P9 on Master Plan CUP Figure 5 and Table 5.

e. **Less Than Significant.** While the proposed project would likely lead to an increase in the number of people visiting the project site, Summit Road would remain open to vehicular traffic through the site, all existing emergency access routes would be maintained, and the ATE Study determined that project-related traffic would not significantly impede traffic along roadways in and around the project site. The project has also been reviewed by the Ventura Fire and Police Departments to ensure that it includes features necessary for emergency access (such as two means of ingress and egress and adequate road and driveway widths) and, with imposition of conditions from these agencies (such as removable bollards), the project would not interfere with emergency response access. Therefore, the proposed Project would have a **less than significant** impact on emergency access.

**References**:


Associated Transportation Engineers (ATE). *Ventura Botanical Gardens Master Plan, City of Ventura, California, Traffic, Circulation, and Parking Study*. June 2014.

City of Ventura. *2005 General Plan FEIR* (Section 4.12 Transportation and Circulation). August 2005.


| **XVII. UTILITIES AND SERVICE SYSTEMS** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Would the Project: | | | | |
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☒ | ☐ |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☒ | ☐ |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☒ | ☐ |
| d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed? | ☐ | ☐ | ☒ | ☐ |

| | | | | |
|---|---|---|---|---|
| e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☒ | ☐ |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs? | ☐ | ☐ | ☒ | ☐ |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☒ | ☐ |

**Explanation**:

**a, b, e. Less Than Significant Impact.** Wastewater – The project site is within the service area of the City of Ventura's Water Department (Ventura Water), which provides water and wastewater services to most of the city. Additional demands on the City's wastewater systems have been anticipated in the 2005 General Plan and the 2005 General Plan FEIR, which was reviewed by the Los Angeles Regional Water Quality Control Board for Ventura County and cities. The City's wastewater collection system is divided into four service areas known as the East, Midtown, Downtown, and Westside areas. The project site is located in the Downtown service area. Flows from the City's four wastewater service areas are treated at the City's Ventura Water Reclamation Facility in the Harbor area near the mouth of the Santa Clara River. Ventura residents generate millions of gallons of wastewater each day, which is carried by more than 450 miles of sewer mains and 12 lift stations to the Water Reclamation Facility. While most residents receive sewer service directly from the City, three other sanitary sewer agencies with their own treatment facilities provide service to some citizens in the Montalvo, Saticoy, and North Ventura Avenue areas. These treatment facilities are:

- Montalvo Community Services District Treatment Plant
- Saticoy Sanitary District Treatment Plant
- Ojai Valley Sanitary District Treatment Plant

Ventura Water produced a memo and an associated spreadsheet on June 9th and 17th, 2014 (Attachment F) evaluating the plant capacity of the Ventura Wastewater Reclamation Facility (VWRF) compared to existing flows and all projects currently under construction, approved, or active (in the planning process), plus the proposed project. This memo, which was updated by the spreadsheet determined that the current estimated average inflow at the VWRF is 8.8 million gallons per day (mgd) and the currently permitted capacity of the VWRF is 14 mgd, but the secondary treatment capacity limits the plant capacity to 12 mgd. It also estimated that the total average sewer flow from all projects in the City currently under construction, approved, or active is 1.6 mgd, and that wastewater flows from the proposed Project would be an estimated 15,896 gpd (0.016 mgd). Using these assumptions, total estimated existing and projected wastewater flows, including the proposed project, were determined to be 10.4 mgd, 1.6 mgd below the 12 mgd plant capacity of the VWRF (87% plant capacity). The proposed Project would therefore not cause the capacity of the VWRF to be exceeded but a study must now be conducted by Ventura Water and report filed to the Regional Water Quality Control Board that outlines plans for an eventual Plant expansion since flows will be exceeding 75% of Plant capacity.

The City's allowance for sewer line depth of peak wet weather flow (d) compared to the diameter of pipe (D) is a maximum of 67% d/D for pipes 15-inches in diameter and smaller, and 75% d/D for pipes larger than 15-inches diameter. The allowance is 50% d/D for pipes that cross underneath freeways. All development on the project site that would generate wastewater flows would be required by the City to connect to the City's wastewater system. Projects are required by the City to prove adequate sewer collection system capacity, and are conditioned for infrastructure improvements on a first come basis to upgrade systems, with subsequent projects paying their fair share. The following 2005 General Plan action supports this approach:

*Action 5.6* *Require project proponents to conduct sewer collection system analyses to determine if downstream facilities are adequate to handle the proposed development.*

As analyzed in the June 2014 Ventura Water memo discussed above, while implementation of the proposed Project would increase wastewater generation, the projected flows would remain within the capacity of the VWRF.

The City's existing collection system was also analyzed to determine whether it would also be adequate to accommodate the additional sewer flow from the project in an infrastructure analysis provided by Kennedy/Jenks Consultants in a report dated September 15, 2014 (Attachment G). According to this report, per the project plans, wastewater from the project would connect to the City's sewer collection system at two locations. Connection point #1 would be at the west end of Summit Drive and connection point #2 would be on Poli Street, just west of Chestnut Street, as shown on Figure 1 of the Kennedy/Jenks report. The connection on Summit Drive would be to an existing 8-inch sewer, which would then connect to an 8-inch sewer to the east in Kalorama Drive. Once in Kalorama, the wastewater would flow south to Thompson Boulevard, and then west, eventually reaching the Seaside Transfer station. The connection on Poli Street would be to an existing 6-inch sewer, which connects to an existing 8-inch sewer in California Street. Once in California, the wastewater would flow south to Thompson Boulevard, and then west, eventually reaching the Seaside Transfer station. The wastewater would be pumped from the Seaside Transfer station to the southeast to the VWRF. In the City's 2010 Wastewater System Master Plan (Kennedy Jenks, August 2010), the existing loads assigned to the parcels that make up the project site totaled 2.56 gpm, while the loads estimated for these parcels under ultimate conditions (buildout of the City's existing General Plan, plus the proposed project) totaled 28.64 gpm; while an estimated flow of 11.04 gpm was calculated for the project for both the existing and the ultimate scenarios. Using hydraulic modeling, calibrated by flow monitoring conducted by Gold Coast Environmental, the study ultimately determined that the additional flows from the project do not make a significant difference in terms of the performance of the collection system for the area of the system downstream from the project. This is also true for near-term and ultimate flow conditions. Therefore, the proposed Project would have a **less than significant impact** on wastewater facilities and disposal. However, the project is contributing flows to pipes that are already exceeding the d/D allowances. The project was therefore conditioned to pay a fair- share fee to be used towards upsizing sewer pipes that are being utilized by the project as part of an upcoming Capital Improvement Project.

**c. Less Than Significant Impact.** Stormwater – Individual projects carried out under the proposed Master Plan would be required by the City to include a stormwater management system consistent with MS-4 requirements. The design and implementation of the system would be required to use a variety of specific Low Impact Development (LID) practices and Best

Management Practices (BMPs) for the treatment of stormwater utilizing source control, site design, and structural treatment control.

General Plan Policy 5B calls on the City to "improve services in ways that respect and even benefit the environment". Several Actions under this Policy require project proponents to evaluate the need for, and pay their fair share of the cost of, improvements necessary to address system deficiencies or needed improvements for the proposed development. Implementation of these Policies and Actions would provide the requisite funding for new facilities and equipment needed to serve new development in the City through 2025. Consistent with these Policies and Actions, prior to issuance of any building permits, the applicant would be required by the City to pay sewer and water connection fees, parks and recreation facilities taxes, traffic mitigation fees, service area parks mitigation fees, public park fees and all other applicable fees/taxes. The proposed Project's impact related to storm water facilities would be **less than significant**.

**d. Less Than Significant Impact.** Water – The project site is within the service area of Ventura Water, which provides water and wastewater services to most of the city. There are presently five distinct water sources providing water to the City water system:

- Casitas Municipal Water District (Casitas)
- Ventura River Foster Park Area (Foster Park)
- Mound Groundwater Basin
- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)
- Santa Paula Groundwater Basin

The City also provides reclaimed water from the Ventura Water Reclamation Facility. In addition, the City has a 10,000 acre feet per year (AFY) contract amount from the California State Water Project, which is not utilized within the City service area because there are no facilities to deliver the water to the City.

A significant impact would occur if sufficient domestic and/or fire protection water supply were not available to serve the proposed project's current and long-term needs. The City's existing water use is currently estimated to be 17,343 AFY as stated in the 2014 Comprehensive Water Resources Report (RBF Consulting, May 2014). The 2005 General Plan FEIR estimated the total water available for City use in 2015 to be 28,262 AFY. This number was based on the 2000 Urban Water Management Plan (UWMP). Furthermore, the 2010 UWMP (Ventura Water, June 2011) estimated the total water available for City use to be 22,000 AFY (based on Casitas MWD demands declining from 6,000 to 5,000 AFY). The 2010 UWMP estimated a 6.5% annual water loss (due to leaks in the infrastructure and evaporation) and therefore the current total water available for City is estimated to be approximately 19,600 AFY. The Water System Evaluation (RBF Consulting, November 2014) contained in Attachment G found that future water supply projections under non-drought conditions range from 19,535 AFY to 24,284 AFY, and that existing water use, plus projects under construction and approved projects, is projected to be 18,428 AFY. Adding this to the proposed project's estimated annual water demand of 134.05 AFY, total water demand at project buildout is estimated to be 18,562 AFY. This is less than the City's conservative estimate of water supply of 19,824 AFY. Sufficient water supplies are therefore available to serve the proposed project, and impacts would be **less than significant**.

**f, g. Less Than Significant Impact.** Solid Waste - Solid waste disposal is an issue of regional and statewide significance, especially as landfills are approaching and/or reaching their capacities. In addition, the ability to develop new landfills is complicated by numerous environmental, regulatory and political concerns. Recycling and reusing waste materials provides significant additional environmental benefits such as reducing resource and energy use, conserving water, and reducing pollution, but recycling and reusing waste materials has not eliminated the need to develop new landfills.

Assembly Bill 939, passed in 1989, required all jurisdictions in California to increase their landfill diversion to 50% by the year 2000. In addition, AB 341 passed in 2012, sets a new statewide goal of achieving 75% landfill diversion by 2020. The bill also requires businesses generating more than 4 cubic yards of solid waste to recycle and requires owners of multi-family housing with 5 or more units to provide recycling for their tenants. New development projects in the city are required to implement site specific source reduction, recycling, and re-use programs to comply with AB 939 and AB 341.

In addition, all newly constructed solid waste enclosures must comply with the city's Refuse and Recycling Enclosure Minimum Standards and Guidelines (City of Ventura, March 2004), which includes the provision that all new enclosures must be constructed to accommodate at least one 3-cubic yard trash bin AND one 3-cubic yard recycling bin. The proposed Project also includes the following standards for trash enclosures within the VBG, contained in Section 1.10 of the proposed VBG Design Principles and Guidelines/Sign Guidelines:

> *Trash enclosures within the Botanical Garden will comply with the following requirements, which are based on the guidelines for trash enclosures from the City's Citywide Design Guidelines:*
>
> *a. Trash enclosures shall include separate bins for trash and recycle materials.*
> *b. Trash enclosures shall be shielded from general view.*
> *c. Enclosures shall be animal proof.*
> *d. All trash enclosures shall have a solid roof and be screened from public view by solid fences or walls with a minimum of 6 feet in height.*

Construction and demolition projects can generate large amounts of waste. Most of the waste is recyclable, including asphalt, concrete, wood, cardboard and metal. As of January 1, 2011, the new *California Green Building Standards Code* (California Code of Regulations, Title 24, Part II, available online at http://www.bsc.ca.gov/Home/CALGreen.aspx) went into effect. Section 5.408 now requires all new construction projects to file and implement a construction and demolition Waste Management Plan (WMP). The City's Environmental Sustainability Division works in conjunction with its Building and Safety Division in reviewing and assisting applicants with their WMP plans. The WMP must be submitted and approved as part of the plan-check process before a building permit can be issued. The implementation of the WMP must result in diversion of at least 50% of the waste generated during a construction project.

Solid waste generated in the City of Ventura is typically hauled to Gold Coast Recycling and Transfer Station. Solid waste is sorted and either hauled to Toland Road Landfill (maximum permitted capacity of 1,500 tons/day and receives 1,300 tons/day) for disposal or segregated into recyclable materials and sent off to various recycling markets. With an estimated maximum daily attendance of 660 visitors during peak periods of VBG's Exposition years, and using the per capita solid waste generation factor of 0.0096 tons per person per day from Table 4.11-17 of

the 2005 General Plan Final EIR, the proposed Project would generate a maximum of 6.3 tons of solid waste per day. With an expected diversion rate of 61%, the total net increase would be 2.5 tons per day. In summary, implementation of the proposed Project would increase solid waste generation but the projected future solid waste generation is anticipated to remain within the capacity of local landfills. This impact would therefore be **less than significant**.

**References**:


City of Ventura. *2005 General Plan FEIR* (Section 4.13 Utilities and Service Systems). August 2005.

City of Ventura. *Trash Enclosures Guidelines*. March 2014. Available online at: http://www.cityofventura.net/files/community_development/planning/current_planning/resources/2008design_guidelines/Trashenclosures.pdf.

RBF Consulting. *2014 Comprehensive Water Resources Report*. May 2014.

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Ventura Water. *2010 Urban Water Management Plan*. June 2011.

Ventura Water. *Estimated Wastewater Flows*. June 2014.


| **XVIII.MANDATORY FINDINGS OF SIGNIFICANCE** | *Potentially Significant Impact* | *Less Than Significant Impact with Mitigation Incorpo-rated* | *Less Than Significant Impact* | *No Impact* |
|---|---|---|---|---|
| Does the Project: | | | | |
| a) 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? | ☐ | ☒ | ☐ | ☐ |
| b) 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)? | ☐ | ☒ | ☐ | ☐ |

| | | | | |
|---|---|---|---|---|
| c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ |

**Explanation**:

**a. Less Than Significant Impact With Mitigation Incorporated.** As discussed in Section IV, *Biological Resources*, implementation of the proposed project would have the potential to impact sensitive species and/or their habitats (monarch butterflies, special status avian species including raptors) as well as special status flora species (Plummer's Baccharis, Catalina mariposa lily) and communities (Purple Needle Grassland and Central Coast Prickly Pear). Although there are no recorded archeological sites or known cultural resources on the project site, there are cultural resources in the vicinity. However, with implementation of the Mitigation Measures contained in this MND, the proposed project's potential to have a significant adverse impact on biological and cultural resources would be **less than significant with mitigation incorporated**.

**b. Less Than Significant with Mitigation Incorporated.** The proposed project largely provides a cumulative benefit by protecting natural resource areas, preserving scenic vistas, and encouraging recreational and community activities. However, the proposed project, plus other potential future development, would lead to cumulative increases in demand on water and sewer service systems, and create cumulative increases in traffic, air pollutant emissions, greenhouse gas emissions, and noise. However these increased cumulative demands and environmental effects have been analyzed throughout this MND and determined to be less than significant, in some cases with mitigation incorporated. Additionally, buildout of the proposed project has been found in this MND to be within the amount of growth analyzed in the 2005 General Plan as projected through 2025. These potential cumulative environmental effects have therefore already been analyzed, and the proposed project would not increase their severity. The project's cumulative impacts would therefore be **less than significant with mitigation incorporated**.

**c. Less Than Significant With Mitigation Incorporated.** Visitors to the Botanic Garden and Grant Park would benefit from the recreational and educational opportunities, access to scenic resources, and use of community gathering areas created by the proposed project. Although the increase in the number of people visiting the project site created by the proposed project could potentially introduce higher traffic risks, personal injury during recreational activities, and increased risks from wildland fires and geological hazards, with implementation of the mitigation measures contained in this MND these impacts would be reduced to a level of **less than significant with mitigation incorporated**.

## F. REFERENCES:

Associated Transportation Engineers (ATE). *Ventura Botanical Gardens Master Plan, City of Ventura, California, Traffic, Circulation, and Parking Study*. June 2014.

California Air Pollution Control Officers Association. *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA).* January 2008.

California Department of Finance. *E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2013 and 2014.* May 2014.

California Department of Fish and Wildlife (CDFW). California Essential Habitat Connectivity project website (https://www.wildlife.ca.gov/Conservation/Planning/Connectivity). July 2014.

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Ventura Water. *Estimated Wastewater Flows*. June 2014.

**ATTACHMENTS:**

A. Master Plan CUP and Rezone Application/Document, November 2014
B. Offsite Visual Survey
C. Air Quality and Greenhouse Gas Emissions Modeling
D. Biological Effects Memorandums, July 7, 2014
E. Traffic, Circulation, and Parking Study, June 12, 2014
F. VWRF Plant Capacity Memo, January 6, 2015 (updates June 9, 2014 memo)
G. Sewer Infrastructure Review, September 15, 2014
H. Water System Alternatives Evaluation, Hydraulic Evaluation, and Supply Discussion, November 4, 2014
I. VBG Confirmation Letter, Ventura Water System – Alternative 4, dated September 19, 2014

**ATTACHMENT A**

**MASTER PLAN CUP AND REZONE APPLICATION/DOCUMENT, NOVEMBER 2014**

# Ventura Botanical Gardens

# Master Plan

## Conditional Use Permit and Rezone Application

November 2014

VBG, Inc.

Project No. 5810

Case Nos. UP-1-13-14353; Z-4-13-15774; EIR-1-13-14355

Figure 1. General Location/Vicinity

FEB 2014

# VENTURA BOTANICAL GARDENS
# PROJECT DESCRIPTION

The Ventura Botanical Gardens (VBG) has identified Grant Park as the desired location to create a world class botanical garden. The mission of VBG is to create and maintain public gardens for the preservation, education, cultural contribution and enhancement of our planet on a community, regional, and global level. To achieve this mission the project will create gardens representing the five major Mediterranean climate zones of the world. There will be recreational and public gathering areas with features and facilities that provide interpretive and educational opportunities for people of all ages, background, and ability.

While some public parks, amusement parks, resorts, and even some shopping districts can have lovely and diverse plantings, these and other nicely landscaped places do not meet the essential criteria of being a botanic garden. Botanic gardens have a specific meaning in the world, and it is that higher purpose which VBG aspire to.

As defined by the American Public Gardens Association (APGA), Botanic Gardens Conservation International (GBCI), and others, authentic botanic gardens are "mission based institutions that maintain collections of plants for the purpose of education, research, conservation and public display. They must be open to the public and provide accommodations for access to all people. They must also have a system for maintaining records about the plants in the collections as well as a professional staff capable of managing and maintaining those collections."

Core values of education, research, and conservation need not be sterile or boring. VBG will stimulate the imaginations of its visitors and celebrate the beauty and serenity of nature. The relationship of plants to human culture, art, and history will be woven into the plant collections and activities created at VBG to expand awareness about the importance and richness of the botanic world around us.

The project involves the development of 106.98 acres in multiple phases on land leased by the City of Ventura to The Ventura Botanical Gardens, Inc. and this property is currently known as Grant Park. This project description provides details about the location, land use patterns, garden elements, facility needs, traffic control and other operational plans and can serve as the basis for a CEQA document project description.

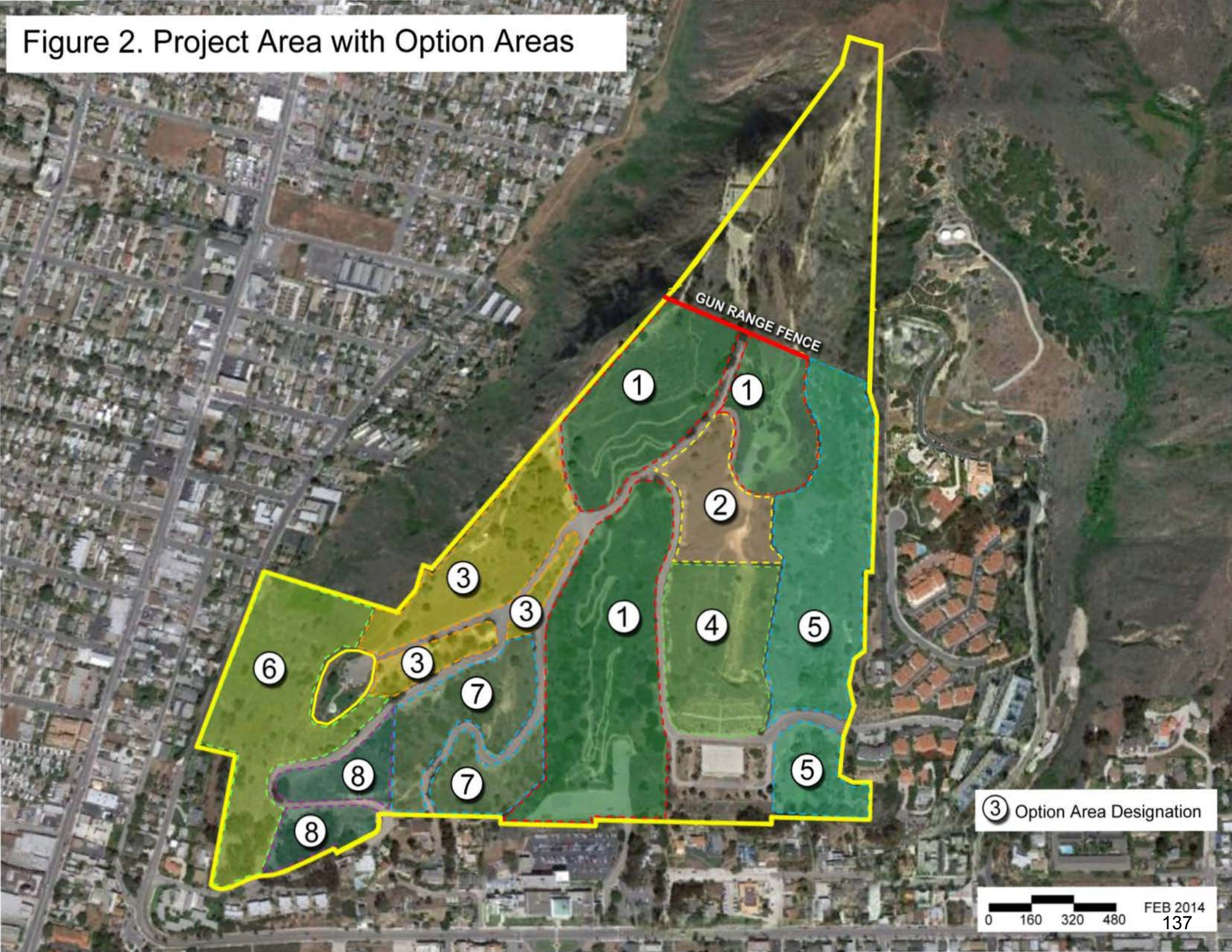
## PROJECT APPLICANT

Ventura Botanical Gardens, Inc.
Contact: Joseph Cahill, President
P. O. Box 3127
Ventura, California 93006

## PROJECT LOCATION

The project site is located at Grant Park, 398 Ferro Drive, Ventura, CA 93001, see Figure 1, General Location/Vicinity. The roughly triangular, approximately 106.98 acre site is intersected by Ferro Drive, Brakey Road, and Summit Drive. The site is bounded by Poli Street to the south, Cedar Street to the west, North Kalorama Street to the East, and undeveloped hilly open space to the north.

# Figure 2. Project Area with Option Areas



# PROJECT OVERVIEW

The Ventura Botanical Gardens (VBG) is a 501©3 non-profit organization formed by local citizens with the mission of creating and maintaining a public garden.

Key objectives of the plan are to:

- Create a botanical garden with an ecological emphasis on the Ventura Coast and its relationship to regions of the world which share the Mediterranean biome;
- Encourage partnerships with other botanical, horticultural, educational, environmental, and cultural organizations;
- Participate in meaningful advancement of scientific knowledge and conservation practices;
- Build a knowledgeable volunteer core of community members;
- Promote education regarding the environment, ecology, and organic methods of horticulture; and
- Establish support facilities and amenities to generate revenue to foster and maintain a sustainable botanical institution.

# CITY AND VBG COORDINATION

The Ventura Botanic Garden (VBG) project shall be implemented through direct coordination with the City through an established City/VBG Coordination Team lead by the City's Park Manager. The coordination team will consist of representatives from each city department involved in development review: Community Development, Fire, Public Works, Police, and Ventura Water; with assistance from City Attorney and Risk Management as needed. The VBG shall establish two representatives of the organization annually to participate as requested by the City/VBG Coordination Team. These requirements are included as one of the conditions of approval of the project.

# CURRENT LAND USE REGULATIONS AND PATTERN OF EXISTING USES

## Land Use Regulatory Overview

The City of Ventura General Plan (2005) identifies Grant Park as a city park facility. The Grant Park Master Plan identified in the General Plan was placed on hold in 2008. Currently, the site is divided into thirteen parcels, with the largest parcel of over 67 acres zoned R-1-7, or Single Family Residence with a minimum lot size of 7,000 square feet. The remaining twelve parcels are zoned, R-1-1AC (Single Family Residence with a minimum lot size of 1 acre) and R-3-5 (Multiple Family with 1 unit per 2,400 sq. ft. of land area). All parcels are owned by the City of Ventura with the exception of 069-0-060-110, owned by the Serra Cross Conservancy.

### Proposed Conditional Use Permit

The applicant's VBG Master Plan proposal will be processed through a Conditional Use Permit (CUP) to authorize the range of uses and support facilities identified below in this detailed project description. The CUP and associated environmental review is subject to review and approval by the Planning Commission.

### Proposed Rezone

Along with processing the CUP for the Ventura Botanic Garden Master Plan, the City will process a "consistency rezone" from Residential zoning (R-1-1-AC, R-1-7, and R-3-5) to Park zoning (P) for the entirety of the Grant Park lands inclusive of the VBG proposal in order to match the 2005 General Plan land use designation of Parks and

Open Space. The consistency rezone requires a recommendation by the Planning Commission and adoption by City Council.

## Current Land Use

The site consists of mostly vacant, modestly disturbed land that measures 106.98 acres in size, organized into nine City lease areas, see Figure 2 –Project Area with Option Areas. Grant Park is a City owned-facility that includes a one-acre in-holding parcel owned by the Serra Cross Conservancy, which is the site of the Serra Cross Monument. The in-holding parcel is not included as a part of the Ventura Botanical Gardens project.

Development within Grant Park includes paved roads, including extensions of Ferro Drive, Brakey Road and Summit Drive, a few parking areas, two water tanks and associate pumps, cellular and communication tower relay sites, an arch structure and rock wall at Brakey Road, a group barbeque area, a City-owned water reservoir, a Police gun range operated by the City, and limited hiking trails. The site consists of thirteen contiguous parcels, all listed by size in Table 1.

**Table 1 Site Parcels**

| Parcel | Size | Zoning |
|---|---|---|
| 064-0-150-040 | 6.75 | R-1-1 AC |
| Cross Conservancy | NA | |
| 0710-112-110 | 0.06 | R-1-7 |
| 071-0-151-080 | 2.13 | R-3-5 |
| 071-0-192-010 | 2.6 | R-1-7 |
| 071-0-120-160 | 67.31 | R-1-7 |
| 071-0-201-130 | 0.26 | R-1-7 |
| 071-0-120-050 | 9.44 | T6.1 |
| 072-0-103-025 | 3.65 | R-1-7 |
| 072-0-274-015 | 3.77 | R-1-7 |
| 072-0-273-010 | 3.67 | R-1-7 |
| 072-0-272-010 | 3.67 | R-1-7 |
| 072-0-271-010 | 3.67 | R-1-7 |
| **Gross Acreage** | **106.98** | |

## Surrounding Land Uses

Surrounding land uses include public facility development, residential uses, and open space. Multi-family and Single-family residential neighborhoods are located east of the site at Kalorama Street and Summit Drive, west of the site at Cedar Street, and south of the site at Poli Street. Ventura City Hall is located at the center of the southern boundary. The northern tip of the project site includes a gun range that is currently operated by the Ventura Police Department. The northern tip of the project site is adjacent to open space that is outside the City

corporate boundary. Table 2 lists the surrounding land uses, current site conditions, public services and City planning and zoning attributes.

**Table 2 Existing Site Characteristics**

| | | |
|---|---|---|
| Site Size | 106.98 gross acres | |
| 2005 General Plan Land Use Designation, 2007 Downtown Specific Plan Zones | Parks & Open Space, Neighborhood High, Neighborhood Medium, Neighborhood Low; and Specific Plan Urban Core City Building | |
| Zoning Designations | R-1-1AC (Single Family Residence, Minimum Lot Size – 1 Acre), R-1-7 (Single Family Residence, Minimum Lot Size – 7,000 Square Feet), and R-3-5 (Multiple Family, 1 unit/2,400 sq. ft. of land area ); T6.1 – Urban Core | |
| Current Use and Development | Open space, police gun range range, water tanks and pump, public roadways, parking, fire roads, communication tower site, Brakey Road arch and rock walls, barbeque area, and trails. | |
| Surrounding Uses/Zoning | North: | Vacant land/open space |
| | South: | Residential (T4.1 - Urban General 1 Zone, R-1-7, RPD-8) and Ventura City Hall (T6.1 – Urban Core) |
| | East: | Residential (RPD-1 – Residential Planned Development, 1 unit per acre, RPD-5– Residential Planned Development, 5 units per acre, RPD-8– Residential Planned Development, 8 units per acre, RPD-12– Residential Planned Development, 12 units per acre) |
| | West: | Cedar Street and adjacent Residential (T4.1, R-3-5, R-3-4) |
| Access | Ferro Drive, Summit Drive, Brakey Road, and upper City Hall parking lot | |
| Public Services | Water: | Ventura Water |
| | Natural Gas: | Southern California Gas Company (limited to no service inside park boundaries) |
| | Electricity: | Southern California Edison (limited to no service inside park boundaries) |
| | Sewer: | Ventura Water; Limited gravity flow lines to street mains, condition unknown (limited to no service inside park boundaries) |

## Serra Cross Monument

As already mentioned under the discussion of current land uses within the project site, Grant Park is a City owned-facility that includes a one-acre in-holding parcel owned by the Serra Cross Conservancy (SCC), which is the site of the Serra Cross Monument. This area is accessed from internal park roads within Grant Park. It includes landscaping, paving and parking areas, as well as a cross monument. Although this in-holding parcel is surrounded by the project site, it would remain under ownership by the Serra Cross Conservancy, would not be part of the proposed Botanical Gardens, and is not part of the project site. However, because of the adjacency of

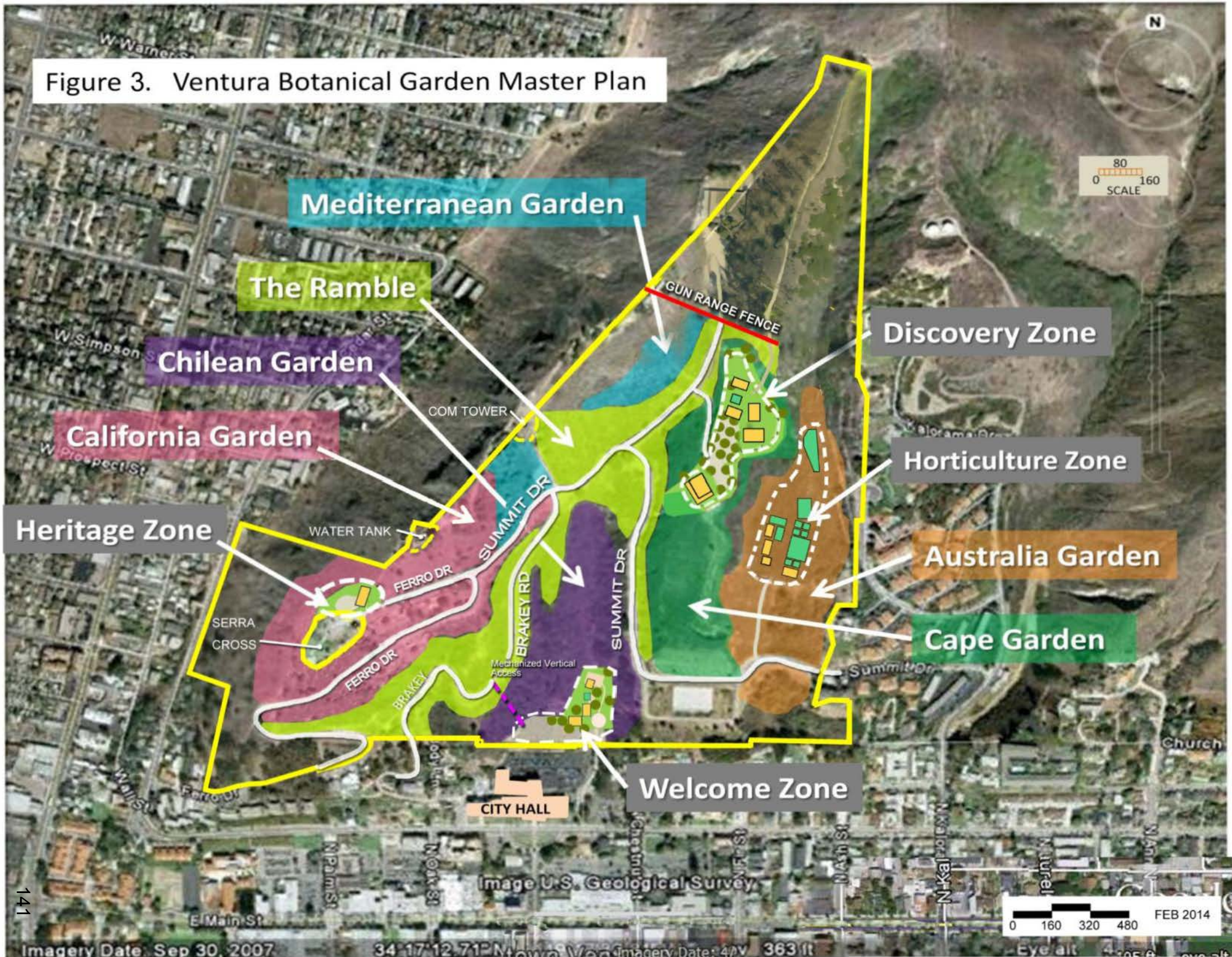


Figure 3. Ventura Botanical Garden Master Plan
Mediterranean Garden
The Ramble
Chilean Garden
California Garden
Heritage Zone
Discovery Zone
Horticulture Zone
Australia Garden
Cape Garden
Welcome Zone
GUN RANGE FENCE
COM TOWER
WATER TANK
SUMMIT DR
FERRO DR
BRAKEY RD
SERRA CROSS
Mechanized Vertical Access
CITY HALL
W Simpson
W Prospect St
W Main St
E Main St
N Palm St
N Oak St
Church
Image U.S. Geological Survey
Imagery Date: Sep 30, 2007
FEB 2014
SCALE
0 160 320 480

the project site and the Serra Cross Monument, VBG, Inc. has committed to working with SCC on the following issues:

- Operation of the VBG tram on SCC property will be conditional; if an event is occurring during tram hours which will prevent the safe operation of the tram on SCC property, it will unload and load in a different location;
- Overflow parking for SCC events will be allowed on VBG ground on Summit and Brakey Drive given proper notice and coordination;
- VBG, Inc. and SCC will work together on issues surrounding the operational use of Summit Drive that will allow continued access to the SCC site from Summit Drive;
- VBG, Inc. and SCC will work together to identify and implement mutually agreeable modifications to the existing roadways that would slow traffic and improve the safety and tranquility of existing and future pedestrian zones adjacent to the roadway;
- Before the VBG's Heritage Center is approved and constructed, a shared parking MOU will be required and VBG, Inc. will need SCC approval for any access through the Serra Cross parking lot.

**Police Gun Range**

The northern tip of the project site includes a gun range that is currently operated by the Ventura Police Department (VPD). The relocation of the gun range to a site that is not adjacent to significant public uses has been under discussion by community members for many years. In March 2005 the Ventura City Council approved a policy statement regarding closing/relocating the gun range, cleaning up the lead contamination it has caused, and integrating the site into a new recreational strategy for Grant Park by the year 2010. As of November 2010 a relocation project for the gun range was included in the City's capital improvement plan but no funding had been allocated. That discussion remains active in the community at the time of this application. For that reason, the project application identifies the acreage and existing features of the gun range, anticipating eventual incorporation of that portion of the site into the project plan. However, the proposed project has been discussed with VPD and they have indicated that the project will be compatible with their continued use of the gun range at its current location. If the portion of Grant Park now occupied by the gun range but outside of the current City/VBG lease option map may become available, VBG will request an amendment to the Master Plan CUP for inclusion of that area as a part of VBG.

VBG, Inc. and the City Police Department have coordinated about their respective current and planned uses within Grant Park, and as a result the Master Plan CUP now includes fence and gates installation at the gun range access road and at two fire access roads to appropriately separate these uses, with incorporation of these features into the proposed project's permit conditions of approval.

# PROJECT CHARACTERISTICS

The proposed project represents the Ventura Botanical Gardens plan for gardens and associated facilities that will be developed in phases over 30 years, as funding is secured and the needs of VBG and the public evolve, see Figure 3 – Ventura Botanical Garden Master Plan.

## The Gardens

As previously stated, the primary mission of VBG is education and appreciation of plants and their relationship to humans and the environment. As such, the principal organizational pattern of VBG is the distribution of the five representative climate regions (California, Chile, Cape of Africa, South Australia, and Mediterranean) and a garden section identified as "The Ramble" as illustrated in Figure 3.

# Figure 4. Facilities

The area titled The Ramble will comprise native California plantings, sometimes displayed to compare with plants of other Mediterranean biomes, and arrayed in a progression from south to north (and therefore up hill) that generally represents a geographical transect of California plant communities from the Coastal Prairie plant community to the Upper Montane plant community.

Gardens evolve over time. Therefore, the actual location, size and composition of each biome and garden section, including trails and associated garden features (including commemorative markers such as small pillars or stones with plaques or engravings that include text but also in some cases aesthetic elements), will be modified as needed by the VBG horticultural staff over the life of VBG to fit site micro-climatic, soil, display opportunities, educational opportunities, and other factors. The Master Plan CUP recognizes this evolving development of the gardens, implemented through conditions of approval, including mitigation measures of the adopted environmental document.

## Support Facilities

In addition to laying out the primary garden sections, the Ventura Botanical Gardens Master Plan CUP identifies the future buildings, vehicular circulation and parking areas that will likely be required to maintain and support the mission of a world class botanic garden. This plan was developed based on current staffing and programmatic projections and estimated public attendance derived from the experience of other significant botanical gardens. It is anticipated that the plan will be altered somewhat over time in response to changing public needs, funding availability, and other VBG priorities, but considerable effort has been made to evaluate future needs. The project represents a realistic and reasonable projection of needs for approximately 30 years.

## Summary of Facility Uses

Facility elements proposed for inclusion in the Master Plan CUP are delineated on the conceptual site plan and further grouped descriptively by geographic region within the VBG project, see Figure 4 – Facilities. These include four zones, the *Welcome, Discovery, Heritage, and Horticultural zones*. A general description of the purpose of each zone in the facility plan and their component features are included below. Function, size and staffing are detailed in Attachment A, VBG Facilities Summary. Note that staffing is based on a mix of VBG employees, volunteers, docents, and vendor staff

### Welcome Zone

Located adjacent to the existing upper parking lot behind city hall and within easy walking distance of the Ventura downtown core, the Welcome Zone is anticipated to be the primary entrance and point of arrival for the majority of botanic garden visitors. A grouping of visitor serving buildings (see Figure 4, A to D) will be arranged with welcoming gardens, walks and a plaza to greet, orient, and welcome visitors to the gardens.

In addition to promoting walk-in visitors from downtown, parking for daily VBG visitors will be provided at the existing upper parking lot in the Welcome Zone and that existing lot will be upgraded to include appropriate trees and other landscaping.

This area would also contain a mechanized vertical transport system or other device to assist in VBG internal circulation.

Welcome zone components are as follows are as follows:

| | |
|---|---|
| Welcome Zone | ▪ Entry Plaza<br>▪ Visitor Center<br>▪ Book & Gift Shop<br>▪ Plant Sales<br>▪ Snack Bar<br>▪ Entrance to Open access pathway<br>▪ Entrance to Controlled access pathway<br>▪ Mechanized Vertical Transport |

## Discovery Zone

Located adjacent to an existing parking lot that has two large, unused barbeque pits, the site for the Discovery Zone provides a wonderful vantage point for visitors to the garden. The Master Plan CUP for this area will use previously disturbed portions of the site to group six proposed buildings that are primarily dedicated to the display and education aspects of Ventura Botanical Gardens' mission. The buildings will be used in conjunction with the grounds of the gardens to conduct classes, provide art and botanic exhibits, conduct ongoing research on environmental management, and host lectures.

In addition to serving as classrooms, community rooms, and lecture space, one of these buildings also includes a restaurant with outdoor dining terrace. This adjacency of food service and community rooms will support a wide variety of events in addition to the primary function of the community rooms as classrooms. The revenue from the restaurant and the events it will support are critical to the financial viability of the Ventura Botanical Gardens.

Discovery zone components are as follows:

| | |
|---|---|
| Discovery Zone | ▪ Event & Lecture Center<br>▪ Event Meadow<br>▪ Restaurant<br>▪ Headquarters Offices<br>▪ Conservation Center<br>▪ Discovery Center<br>▪ Children's Center<br>▪ Public Seeding Cage<br>▪ Temporary Events, including annual CAST Event |

Prior to, and after completion of, the Discovery Zone development, VBG, Inc. also proposes to continue to use the Discovery Zone area as a host site for an annual state wide exhibit by the floriculture industry, known as the California Spring Trials (CAST). This multi-day series of invitation-only events showcases the gardens and provides an opportunity for further fundraising to benefit the ongoing improvement and maintenance of the VBG. During each day of CAST (8AM to 6PM), the number of attendees on the site ranges from 10 to 60, with an average per hour attendance of 31 guests. Staff and volunteers on the site vary from 6 to 18 during operating hours with an average of 10 at any given time. The 2014 CAST event hosted approximately 1,800 guests over 6 days. The event requires approximately one week of setup of event rental tents, temporary "planter boxes," irrigation water trucks, mobile restroom trailer (with self-contained holding tanks), and small generators (one for each tent plus one for the restroom trailer). No permanent structures are proposed as part of the CAST event at this time, but CAST has indicated a desire to improve water supply (the temperature of water in the tank trucks was too warm for roots) and reduce the cost of tent rental by building an interim structure or structures.

VBG has begun conversations with CAST in hopes of defining a useful structure or structures that would support VBG uses at the site throughout the year when CAST is not present.

To provide water for CAST events and other temporary events in the Discovery Zone, VBG Inc. will truck water to storage tanks. Water trucks would fill up from a temporary meter at a fire hydrant via a Temporary Meter Service Agreement and Memorandum of Understanding as approved by Ventura Water. VBG, Inc. would install interim water tanks in the Discovery Zone where the CAST Events are to be held. These tanks would have 6,000 gallons total storage, which could be contained in three tanks approximately 90" (7'6") in diameter and 80" (6'8") tall, or in two tanks approximately 96" (8') in diameter and 96" (8') tall.

### Heritage Zone

Placed adjacent to the Serra Cross Conservancy property and with views to the Ventura River and agricultural lands west of it, the Heritage Zone is located to take advantage of these reference points. A component of the Ventura Botanical Gardens' mission is recognizing and teaching human cultural connections with plants. The Heritage Zone will emphasize ethno-botany while discussing and displaying the relationships of humans to plants and the environment in the past and present. The Master Plan CUP for this area includes the Heritage Center, a building serving as an interpretive exhibit center. Heritage zone components are as follows:

| | |
|---|---|
| Heritage Zone | ▪ Heritage Center |

### Horticulture Zone

Accessed by an existing abandoned access road that will be restored for VBG staff vehicular access, the Horticulture Zone is approximately 500 feet north of Summit Drive near the east line of the property. The primary purpose of this zone of the Master Plan CUP is to propagate and grow new plants for use in the gardens and for sale to the public. It will also be the hub of ongoing maintenance of the entire garden property.

Horticultural zone components are as follows:

| | |
|---|---|
| Horticultural Zone | ▪ Equipment & Storage Garages<br>▪ Maintenance Workshops<br>▪ Horticulture & Maintenance Staff Offices<br>▪ Growing Areas<br>▪ Material Storage<br>▪ Service Yards<br>▪ Tram Service & Vehicle Storage<br>▪ Restored Service Road |

## Regional Botanical Gardens Use and Operations

The average daily visitor attendance is estimated to be 100 to 300 people, not including weddings and wedding receptions, or other special event activities (major art openings, famous lecturers, etc.).

The heaviest daily use is expected during weekday and weekend afternoons and evenings. In addition to visitors, the botanical gardens will have 20 to 85 staff onsite at any moment depending upon activities. Staff will be comprised of employees, docents, volunteers, and concession vendors (such as security, restaurant, or event personnel, etc.). For further details about the location and function of VBG staff see Attachment A, Ventura Botanical Gardens Facility Summary.

The botanic garden and its facilities will be open to visitors seven days a week and every day of the year except Thanksgiving Day, Christmas Eve, Christmas Day, and New Year's Day. Hours of operation will be as shown below in Table 3.

## Special Events

Special events at botanic gardens vary widely in character and scale. They are different from the ordinary daily displays in that they often differ thematically or intensively highlight a particular aspect of the theme. In addition to providing much needed revenue, special events create a compelling reason for people to visit for the first time or to return to see something new. Such time-limited events ranging from a day to two weeks, or an entire season for a major exhibit, convey a sense of urgency that other gardens have found to be very useful for attracting new and repeat visitors. VBG intends to host these sorts of events, and the Master Plan CUP establishes conditions of approval to authorize these events, in close coordination with the City's Parks Recreation & Community Partnerships Department.

The scale of events can be quite broad. Small events often occur over a few days or weeks and might attract hundreds to a few thousand people throughout the entirety of the event. Examples of some events of this type might include quilt shows, plant society flower shows, art exhibits, and celebrity chef cooking classes as well as music, drama, and dance performances.

At a somewhat larger scale, many gardens have established signature events held on an annual basis that become a major attendance builder. Because these events are held on a regular basis, staff and volunteers become very expert at executing them and therefore they become far more efficient than "one-off" endeavors. At VBG a signature event such as a yearly bonsai festival, major plant sale, holiday show, orchid show, or other event that builds a reliable yearly following that can be expected to draw thousands to tens of thousands of visitors throughout the entirety of the event.

In the largest category of special events at VBG, there are examples of expositions held at botanic gardens that often last for six months to a year and have tremendous revenue potential. These installations are akin to blockbuster attractions at art museums, are enormously popular with the public and attract large crowds. In recent years two examples of this type of show include "Big Bugs", a display of gigantic hand sculpted bugs placed in garden displays and the Dale Chihuly glass exhibition, a customized sculpture exhibit unique to each installation.

To explore the numbers of such an event, here is a summary of the experience at several botanic gardens that arranged to exhibit the work of Dale Chihuly. Each put on the display for 6 to 9 months, and each experienced major increases in all categories of revenue. To focus on the revenue data for one, the Atlanta Botanical Garden, the exhibit resulted in increases in the following categories: total attendance 136%; admissions revenue 243%; membership dues 84%; museum shop sales 215%. See Attachment B for attendance projections for regular daily attendance and for different types of events, including Expositions.

## Table 3 – Hours of Operation

**LIVING COLLECTIONS**

| | | |
|---|---|---|
| Chilean Garden | 8:30 am to 7:30 pm | March -October |
| Mediterranean Basin Garden | 8:30 am to 6:30 pm | November - February |
| Cape Garden | | |
| Australia Garden | | |
| California Garden | | |
| The Ramble | | |

**WELCOME ZONE**

| | | |
|---|---|---|
| Visitor Center | 9:00am to 7:30 pm | March - November |
| Book & Gift Shop | 9:00am to 6:30 pm | November - February |
| Plant Sales | | |
| Café | | |
| Vertical Transport | | |

**DISCOVERY ZONE**

| | | |
|---|---|---|
| Event & Lecture Center | 7:30 am to 12:00 am | |
| Restaurant | | |
| Discovery Center | 9:00 am to 9:00 pm | |
| Headquarters | 9:00 am to 6:00 pm | |
| Conservation Center | | |
| Children's Center | | |
| Public Seedling Cage | | |

**HERITAGE ZONE**

| | | |
|---|---|---|
| Heritage Center | 9:00am to 7:00 pm | March - November |
| | 9:00am to 6:00 pm | November - February |

**HORTICULTURE ZONE**

| | | |
|---|---|---|
| Garden Maintenance Operations | Dawn to Dusk | |
| Tram Operations | 9:00am to 7:30 pm | March - November |
| | 9:00am to 6:30 pm | November - February |

## Access, Circulation and Parking

**Parking & Circulation**

To accommodate those who arrive by automobile, the project will actively advocate parking in the downtown area and walking to the gardens, or parking at the main project lot adjacent to the Welcome Zone courtyards that will be created in the existing upper parking lot behind City Hall. Automobile accessibility from Ferro and Summit Drives will remain open to the public, with future traffic calming provisions on Summit Drive in the east/west portion of this roadway, see Figure 5.

On-site parking for the project will be accommodated by redistribution of existing parking spaces, revised and new striping/delineation of spaces, and the addition of 32 new parking spaces, see Figure 6 – Access/Parking/Circulation. Table 4 below compares existing parking with proposed project parking.

For general daily use, restricted nighttime parking similar to that provided at public beaches and public parks will be provided throughout the botanic gardens to restrict access after operating hours. Security lighting will be provided for all facilities, roadways, and parking lots and some fixtures may remain on all night. Lighting will only be provided on pathways connecting immediately adjacent facilities with parking areas and within the Welcome, Discovery, and Heritage areas. No lighting of pathways is proposed within the plant collection zones. All lighting will be directed downward to maintain security while minimizing ambient night light pollution, as conditioned in the Master Plan CUP.

**Table 4. Parking Spaces**

(See Figure 5 for locations)

| Symbol on Figure 5 | Description | Existing | Proposed |
|---|---|---|---|
| P1 | Main Lot- Exist. City Hall Upper | 153 | 106 |
| P2 | Lower Brakey Turnout | 7 | 0 |
| P3 | Lower Ferro Turnout | 0 | 6 |
| P4 | Mid- Ferro Turnout | 15 | 15 |
| P5 | 2011 Stone rampart near cross | 15 | 28 |
| P6 | Adjacent to Gun Range | 0 | 10 |
| P7 | Exist. BBQ Lot - Future Discovery | 30 | 72 |
| P8 | Horticulture/Maintenance | 0 | 10 |
| P9 | Cedar Street | 0 | 5 |
| | **TOTAL** | **220** | **252** |

For large special events the public will be encouraged to arrive early, park in lots distributed throughout downtown and enjoy the restaurants and shops in Ventura as they come and go. In the case of occasional very large events, VBG will provide shuttles to and from more remote parking sites such as the fairgrounds, schools, churches, or other appropriate sites. During weekends and some evenings when no other events are occurring at City Hall, the additional 225 parking spaces at that location will also be available subject to a parking permit system. A third means of accommodating parking will be the use of valet attendants who will shuttle

automobiles to selected appropriate parking locations. As conditioned in the Master Plan CUP, an Access and Parking Management Plan is required during the initial project phase and thereafter amended to as each additional phase of the Master Plan build-out is activated with new uses or buildings. This management plan ensures that off-site parking locations, shuttles and use of lower City Hall parking is adequately coordinated between VBG, Inc. and the City.

**Bicycle Parking**

The project design anticipates a shift in emphasis from automobile to pedestrian circulation. Visitors will be encouraged to walk or bicycle to the site. Adequate secure bicycle parking will be provided at the Welcome Zone, Discovery Zone, Heritage Zone and Horticulture Zone for use by visitors and staff. Bicycle racks will also be placed at each end of the roads indicated for pedestrian use (see Figure 5), as conditioned in the Master Plan CUP. After operation, the VBG anticipates that additional bike racks will be installed as visitor usage patterns are observed over time.

**Pathways**

An extensive pathway network will be created within the garden to not only provide the primary means of pedestrian circulation within the gardens for public enjoyment and education, but also to connect the project with the Westside community and Downtown community core, see Figure 6 –Pathways. While portions of the gardens will require paid access, the network will allow for separate unpaid public passage as well.

Conceptual pathway alignments are indicated on Figure 6 but ultimately will be selected over time by VBG with a critical eye to erosion control, service access, groupings of garden displays, preservation of sensitive flora and fauna, and other factors that will ensure minimal site intrusion.

**Ramble**

To further the theme of walking, Brakey Road will be closed to vehicle use by the public from the existing stone arch entrance at the southern boundary of the proposed VBG to Brakey's intersection with Ferro at the west, (see Figure 5). This will become a pedestrian zone where the arch and stone wall remains and with narrowed paving, new plantings and garden features that form a portion of The Ramble garden. This pedestrian zone will only be open for emergency and service vehicles as well as a project tram that will provide on-site transit for botanical garden visitors. General public vehicle access to the Serra Cross will remain available using Ferro Drive and Summit Drive.

**Tram & Mechanized Vertical Transport**

After arriving at the main parking lot, visitors will have the option of walking the new trails and pathways that will be constructed throughout the project or they may choose to use the VBG tram system that will circulate within portions of the project site. In addition, the steep terrain separating The Ramble from the main parking lot will be overcome by means of a mechanized link such as a small funicular or other gondola and the VBG tram will further assist by circulating within The Ramble as well.

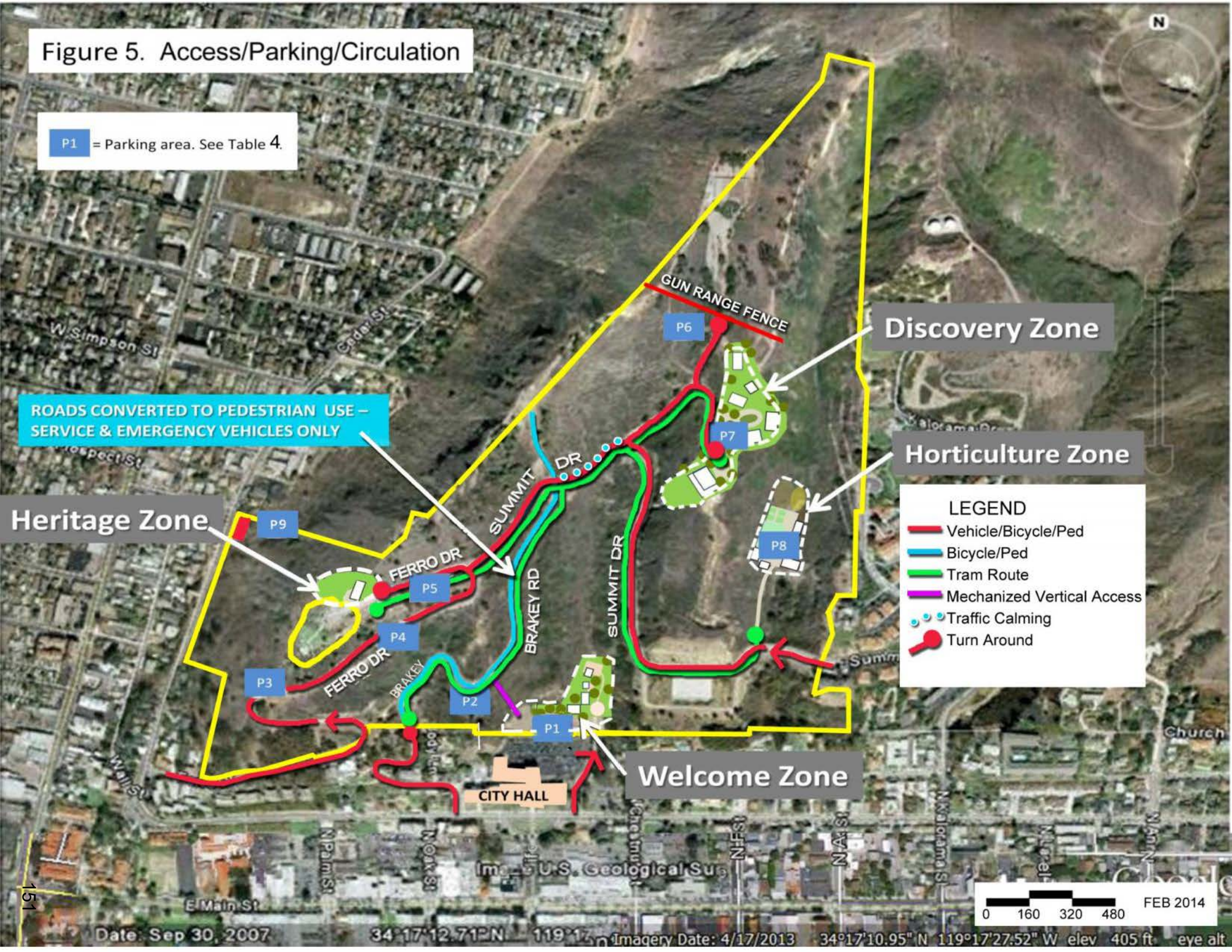


Figure 5. Access/Parking/Circulation
P1 = Parking area. See Table 4.
ROADS CONVERTED TO PEDESTRIAN USE – SERVICE & EMERGENCY VEHICLES ONLY
Heritage Zone
Discovery Zone
Horticulture Zone
Welcome Zone
GUN RANGE FENCE
SUMMIT DR
BRAKEY RD
FERRO DR
BRAKEY
CITY HALL
P1
P2
P3
P4
P5
P6
P7
P8
P9
LEGEND
Vehicle/Bicycle/Ped
Bicycle/Ped
Tram Route
Mechanized Vertical Access
Traffic Calming
Turn Around
0 160 320 480
FEB 2014
Date: Sep 30, 2007
Imagery Date: 4/17/2013
34°17'10.95" N 119°17'27.52" W elev 405 ft eye alt

Figure 6. Pathways
GUN RANGE FENCE
E Warner St
Bell Way
E Barnett St
Kellogg St
W Ramona St
E Ramona St
W Simpson St
W Center St
E Center St
E Prospect St
N Olive St
N Ventura Ave
Summit Dr
Kalorama Dr
Vallecito Dr
Tioga Dr
Grimea St
Church St
Buena Vista St
Ferro Dr
Brake Rd
Poli St
N Palm St
N Oak St
N California St
N Chestnut St
N Fir St
N Ash St
N Kalorama St
Laurel St
E Main St
© 2013 Google
LEGEND
Open Pathway
Controlled Pathway
0 160 320 480
FEB 2014
Imagery Date: 4/17/2013 34°17'10.95" N 119°17'27.52

## Public Accessibility: Open vs. Closed Pathways

As a professionally managed botanic garden, VBG will have a responsibility to protect its living collections as would any museum that has taken great care in assembling and presenting its valued collection. Therefore Figure 6 indicates both open and controlled pathways, as approved by this Master Plan CUP.

Open pathways will be provided as a part of the project to provide general access to the site during hours of operation of the living collections without need to pay an admissions charge or pass through a monitored entrance point. The location of the open pathways, in conjunction with the pedestrian zones of the Ramble (Brakey Road segment) which will also provide open pedestrian access, provide walkable paths through the property from north to south and east to west to a far greater extent than was possible at the inception of the VBG project.

Closed pathways will require admission at monitored points of entrance. VBG does not intend to charge for admission into the controlled pathway areas in the early years of creating the gardens. However, as the living collections are expanded and begin to mature and to be protected, VBG does intend to charge admission. Other institutions currently charge $8 for adults, $6 for seniors, teen, students, etc., and $4 for children over 2yrs. This is the likely range of admissions that VBG will institute at some time in the future. To expand public access to the living collections themselves and to further stimulate participation in its activities, VBG will also designate and promote free access days at various times of the year.

The American Public Gardens Association advises that admissions are not only extremely important for the basic revenue they provide, they are extremely important for building the public's awareness of the value of the gardens, as well as an essential tool in engaging and attracting new members and donors.

**Access during Phased Development**

VBG recognizes that its early commitment to this project by funding and constructing the "demonstration trail" has become a popular public amenity. To respect the public's desire for the open access that they have become accustomed to, the project proposes a new open pathway linking the future pedestrian access through the Ramble along Brakey Road to the Welcome Zone (western end of the upper City Hall parking lot), as shown on Figure 6. That pathway will be completed prior to instituting controlled access at the existing "demonstration trail" so the public will have continuous open access to the property from south to north when entering the Welcome Zone.

When development commences for each Phase (or Activity within a Phase), any construction staging areas that might require temporary alternate accessibility will be coordinated in advance with the Serra Cross Conservancy and Police Gun Range as part of the VBG implementation with the City's Parks, Recreation, & Community Partnerships Department.

## Water & Sewer Use

A water use and availability analysis dated September 2011 estimated water use for all irrigated portions of the 106.98 acre parcel to be as much as 52.6 acre-feet per year. In addition to the non-potable irrigation water need, that report estimates a further need for approximately 15 acre-feet of potable water per year to support the visitor and staff needs identified in the project.

What little water infrastructure exists on the site presently is in very poor condition and the project will therefore need to develop a functional distribution system for potable water and fire protection. Summit Drive, Brakey Road, and Ferro Drive represent favorable routes for extending existing potable water from the city to the interior of the project and connection to water at Poli Street would be available to support the Welcome Zone.

As a large land holding whose primary purpose is production, planting, and maintenance of ornamental plants, the project site will be agricultural in nature. As with agricultural operations of this size, VBG proposes to supply some or all of its irrigation needs through development of a well or wells on the property.

Irrigation water will be an essential ingredient of VBG as it is in every garden. VBG strives to be an example of best practices for water conservation and management committed to low water use, identification of water capture and retention systems, and maximizing use of untreated or minimally treated water for irrigation purposes. Preliminary investigations indicate that well water suitable for irrigation is likely to occur at reasonably accessible depths on an adjacent property and negotiations are under way to drill an exploratory well at that location (see Attachment D for this off-site well concept). It is also likely that a similar well site or sites may be discovered within the bounds of the lease option areas. A well source irrigation system would include a pumping station at the source and a tank or tanks, ideally situated at an elevation to allow for gravity outflow.

If feasible, VBG will capture storm water runoff in subterranean tanks and distribute that water through the same irrigation system as the well water. In the event that well water sources are not available or prove to be insufficient, VBG will connect to the City provided potable water system.

Potable water supply could also be provided through connection to the City's existing water supply system. According to a Water System Evaluation completed for the project (RBF Consulting, November 2014), the VBG selected Alternative 4 of the study which is acceptable to Ventura Water that proposes water service provided by gravity service from the City's existing 605K Zone. The 605K Zone is located to the east of the project site, separated by a valley, but joined by Summit Drive. Storage for the 605K Zone currently consists of two above grade steel water storage tanks (the Kalorama tanks), each with a capacity of 0.15 million gallons (MG), for a combined capacity of 0.30 MG, located approximately 1,030 feet north of the northern terminus of Kalorama Drive and approximately 680 feet east of the Police gun range. According to the RBF report, the regulatory storage required for the project is 175 percent of maximum day demand, which is equivalent to approximately 0.32 MG, which would result in requiring roughly double the amount of storage currently available at the Kalorama Tanks, although provision of this required storage could be gradually phased in as Master Plan CUP demand increase over time. Under this scenario, two additional 0.16 MG storage tanks would be constructed at the site of the Kalorama tanks, subject to reaching an agreement with the City. The RBF report also states that a tank siting study and geotechnical investigation would need to be done to confirm that the site can physically accommodate the new tanks, and a retaining wall may be required on the north side of the site, as the hill continues to slope upward where the new tanks are proposed. It is anticipated that the tank would be above grade welded steel meeting the City's Engineering Design Standards.

The RBF report also concludes that, in addition to the new storage tanks, service would need to be brought from the 605K Zone over to the project site. In order to accomplish this, approximately 500 feet of existing 12-inch asbestos cement pipe (ACP) in Summit Drive would need to be converted from the City's 260 Zone to the 605K Zone. This could be done by installing a new, normally closed isolation valve near the Grant Park Reservoir, and opening the existing zone break valve. This would require verification that the existing line can handle the approximate 150 psi increase in working pressure. Service would be completed by installing a backflow preventer and flow meter. The exact zone break location would be verified prior to performing any improvements.

Implementation of the recommendations of the RBF report regarding extension of service from the 605K Zone have been made a condition of approval of Master Plan CUP, as has requiring extension of water service from Poli Street to the Welcome Zone as part of Phase 1, including a water line, meter, and fire hydrant near the Welcome Center.

Regardless of which water supply source is used, or combination of supply sources, the onsite irrigation system would include a 2" to 3"diameter subterranean main piping distribution system would distribute to two manifolds. Manifold 1 would serve the Ramble as well as Cape and Australia Gardens, each with a 1" diameter sub-main. Manifold 2 would serve the Mediterranean, California, and Chilean Garden each with a 1" diameter sub-main. Both the main and sub-main piping will be buried in an approximate 36" deep x 12" wide trench. From the sub-mains in each garden several additional ¾" diameter branch distribution zones will take water to additional manifolds needed to route ½" diameter and smaller drip irrigation tubing to the plants of the living collections. The branch distribution will be buried approximately 6" deep and the drip irrigation tubing will have 6" to 1" of cover except at the surface level drip emitters.

Sanitary connections will be made by means of new appropriately sized lines at the time that permanent buildings are constructed. The buildings at the Welcome zone will be connected to the existing main at Poli Street. The existing sewer main in Summit Drive that currently terminates at the project's east boundary will be extended to the Discovery zone for those buildings. The buildings in the Horticulture zone and the Heritage center will be connected to the new extension of the sewer line in Summit Drive as well. A "Sewer Infrastructure Review" report produced by Kennedy/Jenks Consultants in September 2014 identified specific points of connection existing sewer mains at these locations, and found that no upgrades to these sewer mains or any other "downstream" sewer facilities would be required either in the near term or at buildout of the Master Plan.

## Plant Species Management

Many plant species, including the vast majority of our California native plants, have little information or data on invasiveness. VBG necessarily has to make many assumptions where there is little information available and follow up on those assumptions with diligent observation and stewardship. However, VBG recognizes the need for a well-reasoned and careful approach to plant selections based on applying rational thought processes in conjunction with the best available botanic evidence.

Therefore, VBG has instituted a policy for assessing invasive potential of introduced plant species. The policy is comprised of seven steps that have been applied, and will continue to be applied by qualified botanists, horticulturalists, and other experienced and credentialed members of the VBG collections committee. After application of the steps, the collection committee makes a determination based on the totality of the results. A negative result for any one step does not necessarily mean a species is disallowed for acquisition and propagation as negatives can be balanced by other information. Most botanic gardens apply step 1 or parts of it if they have any policy at all.

The seven steps of the VBG policy:

1. Life cycle traits analysis. Indices: fecundity traits, distribution mechanisms, plasticity, and preferences for disturbed environments. A weed risk assessment system uses information on a taxon's current weed status in other parts of the world, climate and environmental preferences, and biological attributes. Australian Weed Risk Assessment (WRA) system is commonly used. http://www.daff.gov.au/ba/reviews/weeds/system/ (Note: This step has led VBG to eliminate several species and groups of species from consideration, such as ALL Chilean grass species.)

2. Review scientific literature for indications of invasiveness of species, hybridization potential.

3. Compare to lists of known weedy/invasive taxa, for California as well as other Mediterranean climate regions.

4. Search California herbarium records database for indications of invasive presence in state. (Note: This is a powerful tool that was not available in the past. It has already resulted in VBG eliminating species from our proposed list to import from Chile in 2013.)

5. Exercise caution in taking unknown species from wild. Prefer species already available in horticulture (in Chile and elsewhere) and have a track record to review by communicating with horticulture experts in country.

6. Controlled setting of VBG with intensity of observation allows us to monitor closely. This can be done in a scientific manner. Specimens are not permanent and can be removed as other gardens have done based on results of monitoring. (Note: as a part of the global botanic garden network, observations on newly discovered potential for invasiveness will add to the knowledge base and VBG will also receive updates from other institutions on their experiences.)

7. VBG will sell plants, but not those that have legal restrictions associated with them and/or those plants with invasive potential. VBG will not sell specimen propagules, seeds, or plants to the public in plant sales with weedy potential, CBD (Convention on Biological Diversity) issues, or liability for VBG analogous to what other gardens have dealt with. Stewardship includes monitoring to determine if our specimens were illicitly entered into the commercial nursery trade. (Note: Not introducing new species into horticultural trade, including selling at plant sales or distributing to growers is the single most important impact component of this policy.)

VBG is cautious about being too reactionary to reports of weediness for species in the scientific literature as species are often placed on lists of weeds promulgated by the state only to be later downgraded or removed after the scientific assessment does not verify. Science progresses. Findings are more often than not found to vary upon repeated or expanded experimentation. Local environment and experimental design have huge effects on studies of invasiveness.

It is unclear how VBG will apply this to species already on the site. Grant park was under agriculture from the 1700's, then became pasture for grazing in the 1800s, then arboriculture, then the current vegetation is what has colonized since the last fire in the 1950's. The current vegetation is a mix of invasive plant species and a very small number of native plant species. Many of the natives which are present are quite aggressive and would grossly fail each step of the VBG policy. VBG plans to define a policy to address control of both invasive non-native and aggressive native plant species so that these species do not overwhelm VBG's efforts to increase biodiversity. This policy on invasive and aggressive plant species will be part of a larger policy on stewardship that will also address herbicide and pesticide use.

Further, the Master Plan CUP includes mitigation measures to reduce potential impacts to biological resources on site. VBG, Inc. will implement all measures as identified in the Permit's phased development.

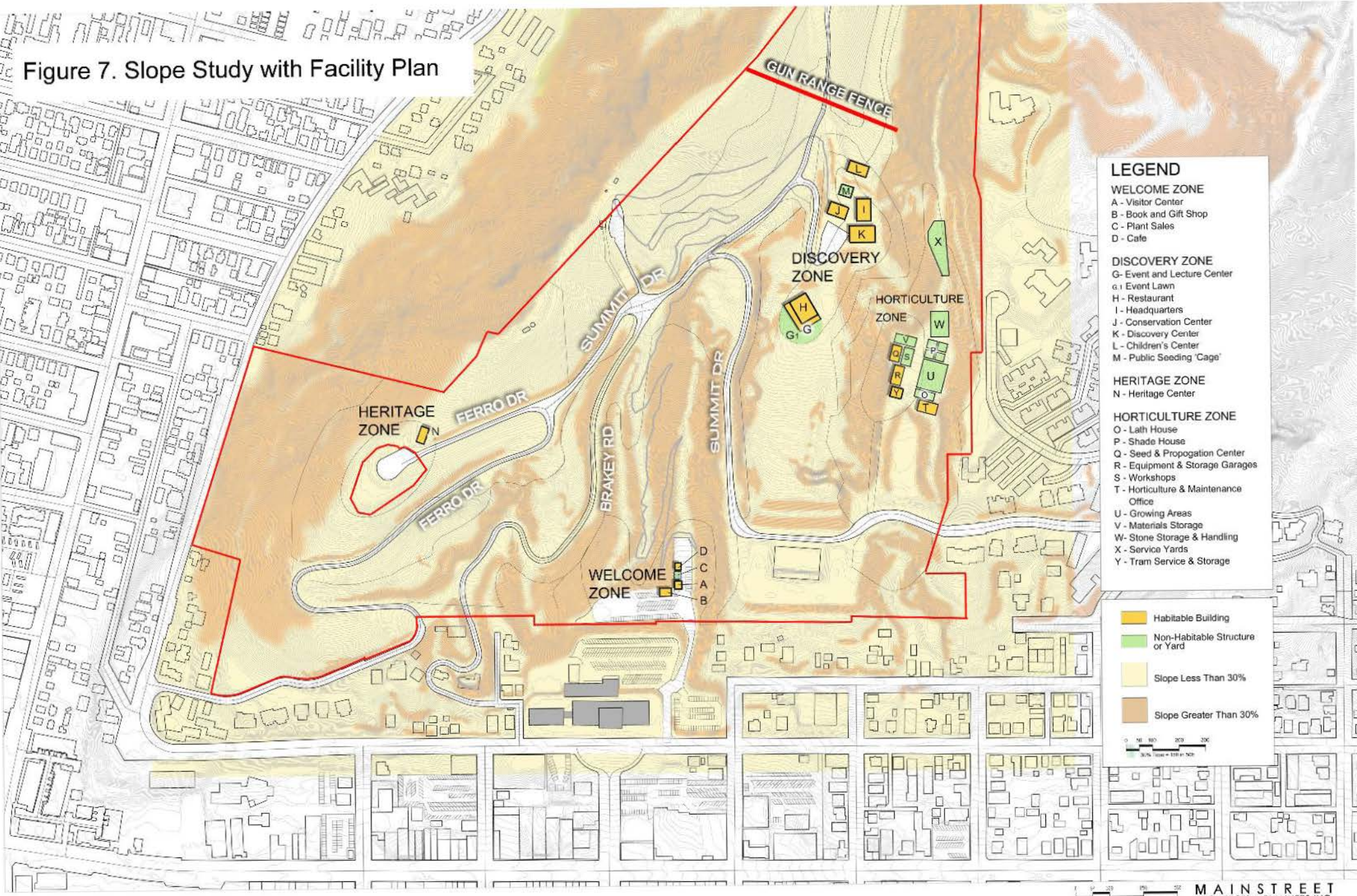
## Noise Control

The Master Plan CUP includes conditions of approval to ensure sound control that will minimize sound intrusion to its own gardens and to neighboring properties and will be in compliance with adopted City noise ordinances.

## Garden Components

As previously discussed, the primary objective of VBG is establishing beautiful and well organized living collections with plantings that represent the Mediterranean climate regions of the world. In addition to installation of plant materials these gardens will by necessity incorporate elements such as soil amendments, irrigation systems, pathways, water features, foot bridges, trellises, benches, signage, fencing, informational

# Figure 7. Slope Study with Facility Plan

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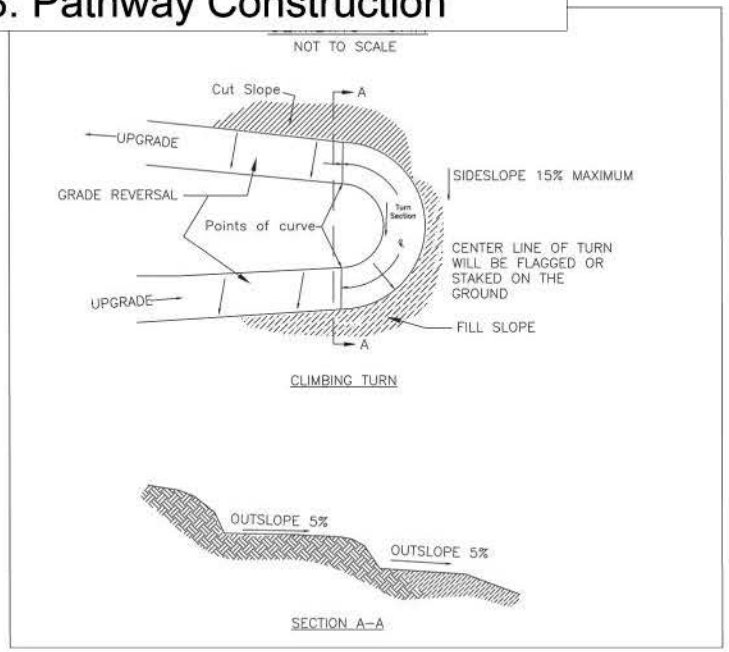
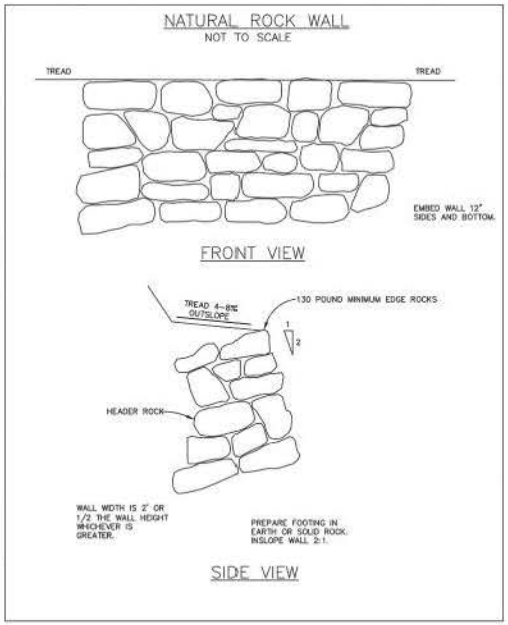
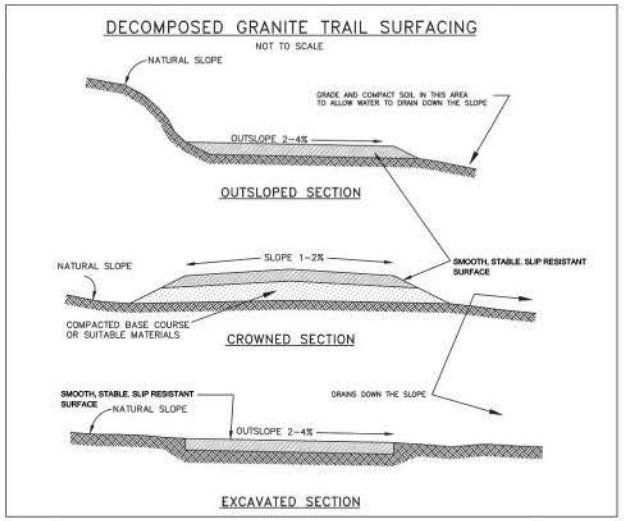
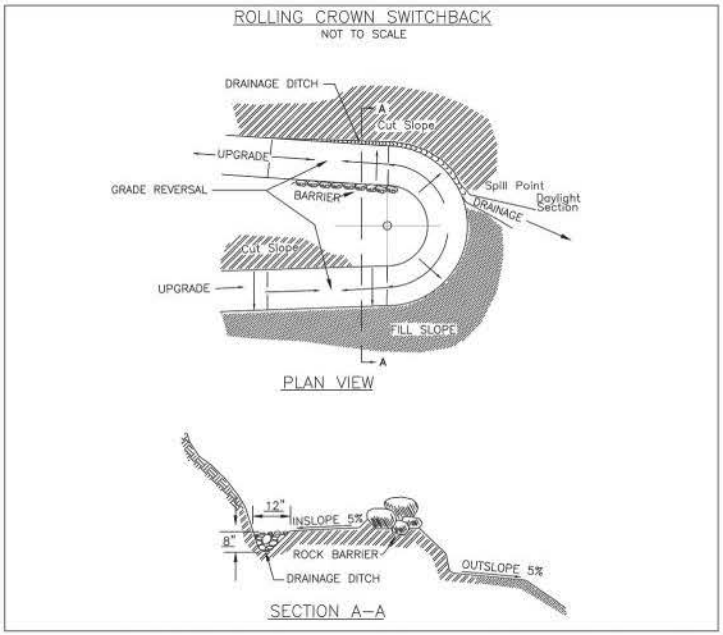
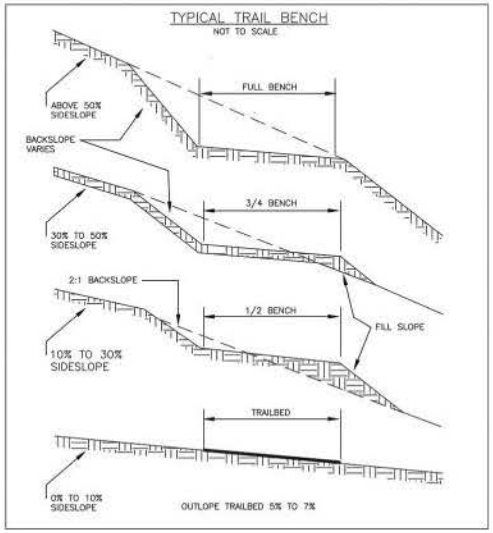
# 8. Pathway Construction




## VENTURA BOTANIC GARDEN

# PATH CONSTRUCTION

These standards are based upon the plans prepared by the Contractor who constructed the initial path now being enjoyed by the community.

They apply to all paths, depending upon the site conditions and the function of the particular path. In terms of physical development, they are all 'light impact', using natural or recyclable materials and minimal excavations. The paths with gravel base would primarily be used where service vehicles require routine access.

The VBG intends to modify these standards in response to experience gained as the Garden undergoes increased use. The VBG intends to use 'best practices' as practiced by numerous similar Botanical Gardens throughout the country and beyond, in order to construct paths that provide safe, stable and environmentally sound access ways.

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kiosks, informal gathering areas, works of art, and other features commonly associated with important botanic gardens of the world. Those features would be beyond the development envelopes shown in Figure 7. By their nature gardens are evolutionary. While some features may endure for many decades, others are likely to be altered and reshaped by botanic garden staff and volunteers over time to improve the diversity of the collections, to respond to changes in the environment, to better educate the public, and to generally rejuvenate and energize the experience for visitors.

One of the most important garden components will be the network of pathways running throughout the gardens. Figure 8 shows path construction standards for these pathways. These standards are based on the plans prepared by the Contractor who constructed the demonstration path already being used by the community, which runs from a trailhead at the back of the upper parking lot behind City Hall to the top of Grant Park Fuel Break Road, where a parking lot and barbeque pits are currently located. The standards are meant to apply to all paths, depending upon the site conditions and the function of the particular path. In terms of physical development, they are all 'light-impact', using natural or recyclable materials and minimal excavations. The paths with gravel base would primarily be used where service vehicles require routine access.

The VBG intends to modify these standards in response to experience gained as the Garden undergoes increased use. The VBG intends to use 'best practices' as practiced by numerous similar Botanical Gardens throughout the country and beyond, in order to construct paths that would provide safe, stable, and environmentally sound access ways. All garden components, including the layout, size and organization of buildings as depicted in these exhibits, is representational of the intended uses and activities, and is not intended to present a final design. All such designs will be subject to a set of Design Principles and Guidelines/Sign Guidelines developed by VBG, Inc. and subject to approval through applications processed by the City and the City's Design Review Committee as identified in the Master Plan CUP Conditions of Approval. A set of such Principles and Guidelines proposed by VBG is included in Attachment C.

## Interim Structure and Facility Use

In the course of phasing the project, interim structures will be built or installed for the purpose of supporting the short term needs of the botanic garden. For instance, the Master Plan CUP does not indicate horticultural support structures located in the Welcome Zone when the entire project has been completed. However, because phasing anticipates construction and maintenance of the Chilean Garden in Phase 1 and that is immediately adjacent to the Welcome Zone, interim structures are proposed in this area.

Interim structures will be placed on site and may be reused for a different function, and relocated or removed from the site in future phases. For example, some water lines installed to serve temporary uses may remain in place to serve a later permanent use. The general type of interim structures will include some, all or a combination of the following list. This list is illustrative of the purpose and intent for interim structures in the phasing of the Master Plan, however there might be other specific unforeseen needs that emerge over time and require review and authorization of other structures of a similar nature:

<u>Buildings</u>

1. Prefabricated buildings
2. Prefabricated structures re-purposed as buildings (shipping containers for instance)
3. Factory designed and built buildings assembled on site
4. Conventionally constructed buildings

<u>Site Improvements:</u>

1. Shade structures
2. Hardscape patios

3. Raised and grade level planters
4. Fencing (Chain link and decorative)
5. Access ramps and parking
6. AC Paving resurfacing
7. Temporary power poles
8. Temporary water lines
9. Signage
10. Security lighting

All interim structures will be installed or constructed in compliance with applicable building and fire codes as if they are permanent structures, as identified in the Master Plan CUP Conditions of Approval. The following is a summary of some known, specific criteria applicable to the project:

1. All Buildings will meet or exceed the requirements of Chapter 7A of the California Building Code (CBC) relating to buildings in the wildland-urban interface. Accessibility to the interim facilities will meet or exceed the requirements of Chapter 11B of the CBC relating to accessibility.
2. Any interim building over 120 square feet must provide confirmation and/or calculations proving the seismic integrity of the structure in compliance with CBC.
3. For any proposed interim building over 1,000 square feet in area, a geotechnical report must be provided.
4. Any building over 500 square feet must have an approved fire sprinkler system.

Uses of the interim structures will be the same as the uses in the Master Plan CUP and their intensity of use will be equal to or less than the completed permanent building or structure.

Where permanent utilities such as sewer, water, power, and communications have not yet been installed on the site, specific alternative measures may be employed. For example, a self-contained restroom facility with holding tanks for wash water and sewage is proposed adjacent to the interim horticulture facility noted above. Features of this sort will be reviewed and permitted by City and County departments as applicable prior to installation through coordination with the City's Parks, Recreation, and Community Partnerships Department.

## Project Phasing

Development of a botanic garden of this size and scope will be a complex task and will take many years to accomplish. The phasing plan is shown in Table 5 below, which identifies how implementation of the Master Plan CUP will occur.

In summary, VBG's primary objective is the construction and maintenance of public botanic gardens. The expense of growing the necessary support infrastructure and revenue generating programs and facilities is closely tied and balanced to that primary objective.

VBG proposes continuous construction of gardens over time and the use of temporary structures to support that growth until significant portions of the gardens have been established. Completion of VBG permanent building projects and garden special features will be funded by means of separately directed capital campaigns and built in later years.

Furthermore, the gardens of the six climate regions themselves have been planned for both the basic, but complete, representations of their plant collections and for the special features within them. Keeping the cost of the special features separate from the baseline collections will allow further flexibility in fund raising and scheduling.

**Table 5. Project Phasing**

| PHASE | ESTIMATED DATE | ACTIVITIES |
|---|---|---|
| 1 | 2015-2017<br><br><br><br>Option Area 1 | Special events, including CAST event<br>Temporary water supply<br>Chilean Garden - Create 35-40%<br>Mediterranean Garden -Create 1 -3%<br>Ramble - Create 1 -2%<br>Develop on-site or site adjacent well for irrigation<br>Install interim facilities @ Welcome Zone |
| 2 | 2018-2020<br><br>Option Area 1 thru 4 | Chilean Garden - Create additional 40-45%<br>Mediterranean Garden -Create additional 10 -15%<br>Ramble - Create additional 1 -2%<br>Cape Garden - Create 4-6%<br>California Garden - Create 2-4%<br>Continue interim facilities @ Welcome Zone<br>Sewer & water Infrastructure construction @ Welcome Zone<br>Construct & occupy permanent Welcome Zone building(s)<br>Remove interim facilities @ Welcome Zone when permanent facilities completed<br>Install interim facilities @ Discovery Zone |
| 3 | 2021-2023<br><br>Option Area 1 thru 7 | Chilean Garden - complete final 10-20%<br>Mediterranean Garden -Create additional 40-45%<br>Ramble - Create additional 3-5%<br>Cape Garden - Create additional 9-11%<br>California Garden - Create additional 5-7%<br>Australia Garden - Create 3-5%<br>Chilean creek garden<br>Continue interim facilities @ Discovery Zone<br>Turnaround/welcome plaza @ Brakey stone arch<br>Sewer & Water Infrastructure Construction @ Discovery Zone<br>Construct and occupy Restaurant & Event Center @ Discovery Zone<br>Improve road with gravel surface to Horticulture Zone<br>Install interim facilities @ Horticulture Zone |
| 4 | 2024-2026<br><br>Option Area 1 thru 8 | Mediterranean Garden -complete final 35-45%<br>Ramble - Create additional 8-10%<br>Cape Garden - Create additional 25-35%<br>California Garden - Create additional 10-15%<br>Australia Garden - Create additional 4-6%<br>New welcome Terrace @ Brakey & Summit<br>New welcome Terrace @ Summit & Ferro<br>New welcome Terrace @ Summit & Range Road<br>Continue interim facilities @ Discovery Zone<br>Continue interim facilities @ Horticulture Zone<br>Install permanent lath house and two shade structures @ Horticulture Zone |

**Table 5. Project Phasing** (Cont'd.)

| PHASE | ESTIMATED DATE | ACTIVITIES |
|---|---|---|
| 5 | 2027-2029<br><br>Option Area 1 thru 8 | Ramble - Create additional 15-20%<br>Cape Garden - Create additional 40-50%<br>California Garden - Create additional 10-20%<br>Australia Garden - Create additional 6-12%<br>New exhibit in Chilean garden<br>New meditation area in Mediterranean Garden<br>Construct and occupy Discovery Center @ Discovery Zone<br>Continue interim facilities @ Discovery Zone<br>Continue interim facilities @ Horticulture Zone |
| 6 | 2030-2032<br><br>Option Area 1 thru 8 | Ramble - Create additional 20-30%<br>Cape Garden - Complete final 5-15%<br>California Garden - Create additional 35-45%<br>Australia Garden - Create additional 20-25%<br>Scenic overlook in Mediterranean Garden<br>Construct and occupy Children's Center & Seedling Cage @ Discovery Zone<br>Continue interim facilities @ Discovery Zone<br>Continue interim facilities @ Horticulture Zone |
| 7 | 2033-2035<br><br>Option Area 1 thru 8 | Ramble - Create final 35-45%<br>California Garden - Create final 30-40%<br>Australia Garden - Create final 55-65%<br>New exhibit in Chilean garden<br>Construct and occupy Conservation Center @ Discovery Zone<br>Continue interim facilities @ Discovery Zone<br>Continue interim facilities @ Horticulture Zone |
| 8 | 2036-2038<br><br>Option Area 1 thru 8 | Sewer & water infrastructure @ Horticulture Zone<br>Update access road to impermeable paving @ Horticulture Zone<br>Construct and occupy Workshops, Garages, and Offices @ Horticulture Zone<br>New exhibit in Mediterranean Garden<br>New watershed exhibit in Cape Garden<br>New drought, culinary, and interactive displays in Cape Garden<br>New sculpture and astronomy areas in Cape Garden<br>Continue interim facilities @ Discovery Zone<br>Remove interim facilities @ Horticulture Zone |
| 9 | 2039-2041<br><br>Option Area 1 thru 8 | Construct and occupy Headquarters @ Discovery Zone<br>New meditation area within the Mediterranean Garden<br>New exhibit in Ramble<br>New Children's Discovery garden near Children's Center<br>New agricultural demonstration gardens near Heritage Center<br>New wetland exploration garden within Australia Garden<br>New bird exploration garden within Australia Garden<br>Construct Mechanized Vertical Transport<br>Install permanent lath house and two shade structures @ Horticulture Zone<br>Remove interim facilities @ Discovery Zone |
| 10 | 2042-2044<br><br>Option Area 1 thru 8 | New exhibit in Mediterranean Garden<br>New exhibit in Cape Garden<br>New Heritage gardens within the California Garden<br>New water play fountain within the California Garden<br>Sewer & water infrastructure @ Heritage Zone<br>Construct and occupy Heritage Center @ Heritage Zone |

This strategy, as approved in this Master Plan CUP, will allow for incremental development and flexibility while insuring that adequate support facilities are in place as each successive phase of development is undertaken. For example, in the event of an unforeseen circumstance like a delay in the construction of the Welcome Center component (or any other "Capital Campaign" component shown in the phasing plan) our yearly revenue stream is calibrated to fund the temporary interim facilities and operating costs needed to support the continued growth and maintenance of gardens.

On the other hand, a more positive example of the kind of flexibility VBG needs is the eventuality that a major donor or grant opportunity may appear. For instance, if VBG identifies a donor who is anxious to help build a new Children's Learning Center in 2019 rather than 2029 as currently shown on the phasing document, VBG might want to take steps to move in that direction. In that case VBG may decide to accelerate construction of portions of the South Africa Garden and develop a Capital Campaign for the Event Center prior to the Welcome Center for instance.

# Attachment A

## Ventura Botanical Garden Facility Summary

| | | Building | Function | Bldg. Area S.F. * | Stories | Bldg. Footprint S.F. ** | Exterior Space S.F. | Use of Outdoor Space | Staff **** |
|---|---|---|---|---|---|---|---|---|---|
| WELCOME ZONE | A | Visitor Center | Visitor admissions & orientation, restrooms, lost & found, first aide, etc. | 1,256 | 1 | 1,256 | 600 | Visitor orientation terrace. | 2 |
| | B | Book & Gift Shop | Cashier stations, ample storage and retail display areas for books, art, pottery, ceramics, garden objects, hats, t-shirts, and other items. | 2,228 | 1 | 2,228 | 200 | Patio sales area. | 2 |
| | C | Plant Sales | Lathhouse like plant sales building with all-weather cashier stations, potting work benches, tool storage, and adjacent outdoor sale patio with | 1,620 | 1 | 1,620 | 1,000 | Plant sales patio; 2/3 shaded. | 2 |
| | D | Snack Bar | Coffee, pastry, soup, sandwich & snack venue with little or no indoor seating adjacent to a small "dining" patio. | 662 | 1 | 662 | 400 | "Dining" patio. | 1 |
| DISCOVERY ZONE | G | Event & Lecture Center | Lecture, classroom, and community event venue. Main room (which can be subdivided) capable of hosting an event of 250-350 people. Also includes catering/demonstration kitchen, arrival foyer, restrooms, storage and direct access to the event meadow. | 11,570 | 1*** | 11,570 | 6,250 | Event meadow, small stage, and service area. | 0 |
| | H | Restaurant | Indoor seating for 35-45 for dining, 20-25 in the bar area, and 35-60 terrace dining, as well as a small gift shop. | 6,048 | 1*** | 0*** | 2,200 | Dining terrace & patio. | 8 |
| | I | Headquarters | Administrative and fund raising offices. | 6,710 | 2 | 3,355 | 800 | Entry forecourt and patio | 18 |
| | J | Conservation Center | Botanic laboratory and collection space for the advancement of the understanding, use, and preservation of plants of the world. | 9,060 | 2 + Basement | 3,020 | | | 9 |
| | K | Discovery Center | The main educational building of VBG it will include an exhibition space, botanic lab classroom for adult education, offices for staff educators, and a volunteer center. Also houses the main security | 7,992 | 2 | 3,996 | 1,600 | Exhibit and patio areas. | 9 |
| | L | Children's Center | Children's education including a botanic lab designed for kids, a discussion classroom, and access to adjacent outdoor classroom. | 2,288 | 1 | 2,288 | 800 | Outdoor classroom and demonstration area. | 0 |
| | M | Public Seedling "Cage" | A lathhouse like building for education about plant propagation. | 1,200 | 1 | 1,200 | | | 0 |
| HERITAGE ZONE | N | Heritage Center | An exhibit space for orientation to the human history of the region in relationship to the natural and cultivated botanic environment. | 3,186 | 1 | 3,186 | 1,000 | Visitor orientation terrace. | 1 |
| HORTICULTURE ZONE | O-1 | Lath House #1 | Garden Stock | 600 | 1 | 600 | | | 0 |
| | O-2 | Lath House #2 | Plant Sales Stock | 600 | 1 | 600 | | | 0 |
| | P-1 | Shade House # 1 | Garden Stock | 300 | 1 | 300 | | | 0 |
| | P-2 | Shade House # 2 | Garden Stock | 600 | 1 | 600 | | | 0 |
| | P-3 | Shade House # 3 | Plant Sales Stock | 600 | 1 | 600 | | | 0 |
| | P-4 | Shade House # 4 | Plant Sales Stock | 400 | 1 | 400 | | | 0 |
| | Q | Seed & Propagation Center | Seed handling, storage and propagation building. | 1,450 | 1 | 1,450 | | | 2 |
| | R | Equipment & Storage Garages | Truck and tractor storage as well as tractor attachments and hand tools. | 2,338 | 1 | 2,338 | | | 0 |
| | S | Workshops | General maintenance, equipment maintenance, and wood working plus general storage. | 2,313 | 1 | 2,313 | | | 2 |
| | T | Horticulture & Maintenance Staff | Offices, meeting rooms, and support space for operational staff. | 2,754 | 1 | 2,754 | | | 14 |
| | U | Growing Areas | Can yards and other open space to develop nursery stock. | 0 | 0 | 0 | 9,500 | Plant development; some with shade cloth. | 0 |
| | V | Material Storage | Sand, gravel, mulch, wood, etc. in bins + room for tractor maneuvering | 0 | 0 | 0 | 1,800 | Outdoor material storage | 0 |
| | W | Stone Storage & Handling | Stone materials + crafting and maneuvering space | 0 | 0 | 0 | 5,000 | | 2 |
| | X | Service Yards | Bulk materials, trash/recycle area, fuel storage, wood chipping, compost, firewood, lumber, brush burning. | 0 | 0 | 0 | 8,000 | | 0 |
| | Y | Tram Service & Storage | Storage area for on-site public transport vehicles | 875 | 1 | 875 | 500 | | 3 |
| | | | | 66,650 | | 47,211 | 39,650 | | 75 |

***** Building Area is the total area of the building including all levels.
****** Building Footprint is the area of the building at ground level.
******* Event & Lecture Center is below the Restaurant; building appears as two stories from the west, a single story from the north, east, and south.
******** Staff represents largest number on site at one moment from 9AM to 6PM and includs employees, volunteers, and concessionaires.

**Attachment B**

## ATTENDANCE PROJECTIONS

| USE | NUMBER, INTERVAL & DURATION | HOURS | LOCATION |
|---|---|---|---|
| Daily Paid Attendance | March - October 150 to 300 per day evenly distributed throughout hours of operation with average 2 hour stay | 8:30 am to 7:30 pm | Living Collections |
| | November - February 100 to 250 per day evenly distributed throughout hours of operation with average 2 hour stay | 8:30 am to 6:30 pm | |
| School Bus Visits | January to June - 10 buses per month, 30 students + 6 adults, weekdays, 4 hours per bus, two buses maximum at any time. | 8:30 am to 2:30 pm | Children's Center, Living Collections, Heritage Center, Visitor Center |
| | September to December - 5 buses per month, 30 students + 6 adults, weekdays, 4 hours per bus two buses maximum a any time. | | |
| Adult Classes | March - May; 6 classes per week; 10 students per class; 1 to 2 hours per class | 9:00 am to 9:00pm | Discovery Center |
| | June - August; 4 classes per week; 10 students per class; 1 to 2 hours per class | | |
| | September - November; 6 classes per week; 10 students per class; 1 to 2 hours per class | | |
| | December - February; 6 classes per week; 10 students per class; 1 to 2 hours per class | | |
| Lectures & Symposia | Once Per Quarter; 100 attendees; 2 to 8 hours | 9:00 am to 9:00pm | Event Center |
| Revenue Events (weddings, plant sales, lease by outside groups, etc.) | March - August; 8 events per month; 350 people per event; 4 to 8 hours per event | 9:00 am to 10:00pm | Event Center, Event Lawn, Welcome Plaza |
| | September - February; 6 events per month; 350 people per event; 4 to 8 hours per event | | |
| Donor, Member, & Volunteer Recognition Events | Once Per Quarter; 10 to 40 attendees; 2 to 4 hours | 9:00 am to 9:00pm | Event Center, Event Lawn, Discovery Center, Welcome Plaza, Heritage Center, Living Collections |
| Exposition | Every three to five years; 9 month durtion; the first three months of an Exposition would result in approximately 615 to 660 additional daily paid visitors; the remaining 6 months of an Exposition would result in approximately 405 to 480 additional daily paid visitors. | 9:00 am to 10:00pm | Event Center, Event Lawn, Discovery Center, Welcome Plaza, Heritage Center, Living Collections |
| Annual Trade Show | Once per year; 200 to 300 per day; 10 days | 9:00 am to 10:00pm | Event Center, Event Lawn |

# Design Principles and Guidelines/Sign Guidelines

## 1. Design Principles and Guidelines

These Design Principles and Guidelines are based upon the ideas and priorities established during the Ventura Botanical Garden Design Workshop held on February 23, 2013 by the VBG Board of Directors. The resulting Design Principles are reiterated here, with refined language, along with Design Guidelines intended to help guide the implementation of each Principle. In addition to these criteria, improvements within the Botanical Garden are subject to compliance with city ordinances and codes in effect at the time work is undertaken.

The Ventura Botanical Gardens is comprised of several garden areas (climatic region gardens) representing unique regions of the world that share climatic characteristics similar to those of our region. Within this setting, the Master Plan for the Botanical Gardens provides for several facilities, sited to meet specific program needs and to take advantage of unique opportunity areas on the property. These guidelines provide a framework for design that encourages a connectedness between the various facilities while promoting unique design solutions appropriate to the various needs and functions of each.

1. **Improvements, including buildings, structures, walls, paving, seating and other construction should emphasize materials of local origin and color suitable to this climate and site through authentic, durable and intriguing design.**
    a. Materials considered specifically well-suited to this intention include:
        i. Fieldstone – common to the site, as evidenced by the many hand-laid retaining walls built of this durable muted cobble in the past century and earlier;
        ii. Quarried stone from the region, primarily sandstone;
        iii. Rammed earth, in which soil from the site is combined with binding additives such as chalk, lime and gravel.
        iv. Masonry of brick clay, adobe or concrete block, many varieties of which are fabricated in the region of regionally local materials.

    b. Materials considered complimentary to this intention include:
        i. Weathering steel, which exhibits increased resistance to atmospheric corrosion with a characteristically red-rust colored coating that forms to retard future corrosion;
        ii. Woods of a natural finish, ideally farmed through sustainable practices, as structural elements and/or in the fabrication of architectural elements such as screens, trim, frames and surfaces;
        iii. Metal and metal cladding or panels, with natural finish or colors complimentary to the intent of the stated design principles of the Botanical Garden.
        iv. Glass, glass panels, glass channels and similar materials, clear, translucent, or colored, and of a non-reflective finish;
        v. Materials from recycled sources should be used wherever feasible.

2. **Sustainability in the Botanical Garden should be a common attribute, inherent and demonstrable in the use and experience of the buildings and gardens.**
    a. Energy systems need not be screened from view if the system is intended to visibly demonstrate awareness of energy conservation.
    b. These systems may include both active and passive processes:
        i. Active energy systems, such as solar water heating and photovoltaic panels, wind turbines, heat pumps and geo-thermal.

ii. Passive energy systems, such as thermal mass and ventilation chimneys, skylights and light shelves, shade elements, and natural cross ventilation.

c. Plantings of low-water use will predominate, clustered according to the nature of their climatic region;
d. Water will be used conservatively, in a manner that acknowledges its value and scarcity;
e. Site drainage and retention will be configured to provide for bio-filtering, with planting configurations appropriate to the respective climatic region, and in patterns that reflect natural occurrences or artful demonstration. Rain water harvesting should be considered as a potential resource for the Garden.
f. Site improvements, at a minimum, shall comply with the requirements of MS4, Ventura County NPDES Municipal Stormwater Permit (Order No. R4-2010-0108).

**3. Built improvements should express permanence and respect for the Garden and environs, through:**

a. Materials that endure and weather with grace;
b. Strong connections between the interior and exterior spaces;
c. The use of natural light and ventilation;
d. Exterior spaces that provide a functional extension of interior space and activities;
e. Emphasis on views and vistas, both within the garden and of the dramatic coastal setting.
f. Grading shall be minimized where possible. Where grading is necessary it shall be done with respect for the topographic character of the site, and with conscious attention to establishing non-erosive drainage patterns.
g. Lighting for site and building improvements shall be designed to minimize stray light pollution, while providing for minimum safety standards and enjoyment of garden visitors.

**4. The Gardens shall be designed to accommodate a variety of activities, large and small.**

a. Outdoor gathering areas of differing sizes should be created where opportunities are present, for teaching, performances and celebrations.
b. Outdoor spaces may be in the form of plazas, sitting circles (stepped or level), terraces, simple open clearings, picnic areas, covered pavilions, etc.
c. Several ‘vista points’ offer opportunity for informal gatherings. Materials and construction in these unique locations should abide by the intentions of these design principles, using materials that endure and weather with grace.

**5. Art shall compliment the Garden experience through integration within the architecture of built improvements, as well as both permanent and temporary installations.**

a. Opportunities for the integration of artworks are found in such features as walls, seating, vista points and gardens. Materials of the grounds and improvements in these unique locations should abide by the intentions of these design principles.
    i. Lighting of artworks should be done with care to minimize stray light pollution while providing for dramatic effect.
    ii. Up-lighting should be used sparingly, using only low-voltage lighting.

**6. The forms of buildings and improvements shall be integrated into the topography and landscape of the site, and embody a balance of rustic, contemporary and sophisticated design.**

a. Grading shall be minimized. Where grading is necessary it shall be done with respect for the topographic character of the site, and with conscious attention to establishing non-erosive drainage patterns. Any development for interim or permanent structures or buildings that requires a grading permit shall also require DRC review and approval. Development of any pathways is not subject to DRC review.
b. Structures shall respond to unique site conditions and opportunities through:
    i. Terracing, stepping, and subterranean forms, where appropriate;
    ii. Choices of material and color;
    iii. Integration of buildings, structures and site walls with adjacent garden spaces and features.
c. Rustic design allows for the use of raw or hewn materials in a manner that expresses the material's natural state. Expression of structural members and connections are also common attributes of rustic design.
d. Contemporary design here intends to encourage design that is of contemporary aesthetic, using materials and technologies that reflect the need for architecture that is both artfully expressive and environmentally responsible.
e. Sophisticated design here intends to encourage architecture of a higher art – that which is enduring, timeless and inherently adaptable to the purposes of the Botanical Garden.
f. Any structures or improvements within the Welcome Zone shall respect and not compromise the historic setting of City Hall as defined by the National Register of Historic Places Bulletin 15.

7. **The orientation of structures and open spaces shall respond to the unique conditions and environmental factors of the site, including prevailing winds from the west, sweeping views of the site and coastline, and topography;**
    a. Buildings should be designed to utilize natural ventilation and passive heat gain as a significant component in the conditioning of interior spaces;
    b. Buildings and structures should be strategically placed to benefit from coastal vistas and interior views, and to enhance views of the Garden from off-site vantages;
    c. Buildings and structures should be configured to provide outdoor spaces that offer protection from sun, wind and chill;
    d. Topographic conditions of the site offer unique opportunities to create varied and interesting spaces, both interior and exterior;
    e. Careful consideration should be given to the principal of Universal Design, creating *accessible paths of travel that are integral to the building and site design*.

8. **Lighting shall be limited to that which is necessary to the safe enjoyment of the gardens. The following standards shall apply**
    a. Exterior lighting shall be fully shielded or fitted with opaque hoods, shields, louvers, shades, and other devices to insure that light generated by the light source is directed downward and not outward horizontally, and so fitted that no portion of the light source is visible when the light fixture is viewed from the property line.
    b. No exterior light source, including fixtures not mounted on the primary structure, shall be mounted higher than 12 feet measured from the grade at the light location.
    c. No exterior light source shall illuminate, reflect, spill over, or otherwise create a nuisance upon adjoining property.
    d. No flashing, laser, searchlight, strobe, tracing, pulsating, or neon exterior lighting is permitted.

e. Lighting intended to illuminate foliage, trees, landscape, or architectural structures shall be limited to low voltage lighting.
f. Outdoor light fixtures operated by a “dusk to dawn” timer or sensor, shall be motion-sensor activated, and programmed to shut off after 10 minutes. Such sensors shall not be triggered by activity located off the property.

## 2. Sign Standards

Signage will play an important role in the function and experience of the Botanical Garden. Several types of signs will be of use and will serve distinctly different purposes. Some of these signs will need to be highly visible and often of a larger format, while other signs will be discreet and informational at a basic functional level.

**Section 2.1** identifies the types of signage to be utilized at the garden, and provides a design framework for each sign type. All but the temporary signs should be durable, constructed of materials that are well-suited to the outdoors and resistant to tampering and vandalism.
**Section 2.2 and 2.3** provide sizing and placement criteria for the different sign types.

### 2.1 Sign Types and Uses

1. **Architectural Building and Place Identification**: Includes building or facility identification, coordinated with the design of related architecture.
    a. Materials: stainless steel, corten steel, cast bronze, aluminum, carved or sandblasted wood
    b. Mounting: Individual letters building-mounted, placard or panel-mounted
    c. Colors: Natural finish
    d. Lighting: Ambient lighting, spot lighting, backlighting, up-lighting *

2. **Educational, with narrative and pictorial content:** Graphic placard with printed, etched or cast content, includes narrative text and possibly illustrations or other graphic images.
    a. Materials: High Pressure Laminate; cast bronze, aluminum, powder-coated metal, carved or sandblasted wood
    b. Mounting: Panel or placard mounted to pole, stand or base
    c. Colors: Earth tones, or colors drawn from related plant materials and the environment of the sign setting.
    d. Lighting: Ambient or spot lighting*

3. **Way Finding and Directional:** Graphic blade or placard with printed, etched or cast content, includes direction arrow or directional shape. May include illustrations or other graphic images.
    a. Materials: High Pressure Laminate; cast bronze, aluminum, powder-coated metal, carved or sandblasted wood
    b. Mounting: Panel or placard mounted to pole or stand
    c. Colors: Earth tones, or colors drawn from related plant materials and the environment of the sign setting
    d. Lighting: Ambient or spot lighting*

4. **Memorial and Donor Identification:** Placard with printed, etched or cast content, primarily used to state the name(s) of donors and memoriam messages
    a. Materials: High Pressure Laminate; cast bronze, aluminum, powder-coated metal

b. Mounting: Panel or placard mounted to stand, base, bench or rock
c. Colors: Natural material, earth tones, or colors drawn from related plant materials and the environment of the sign setting
d. Lighting: Ambient or spot lighting*

5. **Botanical Identification:** Placard with printed, etched or cast content, primarily used to state the name(s) of specific plant species or garden information
   a. Materials: High Pressure Laminate; etched laminate, cast bronze, aluminum, powder-coated metal
   b. Mounting: Panel or placard mounted to stand or base
   c. Colors: Natural material, earth tones, or colors drawn from related plant materials and the environment of the sign setting
   d. Lighting: Ambient or spot lighting*

6. **Cautionary or Restrictive:** Placard with printed, etched or cast content, primarily used to state a cautionary message or directive
   a. Materials: High Pressure Laminate; etched plastic laminate, aluminum, powder-coated metal
   b. Mounting: Blade, panel or placard mounted to wall, door, pole, stand or base
   c. Colors: Dark red with white lettering
   d. Lighting: Ambient or spot lighting*

7. **Functional:** used to identify facility service functions, restrooms, employee areas
   a. Materials: High Pressure Laminate; etched plastic laminate, aluminum, powder-coated metal
   b. Mounting: Panel or placard mounted to wall, door, pole, stand or base
   c. Colors: Natural material, earth tones, or colors drawn from related plant materials and the environment of the sign setting
   d. Lighting: Ambient or spot lighting*

8. **Temporary:** used to promote fund raising and special projects, and to announce events and special attractions, for a limited duration. Board signs should be limited to a one-year duration, while banner signs should be limited to a 90-day duration. Regardless of duration, temporary signs should be keep in good repair, free of tears, chips, cracks, mars and breaks.
   a. Materials: Printed hard mounted board, banners made of waterproof fabric
   b. Mounting: Boards to be pole-mounted; Banners hung in place
   c. Colors: Natural material, earth tones, or colors drawn from related plant materials and the environment of the sign setting (note that some brighter colors may be useful and appropriate for short-term sign display)
   d. Lighting: Ambient or spot lighting*

### 2.2 Sign Sizing

In general, signs should be sized ***no larger than the smallest size needed*** to accomplish the sign purpose. Many signs in the Garden will serve an educational purpose, including graphic content, and will often be viewed by groups of visitors, including school children. These signs, by their nature and purpose, will be sized larger to present the content in a graphically interesting and compelling manner.

1. **Architectural Building and Place Identification:** These are generally highly aesthetic signs that should fall under the purview of the architect for the building.

2. **Educational, with narrative and pictorial content:** These signs serve an educational purpose, typically including graphic content, and will often be viewed by groups of visitors, including school children. These signs, by their nature and purpose, will be sized larger to present the content in a graphically interesting and compelling manner.

   The size of such signs will vary depending upon the location and extent of content, and may include a single large panel, or an array of panels, sometimes several feet in length.

3. **Way Finding and Directional:** Signs that serve to facilitate visitor access should be sized to be legible to the casual stroller and the facilitated tour-member.
   Directional signs should be designed to be legible from a distance of 20 to 30 feet, with fonts as tall as 6 to 8 inches.
   Signs with graphic content may be larger, as supports the intent of the graphic.

4. **Memorial and Donor Identification:** These signs are intended to be discreet, no larger than is necessary to identify the Memoriam or Donor name. The font size should not exceed 1 inch in height.

5. **Botanical Identification:** These signs serve both to inform visitors and to provide a 'scientific tag'. These are discreet signs with fonts no larger than one-half inch.

6. **Cautionary or Restrictive:** These signs are provided for visitor safety, and must be large enough to be visible, but not detract from the garden environs. A dark red background with white font will facilitate visibility while helping to limit the size of the sign. The placard should be limited to 5 inches in height where feasible.

7. **Functional:** These signs are provided for basic information, room labeling, access restriction and similar purposes. Placards should be limited to 5 inches in height where feasible.

8. **Temporary:** These signs are often intended to serve a promotional purpose, and as such may be larger and more contrasting than would otherwise be acceptable. The maximum size of a banner or board should not exceed 4 feet by 8 feet, unless specifically determined necessary for the intended purpose.

### 2.3 Sign Placement, Height and Lighting

Signs within the Botanical Garden are provided to facilitate the enjoyment of the Garden. Signs should never be made to become more important than the garden setting. Placement of all signs must consider potential negative impacts on the aesthetic environment of the Garden.

1. Signs should be placed to the side of important vistas, viewsheds and focal points.

2. Signs should be set as low as is functionally practical, as determined by the specific sign purpose. In general, signs should not be placed higher than twelve feet (12') above adjacent grade.

3. Signs should be set to the side of paths and trails, never set directly in the path, or set directly in the line of site of a path terminus.

4. Sign Lighting shall be low voltage unless specifically required otherwise, and shall conform to the criteria set forth in Section A.8, above.

## 3. Compliance with city-wide Design Guidelines

In order to ensure consistency between these Design Principles and Guidelines/Sign Guidelines, and in response to comments received during their preparation, VBG will adhere to the following guidelines:

### 3.1 Trash Enclosures

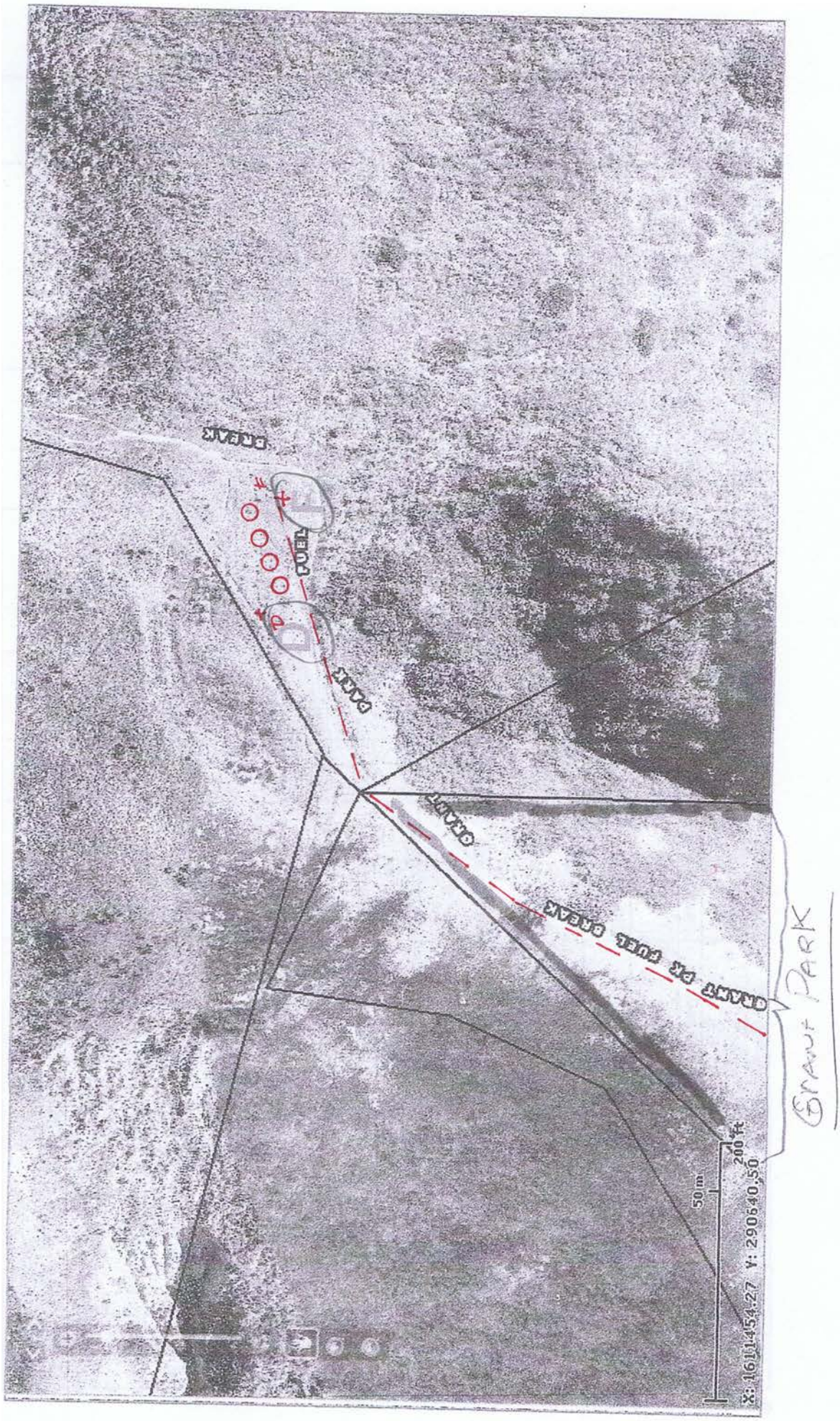
Trash enclosures within the Botanical Garden will comply with the following requirements, which are based on the guidelines for trash enclosures from the City's city-wide Design Guidelines:

- Trash enclosures shall include separate bins for trash and recycle materials.
- Trash enclosures shall be shielded from general view.
- Enclosures shall be animal proof.
- All trash enclosures shall have a solid roof and screened from public view by solid fences or walls with a minimum 6 feet in height.

### 3.2 Utility and Mechanical Equipment

All utility and mechanical equipment should be out of view from the public street, either by its placement or by use of screening materials that blend in with their surroundings.

**Attachment D**
**Off-site Well Concept**



1. **Are there storage devices proposed? What are the sizes and where located?** *Yes, though the system has not yet been designed there will likely be at least two and likely more tanks. The size and number is dependent upon the flow rate of the well. A slow flowing well will take much longer to fill than a fast flowing well and will therefore require larger storage capacity. Past experience indicates that a botanic garden of this size will need a minimum of 40,000 gallons of storage capacity and optimally would have twice that. See the attached sketch/aerial photo which illustrates four 10,000 gallon tanks. Pre-manufactured above ground tanks of this capacity are available in different configuration. The attached sketch represents a common configuration and color of approximately 12 feet diameter x 12 feet high (although manufacture example photo above shows 18-24 feet high).* **B)". . . . . please provide spec sheet of proposed storage devices."** *Since no test well has yet been attempted, there is no design or selected components for a system yet. However, installation of pre-manufactured water tanks in our region is not uncommon. Here is an example from a supplier in Arroyo Grande:* http://www.loomistank.com/tiger-tanks-galvanized-steel.shtml

**RESPONSES FROM VBG TO CITY QUESTIONS – REGARDING OFFSITE WELL FOR WATER SUPPLY 4/18/14**

1. **What are County requirements for drilling a private well on county lands?** *This is a by-right use, see attached application form.*
2. **Has the County issued a permit for water lines crossing property line? How do they regulate this?** *There has been no discussion with the county regarding water passing over property lines. It is common for agricultural wells to be drilled with shared ownership or mutual agreement between property owners and it is therefore not anticipated that this would be an issue if both parties grant permission.*
3. **A) Can water from another property (in county) be used on leased City land?** *VBG believes this is a viable option that the County will approve.* **B) Is the land where the pipeline will be required part of the current lease to VBG?** *No, the pipeline connecting from the off-site well to VBG would be mostly within Grant Park, but along the ridgeline down range of the firing line of the gunnery range and is therefore not a part of the lease option agreement and therefore a specific separate agreement with the City would be required*; **C) Do they need an easement?** *VBG is working with adjacent land owners to secure necessary access rights/easements/ or other agreements to accomplish necessary test well and long term installation of permanent well and tank(s).*
4. **Does LAFCO have a regulatory role and how would they consider a private water service across a jurisdictional boundary from county to city?** *The Ventura Local Agency Formation Commission Commissioner's Handbook – Policies of the Ventura LAFCO Adopted October 17, 2007 (updates through Nov. 2013) provides general guidance on LAFCO's policy relative to extension of infrastructure as follows:*

   *<u>1.4.4.3 Projects Considered to be Exempt from CEQA</u>:*

   *(b) The following projects/actions are considered to be categorically exempt from CEQA pursuant to CEQA Guidelines Section 15300-15332:*

   *iii. Out of agency service agreements to provide for extensions of service to existing structures provided:*
   1. *the associated infrastructure (e.g., water lines) would be limited in size so as to allow no expansion of use beyond that which currently exists; and*
   2. *the installation of any new infrastructure necessary to deliver service to the receiving property would involve only minor alterations to the land; and*
   3. *the project area would not be located in a particularly sensitive environment in which significant effects might result.*

5. **A) Define how much water will be used?** *The amount of water that would be used would be maximized within the best management practices for operation an irrigation well. Because no test well has yet been drilled, it is unknown what the perched water capacity might yield;* **B) Is this all for non-potable only and VBG will still be using City water for consumption purposes?** *Yes, well water is proposed for non-potable, irrigation use. City water will be used as a potable supply.*
6. **A) Where is the water line physically going on the property and show at which point does it cross the property line?** *See attached sketch/aerial photo for proposed point of crossing;* **B) How will it be installed and how much clearance of vegetation and grading is necessary?** *The*

*proposed alignment of the pipe is along the current fire break on the ridge east of the gunnery range and therefore any vegetative clearing would be a benefit. The size of pipe and proposed trenching is for an irrigation main as described on page 18 of the project description.*

7. **Are there any necessary mechanical pumping devices along the route?** *No, the well on adjacent property would pump to the holding tank(s) and then gravity would distribute. The well pump and tank(s) would be located off-site. See attached conceptual sketch/aerial photo.*
8. **A) Are there storage devices proposed? What are the sizes and where located?** *Yes, though the system has not yet been designed there will likely be at least two and likely more tanks. The size and number is dependent upon the flow rate of the well. A slow flowing well will take much longer to fill than a fast flowing well and will therefore require larger storage capacity. Past experience indicates that a botanic garden of this size will need a minimum of 40,000 gallons of storage capacity and optimally would have twice that. See the attached sketch/aerial photo which illustrates four 10,000 gallon tanks. Pre-manufactured above ground tanks of this capacity are available in different configuration. The attached sketch represents a common configuration of approximately 12 feet diameter x 12 feet high.* **B)". . . . . please provide spec sheet of proposed storage devices."** *Since no test well has yet been attempted, there is no design or selected components for a system yet. However, installation of pre-manufactured water tanks in our region is not uncommon. Here is an example from a supplier in Arroyo Grande:* http://www.loomistank.com/tiger-tanks-galvanized-steel.shtml
9. **Storage may also raise a fire suppression question. How much more fire protection is needed even if there is no potable water uses up at the gardens?** *VBG does not propose to provide fire suppression by means of a well system. That will need to come from City water.*
10. **Advisory: In-lieu fee for City water service may still apply if approved by Council.** *Understanding that we are in partnership with the City, what is the process that allows an applicant to enter into discussions that would provide full or partial relief from these fees and/or phased payment?*

**ATTACHMENT B**

**OFFSITE VISUAL SURVEY**

# Offsite Visual Survey – Ventura Botanical Garden Master Plan

Context: Community Development conducted field reconnaissance to assess potential visual impacts of the Ventura Botanical Garden (VBG) Master Plan CUP project. The City's 2005 General Plan contains the following policies and actions regarding hillsides and important viewsheds:

**Policy 3A: Sustain and complement cherished community characteristics**

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

*Action 3.4: Require preservation of public view sheds and solar access.*

**Policy 4D: Protect views along scenic routes**

*Action 4.36: Require development along the following roadways – including noise mitigation, landscaping and advertising – to respect and preserve views of the community and its natural context: State Route 33, US Highway 101, Anchors Way, Brakey Road, Fairgrounds Loop, Ferro Drive, Figueroa Street, Harbor Boulevard, Main Street, Navigator Drive, North Bank Drive, Poli Street/Foothill Road, Olivas Park Drive, Schooner Drive, Spinnaker Drive, Summit Drive, Telegraph Road – east of Victoria Avenue, Victoria Avenue – south of US Highway 101, and Wells Road.*

Assessment: Using the VBG Master Plan CUP Figure Nos. 3 and 7, staff conducted visual assessment from applicable offsite scenic routes per required policy, as well as several other Downtown and Westside public areas: Ventura Pier, Cemetery and Westside Parks, Ash Street/pedestrian overpass parking area (all for perspective only purposes).

Views of future garden installation and trails will have limited views from Westside and Downtown locations, just as existing Ferro, Brakey and Summit roadways do today. Future building development in both Welcome and Horitcultural Zones will only be visible from immediate adjacent properties and roadways. Future building development within the Discovery Zone and the Heritage Zone are designed to be constructed away from ridgelines and off 30% slopes. Because of the VBG's proposed Design Guidelines for site design, views of these zones are limited by existing terrain and landscaping. As such, only portions of some buildings may be visible at certain viewing angles.

Attachment: View Point Photographs

## 1. Fairgrounds Loop

Fairground Loop Zoom image 1 – Entire Site, including Heritage and Discovery Zones

Fairgrounds Loop Zoom Image 2 – Discovery Zone

Fairground Loop Zoom Image 3 – Discovery Zone

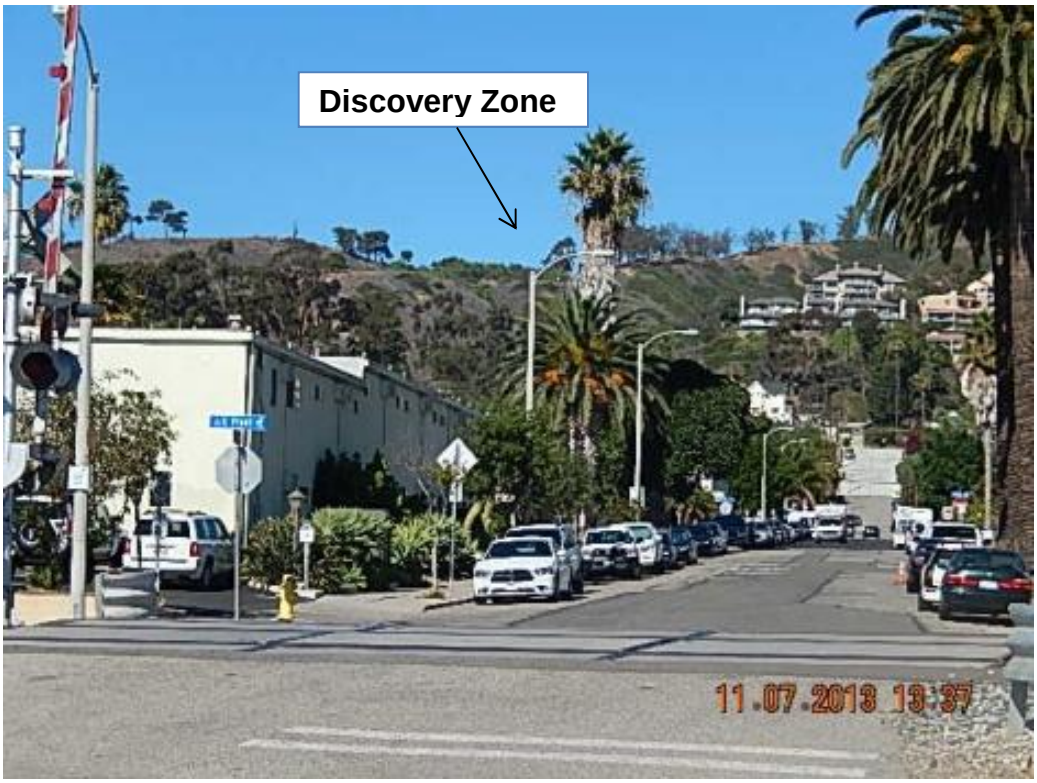
## 2. Figueroa Street at Thompson Boulevard

## 3. Ventura Pier

Ventura Pier Zoom image 1 – Central area of VBG

Ventura Pier Zoom image 2 - Discovery Zone

**4. Ash Street at Highway 101 pedestrian bridge and parking lot**




Zoom image

## 5. Main Street at Ann Street

On Ann Street, at Main Street

**6. Highway 101 near Seaward Overpass**

**7. Cemetery Park**

Cemetery Park Zoom image 1 – West portion of VBG

Cemetery Park Zoom image 2 – Central portion of VBG

Cemetery Park Zoom image 3 – East Portion of VBG

**8. Poli Street at Cemetery Park**

## 9. Main Street at Seaward Avenue

Main Street Zoom image 1 – West/Central portion of VBG

Main Street Zoom image 2 – Central/East portion of VBG

**10. West Main @ Emma Woods State Park Entrance**

West Main @ Emma Woods State Park Entrance – Zoom Image

**11. West Main @ Garden Street**

West Main @ Garden Street – Zoom Image

**12. Hwy 33 Southbound**

**13. Westside Park**

Westside Park – Zoom Image

# ATTACHMENT C

# AIR QUALITY AND GREENHOUSE GAS EMISSIONS MODELING

# Ventura Botanical Gardens Update

**Ventura County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 60.65 | 1000sqft | 7.50 | 60,650.00 | 0 |
| Quality Restaurant | 6.05 | 1000sqft | 0.14 | 6,050.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.6 | **Precipitation Freq (Days)** | 31 |
| **Climate Zone** | 8 | | | **Operational Year** | 2014 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 630.89 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Conservatively, the collective square footage of facilities on-site is assumed to consist of commercial office buildings. Lot acreage of 7.5 refers to total area subject to grading in the vicinity of planned structures.

Construction Phase -

Vehicle Trips - Trip rates taken from traffic study conducted by Associated Transportation Engineers. 20.55 trips per 1000sqft

Waste Mitigation - 75% diversion rate in City of Ventura, based on 2009 data.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblLandUse | LotAcreage | 1.39 | 7.50 |
| tblVehicleTrips | ST_TR | 2.37 | 20.56 |
| tblVehicleTrips | ST_TR | 94.36 | 20.56 |
| tblVehicleTrips | SU_TR | 0.98 | 20.56 |
| tblVehicleTrips | SU_TR | 72.16 | 20.56 |
| tblVehicleTrips | WD_TR | 11.01 | 20.56 |
| tblVehicleTrips | WD_TR | 89.95 | 20.56 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2015 | 5.3315 | 56.9647 | 43.4904 | 0.0409 | 18.2141 | 3.0895 | 21.3036 | 9.9699 | 2.8423 | 12.8122 | 0.0000 | 4,264.3879 | 4,264.3879 | 1.2355 | 0.0000 | 4,290.3330 |
| 2016 | 77.6713 | 22.4421 | 15.4623 | 0.0238 | 0.1232 | 1.2619 | 1.3851 | 0.0327 | 1.1610 | 1.1937 | 0.0000 | 2,439.0812 | 2,439.0812 | 0.7048 | 0.0000 | 2,453.8812 |
| **Total** | **83.0028** | **79.4067** | **58.9526** | **0.0646** | **18.3373** | **4.3514** | **22.6887** | **10.0026** | **4.0033** | **14.0059** | **0.0000** | **6,703.4691** | **6,703.4691** | **1.9402** | **0.0000** | **6,744.2142** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2015 | 5.3315 | 56.9647 | 43.4904 | 0.0409 | 18.2141 | 3.0895 | 21.3036 | 9.9699 | 2.8423 | 12.8122 | 0.0000 | 4,264.3879 | 4,264.3879 | 1.2355 | 0.0000 | 4,290.3330 |
| 2016 | 77.6713 | 22.4421 | 15.4623 | 0.0238 | 0.1232 | 1.2619 | 1.3851 | 0.0327 | 1.1610 | 1.1937 | 0.0000 | 2,439.0812 | 2,439.0812 | 0.7048 | 0.0000 | 2,453.8812 |
| **Total** | **83.0028** | **79.4067** | **58.9526** | **0.0646** | **18.3373** | **4.3514** | **22.6887** | **10.0026** | **4.0033** | **14.0059** | **0.0000** | **6,703.4691** | **6,703.4691** | **1.9402** | **0.0000** | **6,744.2142** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 1.8516 | 7.0000e-005 | 7.1200e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0146 | 0.0146 | 4.0000e-005 | | 0.0155 |
| Energy | 0.0643 | 0.5843 | 0.4908 | 3.5100e-003 | | 0.0444 | 0.0444 | | 0.0444 | 0.0444 | | 701.1716 | 701.1716 | 0.0134 | 0.0129 | 705.4389 |
| Mobile | 5.2396 | 11.6634 | 49.4121 | 0.0911 | 6.5949 | 0.1585 | 6.7533 | 1.7576 | 0.1454 | 1.9030 | | 8,410.5933 | 8,410.5933 | 0.3905 | | 8,418.7943 |
| **Total** | **7.1555** | **12.2478** | **49.9101** | **0.0946** | **6.5949** | **0.2029** | **6.7978** | **1.7576** | **0.1898** | **1.9475** | | **9,111.7796** | **9,111.7796** | **0.4040** | **0.0129** | **9,124.2486** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 1.8516 | 7.0000e-005 | 7.1200e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0146 | 0.0146 | 4.0000e-005 | | 0.0155 |
| Energy | 0.0643 | 0.5843 | 0.4908 | 3.5100e-003 | | 0.0444 | 0.0444 | | 0.0444 | 0.0444 | | 701.1716 | 701.1716 | 0.0134 | 0.0129 | 705.4389 |
| Mobile | 5.2396 | 11.6634 | 49.4121 | 0.0911 | 6.5949 | 0.1585 | 6.7533 | 1.7576 | 0.1454 | 1.9030 | | 8,410.5933 | 8,410.5933 | 0.3905 | | 8,418.7943 |
| **Total** | **7.1555** | **12.2478** | **49.9101** | **0.0946** | **6.5949** | **0.2029** | **6.7978** | **1.7576** | **0.1898** | **1.9475** | | **9,111.7796** | **9,111.7796** | **0.4040** | **0.0129** | **9,124.2486** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2015 | 1/14/2015 | 5 | 10 | |
| 2 | Grading | Grading | 1/15/2015 | 2/11/2015 | 5 | 20 | |
| 3 | Building Construction | Building Construction | 2/12/2015 | 12/30/2015 | 5 | 230 | |
| 4 | Paving | Paving | 12/31/2015 | 1/27/2016 | 5 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 1/28/2016 | 2/24/2016 | 5 | 20 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 100,050; Non-Residential Outdoor: 33,350 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 8.00 | 162 | 0.38 |
| Grading | Graders | 1 | 8.00 | 174 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 255 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 226 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 22.00 | 11.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 4.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.2609 | 56.8897 | 42.6318 | 0.0391 | | 3.0883 | 3.0883 | | 2.8412 | 2.8412 | | 4,111.7444 | 4,111.7444 | 1.2275 | | 4,137.5225 |
| **Total** | **5.2609** | **56.8897** | **42.6318** | **0.0391** | **18.0663** | **3.0883** | **21.1545** | **9.9307** | **2.8412** | **12.7719** | | **4,111.7444** | **4,111.7444** | **1.2275** | | **4,137.5225** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0706 | 0.0750 | 0.8586 | 1.7600e-003 | 0.1479 | 1.2000e-003 | 0.1491 | 0.0392 | 1.1000e-003 | 0.0403 | | 152.6436 | 152.6436 | 7.9500e-003 | | 152.8106 |
| **Total** | **0.0706** | **0.0750** | **0.8586** | **1.7600e-003** | **0.1479** | **1.2000e-003** | **0.1491** | **0.0392** | **1.1000e-003** | **0.0403** | | **152.6436** | **152.6436** | **7.9500e-003** | | **152.8106** |

## 3.2 Site Preparation - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.2609 | 56.8897 | 42.6318 | 0.0391 | | 3.0883 | 3.0883 | | 2.8412 | 2.8412 | 0.0000 | 4,111.7444 | 4,111.7444 | 1.2275 | | 4,137.5224 |
| **Total** | **5.2609** | **56.8897** | **42.6318** | **0.0391** | **18.0663** | **3.0883** | **21.1545** | **9.9307** | **2.8412** | **12.7719** | **0.0000** | **4,111.7444** | **4,111.7444** | **1.2275** | | **4,137.5224** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0706 | 0.0750 | 0.8586 | 1.7600e-003 | 0.1479 | 1.2000e-003 | 0.1491 | 0.0392 | 1.1000e-003 | 0.0403 | | 152.6436 | 152.6436 | 7.9500e-003 | | 152.8106 |
| **Total** | **0.0706** | **0.0750** | **0.8586** | **1.7600e-003** | **0.1479** | **1.2000e-003** | **0.1491** | **0.0392** | **1.1000e-003** | **0.0403** | | **152.6436** | **152.6436** | **7.9500e-003** | | **152.8106** |

## 3.3 Grading - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 6.5523 | 0.0000 | 6.5523 | 3.3675 | 0.0000 | 3.3675 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8327 | 40.4161 | 26.6731 | 0.0298 | | 2.3284 | 2.3284 | | 2.1421 | 2.1421 | | 3,129.0158 | 3,129.0158 | 0.9341 | | 3,148.6328 |
| **Total** | **3.8327** | **40.4161** | **26.6731** | **0.0298** | **6.5523** | **2.3284** | **8.8807** | **3.3675** | **2.1421** | **5.5096** | | **3,129.0158** | **3,129.0158** | **0.9341** | | **3,148.6328** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0588 | 0.0625 | 0.7155 | 1.4700e-003 | 0.1232 | 1.0000e-003 | 0.1242 | 0.0327 | 9.2000e-004 | 0.0336 | | 127.2030 | 127.2030 | 6.6300e-003 | | 127.3421 |
| **Total** | **0.0588** | **0.0625** | **0.7155** | **1.4700e-003** | **0.1232** | **1.0000e-003** | **0.1242** | **0.0327** | **9.2000e-004** | **0.0336** | | **127.2030** | **127.2030** | **6.6300e-003** | | **127.3421** |

## 3.3 Grading - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 6.5523 | 0.0000 | 6.5523 | 3.3675 | 0.0000 | 3.3675 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8327 | 40.4161 | 26.6731 | 0.0298 | | 2.3284 | 2.3284 | | 2.1421 | 2.1421 | 0.0000 | 3,129.0158 | 3,129.0158 | 0.9341 | | 3,148.6328 |
| **Total** | **3.8327** | **40.4161** | **26.6731** | **0.0298** | **6.5523** | **2.3284** | **8.8807** | **3.3675** | **2.1421** | **5.5096** | **0.0000** | **3,129.0158** | **3,129.0158** | **0.9341** | | **3,148.6328** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0588 | 0.0625 | 0.7155 | 1.4700e-003 | 0.1232 | 1.0000e-003 | 0.1242 | 0.0327 | 9.2000e-004 | 0.0336 | | 127.2030 | 127.2030 | 6.6300e-003 | | 127.3421 |
| **Total** | **0.0588** | **0.0625** | **0.7155** | **1.4700e-003** | **0.1232** | **1.0000e-003** | **0.1242** | **0.0327** | **9.2000e-004** | **0.0336** | | **127.2030** | **127.2030** | **6.6300e-003** | | **127.3421** |

## 3.4 Building Construction - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.6591 | 30.0299 | 18.7446 | 0.0268 | | 2.1167 | 2.1167 | | 1.9904 | 1.9904 | | 2,689.5771 | 2,689.5771 | 0.6748 | | 2,703.7483 |
| **Total** | **3.6591** | **30.0299** | **18.7446** | **0.0268** | | **2.1167** | **2.1167** | | **1.9904** | **1.9904** | | **2,689.5771** | **2,689.5771** | **0.6748** | | **2,703.7483** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1070 | 1.2122 | 1.2112 | 2.4600e-003 | 0.0723 | 0.0217 | 0.0940 | 0.0205 | 0.0200 | 0.0405 | | 248.4937 | 248.4937 | 1.8900e-003 | | 248.5334 |
| Worker | 0.0862 | 0.0917 | 1.0494 | 2.1500e-003 | 0.1807 | 1.4700e-003 | 0.1822 | 0.0479 | 1.3400e-003 | 0.0493 | | 186.5644 | 186.5644 | 9.7200e-003 | | 186.7685 |
| **Total** | **0.1933** | **1.3039** | **2.2606** | **4.6100e-003** | **0.2530** | **0.0232** | **0.2762** | **0.0685** | **0.0213** | **0.0898** | | **435.0581** | **435.0581** | **0.0116** | | **435.3018** |

## 3.4 Building Construction - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 3.6591 | 30.0299 | 18.7446 | 0.0268 | | 2.1167 | 2.1167 | | 1.9904 | 1.9904 | 0.0000 | 2,689.5771 | 2,689.5771 | 0.6748 | | 2,703.7483 |
| **Total** | **3.6591** | **30.0299** | **18.7446** | **0.0268** | | **2.1167** | **2.1167** | | **1.9904** | **1.9904** | **0.0000** | **2,689.5771** | **2,689.5771** | **0.6748** | | **2,703.7483** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1070 | 1.2122 | 1.2112 | 2.4600e-003 | 0.0723 | 0.0217 | 0.0940 | 0.0205 | 0.0200 | 0.0405 | | 248.4937 | 248.4937 | 1.8900e-003 | | 248.5334 |
| Worker | 0.0862 | 0.0917 | 1.0494 | 2.1500e-003 | 0.1807 | 1.4700e-003 | 0.1822 | 0.0479 | 1.3400e-003 | 0.0493 | | 186.5644 | 186.5644 | 9.7200e-003 | | 186.7685 |
| **Total** | **0.1933** | **1.3039** | **2.2606** | **4.6100e-003** | **0.2530** | **0.0232** | **0.2762** | **0.0685** | **0.0213** | **0.0898** | | **435.0581** | **435.0581** | **0.0116** | | **435.3018** |

## 3.5 Paving - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.3172 | 25.1758 | 14.9781 | 0.0223 | | 1.4148 | 1.4148 | | 1.3016 | 1.3016 | | 2,339.8984 | 2,339.8984 | 0.6986 | | 2,354.5681 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.3172** | **25.1758** | **14.9781** | **0.0223** | | **1.4148** | **1.4148** | | **1.3016** | **1.3016** | | **2,339.8984** | **2,339.8984** | **0.6986** | | **2,354.5681** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0588 | 0.0625 | 0.7155 | 1.4700e-003 | 0.1232 | 1.0000e-003 | 0.1242 | 0.0327 | 9.2000e-004 | 0.0336 | | 127.2030 | 127.2030 | 6.6300e-003 | | 127.3421 |
| **Total** | **0.0588** | **0.0625** | **0.7155** | **1.4700e-003** | **0.1232** | **1.0000e-003** | **0.1242** | **0.0327** | **9.2000e-004** | **0.0336** | | **127.2030** | **127.2030** | **6.6300e-003** | | **127.3421** |

## 3.5 Paving - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.3172 | 25.1758 | 14.9781 | 0.0223 | | 1.4148 | 1.4148 | | 1.3016 | 1.3016 | 0.0000 | 2,339.8984 | 2,339.8984 | 0.6986 | | 2,354.5681 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.3172** | **25.1758** | **14.9781** | **0.0223** | | **1.4148** | **1.4148** | | **1.3016** | **1.3016** | **0.0000** | **2,339.8984** | **2,339.8984** | **0.6986** | | **2,354.5681** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0588 | 0.0625 | 0.7155 | 1.4700e-003 | 0.1232 | 1.0000e-003 | 0.1242 | 0.0327 | 9.2000e-004 | 0.0336 | | 127.2030 | 127.2030 | 6.6300e-003 | | 127.3421 |
| **Total** | **0.0588** | **0.0625** | **0.7155** | **1.4700e-003** | **0.1232** | **1.0000e-003** | **0.1242** | **0.0327** | **9.2000e-004** | **0.0336** | | **127.2030** | **127.2030** | **6.6300e-003** | | **127.3421** |

## 3.5 Paving - 2016

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0898 | 22.3859 | 14.8176 | 0.0223 | | 1.2610 | 1.2610 | | 1.1601 | 1.1601 | | 2,316.3767 | 2,316.3767 | 0.6987 | | 2,331.0495 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.0898** | **22.3859** | **14.8176** | **0.0223** | | **1.2610** | **1.2610** | | **1.1601** | **1.1601** | | **2,316.3767** | **2,316.3767** | **0.6987** | | **2,331.0495** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0534 | 0.0561 | 0.6446 | 1.4700e-003 | 0.1232 | 9.5000e-004 | 0.1242 | 0.0327 | 8.8000e-004 | 0.0336 | | 122.7044 | 122.7044 | 6.0600e-003 | | 122.8317 |
| **Total** | **0.0534** | **0.0561** | **0.6446** | **1.4700e-003** | **0.1232** | **9.5000e-004** | **0.1242** | **0.0327** | **8.8000e-004** | **0.0336** | | **122.7044** | **122.7044** | **6.0600e-003** | | **122.8317** |

## 3.5 Paving - 2016

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.0898 | 22.3859 | 14.8176 | 0.0223 | | 1.2610 | 1.2610 | | 1.1601 | 1.1601 | 0.0000 | 2,316.3767 | 2,316.3767 | 0.6987 | | 2,331.0495 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **2.0898** | **22.3859** | **14.8176** | **0.0223** | | **1.2610** | **1.2610** | | **1.1601** | **1.1601** | **0.0000** | **2,316.3767** | **2,316.3767** | **0.6987** | | **2,331.0495** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0534 | 0.0561 | 0.6446 | 1.4700e-003 | 0.1232 | 9.5000e-004 | 0.1242 | 0.0327 | 8.8000e-004 | 0.0336 | | 122.7044 | 122.7044 | 6.0600e-003 | | 122.8317 |
| **Total** | **0.0534** | **0.0561** | **0.6446** | **1.4700e-003** | **0.1232** | **9.5000e-004** | **0.1242** | **0.0327** | **8.8000e-004** | **0.0336** | | **122.7044** | **122.7044** | **6.0600e-003** | | **122.8317** |

## 3.6 Architectural Coating - 2016

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 77.2886 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3685 | 2.3722 | 1.8839 | 2.9700e-003 | | 0.1966 | 0.1966 | | 0.1966 | 0.1966 | | 281.4481 | 281.4481 | 0.0332 | | 282.1449 |
| **Total** | **77.6571** | **2.3722** | **1.8839** | **2.9700e-003** | | **0.1966** | **0.1966** | | **0.1966** | **0.1966** | | **281.4481** | **281.4481** | **0.0332** | | **282.1449** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0142 | 0.0150 | 0.1719 | 3.9000e-004 | 0.0329 | 2.5000e-004 | 0.0331 | 8.7200e-003 | 2.3000e-004 | 8.9500e-003 | | 32.7212 | 32.7212 | 1.6200e-003 | | 32.7551 |
| **Total** | **0.0142** | **0.0150** | **0.1719** | **3.9000e-004** | **0.0329** | **2.5000e-004** | **0.0331** | **8.7200e-003** | **2.3000e-004** | **8.9500e-003** | | **32.7212** | **32.7212** | **1.6200e-003** | | **32.7551** |

## 3.6 Architectural Coating - 2016

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 77.2886 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.3685 | 2.3722 | 1.8839 | 2.9700e-003 | | 0.1966 | 0.1966 | | 0.1966 | 0.1966 | 0.0000 | 281.4481 | 281.4481 | 0.0332 | | 282.1449 |
| **Total** | **77.6571** | **2.3722** | **1.8839** | **2.9700e-003** | | **0.1966** | **0.1966** | | **0.1966** | **0.1966** | **0.0000** | **281.4481** | **281.4481** | **0.0332** | | **282.1449** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0142 | 0.0150 | 0.1719 | 3.9000e-004 | 0.0329 | 2.5000e-004 | 0.0331 | 8.7200e-003 | 2.3000e-004 | 8.9500e-003 | | 32.7212 | 32.7212 | 1.6200e-003 | | 32.7551 |
| **Total** | **0.0142** | **0.0150** | **0.1719** | **3.9000e-004** | **0.0329** | **2.5000e-004** | **0.0331** | **8.7200e-003** | **2.3000e-004** | **8.9500e-003** | | **32.7212** | **32.7212** | **1.6200e-003** | | **32.7551** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.2396 | 11.6634 | 49.4121 | 0.0911 | 6.5949 | 0.1585 | 6.7533 | 1.7576 | 0.1454 | 1.9030 | | 8,410.5933 | 8,410.5933 | 0.3905 | | 8,418.7943 |
| Unmitigated | 5.2396 | 11.6634 | 49.4121 | 0.0911 | 6.5949 | 0.1585 | 6.7533 | 1.7576 | 0.1454 | 1.9030 | | 8,410.5933 | 8,410.5933 | 0.3905 | | 8,418.7943 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Office Building | 1,246.66 | 1,246.66 | 1246.66 | 2,979,211 | 2,979,211 |
| Quality Restaurant | 124.36 | 124.36 | 124.36 | 147,509 | 147,509 |
| Total | 1,371.02 | 1,371.02 | 1,371.02 | 3,126,720 | 3,126,720 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Office Building | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| Quality Restaurant | 9.50 | 7.30 | 7.30 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.475873 | 0.063741 | 0.180085 | 0.160840 | 0.068896 | 0.010406 | 0.012442 | 0.015456 | 0.000807 | 0.000660 | 0.005504 | 0.000319 | 0.004970 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0643 | 0.5843 | 0.4908 | 3.5100e-003 | | 0.0444 | 0.0444 | | 0.0444 | 0.0444 | | 701.1716 | 701.1716 | 0.0134 | 0.0129 | 705.4389 |
| NaturalGas Unmitigated | 0.0643 | 0.5843 | 0.4908 | 3.5100e-003 | | 0.0444 | 0.0444 | | 0.0444 | 0.0444 | | 701.1716 | 701.1716 | 0.0134 | 0.0129 | 705.4389 |

### 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Quality Restaurant | 4366.44 | 0.0471 | 0.4281 | 0.3596 | 2.5700e-003 | | 0.0325 | 0.0325 | | 0.0325 | 0.0325 | | 513.6991 | 513.6991 | 9.8500e-003 | 9.4200e-003 | 516.8254 |
| General Office Building | 1593.52 | 0.0172 | 0.1562 | 0.1312 | 9.4000e-004 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | | 187.4725 | 187.4725 | 3.5900e-003 | 3.4400e-003 | 188.6135 |
| **Total** | | **0.0643** | **0.5843** | **0.4908** | **3.5100e-003** | | **0.0444** | **0.0444** | | **0.0444** | **0.0444** | | **701.1716** | **701.1716** | **0.0134** | **0.0129** | **705.4389** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Quality Restaurant | 4.36644 | 0.0471 | 0.4281 | 0.3596 | 2.5700e-003 | | 0.0325 | 0.0325 | | 0.0325 | 0.0325 | | 513.6991 | 513.6991 | 9.8500e-003 | 9.4200e-003 | 516.8254 |
| General Office Building | 1.59352 | 0.0172 | 0.1562 | 0.1312 | 9.4000e-004 | | 0.0119 | 0.0119 | | 0.0119 | 0.0119 | | 187.4725 | 187.4725 | 3.5900e-003 | 3.4400e-003 | 188.6135 |
| **Total** | | **0.0643** | **0.5843** | **0.4908** | **3.5100e-003** | | **0.0444** | **0.0444** | | **0.0444** | **0.0444** | | **701.1716** | **701.1716** | **0.0134** | **0.0129** | **705.4389** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 1.8516 | 7.0000e-005 | 7.1200e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0146 | 0.0146 | 4.0000e-005 | | 0.0155 |
| Unmitigated | 1.8516 | 7.0000e-005 | 7.1200e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0146 | 0.0146 | 4.0000e-005 | | 0.0155 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.4235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 1.4274 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 7.2000e-004 | 7.0000e-005 | 7.1200e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0146 | 0.0146 | 4.0000e-005 | | 0.0155 |
| **Total** | **1.8516** | **7.0000e-005** | **7.1200e-003** | **0.0000** | | **3.0000e-005** | **3.0000e-005** | | **3.0000e-005** | **3.0000e-005** | | **0.0146** | **0.0146** | **4.0000e-005** | | **0.0155** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.4235 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 1.4274 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 7.2000e-004 | 7.0000e-005 | 7.1200e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0146 | 0.0146 | 4.0000e-005 | | 0.0155 |
| **Total** | **1.8516** | **7.0000e-005** | **7.1200e-003** | **0.0000** | | **3.0000e-005** | **3.0000e-005** | | **3.0000e-005** | **3.0000e-005** | | **0.0146** | **0.0146** | **4.0000e-005** | | **0.0155** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Vegetation

# Ventura Botanical Gardens Update

**Ventura County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| General Office Building | 60.65 | 1000sqft | 7.50 | 60,650.00 | 0 |
| Quality Restaurant | 6.05 | 1000sqft | 0.14 | 6,050.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.6 | **Precipitation Freq (Days)** | 31 |
| **Climate Zone** | 8 | | | **Operational Year** | 2014 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 630.89 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Conservatively, the collective square footage of facilities on-site is assumed to consist of commercial office buildings. Lot acreage of 7.5 refers to total area subject to grading in the vicinity of planned structures.

Construction Phase -

Vehicle Trips - Trip rates taken from traffic study conducted by Associated Transportation Engineers. 20.55 trips per 1000sqft

Waste Mitigation - 75% diversion rate in City of Ventura, based on 2009 data.

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblLandUse | LotAcreage | 1.39 | 7.50 |
| tblVehicleTrips | ST_TR | 2.37 | 20.56 |
| tblVehicleTrips | ST_TR | 94.36 | 20.56 |
| tblVehicleTrips | SU_TR | 0.98 | 20.56 |
| tblVehicleTrips | SU_TR | 72.16 | 20.56 |
| tblVehicleTrips | WD_TR | 11.01 | 20.56 |
| tblVehicleTrips | WD_TR | 89.95 | 20.56 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2015 | 0.5109 | 4.3125 | 2.9407 | 4.1300e-003 | 0.1864 | 0.2856 | 0.4720 | 0.0916 | 0.2677 | 0.3593 | 0.0000 | 375.0344 | 375.0344 | 0.0861 | 0.0000 | 376.8420 |
| 2016 | 0.7971 | 0.2372 | 0.1674 | 2.6000e-004 | 1.4700e-003 | 0.0140 | 0.0154 | 3.9000e-004 | 0.0130 | 0.0134 | 0.0000 | 23.8161 | 23.8161 | 6.3900e-003 | 0.0000 | 23.9503 |
| **Total** | **1.3080** | **4.5496** | **3.1080** | **4.3900e-003** | **0.1879** | **0.2995** | **0.4874** | **0.0920** | **0.2807** | **0.3727** | **0.0000** | **398.8505** | **398.8505** | **0.0925** | **0.0000** | **400.7922** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2015 | 0.5109 | 4.3124 | 2.9407 | 4.1300e-003 | 0.1864 | 0.2856 | 0.4720 | 0.0916 | 0.2677 | 0.3593 | 0.0000 | 375.0340 | 375.0340 | 0.0861 | 0.0000 | 376.8416 |
| 2016 | 0.7971 | 0.2372 | 0.1674 | 2.6000e-004 | 1.4700e-003 | 0.0140 | 0.0154 | 3.9000e-004 | 0.0130 | 0.0134 | 0.0000 | 23.8161 | 23.8161 | 6.3900e-003 | 0.0000 | 23.9503 |
| **Total** | **1.3080** | **4.5496** | **3.1080** | **4.3900e-003** | **0.1879** | **0.2995** | **0.4874** | **0.0920** | **0.2807** | **0.3727** | **0.0000** | **398.8501** | **398.8501** | **0.0925** | **0.0000** | **400.7918** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.3379 | 1.0000e-005 | 6.4000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 0.0000 | 1.2700e-003 |
| Energy | 0.0117 | 0.1066 | 0.0896 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 455.2803 | 455.2803 | 0.0178 | 5.3500e-003 | 457.3142 |
| Mobile | 0.9657 | 2.2751 | 9.3932 | 0.0160 | 1.1783 | 0.0289 | 1.2073 | 0.3145 | 0.0265 | 0.3410 | 0.0000 | 1,342.6393 | 1,342.6393 | 0.0644 | 0.0000 | 1,343.9921 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.5692 | 0.0000 | 12.5692 | 0.7428 | 0.0000 | 28.1684 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 4.0025 | 68.3871 | 72.3895 | 0.4142 | 0.0104 | 84.2991 |
| **Total** | **1.3152** | **2.3818** | **9.4834** | **0.0167** | **1.1783** | **0.0370** | **1.2154** | **0.3145** | **0.0346** | **0.3491** | **16.5717** | **1,866.3079** | **1,882.8795** | **1.2393** | **0.0157** | **1,913.7751** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.3379 | 1.0000e-005 | 6.4000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 0.0000 | 1.2700e-003 |
| Energy | 0.0117 | 0.1066 | 0.0896 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 455.2803 | 455.2803 | 0.0178 | 5.3500e-003 | 457.3142 |
| Mobile | 0.9657 | 2.2751 | 9.3932 | 0.0160 | 1.1783 | 0.0289 | 1.2073 | 0.3145 | 0.0265 | 0.3410 | 0.0000 | 1,342.6393 | 1,342.6393 | 0.0644 | 0.0000 | 1,343.9921 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.1423 | 0.0000 | 3.1423 | 0.1857 | 0.0000 | 7.0421 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 4.0025 | 68.3871 | 72.3895 | 0.4142 | 0.0103 | 84.2927 |
| **Total** | **1.3152** | **2.3818** | **9.4834** | **0.0167** | **1.1783** | **0.0370** | **1.2154** | **0.3145** | **0.0346** | **0.3491** | **7.1448** | **1,866.3079** | **1,873.4526** | **0.6821** | **0.0157** | **1,892.6424** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **56.89** | **0.00** | **0.50** | **44.96** | **0.13** | **1.10** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2015 | 1/14/2015 | 5 | 10 | |
| 2 | Grading | Grading | 1/15/2015 | 2/11/2015 | 5 | 20 | |
| 3 | Building Construction | Building Construction | 2/12/2015 | 12/30/2015 | 5 | 230 | |
| 4 | Paving | Paving | 12/31/2015 | 1/27/2016 | 5 | 20 | |
| 5 | Architectural Coating | Architectural Coating | 1/28/2016 | 2/24/2016 | 5 | 20 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 100,050; Non-Residential Outdoor: 33,350 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 255 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 1 | 8.00 | 162 | 0.38 |
| Grading | Graders | 1 | 8.00 | 174 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 255 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 3 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 226 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 125 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 130 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 22.00 | 11.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 4.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Site Preparation - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0263 | 0.2845 | 0.2132 | 2.0000e-004 | | 0.0154 | 0.0154 | | 0.0142 | 0.0142 | 0.0000 | 18.6506 | 18.6506 | 5.5700e-003 | 0.0000 | 18.7675 |
| **Total** | **0.0263** | **0.2845** | **0.2132** | **2.0000e-004** | **0.0903** | **0.0154** | **0.1058** | **0.0497** | **0.0142** | **0.0639** | **0.0000** | **18.6506** | **18.6506** | **5.5700e-003** | **0.0000** | **18.7675** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.5000e-004 | 4.3000e-004 | 4.2500e-003 | 1.0000e-005 | 7.3000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 1.0000e-005 | 2.0000e-004 | 0.0000 | 0.6645 | 0.6645 | 4.0000e-005 | 0.0000 | 0.6653 |
| **Total** | **3.5000e-004** | **4.3000e-004** | **4.2500e-003** | **1.0000e-005** | **7.3000e-004** | **1.0000e-005** | **7.3000e-004** | **1.9000e-004** | **1.0000e-005** | **2.0000e-004** | **0.0000** | **0.6645** | **0.6645** | **4.0000e-005** | **0.0000** | **0.6653** |

## 3.2 Site Preparation - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0263 | 0.2845 | 0.2132 | 2.0000e-004 | | 0.0154 | 0.0154 | | 0.0142 | 0.0142 | 0.0000 | 18.6505 | 18.6505 | 5.5700e-003 | 0.0000 | 18.7675 |
| **Total** | **0.0263** | **0.2845** | **0.2132** | **2.0000e-004** | **0.0903** | **0.0154** | **0.1058** | **0.0497** | **0.0142** | **0.0639** | **0.0000** | **18.6505** | **18.6505** | **5.5700e-003** | **0.0000** | **18.7675** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.5000e-004 | 4.3000e-004 | 4.2500e-003 | 1.0000e-005 | 7.3000e-004 | 1.0000e-005 | 7.3000e-004 | 1.9000e-004 | 1.0000e-005 | 2.0000e-004 | 0.0000 | 0.6645 | 0.6645 | 4.0000e-005 | 0.0000 | 0.6653 |
| **Total** | **3.5000e-004** | **4.3000e-004** | **4.2500e-003** | **1.0000e-005** | **7.3000e-004** | **1.0000e-005** | **7.3000e-004** | **1.9000e-004** | **1.0000e-005** | **2.0000e-004** | **0.0000** | **0.6645** | **0.6645** | **4.0000e-005** | **0.0000** | **0.6653** |

## 3.3 Grading - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0655 | 0.0000 | 0.0655 | 0.0337 | 0.0000 | 0.0337 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0383 | 0.4042 | 0.2667 | 3.0000e-004 | | 0.0233 | 0.0233 | | 0.0214 | 0.0214 | 0.0000 | 28.3860 | 28.3860 | 8.4700e-003 | 0.0000 | 28.5639 |
| **Total** | **0.0383** | **0.4042** | **0.2667** | **3.0000e-004** | **0.0655** | **0.0233** | **0.0888** | **0.0337** | **0.0214** | **0.0551** | **0.0000** | **28.3860** | **28.3860** | **8.4700e-003** | **0.0000** | **28.5639** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.9000e-004 | 7.1000e-004 | 7.0800e-003 | 1.0000e-005 | 1.2100e-003 | 1.0000e-005 | 1.2200e-003 | 3.2000e-004 | 1.0000e-005 | 3.3000e-004 | 0.0000 | 1.1075 | 1.1075 | 6.0000e-005 | 0.0000 | 1.1088 |
| **Total** | **5.9000e-004** | **7.1000e-004** | **7.0800e-003** | **1.0000e-005** | **1.2100e-003** | **1.0000e-005** | **1.2200e-003** | **3.2000e-004** | **1.0000e-005** | **3.3000e-004** | **0.0000** | **1.1075** | **1.1075** | **6.0000e-005** | **0.0000** | **1.1088** |

## 3.3 Grading - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0655 | 0.0000 | 0.0655 | 0.0337 | 0.0000 | 0.0337 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0383 | 0.4042 | 0.2667 | 3.0000e-004 | | 0.0233 | 0.0233 | | 0.0214 | 0.0214 | 0.0000 | 28.3859 | 28.3859 | 8.4700e-003 | 0.0000 | 28.5639 |
| **Total** | **0.0383** | **0.4042** | **0.2667** | **3.0000e-004** | **0.0655** | **0.0233** | **0.0888** | **0.0337** | **0.0214** | **0.0551** | **0.0000** | **28.3859** | **28.3859** | **8.4700e-003** | **0.0000** | **28.5639** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.9000e-004 | 7.1000e-004 | 7.0800e-003 | 1.0000e-005 | 1.2100e-003 | 1.0000e-005 | 1.2200e-003 | 3.2000e-004 | 1.0000e-005 | 3.3000e-004 | 0.0000 | 1.1075 | 1.1075 | 6.0000e-005 | 0.0000 | 1.1088 |
| **Total** | **5.9000e-004** | **7.1000e-004** | **7.0800e-003** | **1.0000e-005** | **1.2100e-003** | **1.0000e-005** | **1.2200e-003** | **3.2000e-004** | **1.0000e-005** | **3.3000e-004** | **0.0000** | **1.1075** | **1.1075** | **6.0000e-005** | **0.0000** | **1.1088** |

## 3.4 Building Construction - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.4208 | 3.4534 | 2.1556 | 3.0800e-003 | | 0.2434 | 0.2434 | | 0.2289 | 0.2289 | 0.0000 | 280.5935 | 280.5935 | 0.0704 | 0.0000 | 282.0719 |
| **Total** | **0.4208** | **3.4534** | **2.1556** | **3.0800e-003** | | **0.2434** | **0.2434** | | **0.2289** | **0.2289** | **0.0000** | **280.5935** | **280.5935** | **0.0704** | **0.0000** | **282.0719** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0135 | 0.1447 | 0.1665 | 2.8000e-004 | 8.1800e-003 | 2.5100e-003 | 0.0107 | 2.3300e-003 | 2.3100e-003 | 4.6400e-003 | 0.0000 | 25.8361 | 25.8361 | 2.0000e-004 | 0.0000 | 25.8403 |
| Worker | 9.8700e-003 | 0.0120 | 0.1195 | 2.4000e-004 | 0.0204 | 1.7000e-004 | 0.0206 | 5.4200e-003 | 1.5000e-004 | 5.5700e-003 | 0.0000 | 18.6797 | 18.6797 | 1.0100e-003 | 0.0000 | 18.7009 |
| **Total** | **0.0233** | **0.1566** | **0.2860** | **5.2000e-004** | **0.0286** | **2.6800e-003** | **0.0313** | **7.7500e-003** | **2.4600e-003** | **0.0102** | **0.0000** | **44.5157** | **44.5157** | **1.2100e-003** | **0.0000** | **44.5412** |

## 3.4 Building Construction - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.4208 | 3.4534 | 2.1556 | 3.0800e-003 | | 0.2434 | 0.2434 | | 0.2289 | 0.2289 | 0.0000 | 280.5932 | 280.5932 | 0.0704 | 0.0000 | 282.0716 |
| **Total** | **0.4208** | **3.4534** | **2.1556** | **3.0800e-003** | | **0.2434** | **0.2434** | | **0.2289** | **0.2289** | **0.0000** | **280.5932** | **280.5932** | **0.0704** | **0.0000** | **282.0716** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0135 | 0.1447 | 0.1665 | 2.8000e-004 | 8.1800e-003 | 2.5100e-003 | 0.0107 | 2.3300e-003 | 2.3100e-003 | 4.6400e-003 | 0.0000 | 25.8361 | 25.8361 | 2.0000e-004 | 0.0000 | 25.8403 |
| Worker | 9.8700e-003 | 0.0120 | 0.1195 | 2.4000e-004 | 0.0204 | 1.7000e-004 | 0.0206 | 5.4200e-003 | 1.5000e-004 | 5.5700e-003 | 0.0000 | 18.6797 | 18.6797 | 1.0100e-003 | 0.0000 | 18.7009 |
| **Total** | **0.0233** | **0.1566** | **0.2860** | **5.2000e-004** | **0.0286** | **2.6800e-003** | **0.0313** | **7.7500e-003** | **2.4600e-003** | **0.0102** | **0.0000** | **44.5157** | **44.5157** | **1.2100e-003** | **0.0000** | **44.5412** |

## 3.5 Paving - 2015

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.1600e-003 | 0.0126 | 7.4900e-003 | 1.0000e-005 | | 7.1000e-004 | 7.1000e-004 | | 6.5000e-004 | 6.5000e-004 | 0.0000 | 1.0614 | 1.0614 | 3.2000e-004 | 0.0000 | 1.0680 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.1600e-003** | **0.0126** | **7.4900e-003** | **1.0000e-005** | | **7.1000e-004** | **7.1000e-004** | | **6.5000e-004** | **6.5000e-004** | **0.0000** | **1.0614** | **1.0614** | **3.2000e-004** | **0.0000** | **1.0680** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.0000e-005 | 4.0000e-005 | 3.5000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0554 | 0.0554 | 0.0000 | 0.0000 | 0.0554 |
| **Total** | **3.0000e-005** | **4.0000e-005** | **3.5000e-004** | **0.0000** | **6.0000e-005** | **0.0000** | **6.0000e-005** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **0.0554** | **0.0554** | **0.0000** | **0.0000** | **0.0554** |

## 3.5 Paving - 2015

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.1600e-003 | 0.0126 | 7.4900e-003 | 1.0000e-005 | | 7.1000e-004 | 7.1000e-004 | | 6.5000e-004 | 6.5000e-004 | 0.0000 | 1.0614 | 1.0614 | 3.2000e-004 | 0.0000 | 1.0680 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.1600e-003** | **0.0126** | **7.4900e-003** | **1.0000e-005** | | **7.1000e-004** | **7.1000e-004** | | **6.5000e-004** | **6.5000e-004** | **0.0000** | **1.0614** | **1.0614** | **3.2000e-004** | **0.0000** | **1.0680** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.0000e-005 | 4.0000e-005 | 3.5000e-004 | 0.0000 | 6.0000e-005 | 0.0000 | 6.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0554 | 0.0554 | 0.0000 | 0.0000 | 0.0554 |
| **Total** | **3.0000e-005** | **4.0000e-005** | **3.5000e-004** | **0.0000** | **6.0000e-005** | **0.0000** | **6.0000e-005** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **0.0554** | **0.0554** | **0.0000** | **0.0000** | **0.0554** |

## 3.5 Paving - 2016

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0199 | 0.2127 | 0.1408 | 2.1000e-004 | | 0.0120 | 0.0120 | | 0.0110 | 0.0110 | 0.0000 | 19.9631 | 19.9631 | 6.0200e-003 | 0.0000 | 20.0896 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0199** | **0.2127** | **0.1408** | **2.1000e-004** | | **0.0120** | **0.0120** | | **0.0110** | **0.0110** | **0.0000** | **19.9631** | **19.9631** | **6.0200e-003** | **0.0000** | **20.0896** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.0000e-004 | 6.0000e-004 | 6.0400e-003 | 1.0000e-005 | 1.1500e-003 | 1.0000e-005 | 1.1600e-003 | 3.1000e-004 | 1.0000e-005 | 3.1000e-004 | 0.0000 | 1.0149 | 1.0149 | 5.0000e-005 | 0.0000 | 1.0160 |
| **Total** | **5.0000e-004** | **6.0000e-004** | **6.0400e-003** | **1.0000e-005** | **1.1500e-003** | **1.0000e-005** | **1.1600e-003** | **3.1000e-004** | **1.0000e-005** | **3.1000e-004** | **0.0000** | **1.0149** | **1.0149** | **5.0000e-005** | **0.0000** | **1.0160** |

## 3.5 Paving - 2016

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0199 | 0.2127 | 0.1408 | 2.1000e-004 | | 0.0120 | 0.0120 | | 0.0110 | 0.0110 | 0.0000 | 19.9631 | 19.9631 | 6.0200e-003 | 0.0000 | 20.0896 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0199** | **0.2127** | **0.1408** | **2.1000e-004** | | **0.0120** | **0.0120** | | **0.0110** | **0.0110** | **0.0000** | **19.9631** | **19.9631** | **6.0200e-003** | **0.0000** | **20.0896** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 5.0000e-004 | 6.0000e-004 | 6.0400e-003 | 1.0000e-005 | 1.1500e-003 | 1.0000e-005 | 1.1600e-003 | 3.1000e-004 | 1.0000e-005 | 3.1000e-004 | 0.0000 | 1.0149 | 1.0149 | 5.0000e-005 | 0.0000 | 1.0160 |
| **Total** | **5.0000e-004** | **6.0000e-004** | **6.0400e-003** | **1.0000e-005** | **1.1500e-003** | **1.0000e-005** | **1.1600e-003** | **3.1000e-004** | **1.0000e-005** | **3.1000e-004** | **0.0000** | **1.0149** | **1.0149** | **5.0000e-005** | **0.0000** | **1.0160** |

## 3.6 Architectural Coating - 2016

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.7729 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.6800e-003 | 0.0237 | 0.0188 | 3.0000e-005 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 2.5533 | 2.5533 | 3.0000e-004 | 0.0000 | 2.5596 |
| **Total** | **0.7766** | **0.0237** | **0.0188** | **3.0000e-005** | | **1.9700e-003** | **1.9700e-003** | | **1.9700e-003** | **1.9700e-003** | **0.0000** | **2.5533** | **2.5533** | **3.0000e-004** | **0.0000** | **2.5596** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.4000e-004 | 1.7000e-004 | 1.7000e-003 | 0.0000 | 3.2000e-004 | 0.0000 | 3.3000e-004 | 9.0000e-005 | 0.0000 | 9.0000e-005 | 0.0000 | 0.2849 | 0.2849 | 1.0000e-005 | 0.0000 | 0.2852 |
| **Total** | **1.4000e-004** | **1.7000e-004** | **1.7000e-003** | **0.0000** | **3.2000e-004** | **0.0000** | **3.3000e-004** | **9.0000e-005** | **0.0000** | **9.0000e-005** | **0.0000** | **0.2849** | **0.2849** | **1.0000e-005** | **0.0000** | **0.2852** |

## 3.6 Architectural Coating - 2016

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.7729 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.6800e-003 | 0.0237 | 0.0188 | 3.0000e-005 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 2.5533 | 2.5533 | 3.0000e-004 | 0.0000 | 2.5596 |
| **Total** | **0.7766** | **0.0237** | **0.0188** | **3.0000e-005** | | **1.9700e-003** | **1.9700e-003** | | **1.9700e-003** | **1.9700e-003** | **0.0000** | **2.5533** | **2.5533** | **3.0000e-004** | **0.0000** | **2.5596** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.4000e-004 | 1.7000e-004 | 1.7000e-003 | 0.0000 | 3.2000e-004 | 0.0000 | 3.3000e-004 | 9.0000e-005 | 0.0000 | 9.0000e-005 | 0.0000 | 0.2849 | 0.2849 | 1.0000e-005 | 0.0000 | 0.2852 |
| **Total** | **1.4000e-004** | **1.7000e-004** | **1.7000e-003** | **0.0000** | **3.2000e-004** | **0.0000** | **3.3000e-004** | **9.0000e-005** | **0.0000** | **9.0000e-005** | **0.0000** | **0.2849** | **0.2849** | **1.0000e-005** | **0.0000** | **0.2852** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.9657 | 2.2751 | 9.3932 | 0.0160 | 1.1783 | 0.0289 | 1.2073 | 0.3145 | 0.0265 | 0.3410 | 0.0000 | 1,342.6393 | 1,342.6393 | 0.0644 | 0.0000 | 1,343.9921 |
| Unmitigated | 0.9657 | 2.2751 | 9.3932 | 0.0160 | 1.1783 | 0.0289 | 1.2073 | 0.3145 | 0.0265 | 0.3410 | 0.0000 | 1,342.6393 | 1,342.6393 | 0.0644 | 0.0000 | 1,343.9921 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Office Building | 1,246.66 | 1,246.66 | 1246.66 | 2,979,211 | 2,979,211 |
| Quality Restaurant | 124.36 | 124.36 | 124.36 | 147,509 | 147,509 |
| Total | 1,371.02 | 1,371.02 | 1,371.02 | 3,126,720 | 3,126,720 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Office Building | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| Quality Restaurant | 9.50 | 7.30 | 7.30 | 12.00 | 69.00 | 19.00 | 38 | 18 | 44 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.475873 | 0.063741 | 0.180085 | 0.160840 | 0.068896 | 0.010406 | 0.012442 | 0.015456 | 0.000807 | 0.000660 | 0.005504 | 0.000319 | 0.004970 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 339.1935 | 339.1935 | 0.0156 | 3.2300e-003 | 340.5209 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 339.1935 | 339.1935 | 0.0156 | 3.2300e-003 | 340.5209 |
| NaturalGas Mitigated | 0.0117 | 0.1066 | 0.0896 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 116.0868 | 116.0868 | 2.2200e-003 | 2.1300e-003 | 116.7933 |
| NaturalGas Unmitigated | 0.0117 | 0.1066 | 0.0896 | 6.4000e-004 | | 8.1000e-003 | 8.1000e-003 | | 8.1000e-003 | 8.1000e-003 | 0.0000 | 116.0868 | 116.0868 | 2.2200e-003 | 2.1300e-003 | 116.7933 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Quality Restaurant | 1.59375e+006 | 8.5900e-003 | 0.0781 | 0.0656 | 4.7000e-004 | | 5.9400e-003 | 5.9400e-003 | | 5.9400e-003 | 5.9400e-003 | 0.0000 | 85.0487 | 85.0487 | 1.6300e-003 | 1.5600e-003 | 85.5662 |
| General Office Building | 581634 | 3.1400e-003 | 0.0285 | 0.0240 | 1.7000e-004 | | 2.1700e-003 | 2.1700e-003 | | 2.1700e-003 | 2.1700e-003 | 0.0000 | 31.0382 | 31.0382 | 5.9000e-004 | 5.7000e-004 | 31.2271 |
| **Total** | | **0.0117** | **0.1066** | **0.0896** | **6.4000e-004** | | **8.1100e-003** | **8.1100e-003** | | **8.1100e-003** | **8.1100e-003** | **0.0000** | **116.0868** | **116.0868** | **2.2200e-003** | **2.1300e-003** | **116.7933** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Office Building | 581634 | 3.1400e-003 | 0.0285 | 0.0240 | 1.7000e-004 | | 2.1700e-003 | 2.1700e-003 | | 2.1700e-003 | 2.1700e-003 | 0.0000 | 31.0382 | 31.0382 | 5.9000e-004 | 5.7000e-004 | 31.2271 |
| Quality Restaurant | 1.59375e+006 | 8.5900e-003 | 0.0781 | 0.0656 | 4.7000e-004 | | 5.9400e-003 | 5.9400e-003 | | 5.9400e-003 | 5.9400e-003 | 0.0000 | 85.0487 | 85.0487 | 1.6300e-003 | 1.5600e-003 | 85.5662 |
| **Total** | | **0.0117** | **0.1066** | **0.0896** | **6.4000e-004** | | **8.1100e-003** | **8.1100e-003** | | **8.1100e-003** | **8.1100e-003** | **0.0000** | **116.0868** | **116.0868** | **2.2200e-003** | **2.1300e-003** | **116.7933** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 947353 | 271.1011 | 0.0125 | 2.5800e-003 | 272.1620 |
| Quality Restaurant | 237947 | 68.0924 | 3.1300e-003 | 6.5000e-004 | 68.3589 |
| **Total** | | **339.1935** | **0.0156** | **3.2300e-003** | **340.5209** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| General Office Building | 947353 | 271.1011 | 0.0125 | 2.5800e-003 | 272.1620 |
| Quality Restaurant | 237947 | 68.0924 | 3.1300e-003 | 6.5000e-004 | 68.3589 |
| **Total** | | **339.1935** | **0.0156** | **3.2300e-003** | **340.5209** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.3379 | 1.0000e-005 | 6.4000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 0.0000 | 1.2700e-003 |
| Unmitigated | 0.3379 | 1.0000e-005 | 6.4000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 0.0000 | 1.2700e-003 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0773 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2605 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 6.0000e-005 | 1.0000e-005 | 6.4000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 0.0000 | 1.2700e-003 |
| **Total** | **0.3379** | **1.0000e-005** | **6.4000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.1900e-003** | **1.1900e-003** | **0.0000** | **0.0000** | **1.2700e-003** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0773 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.2605 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 6.0000e-005 | 1.0000e-005 | 6.4000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1900e-003 | 1.1900e-003 | 0.0000 | 0.0000 | 1.2700e-003 |
| **Total** | **0.3379** | **1.0000e-005** | **6.4000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.1900e-003** | **1.1900e-003** | **0.0000** | **0.0000** | **1.2700e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 72.3895 | 0.4142 | 0.0103 | 84.2927 |
| Unmitigated | 72.3895 | 0.4142 | 0.0104 | 84.2991 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 10.7796 / 6.60682 | 64.5916 | 0.3541 | 8.8800e-003 | 74.7783 |
| Quality Restaurant | 1.83638 / 0.117216 | 7.7979 | 0.0602 | 1.4800e-003 | 9.5208 |
| **Total** | | **72.3895** | **0.4142** | **0.0104** | **84.2991** |

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| General Office Building | 10.7796 / 6.60682 | 64.5916 | 0.3540 | 8.8600e-003 | 74.7729 |
| Quality Restaurant | 1.83638 / 0.117216 | 7.7979 | 0.0602 | 1.4800e-003 | 9.5199 |
| **Total** | | **72.3895** | **0.4142** | **0.0103** | **84.2927** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 3.1423 | 0.1857 | 0.0000 | 7.0421 |
| Unmitigated | 12.5692 | 0.7428 | 0.0000 | 28.1684 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 56.4 | 11.4487 | 0.6766 | 0.0000 | 25.6573 |
| Quality Restaurant | 5.52 | 1.1205 | 0.0662 | 0.0000 | 2.5111 |
| **Total** | | **12.5692** | **0.7428** | **0.0000** | **28.1684** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| General Office Building | 14.1 | 2.8622 | 0.1692 | 0.0000 | 6.4143 |
| Quality Restaurant | 1.38 | 0.2801 | 0.0166 | 0.0000 | 0.6278 |
| **Total** | | **3.1423** | **0.1857** | **0.0000** | **7.0421** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Vegetation

**ATTACHMENT D**

**BIOLOGICAL EFFECTS MEMORANDUMS**
**JULY 7, 2014**

rincon

# Rincon Consultants, Inc.

Environmental Scientists Planners Engineers

## MEMORANDUM

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**Date:** July 7, 2014
**To:** **Dave Ward, AICP** Community Development Planning Manager
**Organization:** City of Ventura Planning Department
**From:** Amber Bruno
**Email:** Rincon Consultants, Inc.
**cc:** Greg Martin
**Re:** Ventura Botanical Gardens Phase 1 Biological Effects

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The purpose of this memorandum is to analyze the potential impacts associated with Phase 1 of the Ventura Botanical Gardens to sensitive biological resources within the City-owned Grant Park. An Opportunities and Constraints Analysis was previously prepared and submitted to the City (Sespe Consulting, Inc., November 2011) that described those sensitive biological resources present at the site. The purpose of this memorandum is to identify feasible mitigation measures for the effects during the Phase 1 implementation.

**Introduction**

The Ventura Botanical Gardens (VBG) non-profit organization has identified the Grant Park site as the desired location to create a world-class botanical garden (gardens or Project). The VBG site is largely undeveloped, with the exception of improved roadways (Ferro Drive, Brakey Road, and Summit Drive), unimproved dirt trails and fire roads, the existing Grant Park/Serra Cross Park recreational improvements, and a shooting range. The site is immediately adjacent to Ventura's urban downtown district to the south, while mixed residential and commercial uses are found in the adjacent Ventura River valley to the west, with residential development to the east and southeast, and agricultural open space to the north.

Long term development of the botanical gardens would include development of about 107 acres in multiple phases on land leased by the City of Ventura to The Ventura Botanical Gardens, Inc. The Phase 1 project activities are proposed to occur from 2015-2017, with the following percentage of development: Chilean Garden - create 35-40%; Mediterranean Garden - create 1 -3%; Area 1 Ramble - create 1 -2%. Percentage of garden development is based on available funds and is assumed to be up to, but generally not to exceed the amount included in the project description for Phase 1. Additional project activities scheduled to occur during Phase 1 include the construction of a well site adjacent but outside of the project area for irrigation; installation of interim facilities at the Welcome Zone (and area immediately adjacent to the Welcome Zone), brush clearance for fire fuels management for interim structures, and related trails (relative to the percentage garden developed). Interim structures will be placed on site and may be reused for a different function, and relocated or removed from the

site in future phases. For example, some water lines installed to serve temporary uses may remain in place to serve a later permanent use.

**Summary of Effects**

The following table summarizes the expected effects of the project, and is followed by a narrative regarding specific issues of biological concerns.

| Project Activities | |
|---|---|
| Construction- Trails | Events (greater than 50 people) |
| Construction- buildings temporary and perm. | Vegetation removal |
| Construction-Well | Planting |
| Construction- Irrigation | Tree removal |
| Fire Fuels Management | Invasive species control |
| Trails and facilities maintenance | Pest control |
| | |
| **Phase 1 Potential Impacts** | |
| **Direct** | **Indirect** |
| Removal of special status species during construction | Pedestrian disturbance (noise) |
| Removal of special status species habitats | Trail erosion |
| Removal of special status habitats | Night lighting |
| Construction noise | Spread of invasive weeds |
| Construction of well (direct removal) | Pest control - secondary poisoning |
| Wildlife entrapment in excavations | Wildlife attraction (food and water sources) |
| | Fire Fuels Management |

**Biological Resources**

*Sensitive or Special Status Species.* Special status animals are those listed, proposed for listing, or candidates for listing as threatened or endangered by the United States Fish and Wildlife Service (USFWS) under the federal Endangered Species Act; those listed or proposed for listing, or candidates for listing as threatened or endangered by the California Department of Fish and Wildlife (CDFW, formerly CDFG) under the state Endangered Species Act; and animals designated as "Fully Protected" or "Species of Special Concern" by the CDFW (Special Animals, January 2011).

Three biological field reconnaissance surveys were conducted between April and June 2011 to document existing site conditions and the potential presence of sensitive wildlife resources. A subsequent biological field reconnaissance survey was conducted in April 2014 to confirm previously documented biological resources. Western whiptail (*Aspidoscelis tigris*) was observed in the native grassland in the northern portion of the site in 2011. This species is relatively common throughout much of California, but because of habitat lost throughout coastal California, populations of the southern subspecies (*A. t. stejnegeri*) are considered at risk. Because these subspecies cannot be identified without close observation and usually comparison to museum specimens, for the purpose of this analysis, the whiptail observed was presumed to be the sensitive subspecies. While the whiptail was found in grassland, individuals would be expected to occur throughout the Phase 1 project area. Other special status reptile species such as, silvery legless lizard (*Anniella pulchra pulchra*) and coast horned lizard (*Phrynosoma blainvillii*) may also occur within the Phase 1 project area. Given local habitat conditions, the Phase 1 area is not expected to contain a substantial population of these reptiles, who are likely to move in and out of the project area and throughout both native and non-native habitat communities. While some individuals may be killed by the initial development, the types of botanical gardens to be developed could still support these species and their populations would be expected to return to similar levels after development. Therefore, impacts to special status reptiles are expected to be less than significant.

During surveys in 2011, Bryant's woodrat (*Neotoma bryanti [N. lepida] intermedia*) middens (nests) were observed in the Coast Prickly Pear Scrub (*Opuntia littoralis*) patches in the southwestern portion of the project site. However these areas are outside of the Phase 1 area, therefore no impacts to this species are expected by Phase 1 project activities.

Other special-status animals with a moderate potential to occur within the site (reported within at least 5 miles of the site by CNDDB and moderately suitable habitat exists) or high potential to occur onsite (reported within at least 5 miles of the site [or tracked onsite] and suitable habitat and habitat features/resources present to support inhabitation by the species) include monarch butterfly overwintering roost sites and bat species.

Monarch butterflies are widespread and very common throughout North America, but along the Pacific Coast, their overwintering roosts have become rarer. Monarchs over-winter within dense, sheltered groves of various trees, often eucalyptus (*Eucalyptus* sp.). Stands of eucalyptus and other trees are located within the project area including limited portions of the Phase 1 area. If Monarch butterflies are actively over-wintering in the eucalyptus groves within the project area during the removal of eucalyptus trees, impacts to the local overwintering population may be considered significant. Mitigation actions have been included below to reduce this adverse effect.

Several bat species, which as a group have declining populations, may be expected to forage within the site, and occasionally roost in the denser tree groves, but generally are not expected to breed within the site. Special status bat species may roost in stands of eucalyptus and other trees located within the project area including limited portions of the Phase 1 area; however the project is not expected to have a substantial impact on these species. Potential adverse effects could be reduced further by Recommended Avoidance and Minimization Measure (RM2) below.

Suitable nesting habitat for special status avian species including raptors, occur within the Phase 1 project area. Causing the abandonment or removing active nests (with eggs or young) of any special status, migratory birds and raptors violates the State Fish and Game Code and the federal MBTA. Raptors and other protected bird species are expected to nest and forage within the project area, therefore project activities could have substantial impact on nesting birds through direct take of active nests without avoidance and minimization measures. Impacts are considered significant and require mitigation as discussed below.

The project area is situated between open space and developed lands with a low to moderate amount of human activity, therefore nesting species are not expected to be indirectly impacted by pedestrian traffic, vehicle traffic or other activities associated with recreational use of the area. In addition, the project will institute measures ensuring sound control that will minimize sound intrusion to its own gardens and to neighboring properties and will be in compliance with adopted City noise ordinances. Therefore no avoidance or minimization measures are proposed for indirect impacts (those not associated with active construction, or ground disturbing activities) to special status nesting birds.

Pest and rodent control within the project area have the potential to impact special status species. On March 22nd, 2005, the Ventura County Board of Supervisors voted to support legislative efforts (AB 1548) to restrict or eliminate the use of anticoagulant rodenticides in the County. The anticoagulants of concern include brodifacoum, bromadiolone, diphacinone, and difethialone. Pesticide and rodent control have the potential to impact special status species or violate CDFG code if unregulated. If Phase 1 project activities include pest control, the possible use of pesticides would have indirect adverse effects on adjacent sensitive animals (such as Bryant's woodrat) and such impacts would be potentially significant and require mitigation as discussed below.

Project activities involving excavation have the potential to entrap special status species and other wildlife, however due to the nature of the proposed activity, the overall mortality would likely be low, therefore impacts related to excavations associated with Phase 1 would be considered to be less than significant. However, Recommended Avoidance and Minimization Measures (RM 3) have been included below to reduce the potential for wildlife to be injured or become entrapped in excavations.

No federal or state listed plant species are present within the property or likely to be present. Three seasonally timed rare plant surveys were conducted in 2009, and special status plant species discovered within the site include Plummer's Baccharis and Catalina mariposa lily. Both of these plants are of limited sensitivity, as they are on the CNPS "Watch List" (List 4.2 = plants of limited distribution, fairly endangered in California (20-80% occurrences threatened; and List 4.3 = plants of limited distribution, not very endangered in California). Plummer's Baccharis does occur within the Phase 1 project area in the Chilean garden development area and

would be directly affected by removal to provide space for the plants. Given the extent of Plummer's Baccharis within Grant Park and its population in the hillsides further east and outside of the Park, and its "watch list" status, impacts are considered adverse, but not significant. California mariposa lily may occur in the vicinity of the proposed well site, but is not expected to occur within the Phase 1 project area. No other special status plant species are expected to occur within the Phase 1 project area, therefore impacts to this species are considered adverse, but not significant. Impacts to these special status plant species would be reduced through Recommended Avoidance and Minimization Measures (RM 4) described below.

*Sensitive or Special Status Habitats or Natural Communities.* Four sensitive plant communities were identified within the site boundaries; Coast Prickly Pear Scrub, Lemonade Berry Scrub, Purple Needle Grass Grassland, and Southern Riparian Scrub (Arroyo Willow Thickets). All are considered to be vulnerable at a state level because of past habitat alteration, but of these, the most sensitive locally is the Purple Needle Grass Grassland because most native grasslands have become supplanted by annual grasslands dominated by exotic grasses that originate from the Mediterranean area. Sensitive plant communities in the vicinity of Phase 1 includes purple needle grassland and Lemonade Berry Scrub. However Phase 1 activities will avoid Purple needle grass plants, and activities will be conducted outside of the 2011 mapped grassland areas. Since activities will avoid this habitat, project activities associated with Phase 1 will have no impact to this habitat community. Lemonade Berry Scrub habitats will be impacted by Chilean garden development and fire fuels management related to the Welcome Center. Lemonade Berry Scrub is relatively widespread through the site and Ventura County, therefore impacts to this habitat are not considered significant.

The project has the potential to spread or introduce exotic, invasive and/ or noxious weeds that could have a substantial impact on habitat communities within the project area and the adjacent open space areas. In particular, the project would introduce exotic plants from other regions that are adapted to the climatic conditions present. Because a variety of parameters that control the spread of these plants in their native climes (animals, soil limitations, specific weather patterns) would be lacking at the site, these plants could "escape" and successfully out-compete native plants. This impact is considered potentially significant. To address the potential of introduced species escaping, the project has incorporated the following procedures.

> Many plant species, including the majority of California native plants, have little information or data on invasiveness. VBG necessarily has to make many assumptions where there is little information available and follow up on those assumptions with diligent observation and stewardship. However, VBG recognizes the need for a well-reasoned and careful approach to plant selections based on applying rational thought processes in conjunction with the best available botanic evidence. VBG will perform the following steps when selecting plants:
>
> - Life cycle traits analysis using the following indices: fecundity traits, distribution mechanisms, plasticity, and preferences for disturbed environments.
> - A weed risk assessment system that uses information on a taxon's current weed status in other parts of the world, climate and environmental preferences, and biological attributes. The Australian Weed Risk Assessment (WRA) system is commonly used. http://www.daff.gov.au/ba/reviews/weeds/system/ (Note: This step has led VBG to eliminate several species and groups of species from consideration, such as ALL Chilean grass species.)
> - Review scientific literature for indications of invasiveness of species, hybridization potential.
> - Compare to lists of known weedy/invasive taxa, for California as well as other Mediterranean climate regions.
> - Search California herbarium records database for indications of invasive presence in state. (Note: This is a powerful tool that was not available in the past. It has already resulted in VBG eliminating species from our proposed list to import from Chile in 2013.)
> - Exercise caution in taking unknown species from wild. Prefer species already available in horticulture (in Chile and elsewhere) and have a track record to review by communicating with horticulture experts in country.
>
> The controlled setting of VBG would allow for close, scientific observation. Specimens are not permanent and can be removed as other gardens have done based on results of monitoring (Note: as a part of the global botanic garden network, observations on newly discovered potential for invasiveness will add to the knowledge base and VBG will also receive updates from other institutions on their experiences). VBG

will sell plants, but not those that have legal restrictions associated with them and/or those plants with invasive potential. VBG will not sell specimen propagules, seeds, or plants to the public in plant sales with weedy potential, CBD (Convention on Biological Diversity) issues, or liability for VBG analogous to what other gardens have dealt with. Stewardship includes monitoring to determine if our specimens were illicitly entered into the commercial nursery trade. (Note: Not introducing new species into horticultural trade, including selling at plant sales or distributing to growers is the single most important component of this policy.).

*Protected Waters and Wetlands.* The subject property is located along the upper hillslopes above downtown Ventura, which are dissected into a series of steep and deep canyons separated by ridges. Because of this topographic location, the site is generally located in the "headwaters" portion of the local watershed and jurisdictional waters are limited to the southeastern portion of the site where sufficient inflow from the watershed and past development has created a small basin that is primarily vegetated by willows (see Potential Jurisdictional Waters and Special Status Plants and Wildlife Map). No jurisdictional areas occur within the Phase 1 project area, therefore no impacts to regulated waters would occur during this phase of development.

*Wildlife Movement and Migration Corridors.* Wildlife corridors are identified to the north of the project area (California Essential Habitat Connectivity project). Wildlife may be temporarily displaced due to project activities into the native habitats to the north, but project activities would not interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The project is located directly between open space and developed urban areas, and is the southwestern extent of the natural habitats extending from the mountains to the north into Grant Park. Due to the presence of the native habitats, it is likely that wildlife utilize the area, but it would not be considered a migratory corridor as the urban portion of Ventura blocks any connectivity to the oceanic environment. Furthermore, project activities associated with Phase 1 would not limit wildlife ability to more through the area, therefore no impact is associated with this phase of the project.

*Conflict with Local Plans and Policies.* The current arboricultural resources include a range of upland, riparian and introduced trees, the majority of which are non-native. Dense stands of eucalyptus trees are found along the southwest section, within drainages or along the roadsides. Pine trees (*Pinus* sp.) are found along the ridgeline with pepper (*Schinus molle*) and olive trees (*Olea europaea*) scattered across the project site. A few native coast live oak (*Quercus agrifolia*) are sparsely located within the edges of the coastal sage scrub habitats. The City of Ventura has no ordinances that protect the trees within the project area. Therefore, Phase 1 of the project would not conflict with any tree preservation regulations, or other local policy or ordinance protecting biological resources.

*Conflict with Approved Habitat Conservation Plans.* The project is not located within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

**Avoidance, Minimization and Mitigation Measures**

The following measures are recommended to reduce possible impacts associated with Phase 1 development to a less than significant impact.

1. *Preconstruction Survey and Avoidance (Well Site Only)*
    a. Prior to ground disturbing project activities associated with the construction of the well, a qualified biologist shall conduct a preconstruction survey for special status biological resources. The survey area shall include the impact area and a 50 foot buffer. The survey shall involve the biologist walking the area at equally spaced transects to ensure full coverage of the area. The survey shall be conducted no more than 30 days prior to the activity and/or be seasonally timed for areas with the potential to support any special status plant species.
    b. A preconstruction survey report shall be submitted to the City detailing the results and potential impacts to biological resources.
    c. If biological resources have the potential to be impacted by project activities, and those biological

resources are not considered within the Phase 1 mitigation measures, appropriate avoidance and minimization measures shall be determined by a qualified biologist.

2. *Monarch Butterfly*
    a. Due to the potential of Monarch Butterfly, no tree trimming or removal of trees considered suitable for winter roosting should be conducted between October 15 and February 28. Removal of trees should be conducted between June 15 and October 15 to the extent feasible.
    b. Should tree trimming or removal activities occur between October 15 and February 28, a preconstruction survey shall be conducted by a qualified biologist seven days prior for monarch butterflies. If Monarch butterfly winter roost(s) are observed, trees shall not be trimmed or removed until the migrant butterflies have left the roost site.
    c. If winter roosts are discovered within 100 feet of project activities (including non occupied tree trimming or removal), a qualified biologist shall determine appropriate avoidance and minimization measures to avoid impacts to butterflies adjacent project activities.
3. *Nesting Birds (All Phase 1 project areas)*
    a. To prevent the loss of active special status bird nests, juveniles or adults, project activities including vegetation clearing should be conducted outside of the breeding season (i.e. February 1 to August 31) to the extent feasible.
    b. If project activities will occur between February 1 to August 31, a preconstruction survey shall be conducted by qualified biologists no less than 7 working days prior to the activity to survey for special status bird and raptor nests. The survey area shall include the project footprint and a 100-foot buffer for passerine species and a 300-foot buffer for raptor species. Following the survey:
        i. A nesting bird survey report shall be submitted to the City prior to the initiation of project activities. The report shall detail the results of the survey and make a determination if ongoing monitoring or nesting bird surveys should be conducted for project activities.
        ii. If active nests are discovered during the survey and if work is scheduled to take place within 100 feet of passerine species and 300-feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.
        iii. A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests or 300 feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.
        iv. If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the City and CDFW detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season.
4. *Night time lighting*
    a. Project related nighttime lighting shall be directed away from adjacent open space and native vegetation communities.
5. *Native or Special Status Vegetation and Special Status Plant Populations (Excluding Lemonade Berry Scrub habitat)*
    a. Impacts to special status vegetation communities (excluding Lemonade Berry Scrub), areas that support special status species, and known populations of special status plants shall be avoided to the extent feasible in the Project Design.
    b. Additionally, the grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.
6. *Invasive and Noxious Weed Management*
    a. Precautions shall be taken to minimize the introduction of any invasive weeds. An invasive weed management plan shall be prepared and implemented to address and prevent the spread of invasive weed species prior to ground disturbing activities.
    b. In riparian areas only water-safe herbicides shall be used.

c. Herbicides shall not be applied when wind velocities exceed 6 mph.
d. Where manual and/or mechanical methods are used, weedy plant debris shall be disposed of properly.
e. The timing of the weed control treatment shall be determined for each plant species in consultation with qualified personnel with the goal of controlling populations before they start producing seeds.

7. *Pesticide and Rodenticide Use*
   a. The project shall develop an Integrated Pest Management Program prior to conducting pest or rodent control. The IPMP shall address applicable regulations and targeted pests.
   b. The IPMP shall avoid the use of rodenticides containing anticoagulants.
   c. The IPMP shall evaluate and address potential impacts to secondary poisoning of carnivores.

**Recommended Avoidance and Minimization Measures**

The following avoidance and minimization measures would further reduce the likelihood of project activities impacting special status wildlife and plant species.

- **(RM 1)** During the pre-construction surveys, a qualified biologist shall identify any potential Bryant's woodrat middens within 50 feet of Project activities. At the discretion of a qualified biologist, an exclusion buffer shall be established around any woodrat middens that can be avoided, and these exclusion zones shall be flagged or fenced to protect the nest during the breeding season (October through June). If a woodrat midden cannot be avoided by the Project's activities, an appropriate resource agency shall be consulted regarding a potential buffer reduction.
- **(RM 2)** Maternity colony or hibernaculum surveys for roosting bats. VBG shall conduct a pre-activity (e.g., vegetation removal, grading) survey for roosting bats within 200 feet of project activities within 15 days prior to any grading of rocky outcrops or removal of towers or trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). VBG shall also conduct surveys for roosting bats during the maternity season (1 March to 31 July) within 300 feet of project activities. Trees and rocky outcrops shall be surveyed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). Surveys shall include a minimum of one day and one evening.
  - If active maternity roosts or non-breeding bat hibernacula are found in trees scheduled to be removed, relocation or other measures shall be determined in consultation with a qualified biologist.
- **(RM 3)** All excavations in excess of 2 feet deep shall be sloped, have escape ramps installed that are suitable for the escape of wildlife, or be thoroughly covered at the end of the day. All trenches and excavations shall be inspected for wildlife at the beginning of the work day and prior to backfilling. If a special-status species is discovered in a trench or excavation, work in the area shall be redirected, and the special-status species shall be allowed to leave the trench and the area of its own accord. In the event any special-status species is trapped in a trench or an excavation and unable to leave on its own accord, the USFWS and the CDFW shall be contacted to relocate the special-status species or VGB, Inc. shall identify an individual with appropriate permits (for example, a CDFW collecting permit) to relocate the special-status species.
- **(RM 4)** Native plants including CNPS RPR 4 are an asset to the ecosystem and could be salvaged for propagation particularly within the California Garden.
  a. Plummer's Baccharis occurs within the Phase 1 development area (mapped in the 2011 Biological Constraints and Opportunities analysis). If impacts within the mapped Plummer's Baccharis area are unavoidable, or additional plants are discovered and unavoidable, the VBG, Inc. shall mitigate for impacts to this species by replacing at a ratio of 1:1 within the Project area. A Mitigation and Monitoring Plan (MMP) shall be developed. The plan shall be prepared by a qualified biologist/ restoration ecologist. The plan shall include the following:
     i. The plan shall include the number of plants removed, site where plants are to be replanted/ replaced, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program.
     ii. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist familiar with the restoration of native habitats.
     iii. Existing plants shall be salvaged to the extent feasible.

iv. Mitigation for impacts to Plummer's Baccharis shall be implemented within one year of the time of impacts.

- **(RM 5)** Best Management Practices (BMPs) shall be implemented for all project activities within 50 feet of regulated water features.

**References**


- California Department of Fish and Wildlife (April 2014). Special Vascular Plants, Bryophytes and Lichens List. Natural Heritage Division, Natural Diversity Data Base.
- California Department of Fish and Wildlife (January 2011). Special Animals. Habitat Conservation Division, Wildlife and Habitat Data Analysis Branch.
- California Department of Fish and Wildlife (April 2014). Vegetation Classification and Mapping Program, List of California Vegetation Alliances. http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf
- California Department of Fish and Wildlife BIOS (April 2014). Ventura County Viewer. GIS Biology Data Layers, including zoning, wetlands, and habitat connectivity, and links to other biological studies conducted in the County (http://imaps.dfg.ca.gov/viewers/ventura/app.htm)
- California Department of Fish and Wildlife, California Natural Diversity Database. August 2013. RareFind3 software.
- California Department of Fish and Wildlife, BIOS. (April 2014). BIOS is an internet-based biological data map server. This database was searched to identify other projects that have occurred in the vicinity of the subject property.
- California Native Plant Society (CNPS). 2013. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. http://www.rareplants.cnps.org. Accessed April 2014.
- Sespe Consulting, Inc.. Opportunities and Constraints Analysis Ventura Botanical Gardens**.** November 2011
- Ventura County (2012). Locally Important Plants. http://www.ventura.org/rma/planning/conservation/locally-important-species.html.
- Ventura County (2012). Locally Important Animals. http://www.ventura.org/rma/planning/conservation/locally-important-species.html

rincon

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Environmental Scientists Planners Engineers

## MEMORANDUM

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**Date:** July 7, 2014
**To:** **Dave Ward, AICP** Community Development Planning Manager
**Organization:** City of Ventura Planning Department
**From:** Amber Bruno
**Email:** Rincon Consultants, Inc.
**cc:** Greg Martin
**Re:** Ventura Botanical Gardens Phase 2 through 10 Biological Effects

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An Opportunities and Constraints Analysis was previously prepared and submitted to the City (Sespe Consulting, Inc., November, 2011) that described those sensitive biological resources present at the site. Rincon Consultants Inc. conducted a follow up biological reconnaissance survey in April 2014 to confirm the biological resource described in the 2011 report. The purpose of this memorandum is to; analyze the potential impacts associated with Phase 2 through 10 of the development of the Ventura Botanical Gardens (proposed Project) to sensitive biological resources within the City-owned Grant Park, and to identify feasible mitigation measures for the effects related to the proposed project.

**Introduction**

The Ventura Botanical Gardens (VBG) non-profit organization has identified the Grant Park site as the desired location to create a world-class botanical garden. The VBG site is largely undeveloped, with the exception of improved roadways (Ferro Drive, Brakey Road, and Summit Drive), improved and unimproved trails and fire roads, the existing Grant Park/Serra Cross Park recreational improvements, and a shooting range. The site is immediately adjacent to Ventura's urban downtown district to the south, while mixed residential and commercial uses are found in the adjacent Ventura River valley to the west, with residential development to the east and southeast, and open space to the north.

Long term development of the botanical gardens would include development of approximately 107 acres in multiple phases on land leased by the City of Ventura to The Ventura Botanical Gardens, Inc. The Phase 2 through 10 (as they are described in the Ventura Botanical Gardens Master Plan Project Description – March 2014) project activities are proposed to occur from 2018-2044, finalizing with the 100 percent development / completion of; Welcome, Discovery, Horticulture Zones, Australian Garden, Cape Garden, associated exhibits, sewer and water infrastructure, fountain, brush clearance for fire fuels management for structures, related trails, and vertical transport. Percentage of garden development is based on available funds and is assumed to be up to, but generally not to exceed the amount included in the project description Table 5 of the Master Plan (March 2014).

While current development plans may show portions of the property undeveloped, for the purposes of this impact analysis, mitigation requirements herewith assume that the entire project area (approximately 107 acres) will be developed to allow for flexibility should specific project features change, be added, or reduced in the future.

**Summary of Effects**

The following table summarizes the expected effects of the project, and is followed by a narrative regarding specific issues of biological concerns.

| **Project Activities** | |
|---|---|
| Construction- Trails | Events (greater than 50 people) |
| Construction- Buildings temporary and permanent | Vegetation trimming and removal |
| Construction-Well | Planting |
| Construction- Irrigation, sewer, utilities | Tree trimming and removal |
| Construction- Fencing | Invasive species control |
| Fire Fuels Management | Pest control |
| Trails and facilities maintenance | |
| | |
| **Phase 2 through 10 potential impacts** | |
| **Direct** | **Indirect** |
| Removal of special status species | Pedestrian disturbance (noise) |
| Removal of special status species habitats | Trail erosion |
| Removal of special status habitats | Night lighting |
| Construction noise | Edge effects to adjacent open space |
| Spread of invasive weeds | Spread of invasive weeds |
| Construction- Fencing permanent | Pest control- secondary poisoning |
| Construction-Well | Construction- Fencing temporary |
| Wildlife entrapment- excavations | Construction- Fencing permanent |
| Construction- Buildings temporary | Wildlife attraction (food and water sources) |
| Construction-Buildings permanent | |

**Biological Resources**

*Sensitive or Special Status Species.* Special status animals are those listed, proposed for listing, or candidates for listing as threatened or endangered by the United States Fish and Wildlife Service (USFWS) under the federal Endangered Species Act; those listed or proposed for listing, or candidates for listing as threatened or endangered by the California Department of Fish and Wildlife (CDFW, formerly CDFG) under the state Endangered Species Act; and animals designated as "Fully Protected" or "Species of Special Concern" by the CDFW (Special Animals, January 2011).

Three biological field reconnaissance surveys were conducted between April and June 2011 to document existing site conditions and the potential presence of sensitive wildlife resources. A subsequent biological field reconnaissance survey was conducted in April 2014 to confirm previously documented biological resources. Special status species with a moderate to high potential to occur, and thus be impact by the proposed project, include Monarch butterfly (*Danaus plexippus* ), Silvery legless lizard (*Anniella pulchra pulchra*), Coastal whiptail (*Aspidoscelis tigris stejnegeri* ), Coast horned lizard (*Phrynosoma blainvillii*), Cooper's hawk (*Accipiter cooperii* ), Pallid bat (*Antrozous pallidus*), Mexican long-tongued bat (*Choeronycteris Mexicana*), Western mastiff bat (*Eumops perotis californicus*), and Bryant's [San Diego desert] woodrat (*Neotoma bryanti [N. lepida] intermedia*).

A western whiptail lizard (*Aspidoscelis tigris*) was observed in the native grassland in the northern portion of the site in 2011. This species is relatively common throughout much of California, but because of habitat lost throughout coastal California, populations of the southern subspecies (*A. t. stejnegeri*) are considered at risk. Because these subspecies cannot be identified without close observation and usually comparison to museum specimens, for the purpose of this analysis, the whiptail observed was presumed to be the sensitive subspecies.

While the whiptail was found in grassland, individuals would be expected to occur throughout the proposed project area. Other special status reptile species such as silvery legless lizard (*Anniella pulchra pulchra*) and coast horned lizard (*Phrynosoma blainvillii*) may also occur within the proposed project area. Given the size of the area, and local habitat conditions, the project area is not expected to contain a substantial population of these reptiles, and it is likely that species, if present, would move in and out of the project area and throughout both native and non-native habitat communities. While project activities may result in the mortality of some individuals, the future Botanical Graden could still support some of these species / populations. Therefore, impacts to special status reptiles are expected to be less than significant with avoidance and minimization measures (**MM Bio 1**).

During surveys in 2011, Bryant's woodrat (*Neotoma bryanti [N. lepida] intermedia*) middens (nests) were observed in the Coast Prickly Pear (*Opuntia littoralis*) Scrub patches in the southwestern portion of the project area. Due to the low number and small size of suitable habit within the project area, it is not expected that the project area supports a significant population of this species. In addition, this species likely occurs in the adjacent open space to the north and west of the project area. The project may also choose to maintain some or all of the existing coastal prickly pear scrub habitat within the project area, and could continue to support this species throughout the life of the proposed project. Therefore, impacts to Bryant's woodrat are expected to be less than significant with avoidance and minimization measures (**MM Bio 1**).

Other special-status animals with a moderate potential to occur within the site (reported within at least 5 miles of the site by CNDDB and moderately suitable habitat exists) or high potential to occur onsite (reported within at least 5 miles of the site [or tracked onsite] and suitable habitat and habitat features/resources present to support inhabitation by the species) include monarch butterfly overwintering roost sites and bat species.

Monarch butterflies are widespread and very common throughout North America, but along the Pacific Coast, their overwintering roosts have become rarer. Monarchs over-winter within dense, sheltered groves of various trees, often eucalyptus (*Eucalyptus* sp.). Stands of eucalyptus and other trees are located within the proposed project area. If Monarch butterflies are actively over-wintering within the project area during the removal of eucalyptus trees, impacts to the local overwintering population may be considered significant. Mitigation actions (**MM Bio 2**) have been included below to reduce this adverse effect.

Several bat species, which as a group have declining populations, may be expected to forage within the project area, and occasionally roost in the denser tree groves (including the stands of eucalyptus and other trees located within the project area), but generally are not expected to breed within the proposed project area. Because these species are not expected to breed within the proposed project area, the project is not expected to have a substantial impact on these species. Potential adverse effects could be reduced further by Recommended Avoidance and Minimization Measure (**RM 2**) below.

Suitable nesting habitat for special status avian species including raptors, occur within the project area. Causing the abandonment of or removing active nests (with eggs or young) of any special status migratory birds and / or raptors violates the State Fish and Game Code and the federal Migratory Bird Treaty Act (MBTA). Raptors and other protected bird species are expected to nest and forage within the project area, therefore project activities could have substantial impact on nesting birds through direct take of active nests without avoidance and minimization measures. Impacts are considered significant and require mitigation (**MM Bio 1, MM Bio 3, MM Bio 4**) as discussed below.

The project area is situated between open space and developed lands with a low to moderate amount of human activity, therefore nesting species are expected to be habituated to a low to moderate level of human activity, and are not expected to be indirectly impacted by pedestrian traffic, vehicle traffic or other activities associated with recreational use of the area. As stated in the Master Plan (dated March 2014), the project will institute measures ensuring noise and sound control that will minimize sound intrusion to its own gardens and to neighboring properties, and will be required to comply with adopted City noise ordinances. Therefore, no avoidance or minimization measures are proposed for indirect impacts (not associated with active construction, or ground disturbing activities) to special status nesting birds.

Pest and rodent control within the project area have the potential to impact special status species. On March 22nd, 2005, the Ventura County Board of Supervisors voted to support legislative efforts (AB 1548) to restrict or

eliminate the use of anticoagulant rodenticides in the County. The anticoagulants of concern include brodifacoum, bromadiolone, diphacinone, and difethialone. Pesticide and rodent control have the potential to impact special status species or violate CDFW code if unregulated. If project activities include pest control, the possible use of pesticides would have indirect adverse effects on sensitive animals (such as Bryant's woodrat and raptors) within and adjacent to the project area, and such impact would be potentially significant and require mitigation (**MM Bio 7**) as discussed below.

Project activities involving excavation have the potential to entrap special status species and other wildlife; however, due to the nature of the proposed activity, and the implementation of avoidance and minimization measures, the overall mortality would likely be low, therefore impacts related to excavations would be less than significant. However, additional Recommended Avoidance and Minimization Measure **RM 3** has been included below to reduce the potential for wildlife to be injured or become entrapped in excavations.

*Sensitive or Special Status Habitats or Natural Communities.* Four sensitive plant communities were identified within the site boundaries; Coast Prickly Pear Scrub, Lemonade Berry (*Rhus integrifolia*)Scrub, Purple Needle Grass (*Stipa pulchra*) Grassland, and Southern Riparian Scrub (Arroyo Willow [*Salix lasiolepis*] Thickets). These areas were mapped in 2011 (Sespe, 2011). The biological reconnaissance survey conducted in April 2014 found the sensitive plant communities to be generally similar to their 2011 mapped size (it was also found that nonnative grassland and black mustard communities have increased in size within the project area since 2011). Coast Prickly Pear Scrub, Lemonade Berry Scrub, Purple Needle Grass Grassland, and Southern Riparian Scrub are all considered to be vulnerable at a state level because of past habitat alteration, but of these, the most sensitive locally is the Purple Needle Grass Grassland because most native grasslands have become supplanted by annual grasslands dominated by exotic grasses that originate from the Mediterranean area. The project may choose to avoid impacts to this species and habitat by avoidance during various phases of the project, however it is assumed that the proposed project may remove up to 100% (approximately 1.7 acres) of the existing Purple Needle Grassland habitat within the project area, therefore impacts to this vegetation community would be considered significant without the incorporation of mitigation (**MM Bio 5**). Coast Prickly Pear Scrub is considered sensitive in part because of limited distribution and because it provides habitat for several animals with declining populations. Approximately 1 acre was mapped within the project area in 2011, and was associated with woodrat middens. Impacts to this habitat would be less than significant with mitigation incorporated (**MM Bio 5**). Lemonade Berry Scrub is relatively widespread through the site and Ventura County. The lemonade Berry Scrub habitats within the project area would be impacted by the proposed project, including fire fuels management, however portions of this community type are expected to remain untouched on the steeper slopes and within the Ramble, therefore impacts to this habitat are not considered significant. Southern Riparian Scrub within the project area is a vegetation community associated with Riparian habitats and therefore under the regulatory jurisdiction of CDGW. Impacts to this vegetation community are discussed further below in *Protected Waters and Wetlands.*

*Sensitive or Special Status Flora.* No federal or state listed plant species are present within the property or likely to be present. Three seasonally timed rare plant surveys were conducted in 2009, and special status plant species discovered within the site included Plummer's Baccharis and Catalina mariposa lily. Both of these plants are currently of limited sensitivity, as they are on the CNPS "Watch List" (List 4.2 = plants of limited distribution, fairly endangered in California [20-80% occurrences threatened]; and List 4.3 = plants of limited distribution, not very endangered in California), but could become rarer in the future. Plummer's Baccharis does occur within the development area of the Chilean, California and Australian Gardens, and would be directly affected by removal to provide space for the plants, trails, and fire fuel management. Given the extent of Plummer's Baccharis within Grant Park, its population in the hillsides further east and outside of the Park, and its "watch list" status, impacts are considered adverse, but not significant. California mariposa lily may occur within multiple habitats in the vicinity of the project including the proposed off-site well site. Given the overall low sensitivity of this species, impacts to these species are considered adverse, but not significant. Impacts to these special status plant species could be reduced through Recommended Avoidance and Minimization Measures (**RM 4**) described below. No other special status plant species are expected to occur within the project area, however given the duration of the project, flora sensitivity ranking could change, or previously unobserved species could be discovered during preconstruction surveys. As part of the Long Term Adaptive Mitigation and Monitoring Plan for this project, potentially adverse impacts to CNPS Rare Plant Rank 1 and 2 species would be mitigated as described below (**MM Bio 5**).

The project has the potential to spread or introduce exotic, invasive and / or noxious weeds that could have a substantial impact on habitat communities within the project area and the adjacent open space areas. In particular, the project would introduce exotic plants from other regions that are adapted to the climatic conditions present. Because a variety of parameters that control the spread of these plants in their native climates (animals, soil limitations, specific weather patterns) would be lacking at the site, these plants could "escape" and successfully out-compete native plants. This impact is considered potentially significant. To address the potential of introduced species escaping, the project has incorporated the following procedures (quoted directly from the applicant's Conditional Use Permit and Rezone Application).

> Many plant species, including the majority of California native plants, have little information or data on invasiveness. VBG necessarily has to make many assumptions where there is little information available and follow up on those assumptions with diligent observation and stewardship. However, VBG recognizes the need for a well-reasoned and careful approach to plant selections based on applying rational thought processes in conjunction with the best available botanic evidence. VBG will perform the following steps when selecting plants:
>
> - Life cycle traits analysis using the following indices: fecundity traits, distribution mechanisms, plasticity, and preferences for disturbed environments.
> - A weed risk assessment system that uses information on a taxon's current weed status in other parts of the world, climate and environmental preferences, and biological attributes. The Australian Weed Risk Assessment (WRA) system is commonly used. http://www.daff.gov.au/ba/reviews/weeds/system/ (Note: This step has led VBG to eliminate several species and groups of species from consideration, such as ALL Chilean grass species.)
> - Review scientific literature for indications of invasiveness of species, hybridization potential.
> - Compare to lists of known weedy/invasive taxa, for California as well as other Mediterranean climate regions.
> - Search California herbarium records database for indications of invasive presence in state. (Note: This is a powerful tool that was not available in the past. It has already resulted in VBG eliminating species from our proposed list to import from Chile in 2013.)
> - Exercise caution in taking unknown species from wild. Prefer species already available in horticulture (in Chile and elsewhere) and have a track record to review by communicating with horticulture experts in country.
>
> The controlled setting of VBG would allow for close, scientific observation. Specimens are not permanent and can be removed as other gardens have done based on results of monitoring (Note: as a part of the global botanic garden network, observations on newly discovered potential for invasiveness will add to the knowledge base and VBG will also receive updates from other institutions on their experiences). VBG will sell plants, but not those that have legal restrictions associated with them and/or those plants with invasive potential. VBG will not sell specimen propagules, seeds, or plants to the public in plant sales with weedy potential, CBD (Convention on Biological Diversity) issues, or liability for VBG analogous to what other gardens have dealt with. Stewardship includes monitoring to determine if our specimens were illicitly entered into the commercial nursery trade. (Note: Not introducing new species into horticultural trade, including selling at plant sales or distributing to growers is the single most important component of this policy.).

Invasive weeds are already present within the site and could be spread in greater number into the adjacent open areas through project development, which could have a substantial impact on habitat communities within the project area and the adjacent open space areas. This impact would be less than significant with the plant selection criteria listed above and incorporated mitigation described in **MM Bio 6**.

*Protected Waters and Wetlands.* The project area is located along the upper hillslopes above downtown Ventura, which are dissected into a series of steep and deep canyons separated by ridges. Because of this topographic location, the site is generally located in the "headwaters" portion of the local watershed and jurisdictional waters are limited to the southeastern portion of the site where sufficient inflow from the watershed and past development has created a small basin that is primarily vegetated by willows (see Potential

Jurisdictional Waters and Special Status Plants and Wildlife Map, Sespe 2011). This basin is a created wetland that is the result of the construction of Summit Drive and it is drained by a corrugated metal pipe (CMP) that discharges into a canyon area below Summit Drive, from whence it is collected into the City's storm drain system and discharged to the beach northwest of Sanjon Road. Although this basin is a manmade feature, the basin has a delimited extent with a definable bank and contains wetland vegetation, and so is subject to Section 1602 of the Fish and Game Code. The downstream channel into which the CMP discharges also has a definable bank and so is potentially within CDFG jurisdiction. The basin and the downstream channel are considered potential "waters of the US" and so subject to USACE jurisdiction. The Ordinary High Water Mark (OHWM), which defines the extent of waters of the US, was a width of approximately two feet within the downstream channel. The edge of the basin as shown on the map would also mark the edge of waters of the US. Because the basin holds water for at least some period of time, it contains "waters of the State" subject to RWQCB jurisdiction. Southern Riparian Scrub occurs within and adjacent to the basin described above. This is a vegetation community associated with Riparian habitats and therefore under the regulatory jurisdiction of CDGW. Project activities could result in substantial impacts to regulated waters and associated habitat onsite, but impacts would be reduced to less than significant with mitigation incorporated (**MM Waters 1 through MM Waters 3, RM 5**).

*Wildlife Movement and Migration Corridors.* Wildlife corridors are identified to the north of the project area (California Essential Habitat Connectivity project). Wildlife may be temporarily displaced into adjacent areas by project activities, but it is not expected that project activities would interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The project is located directly between open space and developed urban areas, and is the southwestern extent of the natural habitats extending from the mountains to the north into Grant Park. Due to the presence of the native habitats, it is likely that wildlife utilize the area, but it would not be considered a migratory corridor as the urban portion of Ventura blocks any connectivity to the oceanic environment. Furthermore, most residential wildlife would be expected to utilize the established garden habitats similarly to the area's current function. Temporary construction fencing could have an effect on the movement of local wildlife, but this impact is not expected to be substantial. Permanent fencing could entrap wildlife attempting to move through the area, which, along with attractive nuisances such as food trash and available water, could lead to the entrapment of wildlife, including large mammals. This impact is considered less than significant since it is expected that wildlife could move through some of the area unconstrained, however implementation of avoidance and minimization measures should be developed to address the potential to entrap, attract, or impede wildlife within the project area (**RM 7**).

*Conflict with Local Plans and Policies Protecting Biological Resources.* Current arboricultural resources in the project area include a range of upland, riparian, and introduced trees, the majority of which are non-native. Six primary tree genera were identified onsite including eucalyptus (*Eucalyptus* spp.), Peruvian pepper tree (*Schinus molle*), nonnative pine (*Pinus* sp.), European olive (*Olea europaea*), blue elderberry (*Sambucus mexicana*), and coast live oak (*Quercus agrifolia*). Native coast live oak trees are sparsely located within the edges of the coastal sage scrub habitats. Native willows exist on site as large shrubs as opposed to trunked trees. Dense stands of eucalyptus trees are found along the southwest section of the project area, within drainages or along the roadsides. Pine trees (*Pinus* sp.) are found along the ridgelines with pepper and olive trees scattered across the project site. The City of Ventura has no ordinances that protect the trees or other biological resources within the project area, therefore, the project is not expected to conflict with any tree preservation regulations, or other local plans, policies, or ordinances protecting biological resources. Due to the duration of this project, it is possible that local ordinances and polices regulating biological resources within the project area could be developed in the future. Per the project's **Long Term Adaptive Mitigation and Monitoring Plan**, regulatory policies would be evaluated and updated annually and incorporated into the Plan. Through preparation and implantation and of the Plan, conflicts with local plans and policies are expected to be mitigated. Impacts to trees could be further reduced with implementation of **RM 6**.

*Conflict with Approved Habitat Conservation Plans.* The project is not located within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

**Avoidance, Minimization and Mitigation Measures**

The following measures are recommended to reduce possible impacts associated with Phase 2 through 10 to less than significant.

**Long Term Adaptive Mitigation and Monitoring Plan**

a. Due to the lifespan of this project, mitigation for impacts to biological resources could span many years. In order to track mitigation measures, mitigation success, and regulatory and legislative requirements, the VBG shall prepare and update a Long Term Mitigation and Monitoring Plan. The Long Term Mitigation and Monitoring Plan shall include
    i. Project phasing schedule
    ii. Mapped biological resources and avoidance areas (e.g. restoration sites)
    iii. Regulatory overview and listing of special status species with the potential to occur within the project area
    iv. Mitigation Measures (MMRP)
    v. Survey requirements by phase
    vi. Invasive Weed Management Plan
    vii. Integrated Pest Management Program
    viii. Status of the implementation of mitigation measures and performance standards
    ix. Applicable reporting requirements and reporting schedule
b. The Plan shall be updated Annually

1. *MM Bio 1. Preconstruction Survey and Avoidance*
    a. Prior to ground disturbing project activities, a qualified biologist shall conduct a preconstruction survey for special status biological resources. The survey area shall include the impact area and a 100 foot buffer and involve the biologist walking the area at equally spaced transects to ensure full coverage of the area. The survey shall be conducted no more than 30 days prior to the activity and / or be seasonally timed for areas with the potential to support any special status plant species. The biologist shall map any special status biological resource or vegetation community within the survey area.
        a. A preconstruction survey report shall be submitted to the City detailing the results and potential impacts to biological resources.
        b. If biological resources have the potential to be impacted by project activities, see additional Mitigation Measures below *or* the following additional Mitigation Measures shall be implemented as applicable:
            1. <u>Special status reptile species</u>: A biological monitor shall be present for all earth moving / ground disturbing activities and shall relocate reptiles out of harm's way.
            2. <u>Bryant's wood rat</u>: During pre-construction surveys, a qualified biologist shall identify any potential Bryant's woodrat middens within 50 feet of Project activities. At the discretion of a qualified biologist, an exclusion buffer shall be established around any woodrat middens that can be avoided, and these exclusion zones shall be flagged or fenced to protect the nest during the breeding season (October through June).
                a. No impact to active middens shall be allowed during the breeding season. If active middens would be directly impacted by project activities, prior or following the breeding season, a biologist shall carefully dismantle / excavate the midden and relocate resident species out of the impact area.
                b. If coast prickly pear scrub is available onsite, middens and individuals shall be relocated to these areas to the extent feasible.
            3. <u>Nesting birds</u>: If project activities are scheduled to occur between February 1 to August 31, or if nesting activity is observed, See MM Bio 3
            4. <u>Special Status Vegetation and Plant Species</u>: See MM Bio 5
            5. <u>Southern Riparian Scrub- Vegetation Trimming</u> Vegetation trimming may be required within the retention basin for fire fuels management or storm water

management. Vegetation trimming that results in temporary impacts to the vegetation community within the retention basin, but that would allow the vegetation community to recover naturally, would not be considered an impact to this vegetation community but would be subject to all other preconstruction survey and reporting requirements (See Tree and / or Vegetation Trimming and Removal MM Bio 5).

6. (Potential Jurisdictional Water features and associated habitats: See MM Waters 1 through MM Waters 3.
7. Special status Bats: See RM 2
8. Tree and / or Vegetation Trimming and Removal See MM Bio 2, MM Bio 3 and MM Bio 5.

2. *MM Bio 2 Monarch Butterfly*
    a. Due to the potential for Monarch Butterflies to utilize the site for winter roosts, no tree trimming or removal of trees considered suitable for winter roosting should be conducted between October 15 and February 28. Removal of trees should be conducted between June 15 and October 15 to the extent feasible.
    b. Should tree trimming or removal activities occur between October 15 and February 28, a preconstruction survey shall be conducted by a qualified biologist seven days prior for monarch butterflies. If Monarch butterfly winter roost(s) are observed, trees shall not be trimmed or removed until the migrant butterflies have left the roost site.
    c. If winter roosts are discovered within 100 feet of project activities (including non-occupied tree trimming or removal), a qualified biologist shall determine appropriate avoidance and minimization measures to avoid impacts to butterflies adjacent to project activities.
3. *MM Bio 3 Nesting Birds*
    a. To prevent the loss of active special status bird nests, juveniles or adults, project activities including vegetation clearing should be conducted outside of the breeding season (i.e. February 1 to August 31) to the extent feasible.
    b. If project activities will occur between February 1 to August 31, a preconstruction nesting bird survey shall be conducted by qualified biologists no less than 7 working days prior to the activity to survey for special status bird and raptor nests. The survey area shall include the project footprint and a 100-foot buffer for passerine species and a 300-foot buffer for raptor species. Following the survey, the following will be implemented:
        i. A nesting bird survey report shall be submitted to the City prior to the initiation of project activities. The report shall detail the results of the survey and make a determination if ongoing monitoring, buffers or if nesting bird surveys should be conducted for project activities.
        ii. If active nests are identified during the survey and / or work is scheduled to take place within 100 feet of active passerine nests or 300-feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.
        iii. A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests or 300 feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.
        iv. If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the City and CDFW detailing the results of monitoring activities. The report will be submitted within 30 days of the completion of the activities or nesting season.
4. *MM Bio 4 Night time lighting*
    a. Project related nighttime lighting shall be directed away from adjacent open space and native vegetation communities.
5. *MM Bio 5A. Native or Special Status Vegetation Communities*

a. Impacts to Purple Needle Grassland and Coast Prickly Pear scrub communities, and individual native bunch grass plants shall be avoided to the extent feasible in the Project Design.
b. Additionally, grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status community or species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.
c. If impacts to Purple Needle Grass Grassland or Coast Prickly Pear Scrub are unavoidable, the project will be required to mitigate for the loss of these habitats. Due to the function of this project as a Botanical Garden, and the relatively small size of these communities relative to the size of the project area, mitigation for these habitats shall be conducted onsite. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, the VBG shall prepare a Mitigation and Monitoring Plan (MMP). The plan shall be prepared by a qualified biologist/ restoration ecologist.
    i. The plan shall include at a minimum: mitigation site location within the project area, native plant palette, planting plan, onsite seed and plant salvage, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist or qualified horticulturalist familiar with the restoration of native habitats.
        1. Impacts to Purple Needle Grass Grassland and / or Coast Prickly Pear Scrub shall be mitigated at a ratio of 1:1.
        2. Final acreage of restoration must equal the acreage identified in the preconstruction survey report for each habitat type or species for the impact to be considered fully mitigated.
        3. Success criteria shall be based on the condition of the habitat as described in the preconstruction survey report.
d. Site Selection:
    i. If Mitigation cannot be conducted within the project area, the site shall be located in a dedicated open space area, or suitable adjacent off-site open space shall be obtained/purchased.
    ii. Selected sites shall not result in the removal of a biologically valuable resource (e.g., native grassland or special status species).
        1. Impacts to Purple Needle Grass Grassland and / or Coast Prickly Pear Scrub shall be mitigated at a ratio of 2:1.
    iii. The MMP shall include detailed descriptions of: Responsibilities and qualifications of the personnel to implement and supervise the plan, plant salvage, planting, invasive weed management, maintenance, monitoring requirements, success criteria and annual report requirements. The responsibilities of the landowner, specialists, and maintenance personnel that would supervise and implement the plan shall be specified.
    iv. The MMP shall include onsite seed and plant salvage to the greatest extent feasible.
    v. The MMP shall be submitted to CDFW for review.
    vi. Final acreage of restoration must equal the acreage identified in the preconstruction survey report for each habitat type or species for the impact to be considered fully mitigated.
    vii. Success criteria shall be based on the condition of the habitat as described in the preconstruction survey report.
    viii. The MMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

*MM Bio 5B. Special Status Plant Populations*

a. Impacts to special status plant species, including known populations of special status plants shall be avoided to the extent feasible in the Project Design.
b. Additionally, grading limits shall be clearly marked, and temporary fencing or other appropriate markers shall be placed around any special status plant species adjacent to work areas prior to the commencement of any ground-disturbing activity or native vegetation removal.

c. If CNPS List 1 and 2 species are observed during preconstruction surveys and removal is unavoidable, impacts shall be mitigated at a 1:1 ratio. Due to the function of this project as a Botanical Garden, and the relatively low occurrence of these species relative to the size of the project area, mitigation shall be conducted onsite. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, the VBG shall prepare a Mitigation and Monitoring Plan (MMP). The plan shall be prepared by a qualified biologist, restoration ecologist or qualified horticulturalist.
    i. The plan shall include at a minimum: mitigation site location, seed and plant salvage, planting plan, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist or qualified horticulturalist familiar with native species.
    ii. Final replacement must equal the acreage and / or numbers of individuals identified in the preconstruction survey report for each species, for the impact to be considered fully mitigated.
    iii. The MMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

d. If Mitigation cannot be conducted within the project area, the site shall be located in a dedicated open space area, or suitable adjacent off-site open space shall be obtained/purchased; or the VBG shall propagate species within the project's associated greenhouses for use (free of charge) in restoration projects within Ventura County at a mitigation replacement ratio or 2:1.
    i. Selected sites shall not result in the removal of a biologically valuable resource (e.g., native grassland or special status species).
    ii. This plan shall be submitted for review to CDFW.
    iii. Final replacement must equal the acreage and / or numbers of individuals identified in the preconstruction survey report for the impact to be considered fully mitigated.
    iv. The MMP shall include remedial measures in the event that the performance criteria are not met. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.

6. *Invasive and Noxious Weed Management*
    a. Precautions shall be taken to minimize the introduction of any invasive weeds. An Invasive Weed Management Plan shall be prepared and implemented to address and prevent the spread of invasive weed species prior to ground disturbing activities.
    b. In riparian areas only water-safe herbicides shall be used.
    c. Herbicides shall not be applied when wind velocities exceed 6 mph.
    d. Where manual and/or mechanical methods are used, weedy plant debris shall be disposed of properly.
    e. The timing of weed control treatment shall be determined for each plant species in consultation with qualified personnel with the goal of controlling populations before they start producing seeds.
7. *Pesticide and Rodenticide Use*
    a. The project shall develop an Integrated Pest Management Program prior to conducting pest or rodent control. The IPMP shall address applicable regulations and targeted pests.
    b. The IPMP shall avoid the use of rodenticides containing anticoagulants.
    c. The IPMP shall evaluate and address potential impacts related to secondary poisoning of carnivores.

1. MM Waters 1: Avoidance
    a. No vegetation trimming or removal shall occur within Southern Riparian Scrub (Arroyo Willow Thickets), to the extent feasible.
    b. If vegetation trimming is necessary, see **MM Bio 1** and **MM Waters 2**.
2. MM Waters 2: Regulated Waters

a. Project activities shall avoid permanent impacts to potentially jurisdictional waters and associated habitats within the project area.
    i. Temporary impacts other than vegetation trimming , (such as habitat enhancement, channel improvements) within regulated waters and/or wetlands may be subject to the permit requirements of the USACE, under Section 404 of the Clean Water Act (CWA), RWQCB, Section 401 of the CWA and the Porter-Cologne Water Quality Act, a Streambed Alteration Agreement from the CDFG pursuant to Section 1600 et. seq. of the California Fish and Game Code.
    ii. If temporary impacts within potentially jurisdictional features are unavoidable, a jurisdictional delineation shall be conducted by qualified personnel to map the extent of regulated waters and potential impacts. Actual jurisdictional areas are determined by the state and federal authorities at the time that permits are requested. As part of the permit process, these agencies will request that the option selected be designed to avoid and/or minimize effects to onsite jurisdictional waters and wetlands to the extent feasible.
        1. On site, in-kind restoration shall occur for all temporarily disturbed areas within regulated waters at a mitigation ratio of 1:1.
    iii. Within the Project's **Long Term Adaptive Mitigation and Monitoring Plan**, VBG, Inc. shall prepare a Habitat Mitigation and Monitoring Plan (HMMP). The plan shall be prepared by a qualified biologist, restoration ecologist, or qualified horticulturalist. The plan shall include at a minimum:
        1. mitigation site location
        2. native plant palette
        3. planting plan
        4. time of year planting will occur
        5. irrigation plan
        6. invasive species control program
        7. success criteria
        8. maintenance and monitoring program.
    iv. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration ecologist or horticultural specialist familiar with the restoration of native habitats.
    v. The HMMP shall include success criteria for monitoring the restoration effort over three years.
    vi. Determination of mitigation adequacy shall be based on comparison of the restored habitat with onsite habitat conditions prior to impact.
    vii. The HMMP shall include remedial measures in the event that the performance criteria are not met for a particular year. Annual monitoring reports shall include results for: restoration planting survival, percent cover, species richness, maintenance conducted, contingency measures implemented, qualitative assessment of habitat restoration, exotic plant control efforts, and photo-documentation.
b. Unavoidable, permanent impacts to jurisdictional waters and associated habitats shall require written justification to the regulatory agencies detailing the infeasibility of avoidance.
    i. Project components within jurisdictional waters shall be designed to include a natural bottom that would minimize the effect on waters of the U.S. and State.
    ii. If impacts within potentially jurisdictional features are unavoidable, a jurisdictional delineation shall be conducted by qualified personnel to map the extent of regulated waters and potential impacts. Actual jurisdictional areas are determined by the state and federal authorities at the time that permits are requested. As part of the permit process, these agencies will request that the option selected be designed to avoid and/or minimize effects to onsite jurisdictional waters and wetlands to the extent feasible.
        1. On site, in-kind restoration shall occur for all temporarily disturbed areas within regulated waters at a mitigation ratio of 1:1. In addition, for those areas that are permanently impacted, the applicant shall provide for in-kind riparian restoration/creation at a 3:1 mitigation ratio, or as otherwise indicated by the regulatory agencies during the permitting process, whichever is greater.
        2. Onsite restoration is preferred; however, if onsite restoration is infeasible, mitigation can be completed by providing adequate funding to a third party

organization, conservation bank or in lieu fee Program for the in- kind creation or restoration at the ratio defined within applicable permits, but no less than 3:1.

iii. If mitigation is implemented offsite, mitigation lands shall be located in the vicinity of the site or within the Ventura River Watershed

iv. The HMMP shall identify an approach for funding assurance for the long-term management of the conserved land if applicable.

3. MM Waters 3: BMPs
   a. Best Management Practices (BMPs) shall be implemented for all project activities within 50 feet of regulated water features.

**Recommended Avoidance and Minimization Measures**

The following avoidance and minimization measures would further reduce the likelihood of project activities impacting special status wildlife and plant species.

- **(RM 2)** Maternity colony or hibernaculum surveys for roosting bats. VBG shall conduct a pre-activity (e.g., vegetation removal, grading) survey for roosting bats within 100 feet of project activities within 15 days prior to any removal of trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities). VBG shall also conduct surveys for roosting bats during the maternity season (1 March to 31 July) within 100 feet of project activities. Trees shall be surveyed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding with CDFW allowing the biologist to handle bats). Surveys shall include a minimum of one day and one evening.
  - If active maternity roosts or non-breeding bat hibernacula are found in trees scheduled to be removed, avoidance, relocation or other measures shall be determined in consultation with a qualified biologist.
- **(RM 3)** All excavations in excess of 2 feet deep shall be sloped, have escape ramps installed that are suitable for the escape of wildlife, or be thoroughly covered at the end of the day. All trenches and excavations shall be inspected for wildlife at the beginning of the work day and prior to backfilling. If a special-status species is discovered in a trench or excavation, work in the area shall be redirected, and the special-status species shall be allowed to leave the trench and the area of its own accord. In the event any special-status species is trapped in a trench or an excavation and unable to leave on its own accord, the USFWS and the CDFW shall be contacted to relocate the special-status species or the VBG, Inc. shall identify an individual with appropriate permits (for example, a CDFW collecting permit) to relocate the special-status species.
- **(RM 4)** Native plants including CNPS RPR 4 are an asset to the ecosystem and could be salvaged for propagation, particularly within the California Garden.
  a. Plummer's Baccharis and Catalina Mariposa Lily occur within the Project area (mapped in the 2011 Biological Constraints and Opportunities analysis). If impacts to these species are unavoidable, VBG, Inc. shall mitigate for impacts to these species by replacing them at a ratio of 1:1 within the Project area. A Mitigation and Monitoring Plan (MMP) shall be developed for CNPS RPR 4 species. The plan shall be prepared by a qualified biologist/ restoration ecologist. The plan shall include the following:
     i. The plan shall include the number of plants removed, sites where plants are to be replanted/ replaced, time of year planting will occur, irrigation plan, invasive species control program, success criteria, maintenance program, and monitoring program.
     ii. Planting, maintenance, monitoring, and reporting shall be overseen by a restoration specialist familiar with the restoration of native habitats.
     iii. Existing plants shall be salvaged to the extent feasible.
     iv. Mitigation for impacts to CNPS RPR 4 species shall be implemented within one year of the time of impacts.
- **(RM 5)** Best Management Practices (BMPs) shall be implemented for all project activities within 50 feet of regulated water features.
- **(RM 6)** Retain as many of the healthy, mature trees as possible onsite as part of the overall garden design.
- **(RM 7)** Permanent fencing activities are associated with Phases 2 through 10, and avoidance and minimization measures should be developed to address the potential to entrap or impede wildlife within the project area.

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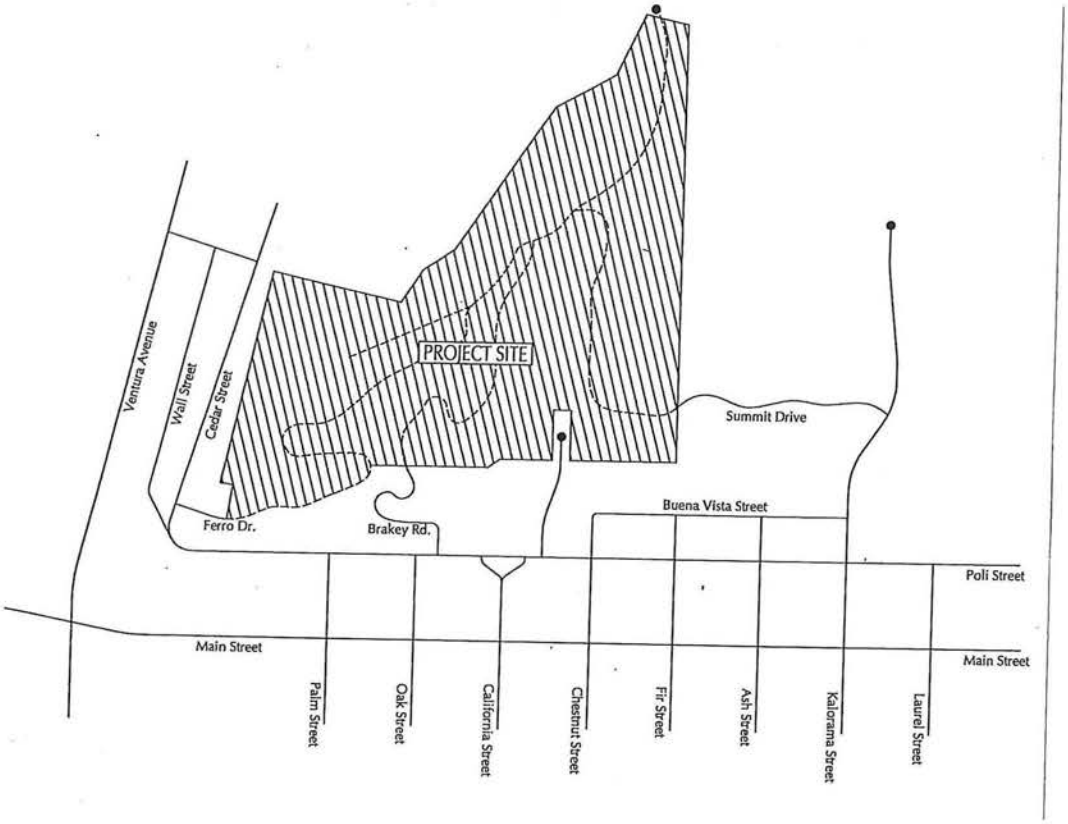
**ATTACHMENT E**

**TRAFFIC, CIRCULATION, AND PARKING STUDY**
**JUNE 12, 2014**

# VENTURA BOTANICAL GARDENS MASTER PLAN
# CITY OF VENTURA, CALIFORNIA

## TRAFFIC, CIRCULATION, AND PARKING STUDY




**June 12, 2014** **ATE #14024**

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**TRAFFIC, CIRCULATION, AND PARKING STUDY FOR THE VENTURA BOTANICAL GARDENS MASTER PLAN - CITY OF VENTURA, CA**

Associated Transportation Engineers (ATE) has prepared the following Traffic, Circulation, and Parking study for the Ventura Botanical Gardens Master Plan located at Grant Park in the City of Ventura.

Associated Transportation Engineers

Scott A. Schell, AICP, PTP
Principal Transportation Planner

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## INTRODUCTION

The following report evaluates the traffic, circulation, and parking plan developed for the Ventura Botanical Gardens Master Plan, proposed in the City of Ventura. This report updates and supercedes the previous reports prepared by ATE for the early development of the Ventura Botanical Gardens Master Plan (ATE reports dated June through September, 2011).

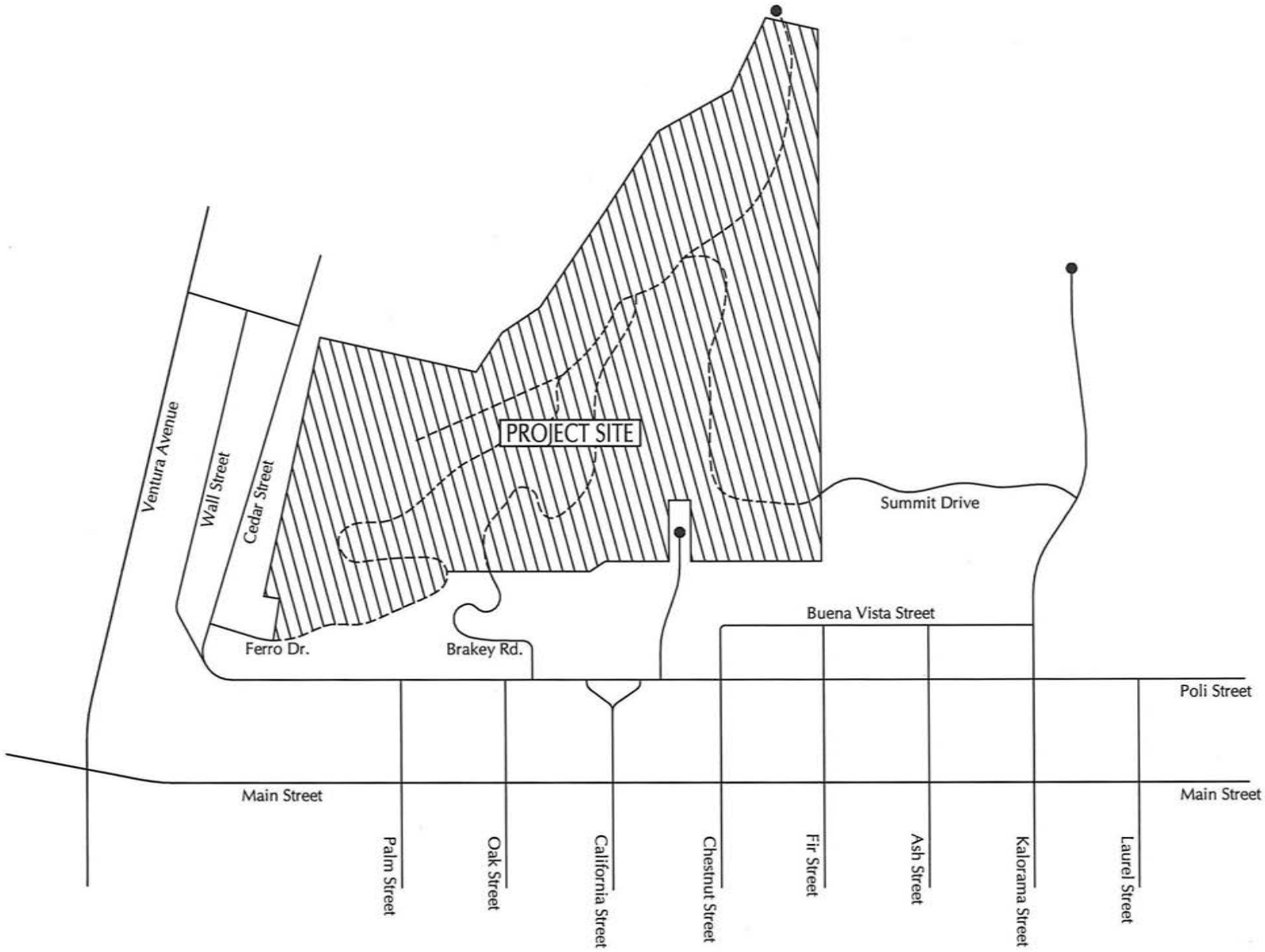
## PROJECT DESCRIPTION

The Ventura Botanical Gardens (VBG) has identified Grant Park as the location to create a world class botanical garden in the City of Ventura. The project involves the development of 106.98 acres in multiple phases over many years. Figure 1 shows the location of the project site within the City of Ventura. Four major zones are proposed withing the VBG, including the Welcome Zone, the Discovery Zone, the Heritage Zone and the Horticultural Zone. Figure 2 shows the location of these development zones, which are discussed below.

**Welcome Zone**. Located adjacent to the existing upper parking lot behind Ventura City Hall and within walking distance of the Ventura downtown core, the Welcome Zone would be the primary entrance for the majority of VBG visitors. A group of visitor serving buildings would be provided with welcoming gardens, walkways, and a plaza to greet and orient visitors to the garden. Visitor parking will be provided at the existing upper Ventura City Hall parking lot which will be upgraded to include appropriate landscaping and restriped to provide 106 parking spaces. Vehicular, pedestrian and bicycle access to the Welcome Zone would be provided through the access driveway that serves the Ventura City Hall property on Poli Street. This area would also contain a mechanized vertical transport system or other device to assist in VBG internal circulation.

**Discovery Zone.** Located adjacent to an existing parking lot in the northern area of the site, the Discovery Zone would provide a vantage point for visitors to the garden. This zone would contain six buildings that are primarily dedicated to the display and education aspects of Ventura Botanical Gardens' mission. The buildings will be used in conjunction with the grounds of the gardens to conduct classes, provide art and botanic expositions, conduct ongoing research on environmental management, and host lectures. The Discovery Zone also includes a 130-seat public restaurant with an outdoor dining terrace. Parking for this area will be provided in an expanded parking lot containing 72 spaces. Vehicular, pedestrian, and bicycle access to the Discovery Zone would be provided through the existing Grant Park access connection to Summit Drive.

**Heritage Zone.** Located adjacent to the Serra Cross Conservancy property, the Heritage Zone will include the Heritage Center, a building serving as an interpretive exhibit center. Parking for the Heritage Center would be provided in a 28-space parking lot. An additional 21 parking spaces would provided in turnouts located along Ferro Drive south of the Heritage Center. Vehicular, pedestrian, and bicycle access to the Heritage Zone would be provided via Ferro Drive and pedestrian/bicycle access would be maintained on Brakey Road.

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EXISTING STREET NETWORK AND PROJECT LOCATION

FIGURE 1

MMF - #14024

Associated Transportation Engineers

PROJECT SITE PLAN

FIGURE 2

MMF - #14024

**Horticulture Zone.** The primary purpose of the Horticulture Zone is to propagate and grow new plants for use in the gardens and for sale to the public. It will also be the hub of ongoing maintenance for the entire garden property. Parking for this area would be provided in a 10-space parking lot. Additional parking for employees and visitors would be provided in a new 55-space parking lot located adjacent to the gunnery range. Vehicular, pedestrian, and bicycle access to the Horticulture Zone would be provided through the existing Grant Park access connection to Summit Drive.

## EXISTING CONDITIONS

### Street Network

The project site is served by a network of internal roadways that connect to the public road system, including Summit Drive, Ferro Drive and Brakey Road. The following text briefly describes the site access system and the surrounding street network.

Ferro Drive is a two-lane local road located on the west side of the project site. Ferro Drive ranges in width from 22 to 24 feet and would provide access to the proposed Heritage Zone. The roadway would continue to serve the existing Father Serra Cross Park overlook area within Grant Park that is not a part of the VBG Project.

Brakey Road is a two-lane local road that extends north from Poli Street and currently provides access to Grant Park. The northern portion of the road would be abandoned and closed to vehicular access as part of the project but would remain open to pedestrians and bicyclists to maintain connectivity to the Ventura downtown area. The proposed tram system would also use Brakey Road.

Ventura City Hall Driveway, located just south of the project site, is a driveway connection to Poli Street that provides access to the parking facilities that serve City Hall. The driveway would also provide access to the proposed Welcome Zone area of the project.

Summit Drive, is a two-lane local road located on the east side of the project site. Summit Drive ranges in width from 20 to 23 feet with dirt shoulders and would provide access to the proposed Discovery and Horticulture Zones of the project.

Poli Street, is a two-lane local road located south of the project site. The road provides access to the City Hall driveway and connectivity to the downtown street network.

Kalorama Street is a two-lane local road located east of the project site. This roadway connects to Summit Drive, Poli Street, and the downtown Ventura street network.

Cedar Street is a two-lane collector road located west of the project site. This roadway connects to Ferro Drive and Poli Street.

### Existing Roadway Volumes

Average daily traffic (ADT) volumes for the study-area roadways and access connections were obtained through traffic counts conducted for this study in March 2014 (count data contained in the Technical Appendix for reference). Figures 3 and 4 present the existing weekday and weekend ADT volumes for the study-area roadways.

The data presented in Figures 3 and 4 show that the traffic volumes on the access roads that serve the existing uses in Grant Park are relatively light. Ferro Drive carries 700 ADT on weekdays and 1,000 ADT on weekends. Summit Drive carries 550 ADT on weekdays and 650 ADT on weekends. The Ventura City Hall driveway carries 1,550 ADT on weekdays and 650 ADT on weekends. The section of Brakey Road at the entrance to Grant Park carries 400 ADT on weekdays and 500 ADT on weekends. These volumes would divert to Ferro Street and the Ventura City Hall entrance driveway when Brakey Road is closed as part of the VBG Project.

## TRAFFIC ANALYSIS

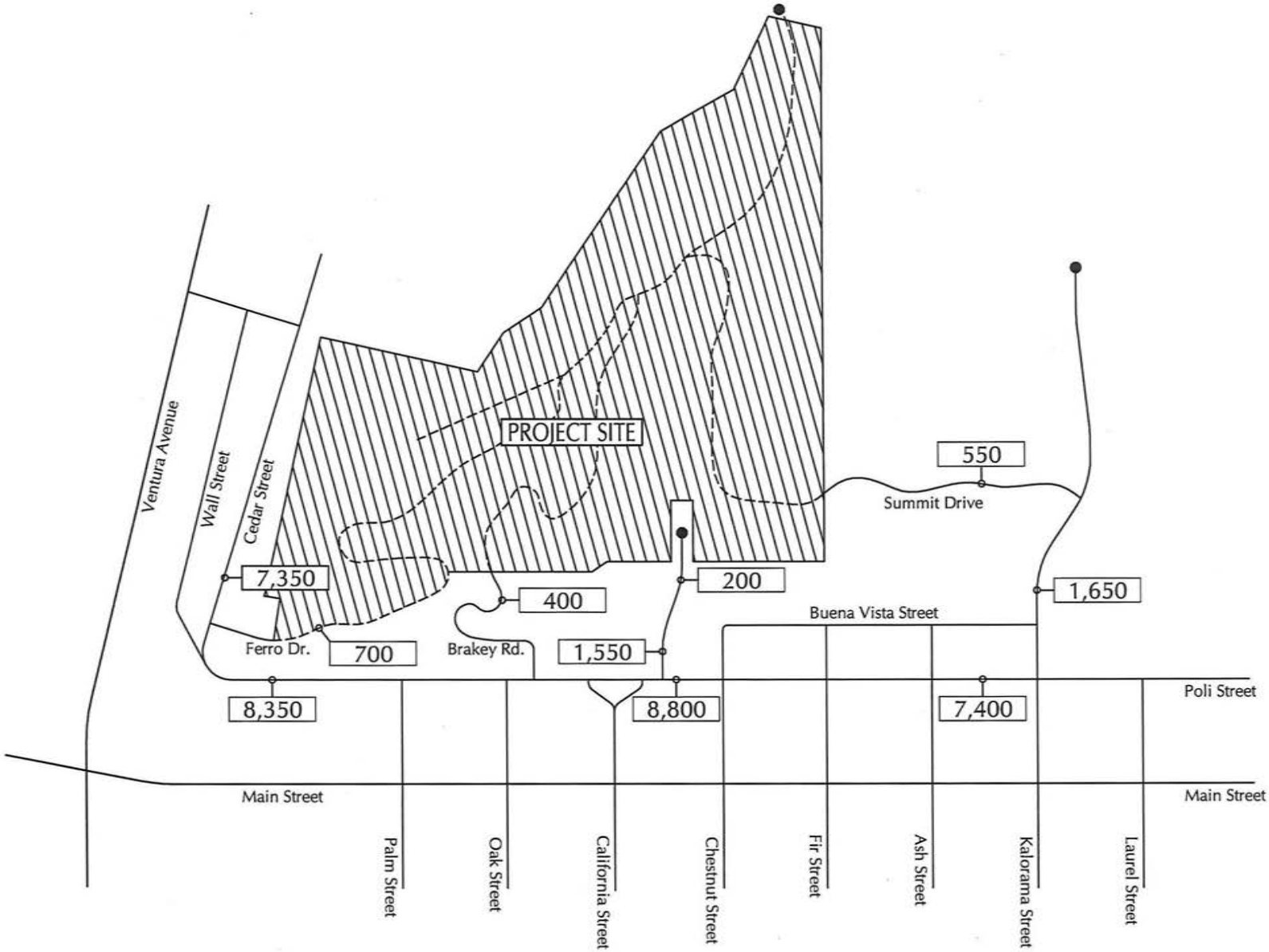
### Project Trip Generation

Trip generation estimates for the Ventura Botanical Gardens were developed based on the number of visitors and employees expected at the gardens as well as the types of activities and events that are held on the grounds. The following text outlines the various components of the project and discusses the methodology used to forecast the trip generation estimates.

**Visitors.** Operational data provided by the applicant indicates that there would be a maximum of between 150 and 300 daily visitors to the VBG during a typical year and a maximum of 660 daily visitors during peak exposition years. The trip generation analysis assumes that 85% of the visitors would drive to the site and that the remaining 15% of visitors would walk or bicycle from other destinations in the downtown Ventura area. Given the VBG's stated goal of actively advocating parking in the downtown area and walking to the gardens, the 15% walk assumption is conservative. The analysis assumes an average vehicle occupancy (AVO) of 2.5 guests per vehicle.

**Employees.** Operational data provided by the applicant indicate that there would be up to 75 daily employees on site. The trip generation analysis assumes that 90% of employees would drive to the site and the remaining 10% of employees would arrive via alternative modes of transportation (car pool, bus, walk, bike, etc).The trip generation forecasts also account for employees that leave and return to the site during their shift for lunch, errands, etc.

**School Groups.** The operational data provided by the applicant indicates that there would be a maximum of 10 buses per month. The trip generation analysis assumes that two school groups would visit the site on a peak day and that each group would arrive and depart the site via separate school busses.




LEGEND

X - Average Daily Traffic Volume

N
NOT TO SCALE

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EXISTING ROADWAY VOLUMES - WEEKDAY

FIGURE 3

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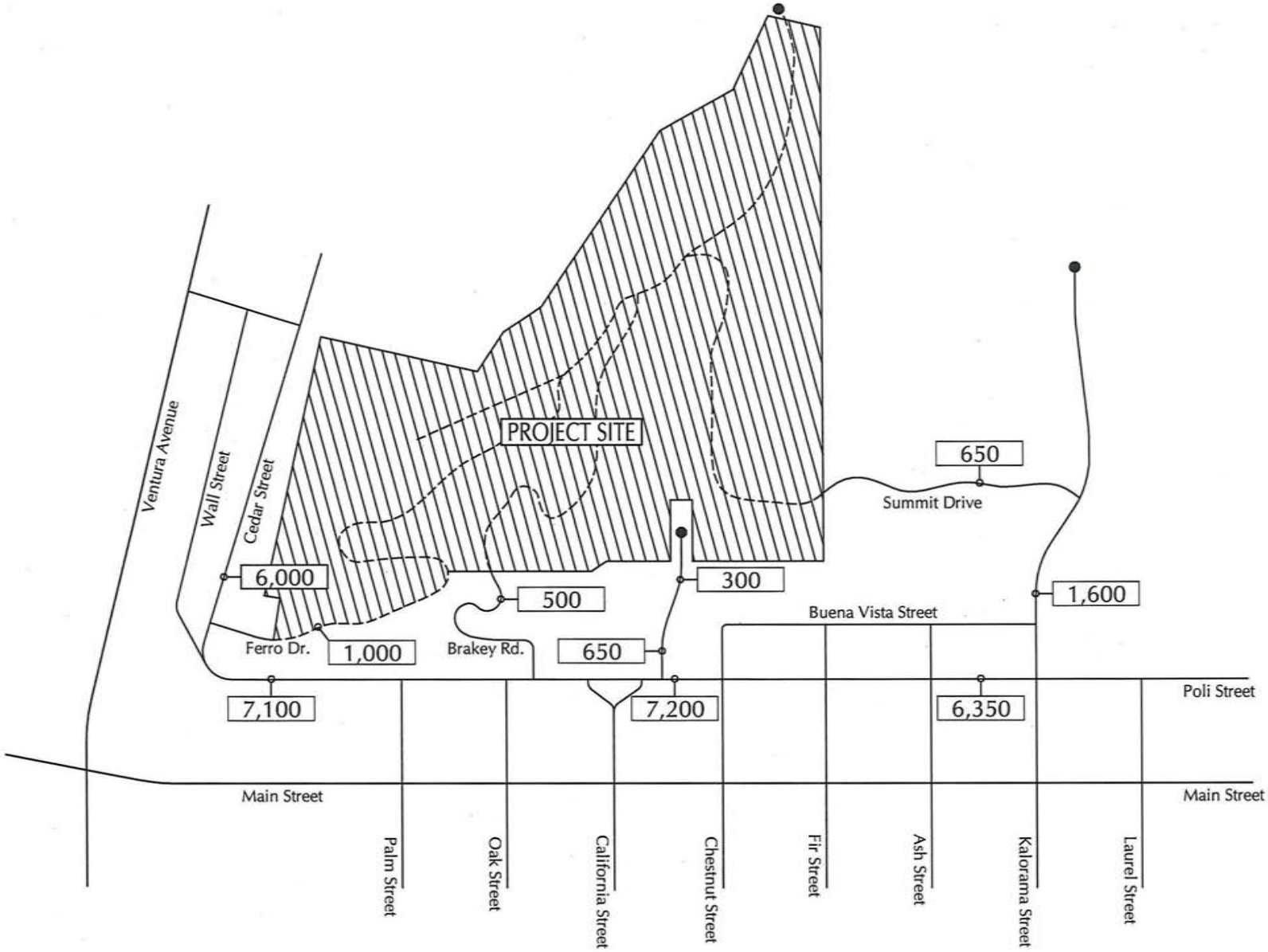



LEGEND

X - Average Daily Traffic Volume

N
NOT TO SCALE

ASSOCIATED
TRANSPORTATION
ENGINEERS

EXISTING ROADWAY VOLUMES - WEEKEND

FIGURE 4

MMF - #14024

**Adult Classes.** The analysis assumes that the there would be 10 students that attend the adult classes held at the VBG site, which would total, at most, six classes per week. The trip generation forecasts assume that all students would drive to and from the site.

**Revenue Events.** Operational data provided by the applicant indicate that revenue events, such as weddings, with a maximum attendance of 350 guests would be held regularly at the site. The analysis assumes that 95% of guests would drive to the site with an AVO 2.5 guests per vehicle. It is noted that Donor, Member, and Volunteer Recognition events, as well as Lecture and Symposia events would not occur when revenue events are held. Since revenue events have the highest attendance, this represents a worst-case scenario.

**Public Restaurant.** Operational data provided by the applicant show that the proposed restaurant would provide 130 seats. Trip generation estimates for the restaurant were developed using rates contained in the Institute of Transportation Engineers (ITE) Trip Generation report[1] for High-Turnover (Sit Down) Restaurants (ITE Land-Use #932). The analysis assumes that 65% of the patrons would be primary trips that would travel directly to the restaurant and that 35% of the patrons would be visitors to the VBG.

**Miscellaneous Trips.** The trip generation analysis assumes 10 miscellaneous vehicles per day to account for deliveries, service vehicles, etc.

Table 1 summarizes the trip generation estimates developed for the various components of the Ventura Botanical Garden for average attendance years.

---

[1] Trip Generation, Institute of Transportation Engineers, 9th Edition, 2010.

**Table 1**
**Trip Generation Estimates - Average Attendance Year**

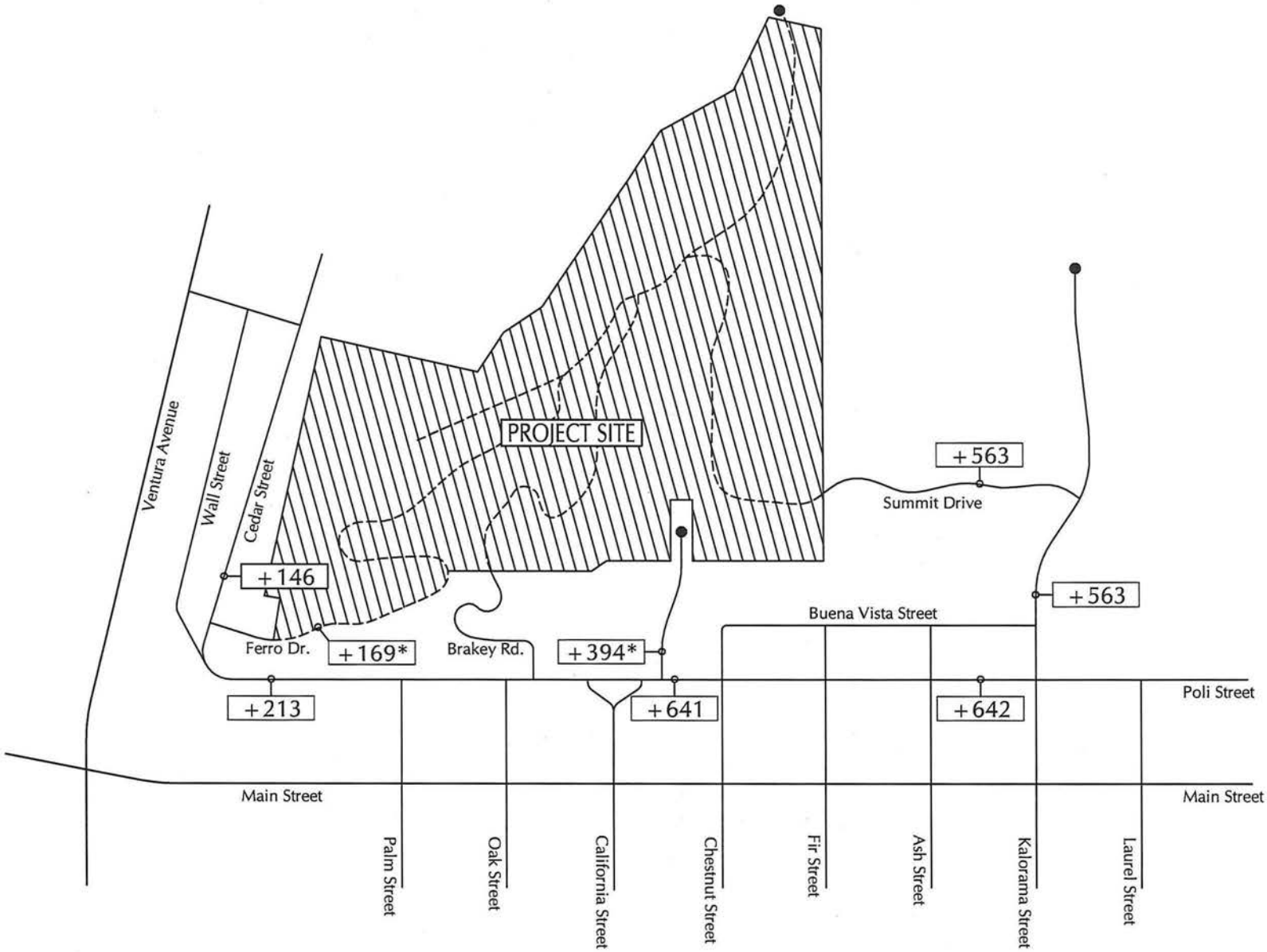
| Use | Size | % Drive | AVO | Vehicles | Trip Rate | Average Daily Trips |
|---|---|---|---|---|---|---|
| Visitors | 300 | 85% | 2.5 | 102 | 2.0 | 204 |
| Employees | 75 | 90% | 1.0 | 68 | 3.0 | 204 |
| School Groups | 2 Busses | 100% | N/A | 2 | 2.0 | 4 |
| Adult Classes | 10 Attendees | 100% | 1.0 | 10 | 2.0 | 20 |
| Revenue Events (a) | 350 Attendees | 95% | 2.5 | 133 | 2.0 | 266 |
| Public Restaurant | 130 Seats | 65% (b) | N/A | N/A | 4.83 | 408 |
| Misc./Deliveries | 10 Vehicles | 100% | N/A | 10 | 2.0 | 20 |
| **Project Total:** | | | | | | **1,126** |

AVO = Average Vehicle Occupancy
(a) Assumes attendance for Revenue Events as worst-case scenario. Donor, Member, and Volunteer Recognition events, as well as Lectures and Symposia events would not occur when revenue events are held.
(b) Assumes 65% of restaurant patrons arrive from off-site and 35% of patrons are VBG visitors.

The data presented in Table 1 show that the Ventura Botanical Gardens is forecast to generate 1,126 average daily trips during average attendance years. It is important to note that the trip generation forecasts assume that peak visitation and events occur on both weekdays and weekends and are conservative in nature, as it likely that visitation and events on weekdays will be less than on weekends. It is also noted that the VBG plans to encourage the use of pedestrian and bicycle access and promote connectivity to other attractions in the downtown Ventura area to reduce vehicle trips to and from the site.

## Project Trip Distribution

The distribution pattern for assigning project-generated traffic to the adjacent street network was developed based on the location of the four major zones and the on-site parking areas. Table 2 presents the distribution pattern developed for the project and shows the project's traffic additions at the three access connections. Figure 5 shows the assignment of project-added traffic to the study-area street network.




LEGEND

X - Average Daily Traffic Volume

* Does not include diverted traffic from Brakey Road

N
NOT TO SCALE

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ENGINEERS

PROJECT-ADDED TRAFFIC VOLUMES

FIGURE 5

MMF - #14024

**Table 2**
**Project Trip Distribution**

| Origin/Destination | Percentage | Project-Added ADT |
|---|---|---|
| Ferro Drive | 15% | 169 ADT |
| City Hall Driveway | 35% | 394 ADT |
| Summit Drive | 50% | 563 ADT |
| **Total** | **100%** | **1,126 ADT** |

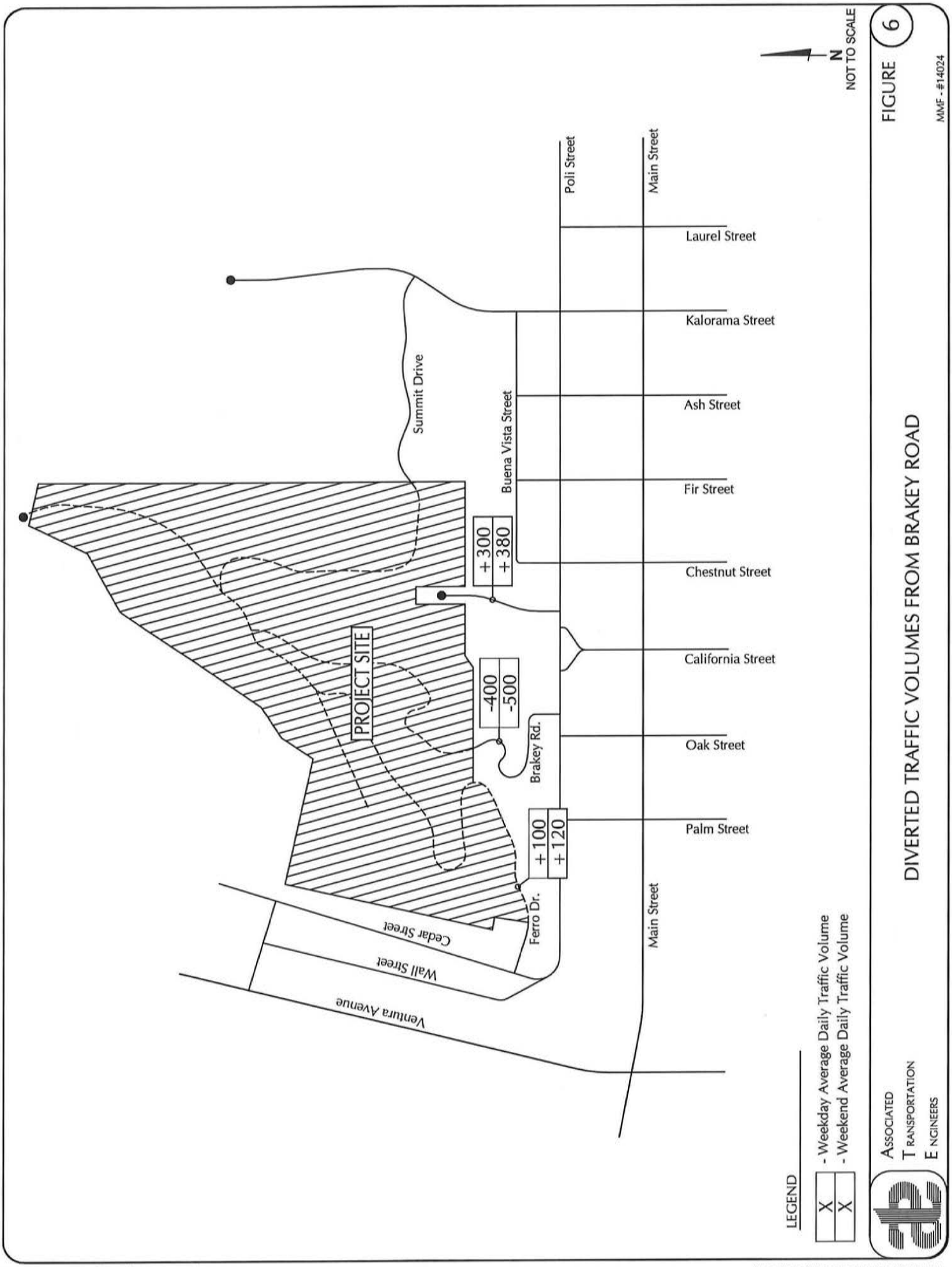
As noted previously, the analysis assumes that Brakey Road would be closed and that the existing traffic using this access connection would be diverted to Ferro Drive and the Ventura City Hall access driveway. Table 3 and Figure 6 present the diverted traffic volumes from Brakey Road to Ferro Drive and the City Hall driveway.

**Table 3**
**Brakey Road Closure - Diverted Traffic**

| Roadway | Weekday Diverted ADT Added | Weekend Diverted ADT Added |
|---|---|---|
| Ferro Drive | + 100 ADT | +120 ADT |
| City Hall Driveway | +300 ADT | +380 ADT |

### Existing + Diversion + Project Roadway Volumes

Figures 7 and 8 present the Existing + Diversion + Project weekday and weekend ADT volumes for the study-area roadways. As previously noted, the trip generation analysis provides a worst-case scenario as it assumes that peak visitation and events would occur on both weekdays and on weekends. Table 4 compares the Existing and Existing + Project ADT for the study-area roadways.


N
NOT TO SCALE
FIGURE 6
MMF - #14024
DIVERTED TRAFFIC VOLUMES FROM BRAKEY ROAD
Poli Street
Main Street
Laurel Street
Kalorama Street
Ash Street
Fir Street
Chestnut Street
California Street
Oak Street
Palm Street
Main Street
Summit Drive
Buena Vista Street
+300
+380
PROJECT SITE
-400
-500
Brakey Rd.
+100
+120
Ferro Dr.
Cedar Street
Wall Street
Ventura Avenue
LEGEND
X - Weekday Average Daily Traffic Volume
X - Weekend Average Daily Traffic Volume
ASSOCIATED
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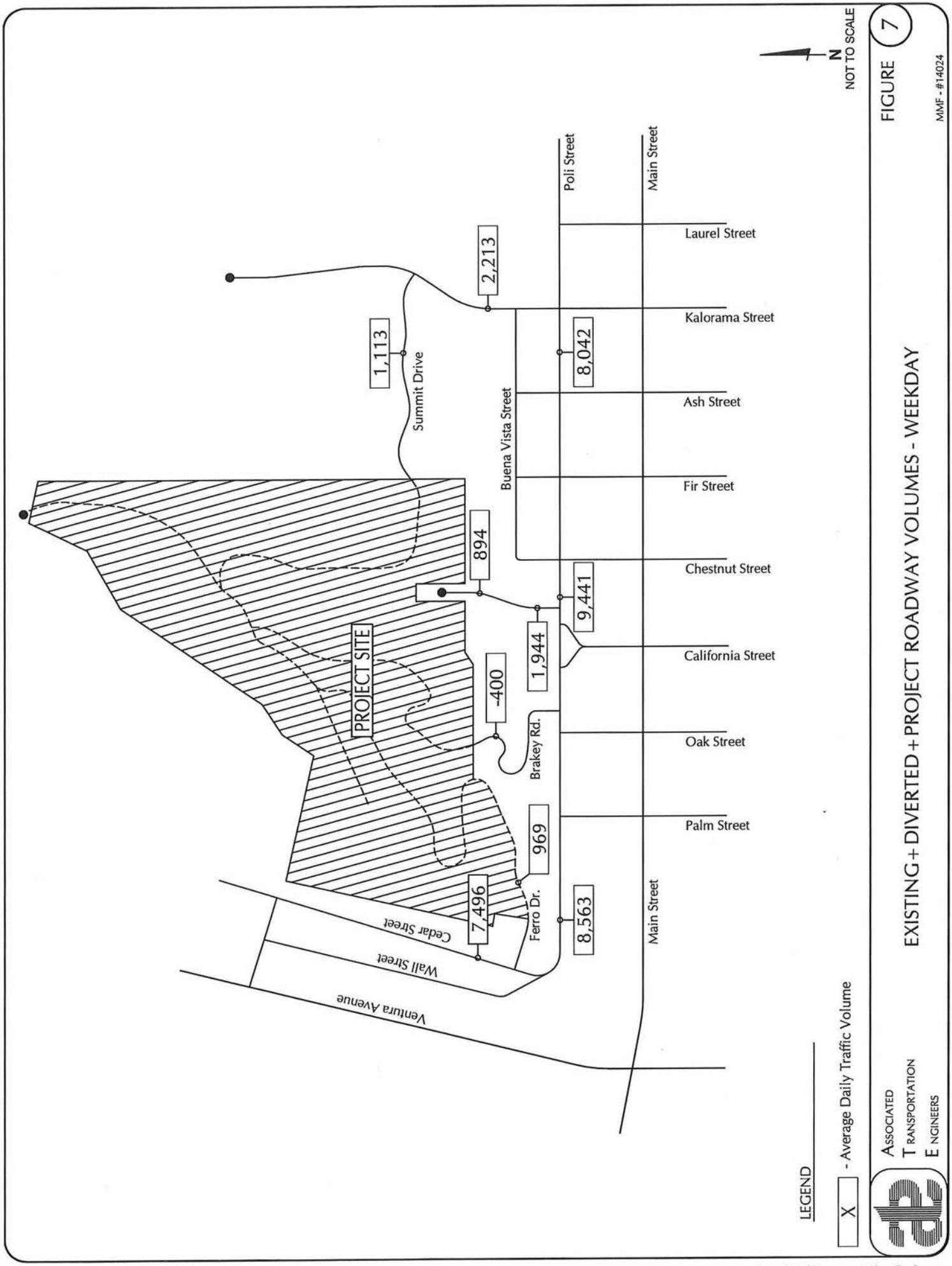
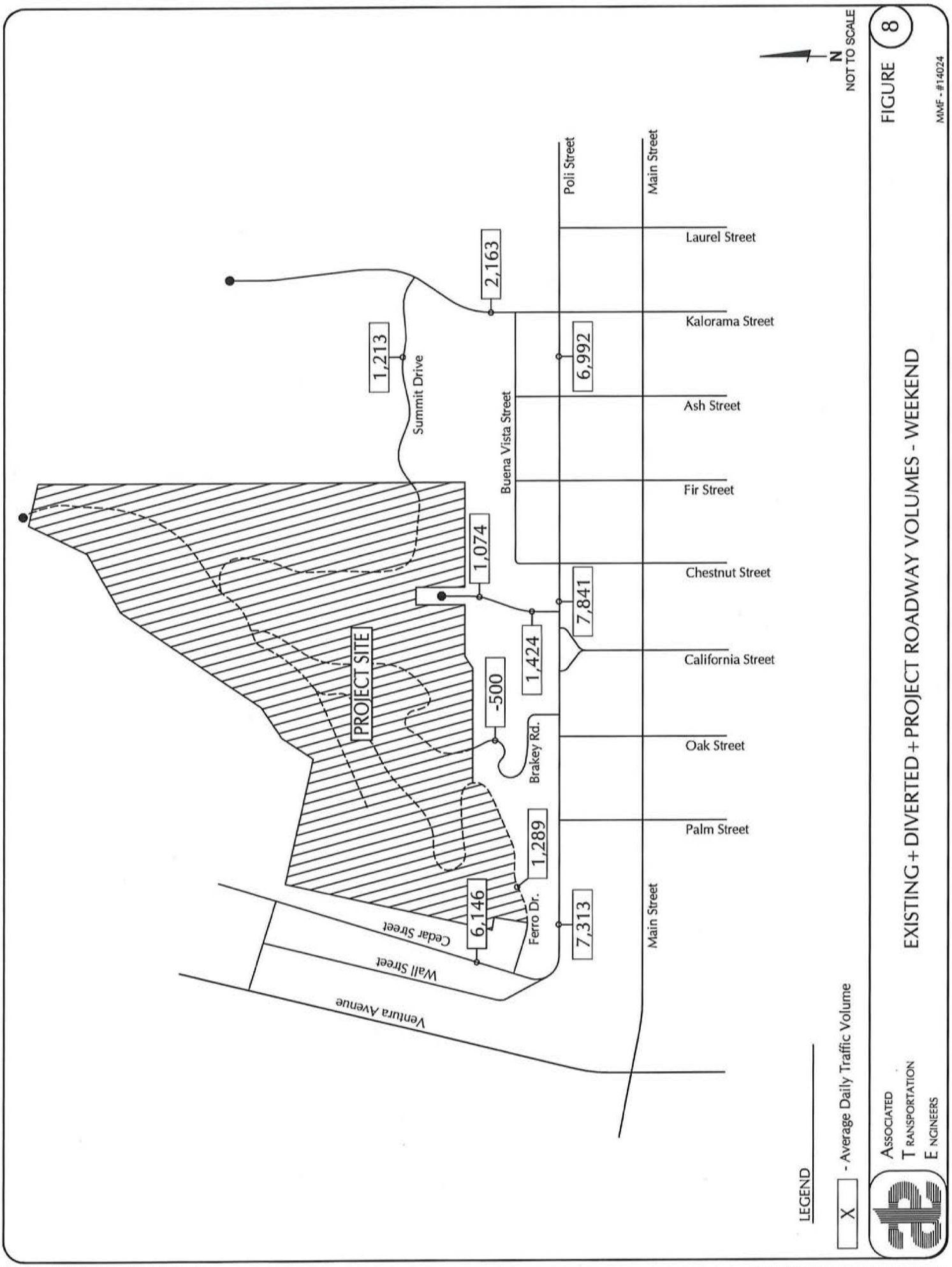
ENGINEERS


N
NOT TO SCALE
FIGURE 7
MMF - #14024
EXISTING + DIVERTED + PROJECT ROADWAY VOLUMES - WEEKDAY
Laurel Street
Kalorama Street
Ash Street
Fir Street
Chestnut Street
California Street
Oak Street
Palm Street
Poli Street
Main Street
Buena Vista Street
Summit Drive
Brakey Rd.
Ferro Dr.
Cedar Street
Wall Street
Ventura Avenue
PROJECT SITE
2,213
1,113
8,042
894
9,441
1,944
-400
969
7,496
8,563
LEGEND
X - Average Daily Traffic Volume
ASSOCIATED
TRANSPORTATION
ENGINEERS


N
NOT TO SCALE
FIGURE 8
MMF - #14024
EXISTING + DIVERTED + PROJECT ROADWAY VOLUMES - WEEKEND
Laurel Street
Kalorama Street
Ash Street
Fir Street
Chestnut Street
California Street
Oak Street
Palm Street
Poli Street
Main Street
Main Street
Buena Vista Street
Summit Drive
Brakey Rd.
Ferro Dr.
Cedar Street
Wall Street
Ventura Avenue
PROJECT SITE
2,163
1,213
6,992
1,074
7,841
1,424
-500
1,289
6,146
7,313
LEGEND
X - Average Daily Traffic Volume
ASSOCIATED TRANSPORTATION ENGINEERS

## Table 4
## Existing + Diversion + Project Roadway Volumes

| Roadway Segment | Weekday ADT | | | | Weekend ADT | | | |
|---|---|---|---|---|---|---|---|---|
| | Existing | Brakey Diversion | Project-Added | Existing + Diversion + Project | Existing | Brakey Diversion | Project-Added | Existing + Diversion + Project |
| ***VBG Access Roads*** | | | | | | | | |
| Ferro Drive | 700 | 100 | 169 | 969 | 1,000 | 120 | 169 | 1,289 |
| Summit Drive | 550 | 0 | 563 | 1,113 | 650 | 0 | 563 | 1,213 |
| City Hall Driveway (Lower) | 1,550 | 300 | 394 | 2,244 | 650 | 380 | 394 | 1,424 |
| City Hall Driveway (Upper) | 200 | 300 | 394 | 894 | 300 | 380 | 394 | 1,074 |
| ***City Streets*** | | | | | | | | |
| Cedar Street n/o Ferro Drive | 7,350 | 0 | 146 | 7,496 | 6,000 | 0 | 146 | 6,146 |
| Poli Street w/o Palm Street | 8,350 | 0 | 213 | 8,563 | 7,100 | 0 | 213 | 7,313 |
| Poli Street e/o California Street | 8,800 | 0 | 641 | 9,441 | 7,200 | 0 | 641 | 7,841 |
| Poli Street w/o Kalorama Street | 7,400 | 0 | 642 | 8,042 | 6,350 | 0 | 642 | 6,992 |
| Kalorama Street n/o Poli Street | 1,650 | 0 | 563 | 2,213 | 1,600 | 0 | 563 | 2,163 |

### Existing + Project Roadway Operations

The City of Ventura has no adopted roadway standards, therefore roadway operations are evaluated based on the Ventura County levels of service thresholds for County roads (LOS thresholds are contained in the Technical Appendix for reference). The data shown in Table 4 show that the site access roads are forecast to carry ADT volumes in the 969 - 2,244 range. Based on the County's thresholds for Class III roadways, the site access roads would operate in the LOS B - C range with Existing + Project traffic volumes. Table 4 shows that the City surface streets are forecast to carry ADT volumes in the 2,163 - 9,441 range. Based on the County's thresholds for Class II roadways, the City streets would operate in the LOS B-D range with Existing + Project traffic volumes. These operations meet the City's LOS D operating standard and are considered acceptable. The project would therefore not generate a significant impact to roadway operations based on the City's LOS D Operating standard. More information on the operations of the study-area roadways is contained in the Site Access and Circulation section of this report.

### Peak Exposition Year Roadway Operations

The VBG is proposing to hold special expositions that would be installed for 6-9 months that would attract a larger number of daily visitors. The analysis assumes that the peak exposition years would attract 660 daily visitors, an increase of 360 daily visitors when compared to the average year scenario. Table 5 summarizes the trip generation estimates for the peak exposition year scenario.

**Table 5**
**Trip Generation Estimates - Peak Exposition Year**

| Use | Size | % Drive | AVO | Vehicles | Trip Rate | Average Daily Trips |
|---|---|---|---|---|---|---|
| Visitors | 660 | 85% | 2.5 | 224 | 2.0 | 448 |
| Employees | 75 | 90% | 1.0 | 56 | 3.0 | 204 |
| School Groups | 2 Busses | 100% | N/A | 2 | 2.0 | 4 |
| Adult Classes | 10 Attendees | 100% | 1.0 | 10 | 2.0 | 20 |
| Revenue Events (a) | 350 Attendees | 95% | 2.5 | 133 | 2.0 | 266 |
| Public Restaurant | 130 Seats | 65% (b) | N/A | N/A | 4.83 | 408 |
| Misc./Deliveries | 10 Vehicles | 100% | N/A | 10 | 2.0 | 20 |
| **Project Total:** | | | | | | **1,370** |

AVO = Average Vehicle Occupancy

(a) Assumes attendance for Revenue Events as worst-case scenario. Donor, Member, and Volunteer Recognition events, as well as Lecture and Symposia events would not take place when revenue events are held.

(b) Assumes 65% of restaurant patrons arrive from off-site and 35% of patrons are VBG visitors.

The data presented in Table 5 show that the VBG would generate 1,370 ADT during the peak exposition year, which is 244 ADT more than the average year scenario (1,126 ADT). The traffic levels generated by the VBG during the peak exposition years would not significantly impact the operations of the surrounding roadways as the study-area roadways would continue to operate at LOS D or better. It is noted that the trip generation forecasts assume peak visitation and events on both weekdays and weekends and are conservative in nature as it likely that visitation and events on weekdays will be less than on weekends. It is also noted that the VBG plans to encourage the use of pedestrian and bicycle access and promote connectivity to other attractions in the downtown Ventura area to reduce vehicle trips to and from the site.

## SITE ACCESS AND CIRCULATION

Vehicular, pedestrian, and bicycle access to the VBG uses would be provided via Ferro Drive, the Ventura City Hall driveway, and Summit Drive. Pedestrian and bicycle access would also be provided via Brakey Road. The following text further describes the site access connections.

### Vehicular Access

Ferro Drive would provide access to the Heritage Zone and would continue to provide access to the Father Serra Cross site. The roadway section is approximately 22 to 24 feet wide with dirt shoulders and no on-street parking. The VBG would also utilize 21 parking spaces in two turn-out areas along Ferro Drive, with an additional 28 spaces provided in a lot near the Father Serra Cross site. The VBG is forecast to add less than 300 ADT to Ferro Road (including diverted traffic from Brakey Road). Based on the County's roadway LOS thresholds, Ferro Drive would operate at LOS B with Existing + Project traffic volumes.

Summit Drive would provide access to the Discovery and Horticulture Zones of the proposed project. The parking areas that would be accessed from Summit Drive include 10 spaces at the Horticulture Zone, 72 spaces at the Discovery Zone, and 55 spaces at the Gunnery Lot. Summit Drive ranges in width between 20 and 23 feet and provides dirt shoulders within the park site. The VBG is forecast to add less than 600 ADT to Summit Drive. Based on the County's roadway LOS thresholds, Summit Drive would operate at LOS B with Existing + Project traffic volumes.

Summit Drive extends east of the VBG as a public street connecting to Kalorama Street. The section of Summit Drive located east of the park site is approximately 32 feet wide with parking restricted on the south side of the roadway and a sidewalk provided on the north side of the roadway. This roadway section would adequately accommodate the traffic generated by the VBG. Kalorama Street is a two-lane local road that connects to Poli Street and the downtown Ventura street network. Kalorama Street carries 1,500 ADT north of Poli Street and 2,500 ADT south of Poli Street. The additional traffic generated by the project would not significantly impact these road segments. Furthermore, the Summit Drive/Kalorama Street intersection is controlled by a Stop sign (Summit Drive is Stop sign controlled and Kalorama Street is free flow). The sight distances at the intersection are adequate and the intersection operates at LOS A during peak commuter periods (no congestion). The additional traffic that would be added by the Project (70 to 110 PHT) would not significantly degrade levels of service at the intersection.

Ventura City Hall Driveway Connection would provide access to the proposed Welcome Zone and main parking lot for the VBG (106 spaces). The driveway connection at Poli Street contains two outbound lanes (left-turn and right-turn) and is controlled by a stop-sign. The internal road connection that provides access to the upper parking lot area is approximately 20-feet wide. The Project is forecast to add less than 800 ADT to the driveway (including traffic diverted from Brakey Road). Based on the County's roadway LOS thresholds, the Ventura City Hall driveway connection would operate at LOS C under Existing + Project traffic volumes.

Internal Circulation and Turnaround Areas. The site access and circulation system includes areas for vehicle to turnaround should they decide to not want to patronize the VBG. A cul-de-sac will be constructed at the north end of Brakey Road where the road will terminate at the boundary for the Garden. Similarly, a cul-de-sac will be constructed at the south end of portion of Brakey Road located within the Garden site. A cul-de-sac will also be constructed at the terminus of the Ferro Drive segment that provides access to the Father Serra Cross for vehicular turnarounds. Cul-de-sac's are also planned at the termini of the vehicular roads that provide access to the Discovery Zone uses in the eastern portion of the Garden (see Figure 9).

**Pedestrian Access**

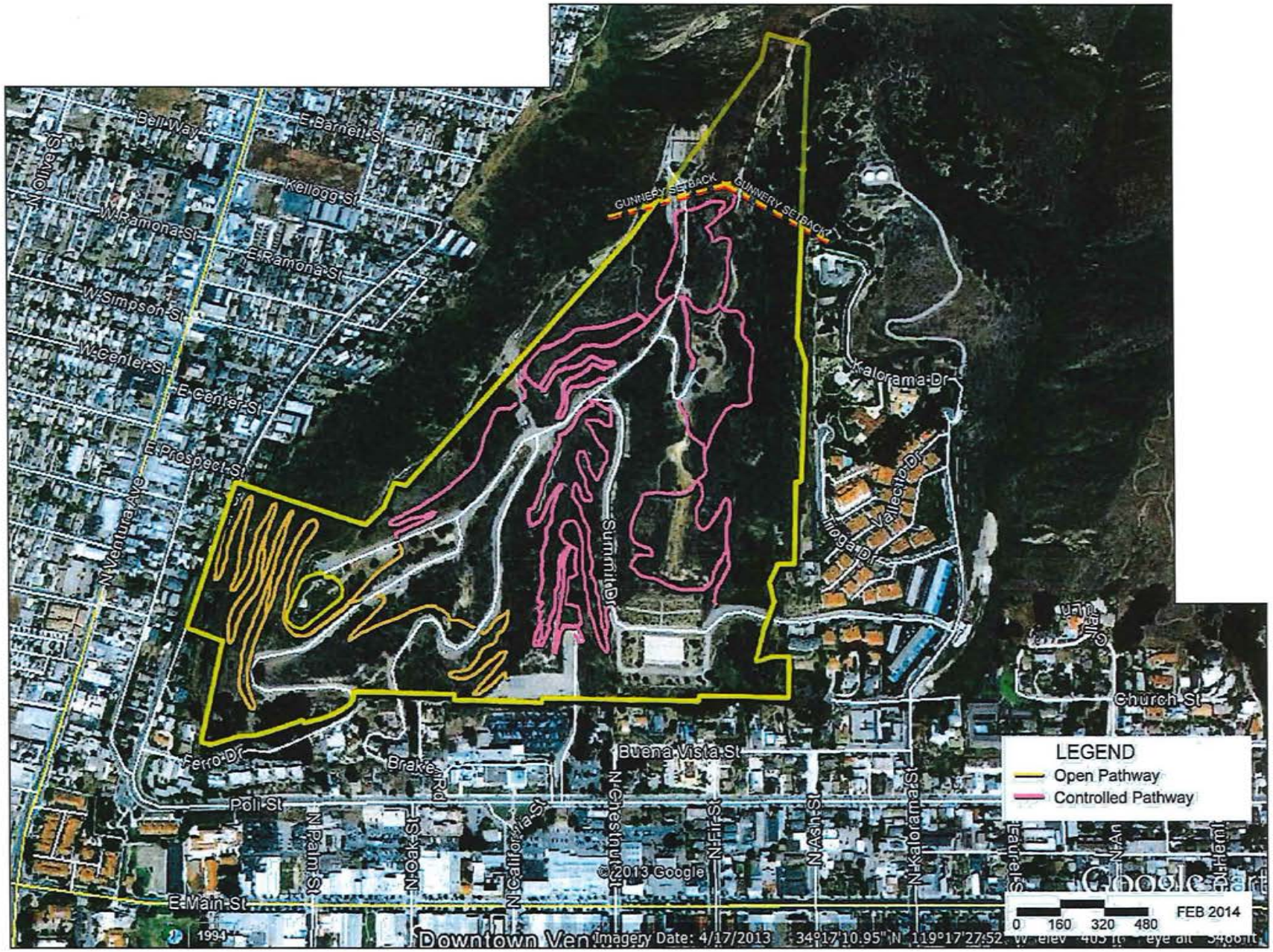
The VBG Project includes an extensive network of public and private pathways that will provide pedestrian circulation throughout the site. Figure 9 shows the proposed pathway network and Figure 10 shows the pedestrian/bicycle access system for the VBG site. As shown, the controlled (private) trail system would be accessed via the Welcome Zone area. A public path connection to the Welcome Zone area would also be provided, and a public trail connection to Cedar Street would provide pedestrian access to the westside neighborhoods adjacent to Ventura Avenue. Pedestrians will also be able to access the site via the City Hall pedestrian access connection to Poli Street, as well Brakey Road, Ferro Drive, and Summit Drive.

The following pedestrian enhancements are recommended:

1. A sidewalk is provided on the north side of Summit Drive from Kalorama Street to the eastern boundary of the Grant Park site. Pedestrians are then required to walk in the roadway to enter the site. It is recommended that an off-street trail be provided connecting from the existing sidewalk to the interior trail system within the VBG or to the closest VBG tram stop.

2. Pedestrian signage and way finding should be provided at the Poli Street entrance to Ventura City Hall to direct pedestrians and bicycles to the Welcome Zone.

3. It is anticipated that pedestrians would use Brakey Road and Ferro Drive to enter the site. There are no sidewalks currently provided on Brakey Road or Ferro Drive, and the roadways are somewhat narrow. Sidewalks or off-road trails should be provided on the segments of Ferro Drive and Brakey Road to allow for better westside pedestrian connectivity. The pedestrian paths should connect to the interior trail system within the VBG or to the closest VBG tram stop.

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INTERNAL PEDESTRIAN PATHWAY NETWORK

FIGURE 9

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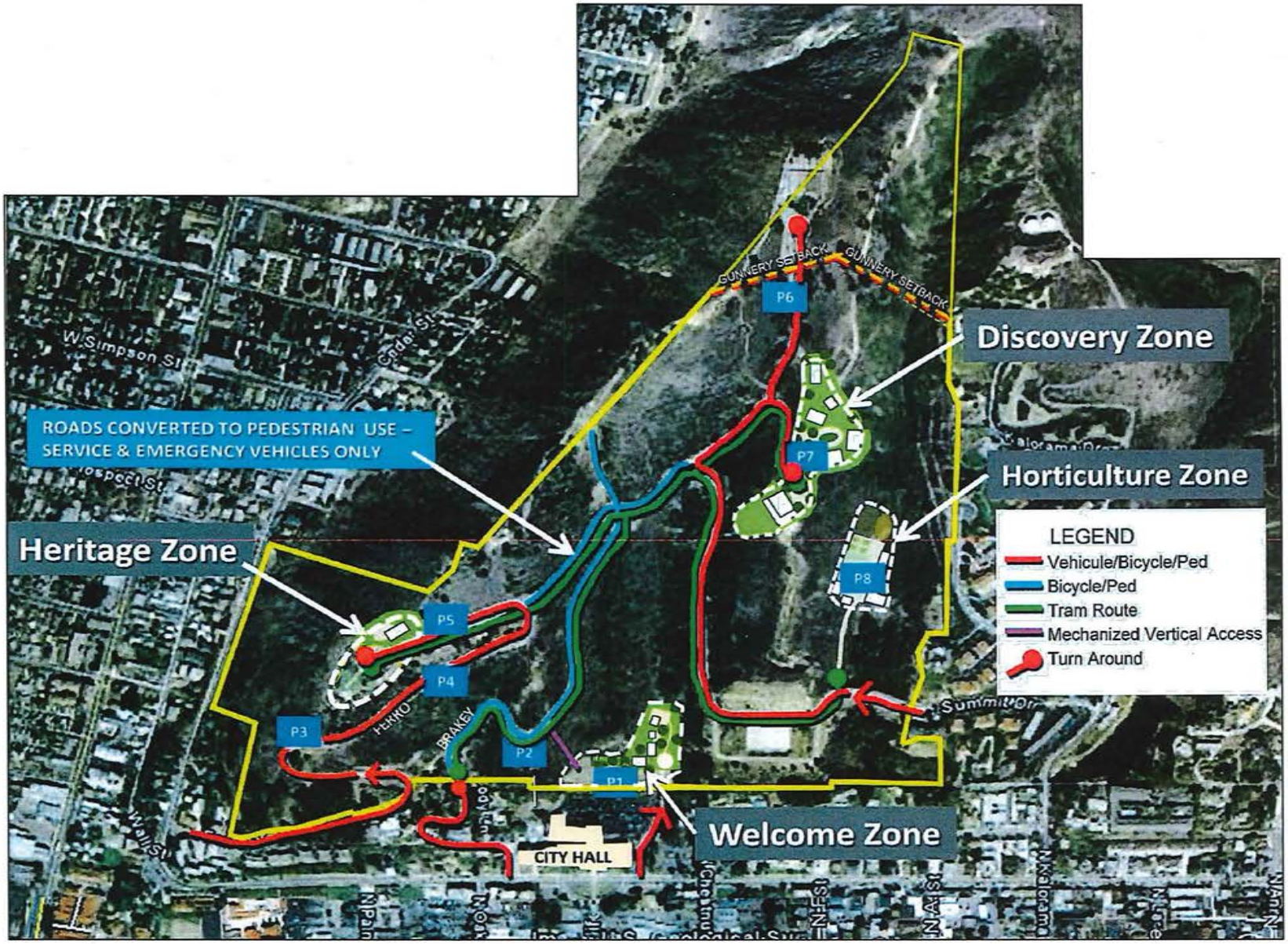


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SITE ACCESS, CIRCULATION, AND PARKING PLAN

FIGURE 10

MMF - #14024

4. A complete system of way finding signage should be provided to direct pedestrians to the following locations:

- VBG access at Ferro Drive, Summit Lane, and Brakey Road
- VBG Tram stops
- Father Serra Cross site
- Grant Park access

**Bicycle Access**

Bicycle access to the project site will be provided via Ferro Drive, Summit Drive, the Ventura City Hall access driveway and Brakey Road. The VBG is proposing to provide adequate and secure bicycle parking at the Welcome Zone, Discovery Zone, Heritage Zone, and Horticulture Zone that will be available to both staff and visitors. A complete system of way finding signage should be provided for bicycle access to and from the VBG site to Summit Drive, Ferro Drive, and Brakey Road, as well access to the Father Serra Cross site and Grant Park.

**Tram System/ADA Access**

ADA parking will be provided in the main visitor parking lot adjacent to the Welcome Center. Visitors will have the option of using the VBG tram system that will circulate within portions of the project site (see Figure 9 for Tram route). Access from the main parking lot to the tram stop within The Ramble will be provided by means of a mechanized link such as a small funicular or other gondola. Additional ADA parking spaces and access will be provided in the parking lots that serve the Discovery Zone, the Heritage Zone and the Horticultural Zone.

## PARKING ANALYSIS

**Proposed Parking Supply**

The VBG Project is proposing to provide a total of 292 parking spaces in various areas of the project site. The project would modify/restripe existing parking areas that currently serve Grant Park and would add 57 new parking spaces (see Figure 9). Table 6 summarizes the proposed parking supply for the VBG site.

**Table 6**
**Proposed Parking Supply**

| Lot # | Parking Area | Existing Spaces Provided | Future Spaces Provided |
|---|---|---|---|
| P1 | Main Parking Lot (Upper City Hall Lot) | 153 | 106 |
| P2 | Lower Brakey Road Turnout | 7 | 0 |
| P3 | Lower Ferro Turnout | 0 | 6 |
| P4 | Middle Ferro Turnout | 15 | 15 |
| P5 | Cross Lot | 15 | 28 |
| P6 | Gunnery Range Lot | 15 | 55 |
| P7 | Discovery Zone Lot | 30 | 72 |
| P8 | Horticulture Zone/Maintenance Parking Lot | 0 | 10 |
| **Total Parking Provided:** | | **235 Spaces** | **292 Spaces** |

## Parking Demand Analysis

A parking demand analysis was prepared to evaluate the adequacy of the proposed parking supply. The analysis was prepared for average year operations and for peak exposition year operations. The following text outlines the methodology used to forecast parking demands for the various components of the project.

**Visitors.** The demand analysis assumes that 85% of all daily visitors would drive to the site and the remaining 15% would walk or bicycle from the downtown Ventura area. The analysis assumes an average vehicle occupancy (AVO) of 2.5 guests per vehicle and that 40% of all visitors would be on site during the peak demand period.

**Employees.** The parking demand analysis assumes that 90% of all employees would drive to the site and the remaining 10% of employees would arrive via alternative modes of transportation (car pool, bus, walk, bike, etc). The peak demand forecasts assume that 60% of all employees would be on site during the peak demand period.

**Adult Classes.** The demand analysis assumes that all 10 Adult Class students would be parked on-site during the peak period.

**Revenue Events.** The demand analysis assumes that 95% of all event guests would park on-site. The demand forecasts assume an AVO 2.5 guests per vehicle and that all guest vehicles would be parked on-site during the peak period. The analysis assumes that Donor, Member, and Volunteer Recognition events, as well as Lecture and Symposia events would not occur when revenue events are held.

**Public Restaurant.** Peak parking demands for the restaurant were developed using rates contained in the Institute of Transportation Engineers (ITE) Parking Generation report[2] for High-Turnover (Sit Down) Restaurants (ITE Land-Use #932).

### Average Year Parking Demand Analysis

Table 7 presents the peak parking demands for the proposed site uses for average attendance years.

**Table 7**
**Ventura Botanical Garden Peak Parking Demands - Average Attendance Year**

| Use | Size | % Drive | AVO | Vehicles | Peak % On-Site | Peak Parking Demand |
|---|---|---|---|---|---|---|
| Visitors | 300 | 85% | 2.5 | 102 | 40% | 41 |
| Employees | 75 | 90% | 1.0 | 68 | 60% | 41 |
| Adult Classes | 10 Attendees | 100% | 1.0 | 10 | 100% | 10 |
| Revenue Events (a) | 350 Attendees | 95% | 2.5 | 133 | 100% | 133 |
| Public Restaurant | 130 Seats | 65% (b) | 0.48 | N/A | 100% | 41 |
| **Project Total:** | | | | | | **266 Spaces** |
| **Proposed Parking Supply:** | | | | | | **292 Spaces** |

AVO = Average Vehicle Occupancy

(a) Assumes attendance for Revenue Events as worst-case scenario. Donor, Member, and Volunteer Recognition events, as well as Lecture and Symposia events would not take place when revenue events are held.

(b) Assumes 65% of restaurant patrons arrive from off-site and 35% of patrons are VBG visitors.

The data presented in Table 7 show that the individual uses of the project would generate a peak parking demand of 266 spaces. The proposed parking supply of 292 spaces would therefore be 91% occupied during the peak demand period with 26 unoccupied spaces.

The parking demand analysis assumes that the peak demand for all uses would occur at one time and thus provides a 'worst-case' scenario, as it is likely that peak demands of the individual uses would occur at different times of day. Additionally the analysis assumes a conservative 15% parking reduction to the visitor parking demands to account for visitors that walk/bike to the site and for visitors parked in the downtown area. The VBG Project will actively encourage pedestrian and bicycle travel to and from the site and would promote

[2] Parking Generation, Institute of Transportation Engineers, 4th Edition, 2010.

connectivity to other destinations/attractions in the downtown Ventura area which would result in lower visitor parking demands on site. Based on the conservative assumptions contained in the parking demand analysis, the proposed parking supply of 292 spaces would adequately accommodate the day-to-day uses of the project.

### Peak Exposition Year Parking Demand Analysis

Table 8 presents the peak parking demands for the project uses during the peak exposition year scenario. The analysis assumes no revenue event held at the site in order to evaluate the adequacy of the on-site parking supply during day-to-day operations of a peak exposition year.

**Table 8**
**Peak Exposition Year Parking Demands Without Revenue Event**

| Use | Size | % Drive | AVO | Vehicles | Peak % On-Site | Peak Parking Demand |
|---|---|---|---|---|---|---|
| Visitors | 660 | 85% | 2.5 | 224 | 40% | 90 |
| Employees | 75 | 90% | 1.0 | 68 | 60% | 41 |
| Adult Classes | 10 Attendees | 100% | 1.0 | 10 | 100% | 10 |
| Restaurant | 130 Seats | 65% (a) | 0.48 | N/A | 100% | 41 |
| **Project Total:** | | | | | | **182 Spaces** |
| **Proposed Parking Supply:** | | | | | | **292 Spaces** |

AVO = Average Vehicle Occupancy

(a) Assumes 65% of restaurant patrons arrive from off-site and 35% of patrons are VBG visitors.

The data presented in Table 8 show that the peak parking demand for the site during a peak exposition year is forecast at 182 parking spaces without a revenue event. The proposed parking supply of 292 spaces would adequately accommodate the day-to-day uses of the project during a peak exposition year.

Table 9 presents the peak parking demands for the peak exposition year scenario with a revenue event.

**Table 9**
**Peak Exposition Year Parking Demands With Revenue Event**

| Use | Size | % Drive | AVO | Vehicles | Peak % On-Site | Peak Parking Demand |
|---|---|---|---|---|---|---|
| Visitors | 660 | 85% | 2.5 | 224 | 40% | 90 |
| Employees | 75 | 90% | 1.0 | 68 | 60% | 41 |
| Adult Classes | 10 Attendees | 100% | 1.0 | 10 | 100% | 10 |
| Revenue Events (a) | 350 Attendees | 95% | 2.5 | 133 | 100% | 133 |
| Restaurant | 130 Seats | 65% (b) | 0.48 | N/A | 100% | 41 ( c) |
| **Project Total:** | | | | | | **315 Spaces** |
| **Proposed Parking Supply:** | | | | | | **292 Spaces** |

(a) Assumes attendance for Revenue Events as worst-case scenario. Attendance for Donor, Member, and Volunteer Recognition events, as well as Lectures and Symposia events would be less than 350 people.
(b) Assumes 35%internal capture reduction.
( c) ITE parking demand rate per seat.

The data presented in Table 9 show that the peak parking demand for the site with a revenue event held during a peak exposition year is forecast at 315 parking spaces. The proposed parking supply of 292 parking spaces would therefore not accommodate the demands of the project uses during peak expositions years when revenue events are held. The project would need to implement a parking management plan during the peak exposition year periods to accommodate revenue events.

### Special Events – Parking Demands and Management

The VBG proposes to hold special events that would experience a large number of guests. According to the Project Description, "Special events at the botanic gardens vary widely in character and scale. Small events often occur over a few days or weeks and might attract hundreds to few thousand people throughout the entirety of the event." While the Project Description does not include a specific number of guests that may attend special events on a daily basis, it will be important to anticipate and plan for adequate parking resources during events.

Special Events are anticipated to generate a demand for 1 parking spaces for each 2.5 attendees, with some guests using parking spaces in the downtown Ventura area (5%). Holding a Special Event with 650 guests and 40 employees would fully utilize the parking resources at the VBG site. A parking management plan should therefore be developed for Special Events that are anticipated to exceed 650 guests. Guests should be encouraged to arrive early and park in lots in the downtown area and walk to the site or ride shuttles to the site (see Site Access and Parking Management Plan Recommendations for additional details).

### Bus Parking and Access

It is expected that tour busses and school busses would transport visitors to the project site, and that shuttle busses would be utilized during the larger special events. The parking plan developed for the VBG should identify the bus staging and parking areas within the Welcome Zone and Discovery Zone areas. The design of the access roads to the Welcome Zone and Discovery Zone will need to be designed to accommodate the turning movements of the tour busses, school busses, and shuttles.

## SITE ACCESS AND PARKING MANAGEMENT PLAN RECOMMENDATIONS

The Project should include a formal site access and parking management plan to maximize use of the on-site parking facilities and minimize potential traffic and parking impacts to the public roadways and parking facilities located adjacent to the project site. The following items should be considered when developing the plan to accommodate peak exposition year and special event traffic and parking demands.

- Informational brochures and the VBG website should include parking lot maps and information to encourage guests to park in the downtown area and walk or bike to the site. The brochures and maps should also show the pedestrian/bike linkages between the downtown parking areas and the project site.

- For guests that drive to the site, maps and information should be provided to direct guests to the upper parking lot located above City Hall. Signage should be placed at the Poli Street access connection to direct guests to the Welcome Center parking lot. Way finding signage should also be placed along the route between the Poli Street access connection and the upper parking lot. It is also recommended that signs be installed in the City parking lots informing the public that Garden parking is prohibited within the lower City Hall lots. The access-parking plan should also contain provisions to have staff available to re-direct guests to the other Garden parking areas when the Welcome Center parking lot becomes full. Should spill over parking become an issue in the lower City Hall parking lot, additional parking enforcement measures, such as permits and parking monitors, may be required.

- Maps and information should be provided to direct guests that may wish to drive to the Father Serra Cross/Heritage Zone area to access that area of the Garden via Ferro Drive. Information should indicate that parking is limited in this area of the Garden and that tram access is available from the main parking lot.

- Maps and information should also indicate the location of the classrooms, community rooms, lecture space, and restaurant within the Discovery Zone. Information should indicate that parking in this zone is intended for those uses.

- For revenue events held during peak exposition years, the access/parking plan should include provisions to utilize the lower City Hall lot (225 parking spaces), which would

be subject to a reciprocal parking agreement during daytime and evening hours seven days a week. This arrangement would be enforced through a CUP condition and would also be incorporated into the lease agreement between the VBG and the City. These spaces would become available when there are no overlapping events at City Hall, 505 Poli Street, or the VBG. It is noted that the City Hall parking spaces are subject to use fees for any special event. In all cases, parking shall be made available for City Hall employees and tenants of 505 Poli Street.

- Provide valet attendants to shuttle automobiles to selected parking locations in the nearby area during peak revenue events.

- For special events that are anticipated to exceed 650 guests, guests should be encouraged to arrive early and park in lots in the downtown area and walk to the site. The parking information would be provided to the event sponsor when the facility is booked. Additional information could be provided to event guests on the VBG's website. Guests parking in the downtown lots will be subjected to parking fees, which could be paid for by the VBG as part of the admission ticket.

- The access/parking plan for the larger special events should also include a shuttle system between off-site parking resources (fairgrounds, schools, churches, etc.) and the VBG site to secure additional parking resources.

- The access/parking plan should identify the bus staging and parking areas within the Welcome Zone and Discovery Zone areas.

- A sidewalk is provided on the north side of Summit Drive from Kalorama Street to the eastern boundary of the VBG site. It is recommended that an off-street trail be provided connecting from the existing sidewalk on Summit Drive to the interior trail system or to the closest tram stop within the VBG.

- It is anticipated that pedestrians would use Brakey Road and Ferro Drive to enter the site. There are no sidewalks currently provided on Brakey Road or Ferro Drive. Sidewalks or off-road trails should be provided on the segments of Ferro Drive and Brakey Road to connect to the interior trail system or to the closest tram stop within the VBG to allow for better westside pedestrian connectivity.

- Bicycle parking should be provided within each of the VBG activity zones. A complete system of way finding signage should be also provided for bicycle access to and from the VBG site to Summit Drive, Ferro Drive, and Brakey Road, as well access to the Father Serra Cross site and Grant Park.

## PROJECT PHASING

As noted, development of the Garden will occur incrementally and may occur over a 30-year period. Furthermore, while a phasing plan has been developed, VBG may decide to

accelerate or put off construction of portions of the Garden depending upon available funding available. Thus, the Project's access and parking improvements should be phased to coincide with development of the Garden's attractions. For instance, when the Welcome Center is developed the parking lot should also be developed, along with the improvements to the Poli Street access and way-finding signs within the City Hall parking lot. Similarly, the access roads and parking facilities should be constructed on the eastern portion of the site when the Discovery Zone is developed.

It is noted that the Garden has constructed a demonstration trail that has become a popular public amenity. To respect the public's desire for the open access that they have become accustomed to, the VBG is proposing a new pathway linking the future pedestrian access through the Ramble along Brakey Road to the Welcome Zone ( see Figure 9). That pathway will be completed prior to instituting controlled access at the existing demonstration trail so the public will have continuous open access to the property from south to north when entering the Welcome Zone.

■ ■ ■

## REFERENCES AND PERSONS CONTACTED

### Associated Transportation Engineers

Scott A. Schell, AICP, PTP, Principal Transportation Planner
Dan Dawson, PTP, Supervising Transportation Planner
Matthew Farrington, Transportation Planner I

### References

Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.
Parking Generation, Institute of Transportation Engineers, 4th Edition, 2010.

### Persons Contacted

Chandra Chandrashaker, City of Ventura
Tom Meracle, City of Ventura
Dave Ward, City of Ventura
Greg Martin, Rincon Consultants

## TECHNICAL APPENDIX

CONTENTS:

TRAFFIC COUNT DATA

VENTURA COUNTY ROADWAY LEVEL OF SERVICE THRESHOLDS

## TRAFFIC COUNT DATA

Prepared by NDS/ATD

# VOLUME

Cedar St N/o Ferro Dr

**Day:** Saturday
**Date:** 3/22/2014

**City:** Ventura
**Project #:** CA14_5163_001

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,110 | 3,144 | 0 | 0 | 6,254 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 18 | | 5 | | | | | | 23 | | 12:00 | 62 | | 60 | | | | | | 122 | |
| 00:15 | 22 | | 8 | | | | | | 30 | | 12:15 | 59 | | 63 | | | | | | 122 | |
| 00:30 | 17 | | 7 | | | | | | 24 | | 12:30 | 64 | | 67 | | | | | | 131 | |
| 00:45 | 13 | 70 | 6 | 26 | | | | | 19 | 96 | 12:45 | 62 | 247 | 58 | 248 | | | | | 120 | 495 |
| 01:00 | 9 | | 5 | | | | | | 14 | | 13:00 | 77 | | 60 | | | | | | 137 | |
| 01:15 | 18 | | 3 | | | | | | 21 | | 13:15 | 56 | | 72 | | | | | | 128 | |
| 01:30 | 14 | | 9 | | | | | | 23 | | 13:30 | 61 | | 57 | | | | | | 118 | |
| 01:45 | 8 | 49 | 3 | 20 | | | | | 11 | 69 | 13:45 | 56 | 250 | 65 | 254 | | | | | 121 | 504 |
| 02:00 | 11 | | 3 | | | | | | 14 | | 14:00 | 47 | | 55 | | | | | | 102 | |
| 02:15 | 4 | | 6 | | | | | | 10 | | 14:15 | 51 | | 44 | | | | | | 95 | |
| 02:30 | 3 | | 3 | | | | | | 6 | | 14:30 | 60 | | 50 | | | | | | 110 | |
| 02:45 | 2 | 20 | 0 | 12 | | | | | 2 | 32 | 14:45 | 56 | 214 | 51 | 200 | | | | | 107 | 414 |
| 03:00 | 3 | | 1 | | | | | | 4 | | 15:00 | 57 | | 36 | | | | | | 93 | |
| 03:15 | 1 | | 7 | | | | | | 8 | | 15:15 | 48 | | 46 | | | | | | 94 | |
| 03:30 | 1 | | 0 | | | | | | 1 | | 15:30 | 67 | | 54 | | | | | | 121 | |
| 03:45 | 3 | 8 | 7 | 15 | | | | | 10 | 23 | 15:45 | 56 | 228 | 60 | 196 | | | | | 116 | 424 |
| 04:00 | 1 | | 2 | | | | | | 3 | | 16:00 | 62 | | 52 | | | | | | 114 | |
| 04:15 | 2 | | 3 | | | | | | 5 | | 16:15 | 66 | | 46 | | | | | | 112 | |
| 04:30 | 3 | | 4 | | | | | | 7 | | 16:30 | 66 | | 63 | | | | | | 129 | |
| 04:45 | 1 | 7 | 5 | 14 | | | | | 6 | 21 | 16:45 | 35 | 229 | 50 | 211 | | | | | 85 | 440 |
| 05:00 | 1 | | 4 | | | | | | 5 | | 17:00 | 66 | | 60 | | | | | | 126 | |
| 05:15 | 4 | | 4 | | | | | | 8 | | 17:15 | 59 | | 53 | | | | | | 112 | |
| 05:30 | 2 | | 9 | | | | | | 11 | | 17:30 | 51 | | 39 | | | | | | 90 | |
| 05:45 | 3 | 10 | 14 | 31 | | | | | 17 | 41 | 17:45 | 40 | 216 | 45 | 197 | | | | | 85 | 413 |
| 06:00 | 4 | | 15 | | | | | | 19 | | 18:00 | 50 | | 31 | | | | | | 81 | |
| 06:15 | 7 | | 18 | | | | | | 25 | | 18:15 | 47 | | 49 | | | | | | 96 | |
| 06:30 | 11 | | 29 | | | | | | 40 | | 18:30 | 43 | | 32 | | | | | | 75 | |
| 06:45 | 12 | 34 | 38 | 100 | | | | | 50 | 134 | 18:45 | 55 | 195 | 35 | 147 | | | | | 90 | 342 |
| 07:00 | 9 | | 28 | | | | | | 37 | | 19:00 | 47 | | 45 | | | | | | 92 | |
| 07:15 | 13 | | 26 | | | | | | 39 | | 19:15 | 52 | | 32 | | | | | | 84 | |
| 07:30 | 14 | | 30 | | | | | | 44 | | 19:30 | 46 | | 41 | | | | | | 87 | |
| 07:45 | 15 | 51 | 48 | 132 | | | | | 63 | 183 | 19:45 | 45 | 190 | 34 | 152 | | | | | 79 | 342 |
| 08:00 | 26 | | 44 | | | | | | 70 | | 20:00 | 30 | | 31 | | | | | | 61 | |
| 08:15 | 16 | | 42 | | | | | | 58 | | 20:15 | 46 | | 21 | | | | | | 67 | |
| 08:30 | 31 | | 46 | | | | | | 77 | | 20:30 | 46 | | 32 | | | | | | 78 | |
| 08:45 | 20 | 93 | 65 | 197 | | | | | 85 | 290 | 20:45 | 31 | 153 | 25 | 109 | | | | | 56 | 262 |
| 09:00 | 45 | | 53 | | | | | | 98 | | 21:00 | 38 | | 29 | | | | | | 67 | |
| 09:15 | 38 | | 54 | | | | | | 92 | | 21:15 | 33 | | 20 | | | | | | 53 | |
| 09:30 | 35 | | 49 | | | | | | 84 | | 21:30 | 33 | | 28 | | | | | | 61 | |
| 09:45 | 34 | 152 | 53 | 209 | | | | | 87 | 361 | 21:45 | 31 | 135 | 23 | 100 | | | | | 54 | 235 |
| 10:00 | 35 | | 55 | | | | | | 90 | | 22:00 | 28 | | 22 | | | | | | 50 | |
| 10:15 | 34 | | 61 | | | | | | 95 | | 22:15 | 34 | | 19 | | | | | | 53 | |
| 10:30 | 39 | | 49 | | | | | | 88 | | 22:30 | 31 | | 9 | | | | | | 40 | |
| 10:45 | 48 | 156 | 66 | 231 | | | | | 114 | 387 | 22:45 | 28 | 121 | 16 | 66 | | | | | 44 | 187 |
| 11:00 | 51 | | 58 | | | | | | 109 | | 23:00 | 18 | | 7 | | | | | | 25 | |
| 11:15 | 50 | | 45 | | | | | | 95 | | 23:15 | 13 | | 13 | | | | | | 26 | |
| 11:30 | 59 | | 61 | | | | | | 120 | | 23:30 | 21 | | 12 | | | | | | 33 | |
| 11:45 | 60 | 220 | 68 | 232 | | | | | 128 | 452 | 23:45 | 10 | 62 | 13 | 45 | | | | | 23 | 107 |
| **TOTALS** | | 870 | | 1219 | | | | | | 2089 | **TOTALS** | | 2240 | | 1925 | | | | | | 4165 |
| **SPLIT %** | | 41.6% | | 58.4% | | | | | | 33.4% | **SPLIT %** | | 53.8% | | 46.2% | | | | | | 66.6% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,110 | 3,144 | 0 | 0 | 6,254 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:45 | 11:45 | | | 11:45 | **PM Peak Hour** | 12:15 | 12:30 | | | 12:30 |
| **AM Pk Volume** | 245 | 258 | | | 503 | **PM Pk Volume** | 262 | 257 | | | 516 |
| **Pk Hr Factor** | 0.957 | 0.949 | | | 0.960 | **Pk Hr Factor** | 0.851 | 0.892 | | | 0.942 |
| **7 - 9 Volume** | 144 | 329 | 0 | 0 | 473 | **4 - 6 Volume** | 445 | 408 | 0 | 0 | 853 |
| **7 - 9 Peak Hour** | 08:00 | 08:00 | | | 08:00 | **4 - 6 Peak Hour** | 16:15 | 16:30 | | | 16:15 |
| **7 - 9 Pk Volume** | 93 | 197 | 0 | 0 | 290 | **4 - 6 Pk Volume** | 233 | 226 | 0 | 0 | 452 |
| **Pk Hr Factor** | 0.750 | 0.758 | 0.000 | 0.000 | 0.853 | **Pk Hr Factor** | 0.883 | 0.897 | 0.000 | 0.000 | 0.876 |

Prepared by NDS/ATD

# VOLUME

Cedar St N/o Ferro Dr

**Day:** Friday
**Date:** 3/21/2014

**City:** Ventura
**Project #:** CA14_5163_001

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,589 | 3,884 | 0 | 0 | 7,473 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 12 | | 2 | | | | | | 14 | | 12:00 | 62 | | 39 | | | | | | 101 | |
| 00:15 | 10 | | 4 | | | | | | 14 | | 12:15 | 62 | | 52 | | | | | | 114 | |
| 00:30 | 9 | | 4 | | | | | | 13 | | 12:30 | 49 | | 46 | | | | | | 95 | |
| 00:45 | 6 | 37 | 2 | 12 | | | | | 8 | 49 | 12:45 | 57 | 230 | 47 | 184 | | | | | 104 | 414 |
| 01:00 | 3 | | 1 | | | | | | 4 | | 13:00 | 47 | | 52 | | | | | | 99 | |
| 01:15 | 6 | | 3 | | | | | | 9 | | 13:15 | 44 | | 60 | | | | | | 104 | |
| 01:30 | 4 | | 4 | | | | | | 8 | | 13:30 | 55 | | 48 | | | | | | 103 | |
| 01:45 | 5 | 18 | 1 | 9 | | | | | 6 | 27 | 13:45 | 63 | 209 | 55 | 215 | | | | | 118 | 424 |
| 02:00 | 5 | | 3 | | | | | | 8 | | 14:00 | 62 | | 58 | | | | | | 120 | |
| 02:15 | 5 | | 1 | | | | | | 6 | | 14:15 | 57 | | 64 | | | | | | 121 | |
| 02:30 | 2 | | 0 | | | | | | 2 | | 14:30 | 59 | | 72 | | | | | | 131 | |
| 02:45 | 2 | 14 | 2 | 6 | | | | | 4 | 20 | 14:45 | 89 | 267 | 72 | 266 | | | | | 161 | 533 |
| 03:00 | 1 | | 1 | | | | | | 2 | | 15:00 | 69 | | 65 | | | | | | 134 | |
| 03:15 | 1 | | 1 | | | | | | 2 | | 15:15 | 68 | | 68 | | | | | | 136 | |
| 03:30 | 1 | | 0 | | | | | | 1 | | 15:30 | 77 | | 88 | | | | | | 165 | |
| 03:45 | 0 | 3 | 3 | 5 | | | | | 3 | 8 | 15:45 | 81 | 295 | 63 | 284 | | | | | 144 | 579 |
| 04:00 | 1 | | 3 | | | | | | 4 | | 16:00 | 77 | | 92 | | | | | | 169 | |
| 04:15 | 3 | | 8 | | | | | | 11 | | 16:15 | 86 | | 72 | | | | | | 158 | |
| 04:30 | 0 | | 9 | | | | | | 9 | | 16:30 | 84 | | 69 | | | | | | 153 | |
| 04:45 | 1 | 5 | 7 | 27 | | | | | 8 | 32 | 16:45 | 82 | 329 | 86 | 319 | | | | | 168 | 648 |
| 05:00 | 7 | | 10 | | | | | | 17 | | 17:00 | 104 | | 75 | | | | | | 179 | |
| 05:15 | 2 | | 15 | | | | | | 17 | | 17:15 | 74 | | 57 | | | | | | 131 | |
| 05:30 | 8 | | 24 | | | | | | 32 | | 17:30 | 72 | | 72 | | | | | | 144 | |
| 05:45 | 8 | 25 | 32 | 81 | | | | | 40 | 106 | 17:45 | 81 | 331 | 69 | 273 | | | | | 150 | 604 |
| 06:00 | 17 | | 26 | | | | | | 43 | | 18:00 | 78 | | 68 | | | | | | 146 | |
| 06:15 | 12 | | 29 | | | | | | 41 | | 18:15 | 65 | | 56 | | | | | | 121 | |
| 06:30 | 15 | | 52 | | | | | | 67 | | 18:30 | 65 | | 58 | | | | | | 123 | |
| 06:45 | 21 | 65 | 43 | 150 | | | | | 64 | 215 | 18:45 | 60 | 268 | 52 | 234 | | | | | 112 | 502 |
| 07:00 | 25 | | 65 | | | | | | 90 | | 19:00 | 56 | | 56 | | | | | | 112 | |
| 07:15 | 44 | | 146 | | | | | | 190 | | 19:15 | 41 | | 46 | | | | | | 87 | |
| 07:30 | 84 | | 90 | | | | | | 174 | | 19:30 | 55 | | 38 | | | | | | 93 | |
| 07:45 | 41 | 194 | 103 | 404 | | | | | 144 | 598 | 19:45 | 45 | 197 | 45 | 185 | | | | | 90 | 382 |
| 08:00 | 41 | | 76 | | | | | | 117 | | 20:00 | 41 | | 30 | | | | | | 71 | |
| 08:15 | 41 | | 75 | | | | | | 116 | | 20:15 | 51 | | 26 | | | | | | 77 | |
| 08:30 | 31 | | 71 | | | | | | 102 | | 20:30 | 37 | | 35 | | | | | | 72 | |
| 08:45 | 40 | 153 | 64 | 286 | | | | | 104 | 439 | 20:45 | 41 | 170 | 22 | 113 | | | | | 63 | 283 |
| 09:00 | 32 | | 69 | | | | | | 101 | | 21:00 | 34 | | 31 | | | | | | 65 | |
| 09:15 | 33 | | 57 | | | | | | 90 | | 21:15 | 45 | | 29 | | | | | | 74 | |
| 09:30 | 26 | | 49 | | | | | | 75 | | 21:30 | 36 | | 22 | | | | | | 58 | |
| 09:45 | 27 | 118 | 55 | 230 | | | | | 82 | 348 | 21:45 | 44 | 159 | 19 | 101 | | | | | 63 | 260 |
| 10:00 | 35 | | 58 | | | | | | 93 | | 22:00 | 21 | | 20 | | | | | | 41 | |
| 10:15 | 37 | | 41 | | | | | | 78 | | 22:15 | 27 | | 21 | | | | | | 48 | |
| 10:30 | 48 | | 32 | | | | | | 80 | | 22:30 | 30 | | 21 | | | | | | 51 | |
| 10:45 | 36 | 156 | 57 | 188 | | | | | 93 | 344 | 22:45 | 27 | 105 | 7 | 69 | | | | | 34 | 174 |
| 11:00 | 35 | | 57 | | | | | | 92 | | 23:00 | 16 | | 13 | | | | | | 29 | |
| 11:15 | 30 | | 48 | | | | | | 78 | | 23:15 | 30 | | 8 | | | | | | 38 | |
| 11:30 | 41 | | 48 | | | | | | 89 | | 23:30 | 28 | | 6 | | | | | | 34 | |
| 11:45 | 47 | 153 | 47 | 200 | | | | | 94 | 353 | 23:45 | 14 | 88 | 16 | 43 | | | | | 30 | 131 |
| **TOTALS** | | 941 | | 1598 | | | | | | 2539 | **TOTALS** | | 2648 | | 2286 | | | | | | 4934 |
| **SPLIT %** | | 37.1% | | 62.9% | | | | | | 34.0% | **SPLIT %** | | 53.7% | | 46.3% | | | | | | 66.0% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,589 | 3,884 | 0 | 0 | 7,473 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:45 | 07:15 | | | 07:15 | **PM Peak Hour** | 16:15 | 16:00 | | | 16:15 |
| **AM Pk Volume** | 220 | 415 | | | 625 | **PM Pk Volume** | 356 | 319 | | | 658 |
| **Pk Hr Factor** | 0.887 | 0.711 | | | 0.822 | **Pk Hr Factor** | 0.856 | 0.867 | | | 0.919 |
| **7 - 9 Volume** | 347 | 690 | 0 | 0 | 1037 | **4 - 6 Volume** | 660 | 592 | 0 | 0 | 1252 |
| **7 - 9 Peak Hour** | 07:15 | 07:15 | | | 07:15 | **4 - 6 Peak Hour** | 16:15 | 16:00 | | | 16:15 |
| **7 - 9 Pk Volume** | 210 | 415 | 0 | 0 | 625 | **4 - 6 Pk Volume** | 356 | 319 | 0 | 0 | 658 |
| **Pk Hr Factor** | 0.625 | 0.711 | 0.000 | 0.000 | 0.822 | **Pk Hr Factor** | 0.856 | 0.867 | 0.000 | 0.000 | 0.919 |

Prepared by NDS/ATD

# VOLUME

Cedar St N/o Ferro Dr

**Day:** Monday
**Date:** 3/24/2014

**City:** Ventura
**Project #:** CA14_5163_001

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,482 | 3,758 | 0 | 0 | 7,240 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 13 | | 2 | | | | | | 15 | | 12:00 | 52 | | 43 | | | | | | 95 | |
| 00:15 | 12 | | 3 | | | | | | 15 | | 12:15 | 59 | | 39 | | | | | | 98 | |
| 00:30 | 3 | | 4 | | | | | | 7 | | 12:30 | 53 | | 39 | | | | | | 92 | |
| 00:45 | 6 | 34 | 4 | 13 | | | | | 10 | 47 | 12:45 | 54 | 218 | 53 | 174 | | | | | 107 | 392 |
| 01:00 | 5 | | 3 | | | | | | 8 | | 13:00 | 45 | | 60 | | | | | | 105 | |
| 01:15 | 8 | | 7 | | | | | | 15 | | 13:15 | 36 | | 45 | | | | | | 81 | |
| 01:30 | 8 | | 3 | | | | | | 11 | | 13:30 | 43 | | 44 | | | | | | 87 | |
| 01:45 | 8 | 29 | 1 | 14 | | | | | 9 | 43 | 13:45 | 46 | 170 | 55 | 204 | | | | | 101 | 374 |
| 02:00 | 3 | | 0 | | | | | | 3 | | 14:00 | 55 | | 66 | | | | | | 121 | |
| 02:15 | 4 | | 2 | | | | | | 6 | | 14:15 | 54 | | 64 | | | | | | 118 | |
| 02:30 | 2 | | 1 | | | | | | 3 | | 14:30 | 66 | | 88 | | | | | | 154 | |
| 02:45 | 3 | 12 | 1 | 4 | | | | | 4 | 16 | 14:45 | 98 | 273 | 69 | 287 | | | | | 167 | 560 |
| 03:00 | 4 | | 3 | | | | | | 7 | | 15:00 | 72 | | 64 | | | | | | 136 | |
| 03:15 | 2 | | 2 | | | | | | 4 | | 15:15 | 67 | | 69 | | | | | | 136 | |
| 03:30 | 1 | | 1 | | | | | | 2 | | 15:30 | 82 | | 89 | | | | | | 171 | |
| 03:45 | 5 | 12 | 6 | 12 | | | | | 11 | 24 | 15:45 | 89 | 310 | 78 | 300 | | | | | 167 | 610 |
| 04:00 | 2 | | 4 | | | | | | 6 | | 16:00 | 66 | | 78 | | | | | | 144 | |
| 04:15 | 1 | | 4 | | | | | | 5 | | 16:15 | 80 | | 57 | | | | | | 137 | |
| 04:30 | 0 | | 6 | | | | | | 6 | | 16:30 | 89 | | 76 | | | | | | 165 | |
| 04:45 | 1 | 4 | 6 | 20 | | | | | 7 | 24 | 16:45 | 69 | 304 | 89 | 300 | | | | | 158 | 604 |
| 05:00 | 2 | | 4 | | | | | | 6 | | 17:00 | 77 | | 70 | | | | | | 147 | |
| 05:15 | 4 | | 10 | | | | | | 14 | | 17:15 | 76 | | 62 | | | | | | 138 | |
| 05:30 | 10 | | 22 | | | | | | 32 | | 17:30 | 93 | | 70 | | | | | | 163 | |
| 05:45 | 9 | 25 | 30 | 66 | | | | | 39 | 91 | 17:45 | 78 | 324 | 62 | 264 | | | | | 140 | 588 |
| 06:00 | 16 | | 17 | | | | | | 33 | | 18:00 | 82 | | 64 | | | | | | 146 | |
| 06:15 | 13 | | 31 | | | | | | 44 | | 18:15 | 71 | | 55 | | | | | | 126 | |
| 06:30 | 13 | | 27 | | | | | | 40 | | 18:30 | 67 | | 54 | | | | | | 121 | |
| 06:45 | 21 | 63 | 53 | 128 | | | | | 74 | 191 | 18:45 | 52 | 272 | 47 | 220 | | | | | 99 | 492 |
| 07:00 | 21 | | 66 | | | | | | 87 | | 19:00 | 52 | | 51 | | | | | | 103 | |
| 07:15 | 45 | | 164 | | | | | | 209 | | 19:15 | 49 | | 38 | | | | | | 87 | |
| 07:30 | 78 | | 96 | | | | | | 174 | | 19:30 | 60 | | 30 | | | | | | 90 | |
| 07:45 | 50 | 194 | 111 | 437 | | | | | 161 | 631 | 19:45 | 52 | 213 | 32 | 151 | | | | | 84 | 364 |
| 08:00 | 51 | | 79 | | | | | | 130 | | 20:00 | 28 | | 32 | | | | | | 60 | |
| 08:15 | 53 | | 66 | | | | | | 119 | | 20:15 | 38 | | 25 | | | | | | 63 | |
| 08:30 | 43 | | 90 | | | | | | 133 | | 20:30 | 36 | | 14 | | | | | | 50 | |
| 08:45 | 41 | 188 | 84 | 319 | | | | | 125 | 507 | 20:45 | 39 | 141 | 25 | 96 | | | | | 64 | 237 |
| 09:00 | 34 | | 59 | | | | | | 93 | | 21:00 | 43 | | 22 | | | | | | 65 | |
| 09:15 | 31 | | 42 | | | | | | 73 | | 21:15 | 32 | | 21 | | | | | | 53 | |
| 09:30 | 33 | | 48 | | | | | | 81 | | 21:30 | 39 | | 15 | | | | | | 54 | |
| 09:45 | 35 | 133 | 54 | 203 | | | | | 89 | 336 | 21:45 | 26 | 140 | 12 | 70 | | | | | 38 | 210 |
| 10:00 | 25 | | 50 | | | | | | 75 | | 22:00 | 24 | | 17 | | | | | | 41 | |
| 10:15 | 33 | | 46 | | | | | | 79 | | 22:15 | 28 | | 10 | | | | | | 38 | |
| 10:30 | 37 | | 41 | | | | | | 78 | | 22:30 | 20 | | 3 | | | | | | 23 | |
| 10:45 | 31 | 126 | 46 | 183 | | | | | 77 | 309 | 22:45 | 13 | 85 | 9 | 39 | | | | | 22 | 124 |
| 11:00 | 43 | | 42 | | | | | | 85 | | 23:00 | 12 | | 9 | | | | | | 21 | |
| 11:15 | 34 | | 63 | | | | | | 97 | | 23:15 | 11 | | 8 | | | | | | 19 | |
| 11:30 | 44 | | 58 | | | | | | 102 | | 23:30 | 10 | | 3 | | | | | | 13 | |
| 11:45 | 50 | 171 | 65 | 228 | | | | | 115 | 399 | 23:45 | 8 | 41 | 6 | 26 | | | | | 14 | 67 |
| **TOTALS** | | 991 | | 1627 | | | | | | 2618 | **TOTALS** | | 2491 | | 2131 | | | | | | 4622 |
| **SPLIT %** | | 37.9% | | 62.1% | | | | | | 36.2% | **SPLIT %** | | 53.9% | | 46.1% | | | | | | 63.8% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,482 | 3,758 | 0 | 0 | 7,240 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 07:30 | 07:15 | | | 07:15 | **PM Peak Hour** | 17:15 | 15:15 | | | 15:30 |
| **AM Pk Volume** | 232 | 450 | | | 674 | **PM Pk Volume** | 329 | 314 | | | 619 |
| **Pk Hr Factor** | 0.744 | 0.686 | | | 0.806 | **Pk Hr Factor** | 0.884 | 0.882 | | | 0.905 |
| **7 - 9 Volume** | 382 | 756 | 0 | 0 | 1138 | **4 - 6 Volume** | 628 | 564 | 0 | 0 | 1192 |
| **7 - 9 Peak Hour** | 07:30 | 07:15 | | | 07:15 | **4 - 6 Peak Hour** | 17:00 | 16:00 | | | 16:30 |
| **7 - 9 Pk Volume** | 232 | 450 | 0 | 0 | 674 | **4 - 6 Pk Volume** | 324 | 300 | 0 | 0 | 608 |
| **Pk Hr Factor** | 0.744 | 0.686 | 0.000 | 0.000 | 0.806 | **Pk Hr Factor** | 0.871 | 0.843 | 0.000 | 0.000 | 0.921 |

Prepared by NDS/ATD

# VOLUME

Ferro Dr E/o Cedar St

Day: Friday
Date: 3/21/2014

City: Ventura
Project #: CA14_5163_002

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 323 | 354 | 677 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 1 | | 0 | | 1 | | 12:00 | | | 2 | | 7 | | 9 | |
| 00:15 | | | 0 | | 0 | | 0 | | 12:15 | | | 8 | | 1 | | 9 | |
| 00:30 | | | 1 | | 0 | | 1 | | 12:30 | | | 6 | | 5 | | 11 | |
| 00:45 | | | 0 | 2 | 0 | | 0 | 2 | 12:45 | | | 7 | 23 | 1 | 14 | 8 | 37 |
| 01:00 | | | 1 | | 0 | | 1 | | 13:00 | | | 6 | | 11 | | 17 | |
| 01:15 | | | 2 | | 1 | | 3 | | 13:15 | | | 5 | | 4 | | 9 | |
| 01:30 | | | 1 | | 2 | | 3 | | 13:30 | | | 4 | | 9 | | 13 | |
| 01:45 | | | 0 | 4 | 1 | 4 | 1 | 8 | 13:45 | | | 2 | 17 | 1 | 25 | 3 | 42 |
| 02:00 | | | 0 | | 0 | | 0 | | 14:00 | | | 7 | | 3 | | 10 | |
| 02:15 | | | 1 | | 0 | | 1 | | 14:15 | | | 3 | | 6 | | 9 | |
| 02:30 | | | 0 | | 1 | | 1 | | 14:30 | | | 3 | | 2 | | 5 | |
| 02:45 | | | 0 | 1 | 0 | 1 | 0 | 2 | 14:45 | | | 9 | 22 | 9 | 20 | 18 | 42 |
| 03:00 | | | 0 | | 0 | | 0 | | 15:00 | | | 7 | | 6 | | 13 | |
| 03:15 | | | 0 | | 0 | | 0 | | 15:15 | | | 5 | | 6 | | 11 | |
| 03:30 | | | 0 | | 0 | | 0 | | 15:30 | | | 1 | | 9 | | 10 | |
| 03:45 | | | 0 | | 0 | | 0 | | 15:45 | | | 4 | 17 | 3 | 24 | 7 | 41 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 16 | | 4 | | 20 | |
| 04:15 | | | 0 | | 0 | | 0 | | 16:15 | | | 6 | | 6 | | 12 | |
| 04:30 | | | 0 | | 1 | | 1 | | 16:30 | | | 6 | | 4 | | 10 | |
| 04:45 | | | 0 | | 0 | 1 | 0 | 1 | 16:45 | | | 7 | 35 | 6 | 20 | 13 | 55 |
| 05:00 | | | 1 | | 1 | | 2 | | 17:00 | | | 10 | | 8 | | 18 | |
| 05:15 | | | 1 | | 0 | | 1 | | 17:15 | | | 15 | | 10 | | 25 | |
| 05:30 | | | 0 | | 0 | | 0 | | 17:30 | | | 4 | | 6 | | 10 | |
| 05:45 | | | 0 | 2 | 1 | 2 | 1 | 4 | 17:45 | | | 9 | 38 | 9 | 33 | 18 | 71 |
| 06:00 | | | 0 | | 1 | | 1 | | 18:00 | | | 7 | | 9 | | 16 | |
| 06:15 | | | 0 | | 0 | | 0 | | 18:15 | | | 6 | | 9 | | 15 | |
| 06:30 | | | 0 | | 2 | | 2 | | 18:30 | | | 6 | | 6 | | 12 | |
| 06:45 | | | 0 | | 8 | 11 | 8 | 11 | 18:45 | | | 9 | 28 | 6 | 30 | 15 | 58 |
| 07:00 | | | 1 | | 2 | | 3 | | 19:00 | | | 8 | | 15 | | 23 | |
| 07:15 | | | 2 | | 7 | | 9 | | 19:15 | | | 8 | | 3 | | 11 | |
| 07:30 | | | 3 | | 5 | | 8 | | 19:30 | | | 5 | | 9 | | 14 | |
| 07:45 | | | 4 | 10 | 1 | 15 | 5 | 25 | 19:45 | | | 6 | 27 | 8 | 35 | 14 | 62 |
| 08:00 | | | 3 | | 6 | | 9 | | 20:00 | | | 4 | | 2 | | 6 | |
| 08:15 | | | 2 | | 7 | | 9 | | 20:15 | | | 2 | | 3 | | 5 | |
| 08:30 | | | 6 | | 2 | | 8 | | 20:30 | | | 3 | | 1 | | 4 | |
| 08:45 | | | 7 | 18 | 3 | 18 | 10 | 36 | 20:45 | | | 3 | 12 | 6 | 12 | 9 | 24 |
| 09:00 | | | 1 | | 6 | | 7 | | 21:00 | | | 1 | | 7 | | 8 | |
| 09:15 | | | 2 | | 1 | | 3 | | 21:15 | | | 4 | | 6 | | 10 | |
| 09:30 | | | 6 | | 2 | | 8 | | 21:30 | | | 4 | | 3 | | 7 | |
| 09:45 | | | 3 | 12 | 14 | 23 | 17 | 35 | 21:45 | | | 4 | 13 | 3 | 19 | 7 | 32 |
| 10:00 | | | 4 | | 6 | | 10 | | 22:00 | | | 2 | | 2 | | 4 | |
| 10:15 | | | 4 | | 7 | | 11 | | 22:15 | | | 1 | | 0 | | 1 | |
| 10:30 | | | 2 | | 8 | | 10 | | 22:30 | | | 2 | | 0 | | 2 | |
| 10:45 | | | 1 | 11 | 2 | 23 | 3 | 34 | 22:45 | | | 2 | 7 | 1 | 3 | 3 | 10 |
| 11:00 | | | 2 | | 2 | | 4 | | 23:00 | | | 2 | | 1 | | 3 | |
| 11:15 | | | 4 | | 2 | | 6 | | 23:15 | | | 1 | | 1 | | 2 | |
| 11:30 | | | 7 | | 2 | | 9 | | 23:30 | | | 1 | | 3 | | 4 | |
| 11:45 | | | 5 | 18 | 8 | 14 | 13 | 32 | 23:45 | | | 2 | 6 | 2 | 7 | 4 | 13 |
| TOTALS | | | | 78 | | 112 | | 190 | TOTALS | | | | 245 | | 242 | | 487 |
| SPLIT % | | | | 41.1% | | 58.9% | | 28.1% | SPLIT % | | | | 50.3% | | 49.7% | | 71.9% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 323 | 354 | 677 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:30 | 09:45 | 09:45 | PM Peak Hour | | | 16:30 | 18:15 | 17:00 |
| AM Pk Volume | | | 22 | 35 | 48 | PM Pk Volume | | | 38 | 36 | 71 |
| Pk Hr Factor | | | 0.688 | 0.625 | 0.706 | Pk Hr Factor | | | 0.633 | 0.600 | 0.710 |
| 7-9 Volume | 0 | 0 | 28 | 33 | 61 | 4-6 Volume | 0 | 0 | 73 | 53 | 126 |
| 7-9 Peak Hour | | | 08:00 | 07:15 | 08:00 | 4-6 Peak Hour | | | 16:30 | 17:00 | 17:00 |
| 7-9 Pk Volume | 0 | 0 | 18 | 19 | 36 | 4-6 Pk Volume | 0 | 0 | 38 | 33 | 71 |
| Pk Hr Factor | 0.000 | 0.000 | 0.643 | 0.679 | 0.900 | Pk Hr Factor | 0.000 | 0.000 | 0.633 | 0.825 | 0.710 |

Prepared by NDS/ATD

# VOLUME

Ferro Dr E/o Cedar St

Day: Saturday
Date: 3/22/2014

City: Ventura
Project #: CA14_5163_002

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 438 | 563 | 1,001 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 1 | | 3 | | 4 | | 12:00 | | | 13 | | 7 | | 20 | |
| 00:15 | | | 2 | | 0 | | 2 | | 12:15 | | | 7 | | 15 | | 22 | |
| 00:30 | | | 0 | | 0 | | 0 | | 12:30 | | | 7 | | 6 | | 13 | |
| 00:45 | | | 1 | 4 | 1 | 4 | 2 | 8 | 12:45 | | | 11 | 38 | 20 | 48 | 31 | 86 |
| 01:00 | | | 1 | | 1 | | 2 | | 13:00 | | | 8 | | 10 | | 18 | |
| 01:15 | | | 1 | | 1 | | 2 | | 13:15 | | | 5 | | 10 | | 15 | |
| 01:30 | | | 1 | | 2 | | 3 | | 13:30 | | | 11 | | 8 | | 19 | |
| 01:45 | | | 1 | 4 | 1 | 5 | 2 | 9 | 13:45 | | | 14 | 38 | 6 | 34 | 20 | 72 |
| 02:00 | | | 1 | | 2 | | 3 | | 14:00 | | | 4 | | 9 | | 13 | |
| 02:15 | | | 0 | | 0 | | 0 | | 14:15 | | | 14 | | 8 | | 22 | |
| 02:30 | | | 2 | | 2 | | 4 | | 14:30 | | | 4 | | 10 | | 14 | |
| 02:45 | | | 0 | 3 | 0 | 4 | 0 | 7 | 14:45 | | | 6 | 28 | 13 | 40 | 19 | 68 |
| 03:00 | | | 0 | | 1 | | 1 | | 15:00 | | | 18 | | 11 | | 29 | |
| 03:15 | | | 0 | | 0 | | 0 | | 15:15 | | | 3 | | 11 | | 14 | |
| 03:30 | | | 0 | | 0 | | 0 | | 15:30 | | | 10 | | 10 | | 20 | |
| 03:45 | | | 0 | | 0 | 1 | 0 | 1 | 15:45 | | | 8 | 39 | 13 | 45 | 21 | 84 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 8 | | 19 | | 27 | |
| 04:15 | | | 0 | | 0 | | 0 | | 16:15 | | | 6 | | 14 | | 20 | |
| 04:30 | | | 0 | | 0 | | 0 | | 16:30 | | | 14 | | 9 | | 23 | |
| 04:45 | | | 1 | 1 | 1 | 1 | 2 | 2 | 16:45 | | | 9 | 37 | 8 | 50 | 17 | 87 |
| 05:00 | | | 0 | | 0 | | 0 | | 17:00 | | | 12 | | 10 | | 22 | |
| 05:15 | | | 0 | | 1 | | 1 | | 17:15 | | | 15 | | 8 | | 23 | |
| 05:30 | | | 0 | | 0 | | 0 | | 17:30 | | | 10 | | 10 | | 20 | |
| 05:45 | | | 0 | | 0 | 1 | 0 | 1 | 17:45 | | | 8 | 45 | 19 | 47 | 27 | 92 |
| 06:00 | | | 0 | | 0 | | 0 | | 18:00 | | | 6 | | 10 | | 16 | |
| 06:15 | | | 1 | | 0 | | 1 | | 18:15 | | | 6 | | 15 | | 21 | |
| 06:30 | | | 3 | | 3 | | 6 | | 18:30 | | | 9 | | 15 | | 24 | |
| 06:45 | | | 3 | 7 | 0 | 3 | 3 | 10 | 18:45 | | | 9 | 30 | 12 | 52 | 21 | 82 |
| 07:00 | | | 3 | | 2 | | 5 | | 19:00 | | | 5 | | 21 | | 26 | |
| 07:15 | | | 1 | | 2 | | 3 | | 19:15 | | | 8 | | 20 | | 28 | |
| 07:30 | | | 3 | | 2 | | 5 | | 19:30 | | | 8 | | 8 | | 16 | |
| 07:45 | | | 2 | 9 | 4 | 10 | 6 | 19 | 19:45 | | | 7 | 28 | 9 | 58 | 16 | 86 |
| 08:00 | | | 4 | | 3 | | 7 | | 20:00 | | | 1 | | 10 | | 11 | |
| 08:15 | | | 3 | | 4 | | 7 | | 20:15 | | | 2 | | 3 | | 5 | |
| 08:30 | | | 1 | | 4 | | 5 | | 20:30 | | | 6 | | 10 | | 16 | |
| 08:45 | | | 2 | 10 | 3 | 14 | 5 | 24 | 20:45 | | | 4 | 13 | 3 | 26 | 7 | 39 |
| 09:00 | | | 2 | | 5 | | 7 | | 21:00 | | | 5 | | 13 | | 18 | |
| 09:15 | | | 3 | | 6 | | 9 | | 21:15 | | | 4 | | 4 | | 8 | |
| 09:30 | | | 5 | | 5 | | 10 | | 21:30 | | | 4 | | 3 | | 7 | |
| 09:45 | | | 4 | 14 | 5 | 21 | 9 | 35 | 21:45 | | | 9 | 22 | 5 | 25 | 14 | 47 |
| 10:00 | | | 3 | | 7 | | 10 | | 22:00 | | | 3 | | 3 | | 6 | |
| 10:15 | | | 3 | | 11 | | 14 | | 22:15 | | | 3 | | 3 | | 6 | |
| 10:30 | | | 5 | | 4 | | 9 | | 22:30 | | | 0 | | 1 | | 1 | |
| 10:45 | | | 4 | 15 | 5 | 27 | 9 | 42 | 22:45 | | | 4 | 10 | 3 | 10 | 7 | 20 |
| 11:00 | | | 7 | | 11 | | 18 | | 23:00 | | | 1 | | 1 | | 2 | |
| 11:15 | | | 9 | | 7 | | 16 | | 23:15 | | | 2 | | 2 | | 4 | |
| 11:30 | | | 14 | | 8 | | 22 | | 23:30 | | | 1 | | 1 | | 2 | |
| 11:45 | | | 9 | 39 | 7 | 33 | 16 | 72 | 23:45 | | | 0 | 4 | 0 | 4 | 0 | 8 |
| TOTALS | | | | 106 | | 124 | | 230 | TOTALS | | | | 332 | | 439 | | 771 |
| SPLIT % | | | | 46.1% | | 53.9% | | 23.0% | SPLIT % | | | | 43.1% | | 56.9% | | 77.0% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 438 | 563 | 1,001 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:15 | 11:30 | 11:30 | PM Peak Hour | | | 16:30 | 18:30 | 18:30 |
| AM Pk Volume | | | 45 | 37 | 80 | PM Pk Volume | | | 50 | 68 | 99 |
| Pk Hr Factor | | | 0.804 | 0.617 | 0.909 | Pk Hr Factor | | | 0.833 | 0.810 | 0.884 |
| 7 - 9 Volume | 0 | 0 | 19 | 24 | 43 | 4 - 6 Volume | 0 | 0 | 82 | 97 | 179 |
| 7 - 9 Peak Hour | | | 07:30 | 07:45 | 07:30 | 4 - 6 Peak Hour | | | 16:30 | 16:00 | 17:00 |
| 7 - 9 Pk Volume | 0 | 0 | 12 | 15 | 25 | 4 - 6 Pk Volume | 0 | 0 | 50 | 50 | 92 |
| Pk Hr Factor | 0.000 | 0.000 | 0.750 | 0.938 | 0.893 | Pk Hr Factor | 0.000 | 0.000 | 0.833 | 0.658 | 0.852 |

Prepared by NDS/ATD

# VOLUME

Cedar St N/o Ferro Dr

Day: Sunday
Date: 3/23/2014

City: Ventura
Project #: CA14_5163_001

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,873 | 2,899 | 0 | 0 | 5,772 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 28 | | 9 | | | | | | 37 | | 12:00 | 43 | | 78 | | | | | | 121 | |
| 00:15 | 13 | | 5 | | | | | | 18 | | 12:15 | 45 | | 74 | | | | | | 119 | |
| 00:30 | 19 | | 5 | | | | | | 24 | | 12:30 | 48 | | 55 | | | | | | 103 | |
| 00:45 | 8 | 68 | 8 | 27 | | | | | 16 | 95 | 12:45 | 66 | 202 | 70 | 277 | | | | | 136 | 479 |
| 01:00 | 15 | | 5 | | | | | | 20 | | 13:00 | 55 | | 68 | | | | | | 123 | |
| 01:15 | 8 | | 4 | | | | | | 12 | | 13:15 | 50 | | 55 | | | | | | 105 | |
| 01:30 | 15 | | 3 | | | | | | 18 | | 13:30 | 42 | | 53 | | | | | | 95 | |
| 01:45 | 10 | 48 | 5 | 17 | | | | | 15 | 65 | 13:45 | 67 | 214 | 55 | 231 | | | | | 122 | 445 |
| 02:00 | 6 | | 4 | | | | | | 10 | | 14:00 | 65 | | 56 | | | | | | 121 | |
| 02:15 | 11 | | 3 | | | | | | 14 | | 14:15 | 73 | | 44 | | | | | | 117 | |
| 02:30 | 5 | | 0 | | | | | | 5 | | 14:30 | 59 | | 46 | | | | | | 105 | |
| 02:45 | 3 | 25 | 1 | 8 | | | | | 4 | 33 | 14:45 | 68 | 265 | 47 | 193 | | | | | 115 | 458 |
| 03:00 | 5 | | 5 | | | | | | 10 | | 15:00 | 63 | | 50 | | | | | | 113 | |
| 03:15 | 8 | | 1 | | | | | | 9 | | 15:15 | 76 | | 53 | | | | | | 129 | |
| 03:30 | 6 | | 4 | | | | | | 10 | | 15:30 | 79 | | 51 | | | | | | 130 | |
| 03:45 | 7 | 26 | 1 | 11 | | | | | 8 | 37 | 15:45 | 56 | 274 | 55 | 209 | | | | | 111 | 483 |
| 04:00 | 3 | | 2 | | | | | | 5 | | 16:00 | 52 | | 66 | | | | | | 118 | |
| 04:15 | 1 | | 4 | | | | | | 5 | | 16:15 | 69 | | 60 | | | | | | 129 | |
| 04:30 | 5 | | 7 | | | | | | 12 | | 16:30 | 53 | | 38 | | | | | | 91 | |
| 04:45 | 0 | 9 | 4 | 17 | | | | | 4 | 26 | 16:45 | 62 | 236 | 53 | 217 | | | | | 115 | 453 |
| 05:00 | 5 | | 0 | | | | | | 5 | | 17:00 | 60 | | 57 | | | | | | 117 | |
| 05:15 | 2 | | 4 | | | | | | 6 | | 17:15 | 39 | | 49 | | | | | | 88 | |
| 05:30 | 2 | | 4 | | | | | | 6 | | 17:30 | 50 | | 33 | | | | | | 83 | |
| 05:45 | 2 | 11 | 14 | 22 | | | | | 16 | 33 | 17:45 | 48 | 197 | 39 | 178 | | | | | 87 | 375 |
| 06:00 | 8 | | 11 | | | | | | 19 | | 18:00 | 51 | | 39 | | | | | | 90 | |
| 06:15 | 2 | | 10 | | | | | | 12 | | 18:15 | 44 | | 39 | | | | | | 83 | |
| 06:30 | 8 | | 17 | | | | | | 25 | | 18:30 | 55 | | 41 | | | | | | 96 | |
| 06:45 | 5 | 23 | 26 | 64 | | | | | 31 | 87 | 18:45 | 33 | 183 | 39 | 158 | | | | | 72 | 341 |
| 07:00 | 7 | | 24 | | | | | | 31 | | 19:00 | 43 | | 31 | | | | | | 74 | |
| 07:15 | 11 | | 20 | | | | | | 31 | | 19:15 | 41 | | 22 | | | | | | 63 | |
| 07:30 | 18 | | 30 | | | | | | 48 | | 19:30 | 52 | | 36 | | | | | | 88 | |
| 07:45 | 9 | 45 | 47 | 121 | | | | | 56 | 166 | 19:45 | 45 | 181 | 28 | 117 | | | | | 73 | 298 |
| 08:00 | 17 | | 37 | | | | | | 54 | | 20:00 | 37 | | 25 | | | | | | 62 | |
| 08:15 | 18 | | 23 | | | | | | 41 | | 20:15 | 38 | | 26 | | | | | | 64 | |
| 08:30 | 10 | | 34 | | | | | | 44 | | 20:30 | 39 | | 21 | | | | | | 60 | |
| 08:45 | 25 | 70 | 40 | 134 | | | | | 65 | 204 | 20:45 | 20 | 134 | 17 | 89 | | | | | 37 | 223 |
| 09:00 | 19 | | 30 | | | | | | 49 | | 21:00 | 21 | | 16 | | | | | | 37 | |
| 09:15 | 14 | | 39 | | | | | | 53 | | 21:15 | 20 | | 14 | | | | | | 34 | |
| 09:30 | 29 | | 54 | | | | | | 83 | | 21:30 | 30 | | 15 | | | | | | 45 | |
| 09:45 | 29 | 91 | 41 | 164 | | | | | 70 | 255 | 21:45 | 30 | 101 | 15 | 60 | | | | | 45 | 161 |
| 10:00 | 31 | | 58 | | | | | | 89 | | 22:00 | 26 | | 15 | | | | | | 41 | |
| 10:15 | 32 | | 82 | | | | | | 114 | | 22:15 | 14 | | 9 | | | | | | 23 | |
| 10:30 | 39 | | 76 | | | | | | 115 | | 22:30 | 22 | | 11 | | | | | | 33 | |
| 10:45 | 42 | 144 | 63 | 279 | | | | | 105 | 423 | 22:45 | 23 | 85 | 10 | 45 | | | | | 33 | 130 |
| 11:00 | 37 | | 44 | | | | | | 81 | | 23:00 | 13 | | 8 | | | | | | 21 | |
| 11:15 | 44 | | 62 | | | | | | 106 | | 23:15 | 9 | | 4 | | | | | | 13 | |
| 11:30 | 59 | | 69 | | | | | | 128 | | 23:30 | 14 | | 3 | | | | | | 17 | |
| 11:45 | 56 | 196 | 63 | 238 | | | | | 119 | 434 | 23:45 | 9 | 45 | 8 | 23 | | | | | 17 | 68 |
| TOTALS | | 756 | | 1102 | | | | | | 1858 | TOTALS | | 2117 | | 1797 | | | | | | 3914 |
| SPLIT % | | 40.7% | | 59.3% | | | | | | 32.2% | SPLIT % | | 54.1% | | 45.9% | | | | | | 67.8% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,873 | 2,899 | 0 | 0 | 5,772 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | 11:30 | 11:30 | | | 11:30 | PM Peak Hour | 14:45 | 12:00 | | | 15:15 |
| AM Pk Volume | 203 | 284 | | | 487 | PM Pk Volume | 286 | 277 | | | 488 |
| Pk Hr Factor | 0.860 | 0.910 | | | 0.951 | Pk Hr Factor | 0.905 | 0.888 | | | 0.938 |
| 7 - 9 Volume | 115 | 255 | 0 | 0 | 370 | 4 - 6 Volume | 433 | 395 | 0 | 0 | 828 |
| 7 - 9 Peak Hour | 08:00 | 07:45 | | | 08:00 | 4 - 6 Peak Hour | 16:15 | 16:00 | | | 16:00 |
| 7 - 9 Pk Volume | 70 | 141 | 0 | 0 | 204 | 4 - 6 Pk Volume | 244 | 217 | 0 | 0 | 453 |
| Pk Hr Factor | 0.700 | 0.750 | 0.000 | 0.000 | 0.785 | Pk Hr Factor | 0.884 | 0.822 | 0.000 | 0.000 | 0.878 |

Prepared by NDS/ATD

# VOLUME

Ferro Dr E/o Cedar St

**Day:** Sunday
**Date:** 3/23/2014

**City:** Ventura
**Project #:** CA14_5163_002

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 442 | 506 | 948 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 1 | | 1 | | 2 | | 12:00 | | | 7 | | 7 | | 14 | |
| 00:15 | | | 0 | | 0 | | 0 | | 12:15 | | | 9 | | 7 | | 16 | |
| 00:30 | | | 1 | | 0 | | 1 | | 12:30 | | | 10 | | 10 | | 20 | |
| 00:45 | | | 1 | 3 | 1 | 2 | 2 | 5 | 12:45 | | | 7 | 33 | 13 | 37 | 20 | 70 |
| 01:00 | | | 0 | | 0 | | 0 | | 13:00 | | | 7 | | 4 | | 11 | |
| 01:15 | | | 1 | | 0 | | 1 | | 13:15 | | | 10 | | 9 | | 19 | |
| 01:30 | | | 0 | | 0 | | 0 | | 13:30 | | | 12 | | 13 | | 25 | |
| 01:45 | | | 0 | 1 | 0 | | 0 | 1 | 13:45 | | | 7 | 36 | 21 | 47 | 28 | 83 |
| 02:00 | | | 1 | | 1 | | 2 | | 14:00 | | | 11 | | 12 | | 23 | |
| 02:15 | | | 1 | | 1 | | 2 | | 14:15 | | | 10 | | 11 | | 21 | |
| 02:30 | | | 0 | | 0 | | 0 | | 14:30 | | | 11 | | 10 | | 21 | |
| 02:45 | | | 0 | 2 | 0 | 2 | 0 | 4 | 14:45 | | | 9 | 41 | 10 | 43 | 19 | 84 |
| 03:00 | | | 1 | | 0 | | 1 | | 15:00 | | | 12 | | 11 | | 23 | |
| 03:15 | | | 0 | | 1 | | 1 | | 15:15 | | | 7 | | 9 | | 16 | |
| 03:30 | | | 0 | | 0 | | 0 | | 15:30 | | | 13 | | 18 | | 31 | |
| 03:45 | | | 0 | 1 | 0 | 1 | 0 | 2 | 15:45 | | | 11 | 43 | 12 | 50 | 23 | 93 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 7 | | 11 | | 18 | |
| 04:15 | | | 1 | | 1 | | 2 | | 16:15 | | | 9 | | 8 | | 17 | |
| 04:30 | | | 0 | | 0 | | 0 | | 16:30 | | | 11 | | 13 | | 24 | |
| 04:45 | | | 0 | 1 | 0 | 1 | 0 | 2 | 16:45 | | | 3 | 30 | 11 | 43 | 14 | 73 |
| 05:00 | | | 0 | | 1 | | 1 | | 17:00 | | | 8 | | 12 | | 20 | |
| 05:15 | | | 0 | | 0 | | 0 | | 17:15 | | | 14 | | 6 | | 20 | |
| 05:30 | | | 0 | | 0 | | 0 | | 17:30 | | | 6 | | 10 | | 16 | |
| 05:45 | | | 0 | | 0 | 1 | 0 | 1 | 17:45 | | | 12 | 40 | 9 | 37 | 21 | 77 |
| 06:00 | | | 1 | | 2 | | 3 | | 18:00 | | | 17 | | 14 | | 31 | |
| 06:15 | | | 0 | | 0 | | 0 | | 18:15 | | | 8 | | 11 | | 19 | |
| 06:30 | | | 0 | | 1 | | 1 | | 18:30 | | | 15 | | 12 | | 27 | |
| 06:45 | | | 2 | 3 | 1 | 4 | 3 | 7 | 18:45 | | | 16 | 56 | 12 | 49 | 28 | 105 |
| 07:00 | | | 3 | | 1 | | 4 | | 19:00 | | | 7 | | 14 | | 21 | |
| 07:15 | | | 0 | | 3 | | 3 | | 19:15 | | | 13 | | 26 | | 39 | |
| 07:30 | | | 1 | | 2 | | 3 | | 19:30 | | | 10 | | 10 | | 20 | |
| 07:45 | | | 2 | 6 | 2 | 8 | 4 | 14 | 19:45 | | | 9 | 39 | 7 | 57 | 16 | 96 |
| 08:00 | | | 5 | | 1 | | 6 | | 20:00 | | | 6 | | 5 | | 11 | |
| 08:15 | | | 1 | | 4 | | 5 | | 20:15 | | | 8 | | 8 | | 16 | |
| 08:30 | | | 0 | | 1 | | 1 | | 20:30 | | | 3 | | 11 | | 14 | |
| 08:45 | | | 4 | 10 | 4 | 10 | 8 | 20 | 20:45 | | | 1 | 18 | 3 | 27 | 4 | 45 |
| 09:00 | | | 2 | | 5 | | 7 | | 21:00 | | | 1 | | 9 | | 10 | |
| 09:15 | | | 3 | | 5 | | 8 | | 21:15 | | | 3 | | 2 | | 5 | |
| 09:30 | | | 1 | | 2 | | 3 | | 21:30 | | | 2 | | 1 | | 3 | |
| 09:45 | | | 8 | 14 | 2 | 14 | 10 | 28 | 21:45 | | | 1 | 7 | 2 | 14 | 3 | 21 |
| 10:00 | | | 3 | | 6 | | 9 | | 22:00 | | | 1 | | 0 | | 1 | |
| 10:15 | | | 6 | | 5 | | 11 | | 22:15 | | | 0 | | 0 | | 0 | |
| 10:30 | | | 5 | | 5 | | 10 | | 22:30 | | | 0 | | 1 | | 1 | |
| 10:45 | | | 7 | 21 | 6 | 22 | 13 | 43 | 22:45 | | | 2 | 3 | 1 | 2 | 3 | 5 |
| 11:00 | | | 14 | | 10 | | 24 | | 23:00 | | | 1 | | 0 | | 1 | |
| 11:15 | | | 5 | | 5 | | 10 | | 23:15 | | | 1 | | 3 | | 4 | |
| 11:30 | | | 1 | | 5 | | 6 | | 23:30 | | | 1 | | 0 | | 1 | |
| 11:45 | | | 11 | 31 | 11 | 31 | 22 | 62 | 23:45 | | | 0 | 3 | 1 | 4 | 1 | 7 |
| **TOTALS** | | | | 93 | | 96 | | 189 | **TOTALS** | | | | 349 | | 410 | | 759 |
| **SPLIT %** | | | | 49.2% | | 50.8% | | 19.9% | **SPLIT %** | | | | 46.0% | | 54.0% | | 80.1% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 442 | 506 | 948 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 11:45 | 11:45 | 11:45 | **PM Peak Hour** | | | 18:00 | 18:30 | 18:30 |
| **AM Pk Volume** | | | 37 | 35 | 72 | **PM Pk Volume** | | | 56 | 64 | 115 |
| **Pk Hr Factor** | | | 0.841 | 0.795 | 0.818 | **Pk Hr Factor** | | | 0.824 | 0.615 | 0.737 |
| **7 - 9 Volume** | 0 | 0 | 16 | 18 | 34 | **4 - 6 Volume** | 0 | 0 | 70 | 80 | 150 |
| **7 - 9 Peak Hour** | | | 08:00 | 08:00 | 08:00 | **4 - 6 Peak Hour** | | | 17:00 | 16:15 | 16:30 |
| **7 - 9 Pk Volume** | 0 | 0 | 10 | 10 | 20 | **4 - 6 Pk Volume** | 0 | 0 | 40 | 44 | 78 |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.500 | 0.625 | 0.625 | **Pk Hr Factor** | 0.000 | 0.000 | 0.714 | 0.846 | 0.813 |

Prepared by NDS/ATD

# VOLUME

Ferro Dr E/o Cedar St

**Day:** Monday
**Date:** 3/24/2014

**City:** Ventura
**Project #:** CA14_5163_002

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 340 | 388 | 728 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 0 | | 0 | | 0 | | 12:00 | | | 5 | | 2 | | 7 | |
| 00:15 | | | 0 | | 0 | | 0 | | 12:15 | | | 3 | | 8 | | 11 | |
| 00:30 | | | 1 | | 0 | | 1 | | 12:30 | | | 6 | | 9 | | 15 | |
| 00:45 | | | 0 | 1 | 0 | | 0 | 1 | 12:45 | | | 5 | 19 | 8 | 27 | 13 | 46 |
| 01:00 | | | 1 | | 0 | | 1 | | 13:00 | | | 7 | | 8 | | 15 | |
| 01:15 | | | 0 | | 1 | | 1 | | 13:15 | | | 8 | | 8 | | 16 | |
| 01:30 | | | 0 | | 0 | | 0 | | 13:30 | | | 4 | | 7 | | 11 | |
| 01:45 | | | 1 | 2 | 0 | 1 | 1 | 3 | 13:45 | | | 7 | 26 | 6 | 29 | 13 | 55 |
| 02:00 | | | 0 | | 1 | | 1 | | 14:00 | | | 6 | | 7 | | 13 | |
| 02:15 | | | 1 | | 0 | | 1 | | 14:15 | | | 8 | | 8 | | 16 | |
| 02:30 | | | 0 | | 0 | | 0 | | 14:30 | | | 6 | | 8 | | 14 | |
| 02:45 | | | 0 | 1 | 0 | 1 | 0 | 2 | 14:45 | | | 10 | 30 | 13 | 36 | 23 | 66 |
| 03:00 | | | 1 | | 0 | | 1 | | 15:00 | | | 6 | | 3 | | 9 | |
| 03:15 | | | 0 | | 0 | | 0 | | 15:15 | | | 9 | | 6 | | 15 | |
| 03:30 | | | 0 | | 0 | | 0 | | 15:30 | | | 10 | | 11 | | 21 | |
| 03:45 | | | 0 | 1 | 0 | | 0 | 1 | 15:45 | | | 4 | 29 | 12 | 32 | 16 | 61 |
| 04:00 | | | 1 | | 1 | | 2 | | 16:00 | | | 6 | | 5 | | 11 | |
| 04:15 | | | 0 | | 0 | | 0 | | 16:15 | | | 5 | | 8 | | 13 | |
| 04:30 | | | 0 | | 0 | | 0 | | 16:30 | | | 8 | | 11 | | 19 | |
| 04:45 | | | 0 | 1 | 0 | 1 | 0 | 2 | 16:45 | | | 8 | 27 | 6 | 30 | 14 | 57 |
| 05:00 | | | 0 | | 0 | | 0 | | 17:00 | | | 7 | | 10 | | 17 | |
| 05:15 | | | 0 | | 0 | | 0 | | 17:15 | | | 6 | | 6 | | 12 | |
| 05:30 | | | 0 | | 0 | | 0 | | 17:30 | | | 9 | | 8 | | 17 | |
| 05:45 | | | 0 | | 1 | 1 | 1 | 1 | 17:45 | | | 9 | 31 | 7 | 31 | 16 | 62 |
| 06:00 | | | 0 | | 1 | | 1 | | 18:00 | | | 10 | | 13 | | 23 | |
| 06:15 | | | 0 | | 1 | | 1 | | 18:15 | | | 4 | | 7 | | 11 | |
| 06:30 | | | 1 | | 0 | | 1 | | 18:30 | | | 13 | | 8 | | 21 | |
| 06:45 | | | 0 | 1 | 2 | 4 | 2 | 5 | 18:45 | | | 7 | 34 | 9 | 37 | 16 | 71 |
| 07:00 | | | 1 | | 2 | | 3 | | 19:00 | | | 11 | | 3 | | 14 | |
| 07:15 | | | 3 | | 5 | | 8 | | 19:15 | | | 3 | | 9 | | 12 | |
| 07:30 | | | 1 | | 6 | | 7 | | 19:30 | | | 7 | | 12 | | 19 | |
| 07:45 | | | 0 | 5 | 4 | 17 | 4 | 22 | 19:45 | | | 4 | 25 | 6 | 30 | 10 | 55 |
| 08:00 | | | 3 | | 4 | | 7 | | 20:00 | | | 6 | | 2 | | 8 | |
| 08:15 | | | 3 | | 6 | | 9 | | 20:15 | | | 7 | | 6 | | 13 | |
| 08:30 | | | 5 | | 4 | | 9 | | 20:30 | | | 1 | | 3 | | 4 | |
| 08:45 | | | 4 | 15 | 2 | 16 | 6 | 31 | 20:45 | | | 1 | 15 | 2 | 13 | 3 | 28 |
| 09:00 | | | 5 | | 4 | | 9 | | 21:00 | | | 3 | | 7 | | 10 | |
| 09:15 | | | 2 | | 5 | | 7 | | 21:15 | | | 4 | | 1 | | 5 | |
| 09:30 | | | 1 | | 6 | | 7 | | 21:30 | | | 4 | | 2 | | 6 | |
| 09:45 | | | 3 | 11 | 2 | 17 | 5 | 28 | 21:45 | | | 4 | 15 | 2 | 12 | 6 | 27 |
| 10:00 | | | 4 | | 0 | | 4 | | 22:00 | | | 0 | | 1 | | 1 | |
| 10:15 | | | 1 | | 8 | | 9 | | 22:15 | | | 4 | | 2 | | 6 | |
| 10:30 | | | 6 | | 7 | | 13 | | 22:30 | | | 2 | | 4 | | 6 | |
| 10:45 | | | 3 | 14 | 3 | 18 | 6 | 32 | 22:45 | | | 0 | 6 | 1 | 8 | 1 | 14 |
| 11:00 | | | 3 | | 5 | | 8 | | 23:00 | | | 0 | | 0 | | 0 | |
| 11:15 | | | 7 | | 6 | | 13 | | 23:15 | | | 0 | | 0 | | 0 | |
| 11:30 | | | 9 | | 6 | | 15 | | 23:30 | | | 0 | | 0 | | 0 | |
| 11:45 | | | 10 | 29 | 8 | 25 | 18 | 54 | 23:45 | | | 2 | 2 | 2 | 2 | 4 | 4 |
| **TOTALS** | | | | **81** | | **101** | | **182** | **TOTALS** | | | | **259** | | **287** | | **546** |
| **SPLIT %** | | | | **44.5%** | | **55.5%** | | **25.0%** | **SPLIT %** | | | | **47.4%** | | **52.6%** | | **75.0%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 340 | 388 | 728 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | **11:15** | **11:45** | **11:00** | **PM Peak Hour** | | | **17:45** | **18:00** | **17:45** |
| **AM Pk Volume** | | | **31** | **27** | **54** | **PM Pk Volume** | | | **36** | **37** | **71** |
| **Pk Hr Factor** | | | **0.775** | **0.750** | **0.750** | **Pk Hr Factor** | | | **0.692** | **0.712** | **0.772** |
| **7 - 9 Volume** | 0 | 0 | **20** | **33** | **53** | **4 - 6 Volume** | 0 | 0 | **58** | **61** | **119** |
| **7 - 9 Peak Hour** | | | **08:00** | **07:30** | **08:00** | **4 - 6 Peak Hour** | | | **17:00** | **16:15** | **16:15** |
| **7 - 9 Pk Volume** | 0 | 0 | **15** | **20** | **31** | **4 - 6 Pk Volume** | 0 | 0 | **31** | **35** | **63** |
| **Pk Hr Factor** | 0.000 | 0.000 | **0.750** | **0.833** | **0.861** | **Pk Hr Factor** | 0.000 | 0.000 | **0.861** | **0.795** | **0.829** |

Prepared by NDS/ATD

# VOLUME

Poli St E/o Cedar St

Day: Friday
Date: 3/21/2014

City: Ventura
Project #: CA14_5163_003

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,794 | 3,788 | 8,582 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 5 | | 14 | | 19 | | 12:00 | | | 58 | | 61 | | 119 | |
| 00:15 | | | 6 | | 10 | | 16 | | 12:15 | | | 60 | | 68 | | 128 | |
| 00:30 | | | 4 | | 9 | | 13 | | 12:30 | | | 49 | | 52 | | 101 | |
| 00:45 | | | 1 | 16 | 8 | 41 | 9 | 57 | 12:45 | | | 55 | 222 | 59 | 240 | 114 | 462 |
| 01:00 | | | 2 | | 4 | | 6 | | 13:00 | | | 69 | | 48 | | 117 | |
| 01:15 | | | 3 | | 7 | | 10 | | 13:15 | | | 72 | | 51 | | 123 | |
| 01:30 | | | 3 | | 2 | | 5 | | 13:30 | | | 74 | | 53 | | 127 | |
| 01:45 | | | 6 | 14 | 5 | 18 | 11 | 32 | 13:45 | | | 62 | 277 | 63 | 215 | 125 | 492 |
| 02:00 | | | 4 | | 5 | | 9 | | 14:00 | | | 73 | | 67 | | 140 | |
| 02:15 | | | 1 | | 5 | | 6 | | 14:15 | | | 71 | | 55 | | 126 | |
| 02:30 | | | 1 | | 3 | | 4 | | 14:30 | | | 81 | | 64 | | 145 | |
| 02:45 | | | 1 | 7 | 2 | 15 | 3 | 22 | 14:45 | | | 82 | 307 | 91 | 277 | 173 | 584 |
| 03:00 | | | 2 | | 1 | | 3 | | 15:00 | | | 73 | | 72 | | 145 | |
| 03:15 | | | 1 | | 1 | | 2 | | 15:15 | | | 85 | | 71 | | 156 | |
| 03:30 | | | 1 | | 1 | | 2 | | 15:30 | | | 105 | | 74 | | 179 | |
| 03:45 | | | 3 | 7 | 0 | 3 | 3 | 10 | 15:45 | | | 77 | 340 | 89 | 306 | 166 | 646 |
| 04:00 | | | 3 | | 1 | | 4 | | 16:00 | | | 101 | | 86 | | 187 | |
| 04:15 | | | 10 | | 3 | | 13 | | 16:15 | | | 85 | | 89 | | 174 | |
| 04:30 | | | 11 | | 0 | | 11 | | 16:30 | | | 86 | | 92 | | 178 | |
| 04:45 | | | 7 | 31 | 1 | 5 | 8 | 36 | 16:45 | | | 106 | 378 | 84 | 351 | 190 | 729 |
| 05:00 | | | 9 | | 6 | | 15 | | 17:00 | | | 88 | | 111 | | 199 | |
| 05:15 | | | 15 | | 3 | | 18 | | 17:15 | | | 71 | | 84 | | 155 | |
| 05:30 | | | 26 | | 7 | | 33 | | 17:30 | | | 87 | | 71 | | 158 | |
| 05:45 | | | 42 | 92 | 9 | 25 | 51 | 117 | 17:45 | | | 90 | 336 | 84 | 350 | 174 | 686 |
| 06:00 | | | 33 | | 16 | | 49 | | 18:00 | | | 82 | | 91 | | 173 | |
| 06:15 | | | 31 | | 12 | | 43 | | 18:15 | | | 83 | | 68 | | 151 | |
| 06:30 | | | 55 | | 13 | | 68 | | 18:30 | | | 78 | | 71 | | 149 | |
| 06:45 | | | 55 | 174 | 18 | 59 | 73 | 233 | 18:45 | | | 65 | 308 | 66 | 296 | 131 | 604 |
| 07:00 | | | 76 | | 24 | | 100 | | 19:00 | | | 83 | | 61 | | 144 | |
| 07:15 | | | 178 | | 45 | | 223 | | 19:15 | | | 57 | | 46 | | 103 | |
| 07:30 | | | 112 | | 88 | | 200 | | 19:30 | | | 46 | | 59 | | 105 | |
| 07:45 | | | 121 | 487 | 44 | 201 | 165 | 688 | 19:45 | | | 65 | 251 | 53 | 219 | 118 | 470 |
| 08:00 | | | 95 | | 43 | | 138 | | 20:00 | | | 38 | | 43 | | 81 | |
| 08:15 | | | 87 | | 40 | | 127 | | 20:15 | | | 31 | | 53 | | 84 | |
| 08:30 | | | 76 | | 31 | | 107 | | 20:30 | | | 47 | | 42 | | 89 | |
| 08:45 | | | 84 | 342 | 46 | 160 | 130 | 502 | 20:45 | | | 31 | 147 | 45 | 183 | 76 | 330 |
| 09:00 | | | 92 | | 31 | | 123 | | 21:00 | | | 48 | | 38 | | 86 | |
| 09:15 | | | 70 | | 36 | | 106 | | 21:15 | | | 41 | | 47 | | 88 | |
| 09:30 | | | 63 | | 27 | | 90 | | 21:30 | | | 29 | | 39 | | 68 | |
| 09:45 | | | 71 | 296 | 28 | 122 | 99 | 418 | 21:45 | | | 29 | 147 | 51 | 175 | 80 | 322 |
| 10:00 | | | 69 | | 36 | | 105 | | 22:00 | | | 20 | | 22 | | 42 | |
| 10:15 | | | 50 | | 33 | | 83 | | 22:15 | | | 32 | | 29 | | 61 | |
| 10:30 | | | 53 | | 44 | | 97 | | 22:30 | | | 22 | | 36 | | 58 | |
| 10:45 | | | 62 | 234 | 36 | 149 | 98 | 383 | 22:45 | | | 13 | 87 | 31 | 118 | 44 | 205 |
| 11:00 | | | 68 | | 37 | | 105 | | 23:00 | | | 14 | | 18 | | 32 | |
| 11:15 | | | 57 | | 32 | | 89 | | 23:15 | | | 10 | | 29 | | 39 | |
| 11:30 | | | 61 | | 47 | | 108 | | 23:30 | | | 11 | | 29 | | 40 | |
| 11:45 | | | 53 | 239 | 52 | 168 | 105 | 407 | 23:45 | | | 20 | 55 | 16 | 92 | 36 | 147 |
| TOTALS | | | | 1939 | | 966 | | 2905 | TOTALS | | | | 2855 | | 2822 | | 5677 |
| SPLIT % | | | | 66.7% | | 33.3% | | 33.8% | SPLIT % | | | | 50.3% | | 49.7% | | 66.2% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,794 | 3,788 | 8,582 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:15 | 11:45 | 07:15 | PM Peak Hour | | | 16:00 | 16:15 | 16:15 |
| AM Pk Volume | | | 506 | 233 | 726 | PM Pk Volume | | | 378 | 376 | 741 |
| Pk Hr Factor | | | 0.711 | 0.857 | 0.814 | Pk Hr Factor | | | 0.892 | 0.847 | 0.931 |
| 7 - 9 Volume | 0 | 0 | 829 | 361 | 1190 | 4 - 6 Volume | 0 | 0 | 714 | 701 | 1415 |
| 7 - 9 Peak Hour | | | 07:15 | 07:15 | 07:15 | 4 - 6 Peak Hour | | | 16:00 | 16:15 | 16:15 |
| 7 - 9 Pk Volume | 0 | 0 | 506 | 220 | 726 | 4 - 6 Pk Volume | 0 | 0 | 378 | 376 | 741 |
| Pk Hr Factor | 0.000 | 0.000 | 0.711 | 0.625 | 0.814 | Pk Hr Factor | 0.000 | 0.000 | 0.892 | 0.847 | 0.931 |

Prepared by NDS/ATD

# VOLUME

Poli St E/o Cedar St

Day: Sunday
Date: 3/23/2014

City: Ventura
Project #: CA14_5163_003

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,662 | 3,116 | 6,778 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 12 | | 31 | | 43 | | 12:00 | | | 89 | | 56 | | 145 | |
| 00:15 | | | 6 | | 12 | | 18 | | 12:15 | | | 99 | | 49 | | 148 | |
| 00:30 | | | 9 | | 20 | | 29 | | 12:30 | | | 73 | | 54 | | 127 | |
| 00:45 | | | 7 | 34 | 7 | 70 | 14 | 104 | 12:45 | | | 82 | 343 | 71 | 230 | 153 | 573 |
| 01:00 | | | 6 | | 14 | | 20 | | 13:00 | | | 75 | | 60 | | 135 | |
| 01:15 | | | 3 | | 8 | | 11 | | 13:15 | | | 72 | | 50 | | 122 | |
| 01:30 | | | 5 | | 15 | | 20 | | 13:30 | | | 72 | | 47 | | 119 | |
| 01:45 | | | 5 | 19 | 10 | 47 | 15 | 66 | 13:45 | | | 86 | 305 | 67 | 224 | 153 | 529 |
| 02:00 | | | 4 | | 7 | | 11 | | 14:00 | | | 73 | | 67 | | 140 | |
| 02:15 | | | 2 | | 12 | | 14 | | 14:15 | | | 68 | | 82 | | 150 | |
| 02:30 | | | 3 | | 5 | | 8 | | 14:30 | | | 58 | | 63 | | 121 | |
| 02:45 | | | 3 | 12 | 3 | 27 | 6 | 39 | 14:45 | | | 63 | 262 | 74 | 286 | 137 | 548 |
| 03:00 | | | 5 | | 8 | | 13 | | 15:00 | | | 71 | | 75 | | 146 | |
| 03:15 | | | 1 | | 8 | | 9 | | 15:15 | | | 67 | | 78 | | 145 | |
| 03:30 | | | 4 | | 6 | | 10 | | 15:30 | | | 74 | | 85 | | 159 | |
| 03:45 | | | 1 | 11 | 8 | 30 | 9 | 41 | 15:45 | | | 68 | 280 | 64 | 302 | 132 | 582 |
| 04:00 | | | 2 | | 3 | | 5 | | 16:00 | | | 78 | | 52 | | 130 | |
| 04:15 | | | 4 | | 0 | | 4 | | 16:15 | | | 72 | | 72 | | 144 | |
| 04:30 | | | 5 | | 3 | | 8 | | 16:30 | | | 63 | | 55 | | 118 | |
| 04:45 | | | 4 | 15 | 0 | 6 | 4 | 21 | 16:45 | | | 69 | 282 | 64 | 243 | 133 | 525 |
| 05:00 | | | 1 | | 5 | | 6 | | 17:00 | | | 74 | | 63 | | 137 | |
| 05:15 | | | 4 | | 2 | | 6 | | 17:15 | | | 53 | | 43 | | 96 | |
| 05:30 | | | 3 | | 2 | | 5 | | 17:30 | | | 46 | | 51 | | 97 | |
| 05:45 | | | 16 | 24 | 2 | 11 | 18 | 35 | 17:45 | | | 56 | 229 | 56 | 213 | 112 | 442 |
| 06:00 | | | 13 | | 8 | | 21 | | 18:00 | | | 47 | | 66 | | 113 | |
| 06:15 | | | 9 | | 2 | | 11 | | 18:15 | | | 53 | | 39 | | 92 | |
| 06:30 | | | 22 | | 7 | | 29 | | 18:30 | | | 51 | | 64 | | 115 | |
| 06:45 | | | 33 | 77 | 6 | 23 | 39 | 100 | 18:45 | | | 49 | 200 | 42 | 211 | 91 | 411 |
| 07:00 | | | 24 | | 7 | | 31 | | 19:00 | | | 50 | | 50 | | 100 | |
| 07:15 | | | 20 | | 12 | | 32 | | 19:15 | | | 49 | | 49 | | 98 | |
| 07:30 | | | 35 | | 17 | | 52 | | 19:30 | | | 42 | | 53 | | 95 | |
| 07:45 | | | 45 | 124 | 9 | 45 | 54 | 169 | 19:45 | | | 35 | 176 | 54 | 206 | 89 | 382 |
| 08:00 | | | 43 | | 22 | | 65 | | 20:00 | | | 34 | | 40 | | 74 | |
| 08:15 | | | 32 | | 19 | | 51 | | 20:15 | | | 33 | | 45 | | 78 | |
| 08:30 | | | 35 | | 9 | | 44 | | 20:30 | | | 32 | | 39 | | 71 | |
| 08:45 | | | 42 | 152 | 24 | 74 | 66 | 226 | 20:45 | | | 25 | 124 | 24 | 148 | 49 | 272 |
| 09:00 | | | 38 | | 21 | | 59 | | 21:00 | | | 25 | | 26 | | 51 | |
| 09:15 | | | 52 | | 17 | | 69 | | 21:15 | | | 21 | | 26 | | 47 | |
| 09:30 | | | 60 | | 32 | | 92 | | 21:30 | | | 22 | | 29 | | 51 | |
| 09:45 | | | 50 | 200 | 31 | 101 | 81 | 301 | 21:45 | | | 21 | 89 | 32 | 113 | 53 | 202 |
| 10:00 | | | 74 | | 34 | | 108 | | 22:00 | | | 17 | | 26 | | 43 | |
| 10:15 | | | 95 | | 35 | | 130 | | 22:15 | | | 9 | | 16 | | 25 | |
| 10:30 | | | 90 | | 39 | | 129 | | 22:30 | | | 13 | | 21 | | 34 | |
| 10:45 | | | 68 | 327 | 45 | 153 | 113 | 480 | 22:45 | | | 9 | 48 | 25 | 88 | 34 | 136 |
| 11:00 | | | 58 | | 45 | | 103 | | 23:00 | | | 7 | | 15 | | 22 | |
| 11:15 | | | 71 | | 46 | | 117 | | 23:15 | | | 7 | | 9 | | 16 | |
| 11:30 | | | 87 | | 65 | | 152 | | 23:30 | | | 8 | | 14 | | 22 | |
| 11:45 | | | 82 | 298 | 61 | 217 | 143 | 515 | 23:45 | | | 9 | 31 | 10 | 48 | 19 | 79 |
| TOTALS | | | | 1293 | | 804 | | 2097 | TOTALS | | | | 2369 | | 2312 | | 4681 |
| SPLIT % | | | | 61.7% | | 38.3% | | 30.9% | SPLIT % | | | | 50.6% | | 49.4% | | 69.1% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,662 | 3,116 | 6,778 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:30 | 11:30 | 11:30 | PM Peak Hour | | | 12:00 | 14:45 | 14:45 |
| AM Pk Volume | | | 357 | 231 | 588 | PM Pk Volume | | | 343 | 312 | 587 |
| Pk Hr Factor | | | 0.902 | 0.888 | 0.967 | Pk Hr Factor | | | 0.866 | 0.918 | 0.923 |
| 7 - 9 Volume | 0 | 0 | 276 | 119 | 395 | 4 - 6 Volume | 0 | 0 | 511 | 456 | 967 |
| 7 - 9 Peak Hour | | | 07:30 | 08:00 | 08:00 | 4 - 6 Peak Hour | | | 16:00 | 16:15 | 16:15 |
| 7 - 9 Pk Volume | 0 | 0 | 155 | 74 | 226 | 4 - 6 Pk Volume | 0 | 0 | 282 | 254 | 532 |
| Pk Hr Factor | 0.000 | 0.000 | 0.861 | 0.771 | 0.856 | Pk Hr Factor | 0.000 | 0.000 | 0.904 | 0.882 | 0.924 |

Prepared by NDS/ATD

# VOLUME

Poli St E/o Cedar St

Day: Monday
Date: 3/24/2014

City: Ventura
Project #: CA14_5163_003

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,446 | 3,679 | 8,125 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 3 | | 13 | | 16 | | 12:00 | | | 51 | | 57 | | 108 | |
| 00:15 | | | 3 | | 12 | | 15 | | 12:15 | | | 46 | | 58 | | 104 | |
| 00:30 | | | 3 | | 3 | | 6 | | 12:30 | | | 48 | | 55 | | 103 | |
| 00:45 | | | 5 | 14 | 6 | 34 | 11 | 48 | 12:45 | | | 64 | 209 | 60 | 230 | 124 | 439 |
| 01:00 | | | 2 | | 5 | | 7 | | 13:00 | | | 73 | | 44 | | 117 | |
| 01:15 | | | 7 | | 7 | | 14 | | 13:15 | | | 54 | | 43 | | 97 | |
| 01:30 | | | 5 | | 9 | | 14 | | 13:30 | | | 56 | | 44 | | 100 | |
| 01:45 | | | 1 | 15 | 9 | 30 | 10 | 45 | 13:45 | | | 65 | 248 | 48 | 179 | 113 | 427 |
| 02:00 | | | 3 | | 3 | | 6 | | 14:00 | | | 67 | | 56 | | 123 | |
| 02:15 | | | 4 | | 5 | | 9 | | 14:15 | | | 79 | | 61 | | 140 | |
| 02:30 | | | 1 | | 3 | | 4 | | 14:30 | | | 107 | | 71 | | 178 | |
| 02:45 | | | 2 | 10 | 3 | 14 | 5 | 24 | 14:45 | | | 79 | 332 | 109 | 297 | 188 | 629 |
| 03:00 | | | 3 | | 5 | | 8 | | 15:00 | | | 76 | | 83 | | 159 | |
| 03:15 | | | 3 | | 2 | | 5 | | 15:15 | | | 73 | | 73 | | 146 | |
| 03:30 | | | 2 | | 1 | | 3 | | 15:30 | | | 101 | | 86 | | 187 | |
| 03:45 | | | 6 | 14 | 5 | 13 | 11 | 27 | 15:45 | | | 99 | 349 | 89 | 331 | 188 | 680 |
| 04:00 | | | 5 | | 1 | | 6 | | 16:00 | | | 93 | | 70 | | 163 | |
| 04:15 | | | 4 | | 1 | | 5 | | 16:15 | | | 53 | | 82 | | 135 | |
| 04:30 | | | 6 | | 0 | | 6 | | 16:30 | | | 102 | | 98 | | 200 | |
| 04:45 | | | 8 | 23 | 1 | 3 | 9 | 26 | 16:45 | | | 101 | 349 | 69 | 319 | 170 | 668 |
| 05:00 | | | 6 | | 2 | | 8 | | 17:00 | | | 80 | | 86 | | 166 | |
| 05:15 | | | 10 | | 5 | | 15 | | 17:15 | | | 76 | | 82 | | 158 | |
| 05:30 | | | 26 | | 10 | | 36 | | 17:30 | | | 92 | | 104 | | 196 | |
| 05:45 | | | 36 | 78 | 8 | 25 | 44 | 103 | 17:45 | | | 78 | 326 | 82 | 354 | 160 | 680 |
| 06:00 | | | 22 | | 17 | | 39 | | 18:00 | | | 75 | | 88 | | 163 | |
| 06:15 | | | 35 | | 13 | | 48 | | 18:15 | | | 69 | | 71 | | 140 | |
| 06:30 | | | 30 | | 14 | | 44 | | 18:30 | | | 58 | | 67 | | 125 | |
| 06:45 | | | 65 | 152 | 22 | 66 | 87 | 218 | 18:45 | | | 62 | 264 | 56 | 282 | 118 | 546 |
| 07:00 | | | 69 | | 20 | | 89 | | 19:00 | | | 64 | | 67 | | 131 | |
| 07:15 | | | 186 | | 48 | | 234 | | 19:15 | | | 54 | | 54 | | 108 | |
| 07:30 | | | 118 | | 80 | | 198 | | 19:30 | | | 34 | | 60 | | 94 | |
| 07:45 | | | 132 | 505 | 44 | 192 | 176 | 697 | 19:45 | | | 38 | 190 | 53 | 234 | 91 | 424 |
| 08:00 | | | 92 | | 52 | | 144 | | 20:00 | | | 34 | | 33 | | 67 | |
| 08:15 | | | 84 | | 57 | | 141 | | 20:15 | | | 34 | | 45 | | 79 | |
| 08:30 | | | 100 | | 45 | | 145 | | 20:30 | | | 23 | | 36 | | 59 | |
| 08:45 | | | 77 | 353 | 41 | 195 | 118 | 548 | 20:45 | | | 29 | 120 | 40 | 154 | 69 | 274 |
| 09:00 | | | 58 | | 34 | | 92 | | 21:00 | | | 29 | | 45 | | 74 | |
| 09:15 | | | 53 | | 31 | | 84 | | 21:15 | | | 31 | | 34 | | 65 | |
| 09:30 | | | 61 | | 33 | | 94 | | 21:30 | | | 22 | | 42 | | 64 | |
| 09:45 | | | 60 | 232 | 38 | 136 | 98 | 368 | 21:45 | | | 17 | 99 | 31 | 152 | 48 | 251 |
| 10:00 | | | 52 | | 25 | | 77 | | 22:00 | | | 18 | | 22 | | 40 | |
| 10:15 | | | 66 | | 35 | | 101 | | 22:15 | | | 10 | | 31 | | 41 | |
| 10:30 | | | 49 | | 38 | | 87 | | 22:30 | | | 11 | | 23 | | 34 | |
| 10:45 | | | 52 | 219 | 33 | 131 | 85 | 350 | 22:45 | | | 8 | 47 | 13 | 89 | 21 | 136 |
| 11:00 | | | 54 | | 44 | | 98 | | 23:00 | | | 11 | | 14 | | 25 | |
| 11:15 | | | 75 | | 35 | | 110 | | 23:15 | | | 9 | | 9 | | 18 | |
| 11:30 | | | 67 | | 46 | | 113 | | 23:30 | | | 3 | | 11 | | 14 | |
| 11:45 | | | 70 | 266 | 50 | 175 | 120 | 441 | 23:45 | | | 9 | 32 | 10 | 44 | 19 | 76 |
| TOTALS | | | | 1881 | | 1014 | | 2895 | TOTALS | | | | 2565 | | 2665 | | 5230 |
| SPLIT % | | | | 65.0% | | 35.0% | | 35.6% | SPLIT % | | | | 49.0% | | 51.0% | | 64.4% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,446 | 3,679 | 8,125 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:15 | 07:30 | 07:15 | PM Peak Hour | | | 15:15 | 17:15 | 16:30 |
| AM Pk Volume | | | 528 | 233 | 752 | PM Pk Volume | | | 366 | 356 | 694 |
| Pk Hr Factor | | | 0.710 | 0.728 | 0.803 | Pk Hr Factor | | | 0.906 | 0.856 | 0.868 |
| 7 - 9 Volume | 0 | 0 | 858 | 387 | 1245 | 4 - 6 Volume | 0 | 0 | 675 | 673 | 1348 |
| 7 - 9 Peak Hour | | | 07:15 | 07:30 | 07:15 | 4 - 6 Peak Hour | | | 16:30 | 17:00 | 16:30 |
| 7 - 9 Pk Volume | 0 | 0 | 528 | 233 | 752 | 4 - 6 Pk Volume | 0 | 0 | 359 | 354 | 694 |
| Pk Hr Factor | 0.000 | 0.000 | 0.710 | 0.728 | 0.803 | Pk Hr Factor | 0.000 | 0.000 | 0.880 | 0.851 | 0.868 |

Prepared by NDS/ATD

# VOLUME

Poli St W/o Chestnut St

Day: Friday
Date: 3/21/2014

City: Ventura
Project #: CA14_5163_004

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 5,110 | 3,825 | 8,935 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 4 | | 7 | | 11 | | 12:00 | | | 70 | | 70 | | 140 | |
| 00:15 | | | 9 | | 6 | | 15 | | 12:15 | | | 62 | | 59 | | 121 | |
| 00:30 | | | 3 | | 4 | | 7 | | 12:30 | | | 64 | | 48 | | 112 | |
| 00:45 | | | 7 | 23 | 5 | 22 | 12 | 45 | 12:45 | | | 68 | 264 | 64 | 241 | 132 | 505 |
| 01:00 | | | 3 | | 2 | | 5 | | 13:00 | | | 79 | | 47 | | 126 | |
| 01:15 | | | 3 | | 6 | | 9 | | 13:15 | | | 97 | | 56 | | 153 | |
| 01:30 | | | 5 | | 0 | | 5 | | 13:30 | | | 76 | | 63 | | 139 | |
| 01:45 | | | 3 | 14 | 5 | 13 | 8 | 27 | 13:45 | | | 72 | 324 | 65 | 231 | 137 | 555 |
| 02:00 | | | 2 | | 4 | | 6 | | 14:00 | | | 78 | | 66 | | 144 | |
| 02:15 | | | 3 | | 2 | | 5 | | 14:15 | | | 78 | | 60 | | 138 | |
| 02:30 | | | 2 | | 1 | | 3 | | 14:30 | | | 94 | | 70 | | 164 | |
| 02:45 | | | 1 | 8 | 1 | 8 | 2 | 16 | 14:45 | | | 96 | 346 | 86 | 282 | 182 | 628 |
| 03:00 | | | 0 | | 0 | | 0 | | 15:00 | | | 86 | | 78 | | 164 | |
| 03:15 | | | 0 | | 1 | | 1 | | 15:15 | | | 99 | | 77 | | 176 | |
| 03:30 | | | 1 | | 1 | | 2 | | 15:30 | | | 119 | | 85 | | 204 | |
| 03:45 | | | 3 | 4 | 2 | 4 | 5 | 8 | 15:45 | | | 90 | 394 | 109 | 349 | 199 | 743 |
| 04:00 | | | 3 | | 2 | | 5 | | 16:00 | | | 99 | | 97 | | 196 | |
| 04:15 | | | 7 | | 3 | | 10 | | 16:15 | | | 92 | | 87 | | 179 | |
| 04:30 | | | 9 | | 1 | | 10 | | 16:30 | | | 86 | | 85 | | 171 | |
| 04:45 | | | 7 | 26 | 3 | 9 | 10 | 35 | 16:45 | | | 107 | 384 | 68 | 337 | 175 | 721 |
| 05:00 | | | 6 | | 3 | | 9 | | 17:00 | | | 101 | | 95 | | 196 | |
| 05:15 | | | 12 | | 3 | | 15 | | 17:15 | | | 108 | | 74 | | 182 | |
| 05:30 | | | 23 | | 6 | | 29 | | 17:30 | | | 89 | | 78 | | 167 | |
| 05:45 | | | 42 | 83 | 9 | 21 | 51 | 104 | 17:45 | | | 99 | 397 | 96 | 343 | 195 | 740 |
| 06:00 | | | 27 | | 20 | | 47 | | 18:00 | | | 99 | | 87 | | 186 | |
| 06:15 | | | 25 | | 8 | | 33 | | 18:15 | | | 95 | | 70 | | 165 | |
| 06:30 | | | 47 | | 12 | | 59 | | 18:30 | | | 82 | | 71 | | 153 | |
| 06:45 | | | 45 | 144 | 24 | 64 | 69 | 208 | 18:45 | | | 75 | 351 | 60 | 288 | 135 | 639 |
| 07:00 | | | 72 | | 45 | | 117 | | 19:00 | | | 70 | | 53 | | 123 | |
| 07:15 | | | 158 | | 61 | | 219 | | 19:15 | | | 74 | | 53 | | 127 | |
| 07:30 | | | 90 | | 94 | | 184 | | 19:30 | | | 60 | | 57 | | 117 | |
| 07:45 | | | 105 | 425 | 50 | 250 | 155 | 675 | 19:45 | | | 66 | 270 | 44 | 207 | 110 | 477 |
| 08:00 | | | 90 | | 60 | | 150 | | 20:00 | | | 48 | | 31 | | 79 | |
| 08:15 | | | 85 | | 51 | | 136 | | 20:15 | | | 36 | | 37 | | 73 | |
| 08:30 | | | 76 | | 51 | | 127 | | 20:30 | | | 54 | | 32 | | 86 | |
| 08:45 | | | 85 | 336 | 53 | 215 | 138 | 551 | 20:45 | | | 37 | 175 | 42 | 142 | 79 | 317 |
| 09:00 | | | 82 | | 45 | | 127 | | 21:00 | | | 49 | | 35 | | 84 | |
| 09:15 | | | 55 | | 47 | | 102 | | 21:15 | | | 58 | | 41 | | 99 | |
| 09:30 | | | 61 | | 24 | | 85 | | 21:30 | | | 41 | | 31 | | 72 | |
| 09:45 | | | 59 | 257 | 37 | 153 | 96 | 410 | 21:45 | | | 35 | 183 | 46 | 153 | 81 | 336 |
| 10:00 | | | 77 | | 39 | | 116 | | 22:00 | | | 21 | | 24 | | 45 | |
| 10:15 | | | 51 | | 40 | | 91 | | 22:15 | | | 35 | | 22 | | 57 | |
| 10:30 | | | 47 | | 49 | | 96 | | 22:30 | | | 36 | | 23 | | 59 | |
| 10:45 | | | 63 | 238 | 44 | 172 | 107 | 410 | 22:45 | | | 18 | 110 | 20 | 89 | 38 | 199 |
| 11:00 | | | 69 | | 33 | | 102 | | 23:00 | | | 28 | | 10 | | 38 | |
| 11:15 | | | 71 | | 41 | | 112 | | 23:15 | | | 11 | | 19 | | 30 | |
| 11:30 | | | 63 | | 48 | | 111 | | 23:30 | | | 16 | | 22 | | 38 | |
| 11:45 | | | 76 | 279 | 47 | 169 | 123 | 448 | 23:45 | | | 20 | 75 | 12 | 63 | 32 | 138 |
| TOTALS | | | | 1837 | | 1100 | | 2937 | TOTALS | | | | 3273 | | 2725 | | 5998 |
| SPLIT % | | | | 62.5% | | 37.5% | | 32.9% | SPLIT % | | | | 54.6% | | 45.4% | | 67.1% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 5,110 | 3,825 | 8,935 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:15 | 07:15 | 07:15 | PM Peak Hour | | | 15:15 | 15:30 | 15:30 |
| AM Pk Volume | | | 443 | 265 | 708 | PM Pk Volume | | | 407 | 378 | 778 |
| Pk Hr Factor | | | 0.701 | 0.705 | 0.808 | Pk Hr Factor | | | 0.855 | 0.867 | 0.953 |
| 7 - 9 Volume | 0 | 0 | 761 | 465 | 1226 | 4 - 6 Volume | 0 | 0 | 781 | 680 | 1461 |
| 7 - 9 Peak Hour | | | 07:15 | 07:15 | 07:15 | 4 - 6 Peak Hour | | | 16:45 | 17:00 | 17:00 |
| 7 - 9 Pk Volume | 0 | 0 | 443 | 265 | 708 | 4 - 6 Pk Volume | 0 | 0 | 405 | 343 | 740 |
| Pk Hr Factor | 0.000 | 0.000 | 0.701 | 0.705 | 0.808 | Pk Hr Factor | 0.000 | 0.000 | 0.938 | 0.893 | 0.944 |

Prepared by NDS/ATD

# VOLUME

Poli St W/o Chestnut St

**Day:** Saturday
**Date:** 3/22/2014

**City:** Ventura
**Project #:** CA14_5163_004

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,207 | 3,442 | 7,649 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 9 | | 12 | | 21 | | 12:00 | | | 84 | | 67 | | 151 | |
| 00:15 | | | 21 | | 20 | | 41 | | 12:15 | | | 89 | | 63 | | 152 | |
| 00:30 | | | 15 | | 11 | | 26 | | 12:30 | | | 72 | | 68 | | 140 | |
| 00:45 | | | 12 | 57 | 12 | 55 | 24 | 112 | 12:45 | | | 91 | 336 | 75 | 273 | 166 | 609 |
| 01:00 | | | 12 | | 5 | | 17 | | 13:00 | | | 79 | | 68 | | 147 | |
| 01:15 | | | 10 | | 15 | | 25 | | 13:15 | | | 99 | | 69 | | 168 | |
| 01:30 | | | 9 | | 8 | | 17 | | 13:30 | | | 66 | | 64 | | 130 | |
| 01:45 | | | 9 | 40 | 5 | 33 | 14 | 73 | 13:45 | | | 76 | 320 | 62 | 263 | 138 | 583 |
| 02:00 | | | 7 | | 14 | | 21 | | 14:00 | | | 77 | | 61 | | 138 | |
| 02:15 | | | 6 | | 3 | | 9 | | 14:15 | | | 66 | | 62 | | 128 | |
| 02:30 | | | 4 | | 1 | | 5 | | 14:30 | | | 74 | | 62 | | 136 | |
| 02:45 | | | 2 | 19 | 2 | 20 | 4 | 39 | 14:45 | | | 76 | 293 | 61 | 246 | 137 | 539 |
| 03:00 | | | 1 | | 0 | | 1 | | 15:00 | | | 52 | | 76 | | 128 | |
| 03:15 | | | 8 | | 0 | | 8 | | 15:15 | | | 77 | | 54 | | 131 | |
| 03:30 | | | 1 | | 1 | | 2 | | 15:30 | | | 86 | | 71 | | 157 | |
| 03:45 | | | 10 | 20 | 3 | 4 | 13 | 24 | 15:45 | | | 77 | 292 | 67 | 268 | 144 | 560 |
| 04:00 | | | 2 | | 3 | | 5 | | 16:00 | | | 66 | | 60 | | 126 | |
| 04:15 | | | 2 | | 1 | | 3 | | 16:15 | | | 70 | | 56 | | 126 | |
| 04:30 | | | 5 | | 3 | | 8 | | 16:30 | | | 75 | | 63 | | 138 | |
| 04:45 | | | 3 | 12 | 0 | 7 | 3 | 19 | 16:45 | | | 76 | 287 | 55 | 234 | 131 | 521 |
| 05:00 | | | 5 | | 2 | | 7 | | 17:00 | | | 68 | | 66 | | 134 | |
| 05:15 | | | 5 | | 3 | | 8 | | 17:15 | | | 67 | | 70 | | 137 | |
| 05:30 | | | 8 | | 2 | | 10 | | 17:30 | | | 57 | | 55 | | 112 | |
| 05:45 | | | 14 | 32 | 6 | 13 | 20 | 45 | 17:45 | | | 70 | 262 | 52 | 243 | 122 | 505 |
| 06:00 | | | 12 | | 5 | | 17 | | 18:00 | | | 43 | | 62 | | 105 | |
| 06:15 | | | 18 | | 10 | | 28 | | 18:15 | | | 67 | | 55 | | 122 | |
| 06:30 | | | 22 | | 10 | | 32 | | 18:30 | | | 65 | | 58 | | 123 | |
| 06:45 | | | 36 | 88 | 17 | 42 | 53 | 130 | 18:45 | | | 65 | 240 | 62 | 237 | 127 | 477 |
| 07:00 | | | 25 | | 16 | | 41 | | 19:00 | | | 70 | | 49 | | 119 | |
| 07:15 | | | 33 | | 13 | | 46 | | 19:15 | | | 53 | | 54 | | 107 | |
| 07:30 | | | 31 | | 23 | | 54 | | 19:30 | | | 61 | | 47 | | 108 | |
| 07:45 | | | 49 | 138 | 27 | 79 | 76 | 217 | 19:45 | | | 49 | 233 | 36 | 186 | 85 | 419 |
| 08:00 | | | 45 | | 35 | | 80 | | 20:00 | | | 35 | | 34 | | 69 | |
| 08:15 | | | 44 | | 30 | | 74 | | 20:15 | | | 36 | | 45 | | 81 | |
| 08:30 | | | 52 | | 38 | | 90 | | 20:30 | | | 43 | | 29 | | 72 | |
| 08:45 | | | 80 | 221 | 31 | 134 | 111 | 355 | 20:45 | | | 32 | 146 | 27 | 135 | 59 | 281 |
| 09:00 | | | 69 | | 52 | | 121 | | 21:00 | | | 34 | | 32 | | 66 | |
| 09:15 | | | 54 | | 55 | | 109 | | 21:15 | | | 41 | | 29 | | 70 | |
| 09:30 | | | 62 | | 57 | | 119 | | 21:30 | | | 51 | | 25 | | 76 | |
| 09:45 | | | 62 | 247 | 52 | 216 | 114 | 463 | 21:45 | | | 35 | 161 | 33 | 119 | 68 | 280 |
| 10:00 | | | 64 | | 45 | | 109 | | 22:00 | | | 24 | | 36 | | 60 | |
| 10:15 | | | 65 | | 53 | | 118 | | 22:15 | | | 35 | | 21 | | 56 | |
| 10:30 | | | 71 | | 54 | | 125 | | 22:30 | | | 15 | | 23 | | 38 | |
| 10:45 | | | 78 | 278 | 53 | 205 | 131 | 483 | 22:45 | | | 30 | 104 | 23 | 103 | 53 | 207 |
| 11:00 | | | 70 | | 66 | | 136 | | 23:00 | | | 26 | | 11 | | 37 | |
| 11:15 | | | 55 | | 62 | | 117 | | 23:15 | | | 16 | | 8 | | 24 | |
| 11:30 | | | 90 | | 81 | | 171 | | 23:30 | | | 23 | | 21 | | 44 | |
| 11:45 | | | 82 | 297 | 71 | 280 | 153 | 577 | 23:45 | | | 19 | 84 | 7 | 47 | 26 | 131 |
| **TOTALS** | | | | 1449 | | 1088 | | 2537 | **TOTALS** | | | | 2758 | | 2354 | | 5112 |
| **SPLIT %** | | | | 57.1% | | 42.9% | | 33.2% | **SPLIT %** | | | | 54.0% | | 46.0% | | 66.8% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,207 | 3,442 | 7,649 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 11:30 | 11:30 | 11:30 | **PM Peak Hour** | | | 12:30 | 12:30 | 12:30 |
| **AM Pk Volume** | | | 345 | 282 | 627 | **PM Pk Volume** | | | 341 | 280 | 621 |
| **Pk Hr Factor** | | | 0.958 | 0.870 | 0.917 | **Pk Hr Factor** | | | 0.861 | 0.933 | 0.924 |
| **7 - 9 Volume** | 0 | 0 | 359 | 213 | 572 | **4 - 6 Volume** | 0 | 0 | 549 | 477 | 1026 |
| **7 - 9 Peak Hour** | | | 08:00 | 08:00 | 08:00 | **4 - 6 Peak Hour** | | | 16:15 | 16:30 | 16:30 |
| **7 - 9 Pk Volume** | 0 | 0 | 221 | 134 | 355 | **4 - 6 Pk Volume** | 0 | 0 | 289 | 254 | 540 |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.691 | 0.882 | 0.800 | **Pk Hr Factor** | 0.000 | 0.000 | 0.951 | 0.907 | 0.978 |

Prepared by NDS/ATD

# VOLUME

Poli St E/o Cedar St

Day: Saturday
Date: 3/22/2014

City: Ventura
Project #: CA14_5163_003

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,090 | 3,365 | 7,455 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 8 | | 19 | | 27 | | 12:00 | | | 70 | | 67 | | 137 | |
| 00:15 | | | 13 | | 25 | | 38 | | 12:15 | | | 87 | | 64 | | 151 | |
| 00:30 | | | 7 | | 17 | | 24 | | 12:30 | | | 85 | | 68 | | 153 | |
| 00:45 | | | 7 | 35 | 12 | 73 | 19 | 108 | 12:45 | | | 100 | 342 | 75 | 274 | 175 | 616 |
| 01:00 | | | 7 | | 10 | | 17 | | 13:00 | | | 80 | | 80 | | 160 | |
| 01:15 | | | 6 | | 20 | | 26 | | 13:15 | | | 91 | | 59 | | 150 | |
| 01:30 | | | 9 | | 14 | | 23 | | 13:30 | | | 67 | | 65 | | 132 | |
| 01:45 | | | 5 | 27 | 8 | 52 | 13 | 79 | 13:45 | | | 81 | 319 | 63 | 267 | 144 | 586 |
| 02:00 | | | 4 | | 12 | | 16 | | 14:00 | | | 64 | | 46 | | 110 | |
| 02:15 | | | 8 | | 6 | | 14 | | 14:15 | | | 54 | | 59 | | 113 | |
| 02:30 | | | 5 | | 3 | | 8 | | 14:30 | | | 72 | | 65 | | 137 | |
| 02:45 | | | 0 | 17 | 2 | 23 | 2 | 40 | 14:45 | | | 71 | 261 | 60 | 230 | 131 | 491 |
| 03:00 | | | 2 | | 3 | | 5 | | 15:00 | | | 65 | | 75 | | 140 | |
| 03:15 | | | 7 | | 1 | | 8 | | 15:15 | | | 64 | | 49 | | 113 | |
| 03:30 | | | 0 | | 1 | | 1 | | 15:30 | | | 60 | | 71 | | 131 | |
| 03:45 | | | 9 | 18 | 4 | 9 | 13 | 27 | 15:45 | | | 70 | 259 | 61 | 256 | 131 | 515 |
| 04:00 | | | 2 | | 1 | | 3 | | 16:00 | | | 76 | | 62 | | 138 | |
| 04:15 | | | 4 | | 2 | | 6 | | 16:15 | | | 69 | | 64 | | 133 | |
| 04:30 | | | 4 | | 3 | | 7 | | 16:30 | | | 73 | | 67 | | 140 | |
| 04:45 | | | 5 | 15 | 0 | 6 | 5 | 21 | 16:45 | | | 68 | 286 | 46 | 239 | 114 | 525 |
| 05:00 | | | 5 | | 1 | | 6 | | 17:00 | | | 72 | | 67 | | 139 | |
| 05:15 | | | 6 | | 4 | | 10 | | 17:15 | | | 68 | | 70 | | 138 | |
| 05:30 | | | 9 | | 2 | | 11 | | 17:30 | | | 53 | | 54 | | 107 | |
| 05:45 | | | 16 | 36 | 3 | 10 | 19 | 46 | 17:45 | | | 71 | 264 | 45 | 236 | 116 | 500 |
| 06:00 | | | 17 | | 4 | | 21 | | 18:00 | | | 44 | | 53 | | 97 | |
| 06:15 | | | 19 | | 7 | | 26 | | 18:15 | | | 58 | | 53 | | 111 | |
| 06:30 | | | 31 | | 14 | | 45 | | 18:30 | | | 53 | | 50 | | 103 | |
| 06:45 | | | 39 | 106 | 13 | 38 | 52 | 144 | 18:45 | | | 52 | 207 | 61 | 217 | 113 | 424 |
| 07:00 | | | 34 | | 10 | | 44 | | 19:00 | | | 61 | | 48 | | 109 | |
| 07:15 | | | 32 | | 14 | | 46 | | 19:15 | | | 66 | | 58 | | 124 | |
| 07:30 | | | 38 | | 16 | | 54 | | 19:30 | | | 59 | | 53 | | 112 | |
| 07:45 | | | 58 | 162 | 19 | 59 | 77 | 221 | 19:45 | | | 44 | 230 | 48 | 207 | 92 | 437 |
| 08:00 | | | 49 | | 24 | | 73 | | 20:00 | | | 46 | | 30 | | 76 | |
| 08:15 | | | 45 | | 16 | | 61 | | 20:15 | | | 32 | | 47 | | 79 | |
| 08:30 | | | 55 | | 29 | | 84 | | 20:30 | | | 47 | | 48 | | 95 | |
| 08:45 | | | 81 | 230 | 24 | 93 | 105 | 323 | 20:45 | | | 30 | 155 | 37 | 162 | 67 | 317 |
| 09:00 | | | 61 | | 43 | | 104 | | 21:00 | | | 38 | | 43 | | 81 | |
| 09:15 | | | 64 | | 38 | | 102 | | 21:15 | | | 30 | | 37 | | 67 | |
| 09:30 | | | 62 | | 38 | | 100 | | 21:30 | | | 34 | | 39 | | 73 | |
| 09:45 | | | 72 | 259 | 37 | 156 | 109 | 415 | 21:45 | | | 30 | 132 | 41 | 160 | 71 | 292 |
| 10:00 | | | 66 | | 34 | | 100 | | 22:00 | | | 29 | | 30 | | 59 | |
| 10:15 | | | 82 | | 31 | | 113 | | 22:15 | | | 25 | | 36 | | 61 | |
| 10:30 | | | 66 | | 43 | | 109 | | 22:30 | | | 10 | | 33 | | 43 | |
| 10:45 | | | 70 | 284 | 52 | 160 | 122 | 444 | 22:45 | | | 20 | 84 | 32 | 131 | 52 | 215 |
| 11:00 | | | 79 | | 52 | | 131 | | 23:00 | | | 14 | | 18 | | 32 | |
| 11:15 | | | 53 | | 54 | | 107 | | 23:15 | | | 12 | | 14 | | 26 | |
| 11:30 | | | 81 | | 66 | | 147 | | 23:30 | | | 16 | | 23 | | 39 | |
| 11:45 | | | 92 | 305 | 69 | 241 | 161 | 546 | 23:45 | | | 15 | 57 | 11 | 66 | 26 | 123 |
| TOTALS | | | | 1494 | | 920 | | 2414 | TOTALS | | | | 2596 | | 2445 | | 5041 |
| SPLIT % | | | | 61.9% | | 38.1% | | 32.4% | SPLIT % | | | | 51.5% | | 48.5% | | 67.6% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,090 | 3,365 | 7,455 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:45 | 11:45 | 11:45 | PM Peak Hour | | | 12:30 | 12:15 | 12:15 |
| AM Pk Volume | | | 334 | 268 | 602 | PM Pk Volume | | | 356 | 287 | 639 |
| Pk Hr Factor | | | 0.908 | 0.971 | 0.935 | Pk Hr Factor | | | 0.890 | 0.897 | 0.913 |
| 7 - 9 Volume | 0 | 0 | 392 | 152 | 544 | 4 - 6 Volume | 0 | 0 | 550 | 475 | 1025 |
| 7 - 9 Peak Hour | | | 08:00 | 08:00 | 08:00 | 4 - 6 Peak Hour | | | 16:00 | 16:30 | 16:30 |
| 7 - 9 Pk Volume | 0 | 0 | 230 | 93 | 323 | 4 - 6 Pk Volume | 0 | 0 | 286 | 250 | 531 |
| Pk Hr Factor | 0.000 | 0.000 | 0.710 | 0.802 | 0.769 | Pk Hr Factor | 0.000 | 0.000 | 0.941 | 0.893 | 0.948 |

15

Prepared by NDS/ATD

# VOLUME

Poli St W/o Chestnut St

**Day:** Sunday
**Date:** 3/23/2014

**City:** Ventura
**Project #:** CA14_5163_004

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,733 | 2,977 | 6,710 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 20 | | 23 | | 43 | | 12:00 | | | 85 | | 77 | | 162 | |
| 00:15 | | | 7 | | 10 | | 17 | | 12:15 | | | 94 | | 52 | | 146 | |
| 00:30 | | | 10 | | 14 | | 24 | | 12:30 | | | 84 | | 65 | | 149 | |
| 00:45 | | | 16 | 53 | 9 | 56 | 25 | 109 | 12:45 | | | 85 | 348 | 63 | 257 | 148 | 605 |
| 01:00 | | | 14 | | 6 | | 20 | | 13:00 | | | 86 | | 60 | | 146 | |
| 01:15 | | | 12 | | 5 | | 17 | | 13:15 | | | 73 | | 58 | | 131 | |
| 01:30 | | | 9 | | 10 | | 19 | | 13:30 | | | 94 | | 67 | | 161 | |
| 01:45 | | | 11 | 46 | 4 | 25 | 15 | 71 | 13:45 | | | 85 | 338 | 72 | 257 | 157 | 595 |
| 02:00 | | | 9 | | 8 | | 17 | | 14:00 | | | 76 | | 73 | | 149 | |
| 02:15 | | | 5 | | 6 | | 11 | | 14:15 | | | 73 | | 72 | | 145 | |
| 02:30 | | | 4 | | 4 | | 8 | | 14:30 | | | 63 | | 66 | | 129 | |
| 02:45 | | | 3 | 21 | 1 | 19 | 4 | 40 | 14:45 | | | 63 | 275 | 66 | 277 | 129 | 552 |
| 03:00 | | | 6 | | 4 | | 10 | | 15:00 | | | 63 | | 71 | | 134 | |
| 03:15 | | | 1 | | 4 | | 5 | | 15:15 | | | 76 | | 78 | | 154 | |
| 03:30 | | | 2 | | 5 | | 7 | | 15:30 | | | 74 | | 78 | | 152 | |
| 03:45 | | | 2 | 11 | 4 | 17 | 6 | 28 | 15:45 | | | 84 | 297 | 64 | 291 | 148 | 588 |
| 04:00 | | | 3 | | 3 | | 6 | | 16:00 | | | 74 | | 53 | | 127 | |
| 04:15 | | | 5 | | 1 | | 6 | | 16:15 | | | 74 | | 73 | | 147 | |
| 04:30 | | | 2 | | 2 | | 4 | | 16:30 | | | 74 | | 56 | | 130 | |
| 04:45 | | | 3 | 13 | 1 | 7 | 4 | 20 | 16:45 | | | 80 | 302 | 57 | 239 | 137 | 541 |
| 05:00 | | | 2 | | 2 | | 4 | | 17:00 | | | 68 | | 51 | | 119 | |
| 05:15 | | | 2 | | 2 | | 4 | | 17:15 | | | 61 | | 39 | | 100 | |
| 05:30 | | | 3 | | 2 | | 5 | | 17:30 | | | 58 | | 48 | | 106 | |
| 05:45 | | | 13 | 20 | 2 | 8 | 15 | 28 | 17:45 | | | 45 | 232 | 58 | 196 | 103 | 428 |
| 06:00 | | | 8 | | 15 | | 23 | | 18:00 | | | 53 | | 45 | | 98 | |
| 06:15 | | | 7 | | 2 | | 9 | | 18:15 | | | 51 | | 44 | | 95 | |
| 06:30 | | | 18 | | 9 | | 27 | | 18:30 | | | 57 | | 55 | | 112 | |
| 06:45 | | | 26 | 59 | 8 | 34 | 34 | 93 | 18:45 | | | 53 | 214 | 34 | 178 | 87 | 392 |
| 07:00 | | | 14 | | 9 | | 23 | | 19:00 | | | 51 | | 47 | | 98 | |
| 07:15 | | | 20 | | 18 | | 38 | | 19:15 | | | 45 | | 45 | | 90 | |
| 07:30 | | | 26 | | 10 | | 36 | | 19:30 | | | 50 | | 51 | | 101 | |
| 07:45 | | | 43 | 103 | 8 | 45 | 51 | 148 | 19:45 | | | 45 | 191 | 41 | 184 | 86 | 375 |
| 08:00 | | | 42 | | 23 | | 65 | | 20:00 | | | 41 | | 32 | | 73 | |
| 08:15 | | | 28 | | 17 | | 45 | | 20:15 | | | 36 | | 31 | | 67 | |
| 08:30 | | | 37 | | 26 | | 63 | | 20:30 | | | 30 | | 28 | | 58 | |
| 08:45 | | | 35 | 142 | 27 | 93 | 62 | 235 | 20:45 | | | 31 | 138 | 17 | 108 | 48 | 246 |
| 09:00 | | | 34 | | 31 | | 65 | | 21:00 | | | 29 | | 17 | | 46 | |
| 09:15 | | | 54 | | 27 | | 81 | | 21:15 | | | 30 | | 20 | | 50 | |
| 09:30 | | | 54 | | 34 | | 88 | | 21:30 | | | 21 | | 17 | | 38 | |
| 09:45 | | | 45 | 187 | 36 | 128 | 81 | 315 | 21:45 | | | 22 | 102 | 23 | 77 | 45 | 179 |
| 10:00 | | | 50 | | 38 | | 88 | | 22:00 | | | 22 | | 19 | | 41 | |
| 10:15 | | | 67 | | 49 | | 116 | | 22:15 | | | 13 | | 17 | | 30 | |
| 10:30 | | | 71 | | 46 | | 117 | | 22:30 | | | 12 | | 17 | | 29 | |
| 10:45 | | | 81 | 269 | 53 | 186 | 134 | 455 | 22:45 | | | 7 | 54 | 12 | 65 | 19 | 119 |
| 11:00 | | | 57 | | 48 | | 105 | | 23:00 | | | 10 | | 8 | | 18 | |
| 11:15 | | | 71 | | 41 | | 112 | | 23:15 | | | 6 | | 7 | | 13 | |
| 11:30 | | | 86 | | 52 | | 138 | | 23:30 | | | 8 | | 8 | | 16 | |
| 11:45 | | | 69 | 283 | 56 | 197 | 125 | 480 | 23:45 | | | 11 | 35 | 10 | 33 | 21 | 68 |
| **TOTALS** | | | | **1207** | | **815** | | **2022** | **TOTALS** | | | | **2526** | | **2162** | | **4688** |
| **SPLIT %** | | | | **59.7%** | | **40.3%** | | **30.1%** | **SPLIT %** | | | | **53.9%** | | **46.1%** | | **69.9%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,733 | 2,977 | 6,710 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | **11:30** | **11:45** | **11:45** | **PM Peak Hour** | | | **12:15** | **14:45** | **13:30** |
| **AM Pk Volume** | | | **334** | **250** | **582** | **PM Pk Volume** | | | **349** | **293** | **612** |
| **Pk Hr Factor** | | | **0.888** | **0.812** | **0.898** | **Pk Hr Factor** | | | **0.928** | **0.939** | **0.950** |
| **7 - 9 Volume** | 0 | 0 | **245** | **138** | **383** | **4 - 6 Volume** | 0 | 0 | **534** | **435** | **969** |
| **7 - 9 Peak Hour** | | | **07:45** | **08:00** | **08:00** | **4 - 6 Peak Hour** | | | **16:00** | **16:00** | **16:00** |
| **7 - 9 Pk Volume** | 0 | 0 | **150** | **93** | **235** | **4 - 6 Pk Volume** | 0 | 0 | **302** | **239** | **541** |
| **Pk Hr Factor** | 0.000 | 0.000 | **0.872** | **0.861** | **0.904** | **Pk Hr Factor** | 0.000 | 0.000 | **0.944** | **0.818** | **0.920** |



16

Prepared by NDS/ATD

# VOLUME

Poli St W/o Chestnut St

**Day:** Monday
**Date:** 3/24/2014

**City:** Ventura
**Project #:** CA14_5163_004

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,968 | 3,654 | 8,622 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 4 | | 8 | | 12 | | 12:00 | | | 95 | | 58 | | 153 | |
| 00:15 | | | 5 | | 6 | | 11 | | 12:15 | | | 57 | | 52 | | 109 | |
| 00:30 | | | 6 | | 1 | | 7 | | 12:30 | | | 52 | | 59 | | 111 | |
| 00:45 | | | 3 | 18 | 3 | 18 | 6 | 36 | 12:45 | | | 62 | 266 | 74 | 243 | 136 | 509 |
| 01:00 | | | 2 | | 3 | | 5 | | 13:00 | | | 91 | | 39 | | 130 | |
| 01:15 | | | 6 | | 6 | | 12 | | 13:15 | | | 59 | | 51 | | 110 | |
| 01:30 | | | 3 | | 5 | | 8 | | 13:30 | | | 75 | | 45 | | 120 | |
| 01:45 | | | 2 | 13 | 6 | 20 | 8 | 33 | 13:45 | | | 61 | 286 | 64 | 199 | 125 | 485 |
| 02:00 | | | 2 | | 3 | | 5 | | 14:00 | | | 77 | | 61 | | 138 | |
| 02:15 | | | 4 | | 2 | | 6 | | 14:15 | | | 90 | | 57 | | 147 | |
| 02:30 | | | 4 | | 2 | | 6 | | 14:30 | | | 100 | | 72 | | 172 | |
| 02:45 | | | 2 | 12 | 1 | 8 | 3 | 20 | 14:45 | | | 95 | 362 | 105 | 295 | 200 | 657 |
| 03:00 | | | 3 | | 5 | | 8 | | 15:00 | | | 93 | | 81 | | 174 | |
| 03:15 | | | 3 | | 1 | | 4 | | 15:15 | | | 77 | | 63 | | 140 | |
| 03:30 | | | 2 | | 2 | | 4 | | 15:30 | | | 110 | | 80 | | 190 | |
| 03:45 | | | 7 | 15 | 1 | 9 | 8 | 24 | 15:45 | | | 107 | 387 | 101 | 325 | 208 | 712 |
| 04:00 | | | 3 | | 1 | | 4 | | 16:00 | | | 102 | | 67 | | 169 | |
| 04:15 | | | 4 | | 1 | | 5 | | 16:15 | | | 97 | | 80 | | 177 | |
| 04:30 | | | 6 | | 0 | | 6 | | 16:30 | | | 114 | | 91 | | 205 | |
| 04:45 | | | 7 | 20 | 1 | 3 | 8 | 23 | 16:45 | | | 115 | 428 | 74 | 312 | 189 | 740 |
| 05:00 | | | 7 | | 2 | | 9 | | 17:00 | | | 140 | | 82 | | 222 | |
| 05:15 | | | 8 | | 7 | | 15 | | 17:15 | | | 109 | | 73 | | 182 | |
| 05:30 | | | 22 | | 10 | | 32 | | 17:30 | | | 125 | | 95 | | 220 | |
| 05:45 | | | 30 | 67 | 11 | 30 | 41 | 97 | 17:45 | | | 100 | 474 | 80 | 330 | 180 | 804 |
| 06:00 | | | 19 | | 19 | | 38 | | 18:00 | | | 103 | | 73 | | 176 | |
| 06:15 | | | 24 | | 14 | | 38 | | 18:15 | | | 79 | | 65 | | 144 | |
| 06:30 | | | 33 | | 15 | | 48 | | 18:30 | | | 79 | | 68 | | 147 | |
| 06:45 | | | 57 | 133 | 25 | 73 | 82 | 206 | 18:45 | | | 64 | 325 | 48 | 254 | 112 | 579 |
| 07:00 | | | 73 | | 42 | | 115 | | 19:00 | | | 58 | | 61 | | 119 | |
| 07:15 | | | 160 | | 67 | | 227 | | 19:15 | | | 50 | | 51 | | 101 | |
| 07:30 | | | 105 | | 91 | | 196 | | 19:30 | | | 52 | | 43 | | 95 | |
| 07:45 | | | 116 | 454 | 57 | 257 | 173 | 711 | 19:45 | | | 40 | 200 | 45 | 200 | 85 | 400 |
| 08:00 | | | 81 | | 77 | | 158 | | 20:00 | | | 41 | | 27 | | 68 | |
| 08:15 | | | 83 | | 62 | | 145 | | 20:15 | | | 40 | | 29 | | 69 | |
| 08:30 | | | 95 | | 65 | | 160 | | 20:30 | | | 38 | | 19 | | 57 | |
| 08:45 | | | 92 | 351 | 65 | 269 | 157 | 620 | 20:45 | | | 42 | 161 | 19 | 94 | 61 | 255 |
| 09:00 | | | 74 | | 57 | | 131 | | 21:00 | | | 47 | | 34 | | 81 | |
| 09:15 | | | 53 | | 45 | | 98 | | 21:15 | | | 36 | | 30 | | 66 | |
| 09:30 | | | 63 | | 40 | | 103 | | 21:30 | | | 24 | | 29 | | 53 | |
| 09:45 | | | 68 | 258 | 46 | 188 | 114 | 446 | 21:45 | | | 27 | 134 | 20 | 113 | 47 | 247 |
| 10:00 | | | 67 | | 34 | | 101 | | 22:00 | | | 14 | | 15 | | 29 | |
| 10:15 | | | 64 | | 31 | | 95 | | 22:15 | | | 18 | | 14 | | 32 | |
| 10:30 | | | 58 | | 42 | | 100 | | 22:30 | | | 10 | | 9 | | 19 | |
| 10:45 | | | 58 | 247 | 44 | 151 | 102 | 398 | 22:45 | | | 14 | 56 | 7 | 45 | 21 | 101 |
| 11:00 | | | 57 | | 44 | | 101 | | 23:00 | | | 14 | | 8 | | 22 | |
| 11:15 | | | 68 | | 46 | | 114 | | 23:15 | | | 13 | | 7 | | 20 | |
| 11:30 | | | 63 | | 46 | | 109 | | 23:30 | | | 5 | | 6 | | 11 | |
| 11:45 | | | 74 | 262 | 55 | 191 | 129 | 453 | 23:45 | | | 7 | 39 | 6 | 27 | 13 | 66 |
| **TOTALS** | | | | 1850 | | 1217 | | 3067 | **TOTALS** | | | | 3118 | | 2437 | | 5555 |
| **SPLIT %** | | | | 60.3% | | 39.7% | | 35.6% | **SPLIT %** | | | | 56.1% | | 43.9% | | 64.4% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,968 | 3,654 | 8,622 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 07:15 | 07:15 | 07:15 | **PM Peak Hour** | | | 16:45 | 15:45 | 16:45 |
| **AM Pk Volume** | | | 462 | 292 | 754 | **PM Pk Volume** | | | 489 | 339 | 813 |
| **Pk Hr Factor** | | | 0.722 | 0.802 | 0.830 | **Pk Hr Factor** | | | 0.873 | 0.839 | 0.916 |
| **7 - 9 Volume** | 0 | 0 | 805 | 526 | 1331 | **4 - 6 Volume** | 0 | 0 | 902 | 642 | 1544 |
| **7 - 9 Peak Hour** | | | 07:15 | 07:15 | 07:15 | **4 - 6 Peak Hour** | | | 16:45 | 17:00 | 16:45 |
| **7 - 9 Pk Volume** | 0 | 0 | 462 | 292 | 754 | **4 - 6 Pk Volume** | 0 | 0 | 489 | 330 | 813 |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.722 | 0.802 | 0.830 | **Pk Hr Factor** | 0.000 | 0.000 | 0.873 | 0.868 | 0.916 |

Prepared by NDS/ATD

# VOLUME

Poli St W/o Kalorama St

Day: Friday
Date: 3/21/2014

City: Ventura
Project #: CA14_5163_005

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,857 | 3,756 | 7,613 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 6 | | 7 | | 13 | | 12:00 | | | 47 | | 60 | | 107 | |
| 00:15 | | | 6 | | 5 | | 11 | | 12:15 | | | 34 | | 52 | | 86 | |
| 00:30 | | | 2 | | 5 | | 7 | | 12:30 | | | 41 | | 41 | | 82 | |
| 00:45 | | | 7 | 21 | 3 | 20 | 10 | 41 | 12:45 | | | 46 | 168 | 63 | 216 | 109 | 384 |
| 01:00 | | | 2 | | 3 | | 5 | | 13:00 | | | 72 | | 55 | | 127 | |
| 01:15 | | | 4 | | 3 | | 7 | | 13:15 | | | 75 | | 50 | | 125 | |
| 01:30 | | | 6 | | 1 | | 7 | | 13:30 | | | 52 | | 61 | | 113 | |
| 01:45 | | | 1 | 13 | 4 | 11 | 5 | 24 | 13:45 | | | 52 | 251 | 62 | 228 | 114 | 479 |
| 02:00 | | | 2 | | 4 | | 6 | | 14:00 | | | 61 | | 60 | | 121 | |
| 02:15 | | | 1 | | 0 | | 1 | | 14:15 | | | 62 | | 48 | | 110 | |
| 02:30 | | | 2 | | 2 | | 4 | | 14:30 | | | 69 | | 74 | | 143 | |
| 02:45 | | | 2 | 7 | 1 | 7 | 3 | 14 | 14:45 | | | 74 | 266 | 80 | 262 | 154 | 528 |
| 03:00 | | | 0 | | 0 | | 0 | | 15:00 | | | 67 | | 76 | | 143 | |
| 03:15 | | | 0 | | 1 | | 1 | | 15:15 | | | 80 | | 60 | | 140 | |
| 03:30 | | | 1 | | 1 | | 2 | | 15:30 | | | 98 | | 84 | | 182 | |
| 03:45 | | | 1 | 2 | 2 | 4 | 3 | 6 | 15:45 | | | 74 | 319 | 92 | 312 | 166 | 631 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 80 | | 89 | | 169 | |
| 04:15 | | | 4 | | 5 | | 9 | | 16:15 | | | 79 | | 76 | | 155 | |
| 04:30 | | | 2 | | 1 | | 3 | | 16:30 | | | 63 | | 84 | | 147 | |
| 04:45 | | | 5 | 11 | 5 | 11 | 10 | 22 | 16:45 | | | 89 | 311 | 72 | 321 | 161 | 632 |
| 05:00 | | | 3 | | 5 | | 8 | | 17:00 | | | 82 | | 89 | | 171 | |
| 05:15 | | | 3 | | 4 | | 7 | | 17:15 | | | 75 | | 71 | | 146 | |
| 05:30 | | | 12 | | 5 | | 17 | | 17:30 | | | 75 | | 82 | | 157 | |
| 05:45 | | | 23 | 41 | 14 | 28 | 37 | 69 | 17:45 | | | 83 | 315 | 97 | 339 | 180 | 654 |
| 06:00 | | | 11 | | 22 | | 33 | | 18:00 | | | 79 | | 83 | | 162 | |
| 06:15 | | | 16 | | 16 | | 32 | | 18:15 | | | 76 | | 70 | | 146 | |
| 06:30 | | | 19 | | 21 | | 40 | | 18:30 | | | 70 | | 62 | | 132 | |
| 06:45 | | | 30 | 76 | 29 | 88 | 59 | 164 | 18:45 | | | 64 | 289 | 69 | 284 | 133 | 573 |
| 07:00 | | | 49 | | 48 | | 97 | | 19:00 | | | 57 | | 40 | | 97 | |
| 07:15 | | | 125 | | 74 | | 199 | | 19:15 | | | 57 | | 48 | | 105 | |
| 07:30 | | | 68 | | 103 | | 171 | | 19:30 | | | 59 | | 57 | | 116 | |
| 07:45 | | | 69 | 311 | 66 | 291 | 135 | 602 | 19:45 | | | 61 | 234 | 43 | 188 | 104 | 422 |
| 08:00 | | | 62 | | 67 | | 129 | | 20:00 | | | 42 | | 28 | | 70 | |
| 08:15 | | | 67 | | 58 | | 125 | | 20:15 | | | 31 | | 32 | | 63 | |
| 08:30 | | | 59 | | 59 | | 118 | | 20:30 | | | 42 | | 30 | | 72 | |
| 08:45 | | | 55 | 243 | 63 | 247 | 118 | 490 | 20:45 | | | 32 | 147 | 34 | 124 | 66 | 271 |
| 09:00 | | | 53 | | 44 | | 97 | | 21:00 | | | 44 | | 37 | | 81 | |
| 09:15 | | | 33 | | 49 | | 82 | | 21:15 | | | 49 | | 26 | | 75 | |
| 09:30 | | | 33 | | 30 | | 63 | | 21:30 | | | 47 | | 26 | | 73 | |
| 09:45 | | | 44 | 163 | 44 | 167 | 88 | 330 | 21:45 | | | 34 | 174 | 46 | 135 | 80 | 309 |
| 10:00 | | | 44 | | 42 | | 86 | | 22:00 | | | 26 | | 16 | | 42 | |
| 10:15 | | | 33 | | 41 | | 74 | | 22:15 | | | 26 | | 23 | | 49 | |
| 10:30 | | | 38 | | 51 | | 89 | | 22:30 | | | 23 | | 16 | | 39 | |
| 10:45 | | | 36 | 151 | 39 | 173 | 75 | 324 | 22:45 | | | 24 | 99 | 24 | 79 | 48 | 178 |
| 11:00 | | | 40 | | 36 | | 76 | | 23:00 | | | 21 | | 10 | | 31 | |
| 11:15 | | | 52 | | 41 | | 93 | | 23:15 | | | 12 | | 15 | | 27 | |
| 11:30 | | | 47 | | 40 | | 87 | | 23:30 | | | 12 | | 20 | | 32 | |
| 11:45 | | | 42 | 181 | 47 | 164 | 89 | 345 | 23:45 | | | 19 | 64 | 12 | 57 | 31 | 121 |
| TOTALS | | | 1220 | | 1211 | | 2431 | | TOTALS | | | 2637 | | 2545 | | 5182 | |
| SPLIT % | | | 50.2% | | 49.8% | | 31.9% | | SPLIT % | | | 50.9% | | 49.1% | | 68.1% | |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,857 | 3,756 | 7,613 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:15 | 07:15 | 07:15 | PM Peak Hour | | | 15:15 | 15:30 | 15:30 |
| AM Pk Volume | | | 324 | 310 | 634 | PM Pk Volume | | | 332 | 341 | 672 |
| Pk Hr Factor | | | 0.648 | 0.752 | 0.796 | Pk Hr Factor | | | 0.847 | 0.927 | 0.923 |
| 7 - 9 Volume | 0 | 0 | 554 | 538 | 1092 | 4 - 6 Volume | 0 | 0 | 626 | 660 | 1286 |
| 7 - 9 Peak Hour | | | 07:15 | 07:15 | 07:15 | 4 - 6 Peak Hour | | | 16:45 | 17:00 | 17:00 |
| 7 - 9 Pk Volume | 0 | 0 | 324 | 310 | 634 | 4 - 6 Pk Volume | 0 | 0 | 321 | 339 | 654 |
| Pk Hr Factor | 0.000 | 0.000 | 0.648 | 0.752 | 0.796 | Pk Hr Factor | 0.000 | 0.000 | 0.902 | 0.874 | 0.908 |

Prepared by NDS/ATD

# VOLUME

Poli St W/o Kalorama St

Day: Saturday
Date: 3/22/2014

City: Ventura
Project #: CA14_5163_005

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,385 | 3,343 | 6,728 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 10 | | 11 | | 21 | | 12:00 | | | 68 | | 58 | | 126 | |
| 00:15 | | | 18 | | 13 | | 31 | | 12:15 | | | 72 | | 68 | | 140 | |
| 00:30 | | | 18 | | 5 | | 23 | | 12:30 | | | 56 | | 69 | | 125 | |
| 00:45 | | | 11 | 57 | 11 | 40 | 22 | 97 | 12:45 | | | 72 | 268 | 66 | 261 | 138 | 529 |
| 01:00 | | | 9 | | 4 | | 13 | | 13:00 | | | 61 | | 76 | | 137 | |
| 01:15 | | | 9 | | 14 | | 23 | | 13:15 | | | 81 | | 56 | | 137 | |
| 01:30 | | | 10 | | 8 | | 18 | | 13:30 | | | 51 | | 65 | | 116 | |
| 01:45 | | | 12 | 40 | 4 | 30 | 16 | 70 | 13:45 | | | 59 | 252 | 67 | 264 | 126 | 516 |
| 02:00 | | | 7 | | 5 | | 12 | | 14:00 | | | 61 | | 53 | | 114 | |
| 02:15 | | | 5 | | 2 | | 7 | | 14:15 | | | 48 | | 52 | | 100 | |
| 02:30 | | | 3 | | 2 | | 5 | | 14:30 | | | 49 | | 69 | | 118 | |
| 02:45 | | | 3 | 18 | 3 | 12 | 6 | 30 | 14:45 | | | 63 | 221 | 64 | 238 | 127 | 459 |
| 03:00 | | | 1 | | 0 | | 1 | | 15:00 | | | 45 | | 68 | | 113 | |
| 03:15 | | | 7 | | 1 | | 8 | | 15:15 | | | 62 | | 51 | | 113 | |
| 03:30 | | | 2 | | 0 | | 2 | | 15:30 | | | 68 | | 53 | | 121 | |
| 03:45 | | | 6 | 16 | 2 | 3 | 8 | 19 | 15:45 | | | 58 | 233 | 61 | 233 | 119 | 466 |
| 04:00 | | | 2 | | 3 | | 5 | | 16:00 | | | 50 | | 55 | | 105 | |
| 04:15 | | | 1 | | 1 | | 2 | | 16:15 | | | 54 | | 57 | | 111 | |
| 04:30 | | | 1 | | 3 | | 4 | | 16:30 | | | 74 | | 56 | | 130 | |
| 04:45 | | | 2 | 6 | 0 | 7 | 2 | 13 | 16:45 | | | 73 | 251 | 52 | 220 | 125 | 471 |
| 05:00 | | | 3 | | 3 | | 6 | | 17:00 | | | 57 | | 59 | | 116 | |
| 05:15 | | | 2 | | 2 | | 4 | | 17:15 | | | 52 | | 67 | | 119 | |
| 05:30 | | | 3 | | 4 | | 7 | | 17:30 | | | 45 | | 64 | | 109 | |
| 05:45 | | | 6 | 14 | 5 | 14 | 11 | 28 | 17:45 | | | 57 | 211 | 63 | 253 | 120 | 464 |
| 06:00 | | | 8 | | 6 | | 14 | | 18:00 | | | 39 | | 62 | | 101 | |
| 06:15 | | | 12 | | 10 | | 22 | | 18:15 | | | 61 | | 56 | | 117 | |
| 06:30 | | | 13 | | 13 | | 26 | | 18:30 | | | 55 | | 57 | | 112 | |
| 06:45 | | | 27 | 60 | 16 | 45 | 43 | 105 | 18:45 | | | 58 | 213 | 48 | 223 | 106 | 436 |
| 07:00 | | | 16 | | 17 | | 33 | | 19:00 | | | 59 | | 43 | | 102 | |
| 07:15 | | | 22 | | 16 | | 38 | | 19:15 | | | 41 | | 57 | | 98 | |
| 07:30 | | | 20 | | 22 | | 42 | | 19:30 | | | 53 | | 39 | | 92 | |
| 07:45 | | | 30 | 88 | 28 | 83 | 58 | 171 | 19:45 | | | 43 | 196 | 41 | 180 | 84 | 376 |
| 08:00 | | | 27 | | 40 | | 67 | | 20:00 | | | 28 | | 31 | | 59 | |
| 08:15 | | | 32 | | 26 | | 58 | | 20:15 | | | 29 | | 38 | | 67 | |
| 08:30 | | | 31 | | 39 | | 70 | | 20:30 | | | 37 | | 29 | | 66 | |
| 08:45 | | | 66 | 156 | 47 | 152 | 113 | 308 | 20:45 | | | 23 | 117 | 25 | 123 | 48 | 240 |
| 09:00 | | | 49 | | 56 | | 105 | | 21:00 | | | 30 | | 28 | | 58 | |
| 09:15 | | | 33 | | 58 | | 91 | | 21:15 | | | 27 | | 29 | | 56 | |
| 09:30 | | | 55 | | 62 | | 117 | | 21:30 | | | 46 | | 25 | | 71 | |
| 09:45 | | | 48 | 185 | 55 | 231 | 103 | 416 | 21:45 | | | 36 | 139 | 35 | 117 | 71 | 256 |
| 10:00 | | | 50 | | 44 | | 94 | | 22:00 | | | 27 | | 27 | | 54 | |
| 10:15 | | | 52 | | 62 | | 114 | | 22:15 | | | 33 | | 18 | | 51 | |
| 10:30 | | | 53 | | 56 | | 109 | | 22:30 | | | 18 | | 22 | | 40 | |
| 10:45 | | | 65 | 220 | 57 | 219 | 122 | 439 | 22:45 | | | 30 | 108 | 19 | 86 | 49 | 194 |
| 11:00 | | | 54 | | 72 | | 126 | | 23:00 | | | 25 | | 11 | | 36 | |
| 11:15 | | | 49 | | 63 | | 112 | | 23:15 | | | 12 | | 10 | | 22 | |
| 11:30 | | | 70 | | 64 | | 134 | | 23:30 | | | 20 | | 15 | | 35 | |
| 11:45 | | | 62 | 235 | 64 | 263 | 126 | 498 | 23:45 | | | 24 | 81 | 10 | 46 | 34 | 127 |
| TOTALS | | | | 1095 | | 1099 | | 2194 | TOTALS | | | | 2290 | | 2244 | | 4534 |
| SPLIT % | | | | 49.9% | | 50.1% | | 32.6% | SPLIT % | | | | 50.5% | | 49.5% | | 67.4% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,385 | 3,343 | 6,728 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:30 | 11:00 | 11:30 | PM Peak Hour | | | 12:30 | 12:15 | 12:15 |
| AM Pk Volume | | | 272 | 263 | 526 | PM Pk Volume | | | 270 | 279 | 540 |
| Pk Hr Factor | | | 0.944 | 0.913 | 0.939 | Pk Hr Factor | | | 0.833 | 0.918 | 0.964 |
| 7 - 9 Volume | 0 | 0 | 244 | 235 | 479 | 4 - 6 Volume | 0 | 0 | 462 | 473 | 935 |
| 7 - 9 Peak Hour | | | 08:00 | 08:00 | 08:00 | 4 - 6 Peak Hour | | | 16:15 | 17:00 | 16:30 |
| 7 - 9 Pk Volume | 0 | 0 | 156 | 152 | 308 | 4 - 6 Pk Volume | 0 | 0 | 258 | 253 | 490 |
| Pk Hr Factor | 0.000 | 0.000 | 0.591 | 0.809 | 0.681 | Pk Hr Factor | 0.000 | 0.000 | 0.872 | 0.944 | 0.942 |

Prepared by NDS/ATD

# VOLUME

Poli St W/o Kalorama St

**Day:** Sunday
**Date:** 3/23/2014

**City:** Ventura
**Project #:** CA14_5163_005

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,097 | 2,892 | 5,989 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 20 | | 23 | | 43 | | 12:00 | | | 64 | | 69 | | 133 | |
| 00:15 | | | 10 | | 7 | | 17 | | 12:15 | | | 76 | | 58 | | 134 | |
| 00:30 | | | 8 | | 9 | | 17 | | 12:30 | | | 64 | | 65 | | 129 | |
| 00:45 | | | 11 | 49 | 9 | 48 | 20 | 97 | 12:45 | | | 79 | 283 | 69 | 261 | 148 | 544 |
| 01:00 | | | 12 | | 5 | | 17 | | 13:00 | | | 59 | | 61 | | 120 | |
| 01:15 | | | 11 | | 6 | | 17 | | 13:15 | | | 71 | | 60 | | 131 | |
| 01:30 | | | 8 | | 9 | | 17 | | 13:30 | | | 74 | | 75 | | 149 | |
| 01:45 | | | 15 | 46 | 6 | 26 | 21 | 72 | 13:45 | | | 62 | 266 | 61 | 257 | 123 | 523 |
| 02:00 | | | 12 | | 7 | | 19 | | 14:00 | | | 51 | | 63 | | 114 | |
| 02:15 | | | 6 | | 6 | | 12 | | 14:15 | | | 66 | | 64 | | 130 | |
| 02:30 | | | 4 | | 5 | | 9 | | 14:30 | | | 70 | | 64 | | 134 | |
| 02:45 | | | 3 | 25 | 2 | 20 | 5 | 45 | 14:45 | | | 55 | 242 | 60 | 251 | 115 | 493 |
| 03:00 | | | 3 | | 4 | | 7 | | 15:00 | | | 54 | | 67 | | 121 | |
| 03:15 | | | 1 | | 6 | | 7 | | 15:15 | | | 67 | | 67 | | 134 | |
| 03:30 | | | 0 | | 4 | | 4 | | 15:30 | | | 58 | | 65 | | 123 | |
| 03:45 | | | 2 | 6 | 2 | 16 | 4 | 22 | 15:45 | | | 84 | 263 | 67 | 266 | 151 | 529 |
| 04:00 | | | 2 | | 3 | | 5 | | 16:00 | | | 73 | | 47 | | 120 | |
| 04:15 | | | 2 | | 0 | | 2 | | 16:15 | | | 57 | | 67 | | 124 | |
| 04:30 | | | 1 | | 2 | | 3 | | 16:30 | | | 63 | | 64 | | 127 | |
| 04:45 | | | 1 | 6 | 2 | 7 | 3 | 13 | 16:45 | | | 75 | 268 | 48 | 226 | 123 | 494 |
| 05:00 | | | 0 | | 2 | | 2 | | 17:00 | | | 60 | | 54 | | 114 | |
| 05:15 | | | 1 | | 3 | | 4 | | 17:15 | | | 51 | | 36 | | 87 | |
| 05:30 | | | 1 | | 3 | | 4 | | 17:30 | | | 47 | | 43 | | 90 | |
| 05:45 | | | 5 | 7 | 2 | 10 | 7 | 17 | 17:45 | | | 37 | 195 | 61 | 194 | 98 | 389 |
| 06:00 | | | 3 | | 5 | | 8 | | 18:00 | | | 50 | | 39 | | 89 | |
| 06:15 | | | 4 | | 3 | | 7 | | 18:15 | | | 53 | | 40 | | 93 | |
| 06:30 | | | 17 | | 10 | | 27 | | 18:30 | | | 47 | | 53 | | 100 | |
| 06:45 | | | 21 | 45 | 12 | 30 | 33 | 75 | 18:45 | | | 38 | 188 | 30 | 162 | 68 | 350 |
| 07:00 | | | 16 | | 11 | | 27 | | 19:00 | | | 43 | | 38 | | 81 | |
| 07:15 | | | 12 | | 25 | | 37 | | 19:15 | | | 48 | | 41 | | 89 | |
| 07:30 | | | 20 | | 13 | | 33 | | 19:30 | | | 41 | | 37 | | 78 | |
| 07:45 | | | 25 | 73 | 13 | 62 | 38 | 135 | 19:45 | | | 46 | 178 | 31 | 147 | 77 | 325 |
| 08:00 | | | 29 | | 25 | | 54 | | 20:00 | | | 38 | | 28 | | 66 | |
| 08:15 | | | 20 | | 20 | | 40 | | 20:15 | | | 31 | | 21 | | 52 | |
| 08:30 | | | 32 | | 29 | | 61 | | 20:30 | | | 28 | | 24 | | 52 | |
| 08:45 | | | 20 | 101 | 30 | 104 | 50 | 205 | 20:45 | | | 27 | 124 | 14 | 87 | 41 | 211 |
| 09:00 | | | 30 | | 38 | | 68 | | 21:00 | | | 37 | | 18 | | 55 | |
| 09:15 | | | 36 | | 33 | | 69 | | 21:15 | | | 20 | | 19 | | 39 | |
| 09:30 | | | 37 | | 37 | | 74 | | 21:30 | | | 18 | | 16 | | 34 | |
| 09:45 | | | 34 | 137 | 36 | 144 | 70 | 281 | 21:45 | | | 21 | 96 | 18 | 71 | 39 | 167 |
| 10:00 | | | 35 | | 45 | | 80 | | 22:00 | | | 16 | | 15 | | 31 | |
| 10:15 | | | 53 | | 43 | | 96 | | 22:15 | | | 11 | | 13 | | 24 | |
| 10:30 | | | 49 | | 51 | | 100 | | 22:30 | | | 9 | | 14 | | 23 | |
| 10:45 | | | 65 | 202 | 65 | 204 | 130 | 406 | 22:45 | | | 3 | 39 | 11 | 53 | 14 | 92 |
| 11:00 | | | 43 | | 53 | | 96 | | 23:00 | | | 11 | | 8 | | 19 | |
| 11:15 | | | 52 | | 55 | | 107 | | 23:15 | | | 4 | | 4 | | 8 | |
| 11:30 | | | 72 | | 54 | | 126 | | 23:30 | | | 9 | | 4 | | 13 | |
| 11:45 | | | 60 | 227 | 60 | 222 | 120 | 449 | 23:45 | | | 7 | 31 | 8 | 24 | 15 | 55 |
| **TOTALS** | | | | 924 | | 893 | | 1817 | **TOTALS** | | | | 2173 | | 1999 | | 4172 |
| **SPLIT %** | | | | 50.9% | | 49.1% | | 30.3% | **SPLIT %** | | | | 52.1% | | 47.9% | | 69.7% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,097 | 2,892 | 5,989 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 11:30 | 11:45 | 11:45 | **PM Peak Hour** | | | 12:00 | 15:00 | 12:45 |
| **AM Pk Volume** | | | 272 | 252 | 516 | **PM Pk Volume** | | | 283 | 266 | 548 |
| **Pk Hr Factor** | | | 0.895 | 0.913 | 0.963 | **Pk Hr Factor** | | | 0.896 | 0.993 | 0.919 |
| **7 - 9 Volume** | 0 | 0 | 174 | 166 | 340 | **4 - 6 Volume** | 0 | 0 | 463 | 420 | 883 |
| **7 - 9 Peak Hour** | | | 07:45 | 08:00 | 08:00 | **4 - 6 Peak Hour** | | | 16:00 | 16:15 | 16:00 |
| **7 - 9 Pk Volume** | 0 | 0 | 106 | 104 | 205 | **4 - 6 Pk Volume** | 0 | 0 | 268 | 233 | 494 |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.828 | 0.867 | 0.840 | **Pk Hr Factor** | 0.000 | 0.000 | 0.893 | 0.869 | 0.972 |

Prepared by NDS/ATD

# VOLUME

Poli St W/o Kalorama St

**Day:** Monday
**Date:** 3/24/2014

**City:** Ventura
**Project #:** CA14_5163_005

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,672 | 3,547 | 7,219 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 3 | | 7 | | 10 | | 12:00 | | | 68 | | 57 | | 125 | |
| 00:15 | | | 4 | | 5 | | 9 | | 12:15 | | | 50 | | 50 | | 100 | |
| 00:30 | | | 8 | | 2 | | 10 | | 12:30 | | | 37 | | 52 | | 89 | |
| 00:45 | | | 3 | 18 | 3 | 17 | 6 | 35 | 12:45 | | | 47 | 202 | 68 | 227 | 115 | 429 |
| 01:00 | | | 2 | | 3 | | 5 | | 13:00 | | | 64 | | 36 | | 100 | |
| 01:15 | | | 3 | | 4 | | 7 | | 13:15 | | | 39 | | 52 | | 91 | |
| 01:30 | | | 3 | | 2 | | 5 | | 13:30 | | | 56 | | 41 | | 97 | |
| 01:45 | | | 2 | 10 | 7 | 16 | 9 | 26 | 13:45 | | | 45 | 204 | 53 | 182 | 98 | 386 |
| 02:00 | | | 1 | | 2 | | 3 | | 14:00 | | | 57 | | 60 | | 117 | |
| 02:15 | | | 2 | | 3 | | 5 | | 14:15 | | | 74 | | 55 | | 129 | |
| 02:30 | | | 3 | | 2 | | 5 | | 14:30 | | | 76 | | 70 | | 146 | |
| 02:45 | | | 1 | 7 | 2 | 9 | 3 | 16 | 14:45 | | | 64 | 271 | 84 | 269 | 148 | 540 |
| 03:00 | | | 2 | | 3 | | 5 | | 15:00 | | | 68 | | 70 | | 138 | |
| 03:15 | | | 3 | | 0 | | 3 | | 15:15 | | | 72 | | 64 | | 136 | |
| 03:30 | | | 0 | | 3 | | 3 | | 15:30 | | | 90 | | 75 | | 165 | |
| 03:45 | | | 4 | 9 | 2 | 8 | 6 | 17 | 15:45 | | | 83 | 313 | 100 | 309 | 183 | 622 |
| 04:00 | | | 2 | | 1 | | 3 | | 16:00 | | | 83 | | 53 | | 136 | |
| 04:15 | | | 4 | | 2 | | 6 | | 16:15 | | | 73 | | 83 | | 156 | |
| 04:30 | | | 3 | | 5 | | 8 | | 16:30 | | | 71 | | 84 | | 155 | |
| 04:45 | | | 4 | 13 | 4 | 12 | 8 | 25 | 16:45 | | | 91 | 318 | 81 | 301 | 172 | 619 |
| 05:00 | | | 2 | | 3 | | 5 | | 17:00 | | | 109 | | 79 | | 188 | |
| 05:15 | | | 5 | | 8 | | 13 | | 17:15 | | | 92 | | 72 | | 164 | |
| 05:30 | | | 9 | | 12 | | 21 | | 17:30 | | | 104 | | 83 | | 187 | |
| 05:45 | | | 16 | 32 | 12 | 35 | 28 | 67 | 17:45 | | | 76 | 381 | 71 | 305 | 147 | 686 |
| 06:00 | | | 7 | | 22 | | 29 | | 18:00 | | | 76 | | 62 | | 138 | |
| 06:15 | | | 15 | | 12 | | 27 | | 18:15 | | | 56 | | 72 | | 128 | |
| 06:30 | | | 22 | | 25 | | 47 | | 18:30 | | | 62 | | 60 | | 122 | |
| 06:45 | | | 35 | 79 | 30 | 89 | 65 | 168 | 18:45 | | | 42 | 236 | 46 | 240 | 88 | 476 |
| 07:00 | | | 55 | | 43 | | 98 | | 19:00 | | | 50 | | 62 | | 112 | |
| 07:15 | | | 124 | | 78 | | 202 | | 19:15 | | | 38 | | 46 | | 84 | |
| 07:30 | | | 79 | | 101 | | 180 | | 19:30 | | | 47 | | 36 | | 83 | |
| 07:45 | | | 71 | 329 | 72 | 294 | 143 | 623 | 19:45 | | | 31 | 166 | 41 | 185 | 72 | 351 |
| 08:00 | | | 61 | | 84 | | 145 | | 20:00 | | | 33 | | 21 | | 54 | |
| 08:15 | | | 60 | | 65 | | 125 | | 20:15 | | | 34 | | 25 | | 59 | |
| 08:30 | | | 56 | | 67 | | 123 | | 20:30 | | | 35 | | 16 | | 51 | |
| 08:45 | | | 57 | 234 | 55 | 271 | 112 | 505 | 20:45 | | | 34 | 136 | 19 | 81 | 53 | 217 |
| 09:00 | | | 51 | | 58 | | 109 | | 21:00 | | | 36 | | 36 | | 72 | |
| 09:15 | | | 42 | | 41 | | 83 | | 21:15 | | | 36 | | 23 | | 59 | |
| 09:30 | | | 35 | | 41 | | 76 | | 21:30 | | | 27 | | 24 | | 51 | |
| 09:45 | | | 49 | 177 | 51 | 191 | 100 | 368 | 21:45 | | | 21 | 120 | 14 | 97 | 35 | 217 |
| 10:00 | | | 45 | | 39 | | 84 | | 22:00 | | | 11 | | 12 | | 23 | |
| 10:15 | | | 47 | | 35 | | 82 | | 22:15 | | | 17 | | 11 | | 28 | |
| 10:30 | | | 29 | | 48 | | 77 | | 22:30 | | | 9 | | 8 | | 17 | |
| 10:45 | | | 38 | 159 | 43 | 165 | 81 | 324 | 22:45 | | | 8 | 45 | 5 | 36 | 13 | 81 |
| 11:00 | | | 39 | | 39 | | 78 | | 23:00 | | | 10 | | 8 | | 18 | |
| 11:15 | | | 51 | | 43 | | 94 | | 23:15 | | | 12 | | 6 | | 18 | |
| 11:30 | | | 44 | | 44 | | 88 | | 23:30 | | | 6 | | 7 | | 13 | |
| 11:45 | | | 44 | 178 | 54 | 180 | 98 | 358 | 23:45 | | | 7 | 35 | 7 | 28 | 14 | 63 |
| **TOTALS** | | | | 1245 | | 1287 | | 2532 | **TOTALS** | | | | 2427 | | 2260 | | 4687 |
| **SPLIT %** | | | | 49.2% | | 50.8% | | 35.1% | **SPLIT %** | | | | 51.8% | | 48.2% | | 64.9% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 3,672 | 3,547 | 7,219 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 07:15 | 07:15 | 07:15 | **PM Peak Hour** | | | 16:45 | 16:15 | 16:45 |
| **AM Pk Volume** | | | 335 | 335 | 670 | **PM Pk Volume** | | | 396 | 327 | 711 |
| **Pk Hr Factor** | | | 0.675 | 0.829 | 0.829 | **Pk Hr Factor** | | | 0.908 | 0.973 | 0.945 |
| **7 - 9 Volume** | 0 | 0 | 563 | 565 | 1128 | **4 - 6 Volume** | 0 | 0 | 699 | 606 | 1305 |
| **7 - 9 Peak Hour** | | | 07:15 | 07:15 | 07:15 | **4 - 6 Peak Hour** | | | 16:45 | 16:15 | 16:45 |
| **7 - 9 Pk Volume** | 0 | 0 | 335 | 335 | 670 | **4 - 6 Pk Volume** | 0 | 0 | 396 | 327 | 711 |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.675 | 0.829 | 0.829 | **Pk Hr Factor** | 0.000 | 0.000 | 0.908 | 0.973 | 0.945 |

Prepared by NDS/ATD

# VOLUME

Kalorama St N/o Poli St

**Day:** Friday
**Date:** 3/21/2014

**City:** Ventura
**Project #:** CA14_5163_006

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 886 | 829 | 0 | 0 | 1,715 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 1 | | 1 | | | | | | 2 | | 12:00 | 10 | | 20 | | | | | | 30 | |
| 00:15 | 2 | | 2 | | | | | | 4 | | 12:15 | 13 | | 13 | | | | | | 26 | |
| 00:30 | 2 | | 3 | | | | | | 5 | | 12:30 | 11 | | 14 | | | | | | 25 | |
| 00:45 | 3 | 8 | 1 | 7 | | | | | 4 | 15 | 12:45 | 13 | 47 | 10 | 57 | | | | | 23 | 104 |
| 01:00 | 1 | | 2 | | | | | | 3 | | 13:00 | 16 | | 13 | | | | | | 29 | |
| 01:15 | 0 | | 1 | | | | | | 1 | | 13:15 | 12 | | 13 | | | | | | 25 | |
| 01:30 | 1 | | 1 | | | | | | 2 | | 13:30 | 20 | | 10 | | | | | | 30 | |
| 01:45 | 1 | 3 | 1 | 5 | | | | | 2 | 8 | 13:45 | 13 | 61 | 9 | 45 | | | | | 22 | 106 |
| 02:00 | 0 | | 0 | | | | | | 0 | | 14:00 | 13 | | 17 | | | | | | 30 | |
| 02:15 | 0 | | 0 | | | | | | 0 | | 14:15 | 10 | | 14 | | | | | | 24 | |
| 02:30 | 0 | | 0 | | | | | | 0 | | 14:30 | 8 | | 10 | | | | | | 18 | |
| 02:45 | 0 | | 0 | | | | | | 0 | | 14:45 | 18 | 49 | 8 | 49 | | | | | 26 | 98 |
| 03:00 | 0 | | 1 | | | | | | 1 | | 15:00 | 17 | | 10 | | | | | | 27 | |
| 03:15 | 0 | | 0 | | | | | | 0 | | 15:15 | 18 | | 15 | | | | | | 33 | |
| 03:30 | 0 | | 1 | | | | | | 1 | | 15:30 | 24 | | 18 | | | | | | 42 | |
| 03:45 | 1 | 1 | 1 | 3 | | | | | 2 | 4 | 15:45 | 15 | 74 | 14 | 57 | | | | | 29 | 131 |
| 04:00 | 0 | | 1 | | | | | | 1 | | 16:00 | 13 | | 12 | | | | | | 25 | |
| 04:15 | 0 | | 0 | | | | | | 0 | | 16:15 | 19 | | 10 | | | | | | 29 | |
| 04:30 | 1 | | 2 | | | | | | 3 | | 16:30 | 14 | | 15 | | | | | | 29 | |
| 04:45 | 0 | 1 | 2 | 5 | | | | | 2 | 6 | 16:45 | 26 | 72 | 15 | 52 | | | | | 41 | 124 |
| 05:00 | 2 | | 6 | | | | | | 8 | | 17:00 | 20 | | 11 | | | | | | 31 | |
| 05:15 | 0 | | 2 | | | | | | 2 | | 17:15 | 29 | | 10 | | | | | | 39 | |
| 05:30 | 1 | | 3 | | | | | | 4 | | 17:30 | 23 | | 13 | | | | | | 36 | |
| 05:45 | 2 | 5 | 4 | 15 | | | | | 6 | 20 | 17:45 | 18 | 90 | 17 | 51 | | | | | 35 | 141 |
| 06:00 | 2 | | 5 | | | | | | 7 | | 18:00 | 14 | | 14 | | | | | | 28 | |
| 06:15 | 3 | | 2 | | | | | | 5 | | 18:15 | 25 | | 12 | | | | | | 37 | |
| 06:30 | 3 | | 6 | | | | | | 9 | | 18:30 | 20 | | 11 | | | | | | 31 | |
| 06:45 | 6 | 14 | 14 | 27 | | | | | 20 | 41 | 18:45 | 18 | 77 | 13 | 50 | | | | | 31 | 127 |
| 07:00 | 4 | | 10 | | | | | | 14 | | 19:00 | 22 | | 15 | | | | | | 37 | |
| 07:15 | 4 | | 14 | | | | | | 18 | | 19:15 | 21 | | 10 | | | | | | 31 | |
| 07:30 | 6 | | 23 | | | | | | 29 | | 19:30 | 18 | | 9 | | | | | | 27 | |
| 07:45 | 3 | 17 | 15 | 62 | | | | | 18 | 79 | 19:45 | 13 | 74 | 7 | 41 | | | | | 20 | 115 |
| 08:00 | 6 | | 14 | | | | | | 20 | | 20:00 | 15 | | 8 | | | | | | 23 | |
| 08:15 | 6 | | 14 | | | | | | 20 | | 20:15 | 10 | | 9 | | | | | | 19 | |
| 08:30 | 12 | | 12 | | | | | | 24 | | 20:30 | 13 | | 10 | | | | | | 23 | |
| 08:45 | 12 | 36 | 17 | 57 | | | | | 29 | 93 | 20:45 | 12 | 50 | 7 | 34 | | | | | 19 | 84 |
| 09:00 | 16 | | 9 | | | | | | 25 | | 21:00 | 7 | | 10 | | | | | | 17 | |
| 09:15 | 9 | | 16 | | | | | | 25 | | 21:15 | 9 | | 8 | | | | | | 17 | |
| 09:30 | 10 | | 14 | | | | | | 24 | | 21:30 | 8 | | 7 | | | | | | 15 | |
| 09:45 | 9 | 44 | 12 | 51 | | | | | 21 | 95 | 21:45 | 8 | 32 | 4 | 29 | | | | | 12 | 61 |
| 10:00 | 12 | | 14 | | | | | | 26 | | 22:00 | 10 | | 7 | | | | | | 17 | |
| 10:15 | 10 | | 12 | | | | | | 22 | | 22:15 | 6 | | 6 | | | | | | 12 | |
| 10:30 | 10 | | 16 | | | | | | 26 | | 22:30 | 6 | | 3 | | | | | | 9 | |
| 10:45 | 6 | 38 | 8 | 50 | | | | | 14 | 88 | 22:45 | 4 | 26 | 6 | 22 | | | | | 10 | 48 |
| 11:00 | 13 | | 10 | | | | | | 23 | | 23:00 | 5 | | 5 | | | | | | 10 | |
| 11:15 | 9 | | 10 | | | | | | 19 | | 23:15 | 3 | | 3 | | | | | | 6 | |
| 11:30 | 18 | | 11 | | | | | | 29 | | 23:30 | 2 | | 2 | | | | | | 4 | |
| 11:45 | 14 | 54 | 17 | 48 | | | | | 31 | 102 | 23:45 | 3 | 13 | 2 | 12 | | | | | 5 | 25 |
| **TOTALS** | | 221 | | 330 | | | | | | 551 | **TOTALS** | | 665 | | 499 | | | | | | 1164 |
| **SPLIT %** | | 40.1% | | 59.9% | | | | | | 32.1% | **SPLIT %** | | 57.1% | | 42.9% | | | | | | 67.9% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 886 | 829 | 0 | 0 | 1,715 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:30 | 07:15 | | | 11:30 | **PM Peak Hour** | 16:45 | 15:15 | | | 16:45 |
| **AM Pk Volume** | 55 | 66 | | | 116 | **PM Pk Volume** | 98 | 59 | | | 147 |
| **Pk Hr Factor** | 0.764 | 0.717 | | | 0.935 | **Pk Hr Factor** | 0.845 | 0.819 | | | 0.896 |
| **7 - 9 Volume** | 53 | 119 | 0 | 0 | 172 | **4 - 6 Volume** | 162 | 103 | 0 | 0 | 265 |
| **7 - 9 Peak Hour** | 08:00 | 07:15 | | | 08:00 | **4 - 6 Peak Hour** | 16:45 | 16:00 | | | 16:45 |
| **7 - 9 Pk Volume** | 36 | 66 | 0 | 0 | 93 | **4 - 6 Pk Volume** | 98 | 52 | 0 | 0 | 147 |
| **Pk Hr Factor** | 0.750 | 0.717 | 0.000 | 0.000 | 0.802 | **Pk Hr Factor** | 0.845 | 0.867 | 0.000 | 0.000 | 0.896 |

Prepared by NDS/ATD

# VOLUME

Kalorama St N/o Poli St

**Day:** Sunday
**Date:** 3/23/2014

**City:** Ventura
**Project #:** CA14_5163_006

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 819 | 768 | 0 | 0 | 1,587 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 4 | | 3 | | | | | | 7 | | 12:00 | 17 | | 15 | | | | | | 32 | |
| 00:15 | 6 | | 3 | | | | | | 9 | | 12:15 | 16 | | 11 | | | | | | 27 | |
| 00:30 | 6 | | 0 | | | | | | 6 | | 12:30 | 16 | | 16 | | | | | | 32 | |
| 00:45 | 1 | 17 | 3 | 9 | | | | | 4 | 26 | 12:45 | 16 | 65 | 16 | 58 | | | | | 32 | 123 |
| 01:00 | 2 | | 0 | | | | | | 2 | | 13:00 | 14 | | 15 | | | | | | 29 | |
| 01:15 | 5 | | 1 | | | | | | 6 | | 13:15 | 25 | | 15 | | | | | | 40 | |
| 01:30 | 1 | | 0 | | | | | | 1 | | 13:30 | 16 | | 15 | | | | | | 31 | |
| 01:45 | 2 | 10 | 1 | 2 | | | | | 3 | 12 | 13:45 | 18 | 73 | 14 | 59 | | | | | 32 | 132 |
| 02:00 | 4 | | 4 | | | | | | 8 | | 14:00 | 28 | | 17 | | | | | | 45 | |
| 02:15 | 2 | | 5 | | | | | | 7 | | 14:15 | 12 | | 18 | | | | | | 30 | |
| 02:30 | 4 | | 1 | | | | | | 5 | | 14:30 | 13 | | 17 | | | | | | 30 | |
| 02:45 | 0 | 10 | 2 | 12 | | | | | 2 | 22 | 14:45 | 18 | 71 | 13 | 65 | | | | | 31 | 136 |
| 03:00 | 0 | | 0 | | | | | | 0 | | 15:00 | 12 | | 21 | | | | | | 33 | |
| 03:15 | 1 | | 1 | | | | | | 2 | | 15:15 | 20 | | 15 | | | | | | 35 | |
| 03:30 | 0 | | 0 | | | | | | 0 | | 15:30 | 19 | | 17 | | | | | | 36 | |
| 03:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 | 15:45 | 17 | 68 | 12 | 65 | | | | | 29 | 133 |
| 04:00 | 0 | | 1 | | | | | | 1 | | 16:00 | 12 | | 18 | | | | | | 30 | |
| 04:15 | 0 | | 0 | | | | | | 0 | | 16:15 | 21 | | 11 | | | | | | 32 | |
| 04:30 | 0 | | 0 | | | | | | 0 | | 16:30 | 18 | | 22 | | | | | | 40 | |
| 04:45 | 0 | | 1 | 2 | | | | | 1 | 2 | 16:45 | 15 | 66 | 11 | 62 | | | | | 26 | 128 |
| 05:00 | 0 | | 0 | | | | | | 0 | | 17:00 | 19 | | 12 | | | | | | 31 | |
| 05:15 | 1 | | 2 | | | | | | 3 | | 17:15 | 17 | | 12 | | | | | | 29 | |
| 05:30 | 1 | | 2 | | | | | | 3 | | 17:30 | 16 | | 19 | | | | | | 35 | |
| 05:45 | 1 | 3 | 1 | 5 | | | | | 2 | 8 | 17:45 | 15 | 67 | 13 | 56 | | | | | 28 | 123 |
| 06:00 | 0 | | 1 | | | | | | 1 | | 18:00 | 20 | | 19 | | | | | | 39 | |
| 06:15 | 1 | | 0 | | | | | | 1 | | 18:15 | 10 | | 3 | | | | | | 13 | |
| 06:30 | 3 | | 3 | | | | | | 6 | | 18:30 | 24 | | 11 | | | | | | 35 | |
| 06:45 | 0 | 4 | 4 | 8 | | | | | 4 | 12 | 18:45 | 15 | 69 | 16 | 49 | | | | | 31 | 118 |
| 07:00 | 1 | | 3 | | | | | | 4 | | 19:00 | 14 | | 12 | | | | | | 26 | |
| 07:15 | 1 | | 3 | | | | | | 4 | | 19:15 | 15 | | 9 | | | | | | 24 | |
| 07:30 | 2 | | 7 | | | | | | 9 | | 19:30 | 9 | | 9 | | | | | | 18 | |
| 07:45 | 5 | 9 | 7 | 20 | | | | | 12 | 29 | 19:45 | 10 | 48 | 12 | 42 | | | | | 22 | 90 |
| 08:00 | 3 | | 5 | | | | | | 8 | | 20:00 | 11 | | 7 | | | | | | 18 | |
| 08:15 | 8 | | 9 | | | | | | 17 | | 20:15 | 12 | | 3 | | | | | | 15 | |
| 08:30 | 1 | | 7 | | | | | | 8 | | 20:30 | 10 | | 4 | | | | | | 14 | |
| 08:45 | 11 | 23 | 10 | 31 | | | | | 21 | 54 | 20:45 | 7 | 40 | 3 | 17 | | | | | 10 | 57 |
| 09:00 | 7 | | 9 | | | | | | 16 | | 21:00 | 4 | | 4 | | | | | | 8 | |
| 09:15 | 6 | | 18 | | | | | | 24 | | 21:15 | 8 | | 6 | | | | | | 14 | |
| 09:30 | 8 | | 18 | | | | | | 26 | | 21:30 | 6 | | 3 | | | | | | 9 | |
| 09:45 | 11 | 32 | 14 | 59 | | | | | 25 | 91 | 21:45 | 5 | 23 | 5 | 18 | | | | | 10 | 41 |
| 10:00 | 12 | | 13 | | | | | | 25 | | 22:00 | 2 | | 1 | | | | | | 3 | |
| 10:15 | 11 | | 17 | | | | | | 28 | | 22:15 | 8 | | 8 | | | | | | 16 | |
| 10:30 | 13 | | 11 | | | | | | 24 | | 22:30 | 2 | | 4 | | | | | | 6 | |
| 10:45 | 14 | 50 | 15 | 56 | | | | | 29 | 106 | 22:45 | 3 | 15 | 2 | 15 | | | | | 5 | 30 |
| 11:00 | 12 | | 14 | | | | | | 26 | | 23:00 | 0 | | 3 | | | | | | 3 | |
| 11:15 | 11 | | 17 | | | | | | 28 | | 23:15 | 6 | | 0 | | | | | | 6 | |
| 11:30 | 7 | | 11 | | | | | | 18 | | 23:30 | 1 | | 2 | | | | | | 3 | |
| 11:45 | 18 | 48 | 10 | 52 | | | | | 28 | 100 | 23:45 | 0 | 7 | 0 | 5 | | | | | 0 | 12 |
| **TOTALS** | | 207 | | 257 | | | | | | 464 | **TOTALS** | | 612 | | 511 | | | | | | 1123 |
| **SPLIT %** | | 44.6% | | 55.4% | | | | | | 29.2% | **SPLIT %** | | 54.5% | | 45.5% | | | | | | 70.8% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 819 | 768 | 0 | 0 | 1,587 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:45 | 09:15 | | | 11:45 | **PM Peak Hour** | 13:15 | 14:15 | | | 13:15 |
| **AM Pk Volume** | 67 | 63 | | | 119 | **PM Pk Volume** | 87 | 69 | | | 148 |
| **Pk Hr Factor** | 0.931 | 0.875 | | | 0.930 | **Pk Hr Factor** | 0.777 | 0.821 | | | 0.822 |
| **7 - 9 Volume** | 32 | 51 | 0 | 0 | 83 | **4 - 6 Volume** | 133 | 118 | 0 | 0 | 251 |
| **7 - 9 Peak Hour** | 08:00 | 08:00 | | | 08:00 | **4 - 6 Peak Hour** | 16:15 | 16:00 | | | 16:15 |
| **7 - 9 Pk Volume** | 23 | 31 | 0 | 0 | 54 | **4 - 6 Pk Volume** | 73 | 62 | 0 | 0 | 129 |
| **Pk Hr Factor** | 0.523 | 0.775 | 0.000 | 0.000 | 0.643 | **Pk Hr Factor** | 0.869 | 0.705 | 0.000 | 0.000 | 0.806 |

Prepared by NDS/ATD

# VOLUME

Kalorama St N/o Poli St

Day: Monday
Date: 3/24/2014

City: Ventura
Project #: CA14_5163_006

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 831 | 771 | 0 | 0 | 1,602 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 0 | | 1 | | | | | | 1 | | 12:00 | 16 | | 16 | | | | | | 32 | |
| 00:15 | 3 | | 0 | | | | | | 3 | | 12:15 | 10 | | 11 | | | | | | 21 | |
| 00:30 | 1 | | 0 | | | | | | 1 | | 12:30 | 18 | | 7 | | | | | | 25 | |
| 00:45 | 1 | 5 | 0 | 1 | | | | | 1 | 6 | 12:45 | 13 | 57 | 14 | 48 | | | | | 27 | 105 |
| 01:00 | 1 | | 0 | | | | | | 1 | | 13:00 | 14 | | 6 | | | | | | 20 | |
| 01:15 | 1 | | 2 | | | | | | 3 | | 13:15 | 13 | | 12 | | | | | | 25 | |
| 01:30 | 1 | | 0 | | | | | | 1 | | 13:30 | 12 | | 13 | | | | | | 25 | |
| 01:45 | 0 | 3 | 1 | 3 | | | | | 1 | 6 | 13:45 | 14 | 53 | 13 | 44 | | | | | 27 | 97 |
| 02:00 | 0 | | 0 | | | | | | 0 | | 14:00 | 15 | | 11 | | | | | | 26 | |
| 02:15 | 0 | | 0 | | | | | | 0 | | 14:15 | 12 | | 19 | | | | | | 31 | |
| 02:30 | 0 | | 0 | | | | | | 0 | | 14:30 | 13 | | 14 | | | | | | 27 | |
| 02:45 | 0 | | 2 | 2 | | | | | 2 | 2 | 14:45 | 12 | 52 | 16 | 60 | | | | | 28 | 112 |
| 03:00 | 0 | | 0 | | | | | | 0 | | 15:00 | 20 | | 13 | | | | | | 33 | |
| 03:15 | 0 | | 0 | | | | | | 0 | | 15:15 | 11 | | 15 | | | | | | 26 | |
| 03:30 | 0 | | 1 | | | | | | 1 | | 15:30 | 18 | | 10 | | | | | | 28 | |
| 03:45 | 0 | | 0 | 1 | | | | | 0 | 1 | 15:45 | 11 | 60 | 15 | 53 | | | | | 26 | 113 |
| 04:00 | 1 | | 0 | | | | | | 1 | | 16:00 | 19 | | 6 | | | | | | 25 | |
| 04:15 | 0 | | 4 | | | | | | 4 | | 16:15 | 20 | | 5 | | | | | | 25 | |
| 04:30 | 0 | | 1 | | | | | | 1 | | 16:30 | 18 | | 15 | | | | | | 33 | |
| 04:45 | 0 | 1 | 3 | 8 | | | | | 3 | 9 | 16:45 | 20 | 77 | 15 | 41 | | | | | 35 | 118 |
| 05:00 | 3 | | 1 | | | | | | 4 | | 17:00 | 31 | | 12 | | | | | | 43 | |
| 05:15 | 0 | | 1 | | | | | | 1 | | 17:15 | 29 | | 11 | | | | | | 40 | |
| 05:30 | 0 | | 5 | | | | | | 5 | | 17:30 | 29 | | 18 | | | | | | 47 | |
| 05:45 | 1 | 4 | 5 | 12 | | | | | 6 | 16 | 17:45 | 26 | 115 | 17 | 58 | | | | | 43 | 173 |
| 06:00 | 1 | | 6 | | | | | | 7 | | 18:00 | 28 | | 9 | | | | | | 37 | |
| 06:15 | 2 | | 6 | | | | | | 8 | | 18:15 | 13 | | 17 | | | | | | 30 | |
| 06:30 | 4 | | 16 | | | | | | 20 | | 18:30 | 20 | | 13 | | | | | | 33 | |
| 06:45 | 5 | 12 | 12 | 40 | | | | | 17 | 52 | 18:45 | 15 | 76 | 10 | 49 | | | | | 25 | 125 |
| 07:00 | 5 | | 12 | | | | | | 17 | | 19:00 | 19 | | 7 | | | | | | 26 | |
| 07:15 | 7 | | 15 | | | | | | 22 | | 19:15 | 10 | | 6 | | | | | | 16 | |
| 07:30 | 8 | | 16 | | | | | | 24 | | 19:30 | 14 | | 12 | | | | | | 26 | |
| 07:45 | 4 | 24 | 21 | 64 | | | | | 25 | 88 | 19:45 | 11 | 54 | 3 | 28 | | | | | 14 | 82 |
| 08:00 | 11 | | 18 | | | | | | 29 | | 20:00 | 12 | | 6 | | | | | | 18 | |
| 08:15 | 5 | | 12 | | | | | | 17 | | 20:15 | 10 | | 7 | | | | | | 17 | |
| 08:30 | 14 | | 16 | | | | | | 30 | | 20:30 | 13 | | 8 | | | | | | 21 | |
| 08:45 | 5 | 35 | 15 | 61 | | | | | 20 | 96 | 20:45 | 13 | 48 | 6 | 27 | | | | | 19 | 75 |
| 09:00 | 6 | | 21 | | | | | | 27 | | 21:00 | 7 | | 7 | | | | | | 14 | |
| 09:15 | 5 | | 12 | | | | | | 17 | | 21:15 | 15 | | 3 | | | | | | 18 | |
| 09:30 | 7 | | 9 | | | | | | 16 | | 21:30 | 8 | | 3 | | | | | | 11 | |
| 09:45 | 6 | 24 | 9 | 51 | | | | | 15 | 75 | 21:45 | 6 | 36 | 3 | 16 | | | | | 9 | 52 |
| 10:00 | 9 | | 8 | | | | | | 17 | | 22:00 | 4 | | 5 | | | | | | 9 | |
| 10:15 | 7 | | 10 | | | | | | 17 | | 22:15 | 3 | | 3 | | | | | | 6 | |
| 10:30 | 7 | | 11 | | | | | | 18 | | 22:30 | 3 | | 3 | | | | | | 6 | |
| 10:45 | 13 | 36 | 12 | 41 | | | | | 25 | 77 | 22:45 | 0 | 10 | 1 | 12 | | | | | 1 | 22 |
| 11:00 | 10 | | 16 | | | | | | 26 | | 23:00 | 2 | | 3 | | | | | | 5 | |
| 11:15 | 9 | | 13 | | | | | | 22 | | 23:15 | 3 | | 2 | | | | | | 5 | |
| 11:30 | 6 | | 7 | | | | | | 13 | | 23:30 | 5 | | 1 | | | | | | 6 | |
| 11:45 | 13 | 38 | 9 | 45 | | | | | 22 | 83 | 23:45 | 1 | 11 | 0 | 6 | | | | | 1 | 17 |
| TOTALS | | 182 | | 329 | | | | | | 511 | TOTALS | | 649 | | 442 | | | | | | 1091 |
| SPLIT % | | 35.6% | | 64.4% | | | | | | 31.9% | SPLIT % | | 59.5% | | 40.5% | | | | | | 68.1% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 831 | 771 | 0 | 0 | 1,602 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | 11:45 | 07:15 | | | 07:45 | PM Peak Hour | 17:00 | 14:15 | | | 17:00 |
| AM Pk Volume | 57 | 70 | | | 101 | PM Pk Volume | 115 | 62 | | | 173 |
| Pk Hr Factor | 0.792 | 0.833 | | | 0.842 | Pk Hr Factor | 0.927 | 0.816 | | | 0.920 |
| 7 - 9 Volume | 59 | 125 | 0 | 0 | 184 | 4 - 6 Volume | 192 | 99 | 0 | 0 | 291 |
| 7 - 9 Peak Hour | 08:00 | 07:15 | | | 07:45 | 4 - 6 Peak Hour | 17:00 | 17:00 | | | 17:00 |
| 7 - 9 Pk Volume | 35 | 70 | 0 | 0 | 101 | 4 - 6 Pk Volume | 115 | 58 | 0 | 0 | 173 |
| Pk Hr Factor | 0.625 | 0.833 | 0.000 | 0.000 | 0.842 | Pk Hr Factor | 0.927 | 0.806 | 0.000 | 0.000 | 0.920 |

24

Prepared by NDS/ATD

# VOLUME

Summit Dr W/o Kalorama St

**Day:** Saturday
**Date:** 3/22/2014

**City:** Ventura
**Project #:** CA14_5163_007

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 349 | 323 | 672 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 0 | | 1 | | 1 | | 12:00 | | | 5 | | 7 | | 12 | |
| 00:15 | | | 2 | | 0 | | 2 | | 12:15 | | | 11 | | 4 | | 15 | |
| 00:30 | | | 0 | | 0 | | 0 | | 12:30 | | | 8 | | 4 | | 12 | |
| 00:45 | | | 0 | 2 | 0 | 1 | 0 | 3 | 12:45 | | | 4 | 28 | 5 | 20 | 9 | 48 |
| 01:00 | | | 0 | | 0 | | 0 | | 13:00 | | | 10 | | 4 | | 14 | |
| 01:15 | | | 0 | | 0 | | 0 | | 13:15 | | | 6 | | 8 | | 14 | |
| 01:30 | | | 1 | | 0 | | 1 | | 13:30 | | | 5 | | 7 | | 12 | |
| 01:45 | | | 0 | 1 | 1 | 1 | 1 | 2 | 13:45 | | | 10 | 31 | 9 | 28 | 19 | 59 |
| 02:00 | | | 1 | | 0 | | 1 | | 14:00 | | | 8 | | 8 | | 16 | |
| 02:15 | | | 0 | | 0 | | 0 | | 14:15 | | | 8 | | 8 | | 16 | |
| 02:30 | | | 0 | | 0 | | 0 | | 14:30 | | | 15 | | 3 | | 18 | |
| 02:45 | | | 0 | 1 | 0 | | 0 | 1 | 14:45 | | | 4 | 35 | 5 | 24 | 9 | 59 |
| 03:00 | | | 0 | | 0 | | 0 | | 15:00 | | | 4 | | 10 | | 14 | |
| 03:15 | | | 0 | | 0 | | 0 | | 15:15 | | | 5 | | 7 | | 12 | |
| 03:30 | | | 0 | | 0 | | 0 | | 15:30 | | | 9 | | 6 | | 15 | |
| 03:45 | | | 0 | | 0 | | 0 | | 15:45 | | | 5 | 23 | 5 | 28 | 10 | 51 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 10 | | 8 | | 18 | |
| 04:15 | | | 0 | | 0 | | 0 | | 16:15 | | | 4 | | 7 | | 11 | |
| 04:30 | | | 0 | | 0 | | 0 | | 16:30 | | | 9 | | 6 | | 15 | |
| 04:45 | | | 0 | | 0 | | 0 | | 16:45 | | | 5 | 28 | 13 | 34 | 18 | 62 |
| 05:00 | | | 0 | | 0 | | 0 | | 17:00 | | | 2 | | 4 | | 6 | |
| 05:15 | | | 0 | | 0 | | 0 | | 17:15 | | | 4 | | 5 | | 9 | |
| 05:30 | | | 1 | | 0 | | 1 | | 17:30 | | | 7 | | 9 | | 16 | |
| 05:45 | | | 1 | 2 | 1 | 1 | 2 | 3 | 17:45 | | | 4 | 17 | 7 | 25 | 11 | 42 |
| 06:00 | | | 0 | | 0 | | 0 | | 18:00 | | | 5 | | 6 | | 11 | |
| 06:15 | | | 1 | | 1 | | 2 | | 18:15 | | | 8 | | 6 | | 14 | |
| 06:30 | | | 1 | | 1 | | 2 | | 18:30 | | | 3 | | 7 | | 10 | |
| 06:45 | | | 5 | 7 | 3 | 5 | 8 | 12 | 18:45 | | | 4 | 20 | 6 | 25 | 10 | 45 |
| 07:00 | | | 3 | | 3 | | 6 | | 19:00 | | | 8 | | 5 | | 13 | |
| 07:15 | | | 6 | | 1 | | 7 | | 19:15 | | | 7 | | 4 | | 11 | |
| 07:30 | | | 6 | | 1 | | 7 | | 19:30 | | | 5 | | 10 | | 15 | |
| 07:45 | | | 4 | 19 | 3 | 8 | 7 | 27 | 19:45 | | | 4 | 24 | 2 | 21 | 6 | 45 |
| 08:00 | | | 5 | | 2 | | 7 | | 20:00 | | | 5 | | 6 | | 11 | |
| 08:15 | | | 1 | | 2 | | 3 | | 20:15 | | | 3 | | 5 | | 8 | |
| 08:30 | | | 5 | | 2 | | 7 | | 20:30 | | | 2 | | 0 | | 2 | |
| 08:45 | | | 5 | 16 | 6 | 12 | 11 | 28 | 20:45 | | | 1 | 11 | 2 | 13 | 3 | 24 |
| 09:00 | | | 5 | | 5 | | 10 | | 21:00 | | | 5 | | 0 | | 5 | |
| 09:15 | | | 4 | | 3 | | 7 | | 21:15 | | | 1 | | 2 | | 3 | |
| 09:30 | | | 6 | | 2 | | 8 | | 21:30 | | | 1 | | 1 | | 2 | |
| 09:45 | | | 5 | 20 | 3 | 13 | 8 | 33 | 21:45 | | | 2 | 9 | 1 | 4 | 3 | 13 |
| 10:00 | | | 2 | | 9 | | 11 | | 22:00 | | | 1 | | 0 | | 1 | |
| 10:15 | | | 7 | | 4 | | 11 | | 22:15 | | | 2 | | 3 | | 5 | |
| 10:30 | | | 7 | | 4 | | 11 | | 22:30 | | | 2 | | 1 | | 3 | |
| 10:45 | | | 2 | 18 | 7 | 24 | 9 | 42 | 22:45 | | | 1 | 6 | 3 | 7 | 4 | 13 |
| 11:00 | | | 5 | | 10 | | 15 | | 23:00 | | | 0 | | 0 | | 0 | |
| 11:15 | | | 8 | | 5 | | 13 | | 23:15 | | | 0 | | 0 | | 0 | |
| 11:30 | | | 9 | | 8 | | 17 | | 23:30 | | | 2 | | 0 | | 2 | |
| 11:45 | | | 6 | 28 | 5 | 28 | 11 | 56 | 23:45 | | | 1 | 3 | 1 | 1 | 2 | 4 |
| **TOTALS** | | | | 114 | | 93 | | 207 | **TOTALS** | | | | 235 | | 230 | | 465 |
| **SPLIT %** | | | | 55.1% | | 44.9% | | 30.8% | **SPLIT %** | | | | 50.5% | | 49.5% | | 69.2% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 349 | 323 | 672 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 11:30 | 10:45 | 11:00 | **PM Peak Hour** | | | 13:45 | 16:00 | 13:45 |
| **AM Pk Volume** | | | 31 | 30 | 56 | **PM Pk Volume** | | | 41 | 34 | 69 |
| **Pk Hr Factor** | | | 0.705 | 0.750 | 0.824 | **Pk Hr Factor** | | | 0.683 | 0.654 | 0.908 |
| **7 - 9 Volume** | 0 | 0 | 35 | 20 | 55 | **4 - 6 Volume** | 0 | 0 | 45 | 59 | 104 |
| **7 - 9 Peak Hour** | | | 07:15 | 08:00 | 07:15 | **4 - 6 Peak Hour** | | | 16:00 | 16:00 | 16:00 |
| **7 - 9 Pk Volume** | 0 | 0 | 21 | 12 | 28 | **4 - 6 Pk Volume** | 0 | 0 | 28 | 34 | 62 |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.875 | 0.500 | 1.000 | **Pk Hr Factor** | 0.000 | 0.000 | 0.700 | 0.654 | 0.861 |

Prepared by NDS/ATD

# VOLUME

Summit Dr W/o Kalorama St

Day: Monday
Date: 3/24/2014

City: Ventura
Project #: CA14_5163_007

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 268 | 240 | 508 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 0 | | 0 | | 0 | | 12:00 | | | 4 | | 4 | | 8 | |
| 00:15 | | | 0 | | 0 | | 0 | | 12:15 | | | 3 | | 4 | | 7 | |
| 00:30 | | | 0 | | 0 | | 0 | | 12:30 | | | 3 | | 5 | | 8 | |
| 00:45 | | | 0 | | 0 | | 0 | | 12:45 | | | 3 | 13 | 3 | 16 | 6 | 29 |
| 01:00 | | | 0 | | 0 | | 0 | | 13:00 | | | 1 | | 4 | | 5 | |
| 01:15 | | | 0 | | 0 | | 0 | | 13:15 | | | 6 | | 2 | | 8 | |
| 01:30 | | | 0 | | 1 | | 1 | | 13:30 | | | 3 | | 4 | | 7 | |
| 01:45 | | | 1 | 1 | 0 | 1 | 1 | 2 | 13:45 | | | 5 | 15 | 4 | 14 | 9 | 29 |
| 02:00 | | | 0 | | 0 | | 0 | | 14:00 | | | 4 | | 3 | | 7 | |
| 02:15 | | | 0 | | 0 | | 0 | | 14:15 | | | 5 | | 5 | | 10 | |
| 02:30 | | | 0 | | 0 | | 0 | | 14:30 | | | 10 | | 3 | | 13 | |
| 02:45 | | | 0 | | 0 | | 0 | | 14:45 | | | 4 | 23 | 4 | 15 | 8 | 38 |
| 03:00 | | | 0 | | 0 | | 0 | | 15:00 | | | 7 | | 8 | | 15 | |
| 03:15 | | | 0 | | 0 | | 0 | | 15:15 | | | 5 | | 4 | | 9 | |
| 03:30 | | | 1 | | 0 | | 1 | | 15:30 | | | 3 | | 7 | | 10 | |
| 03:45 | | | 0 | 1 | 0 | | 0 | 1 | 15:45 | | | 4 | 19 | 2 | 21 | 6 | 40 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 2 | | 7 | | 9 | |
| 04:15 | | | 1 | | 0 | | 1 | | 16:15 | | | 2 | | 8 | | 10 | |
| 04:30 | | | 0 | | 0 | | 0 | | 16:30 | | | 7 | | 6 | | 13 | |
| 04:45 | | | 1 | 2 | 0 | | 1 | 2 | 16:45 | | | 6 | 17 | 2 | 23 | 8 | 40 |
| 05:00 | | | 1 | | 1 | | 2 | | 17:00 | | | 6 | | 14 | | 20 | |
| 05:15 | | | 1 | | 1 | | 2 | | 17:15 | | | 10 | | 6 | | 16 | |
| 05:30 | | | 2 | | 0 | | 2 | | 17:30 | | | 8 | | 11 | | 19 | |
| 05:45 | | | 2 | 6 | 0 | 2 | 2 | 8 | 17:45 | | | 7 | 31 | 11 | 42 | 18 | 73 |
| 06:00 | | | 3 | | 0 | | 3 | | 18:00 | | | 5 | | 12 | | 17 | |
| 06:15 | | | 2 | | 1 | | 3 | | 18:15 | | | 6 | | 3 | | 9 | |
| 06:30 | | | 4 | | 0 | | 4 | | 18:30 | | | 4 | | 6 | | 10 | |
| 06:45 | | | 3 | 12 | 2 | 3 | 5 | 15 | 18:45 | | | 10 | 25 | 5 | 26 | 15 | 51 |
| 07:00 | | | 2 | | 2 | | 4 | | 19:00 | | | 3 | | 3 | | 6 | |
| 07:15 | | | 4 | | 2 | | 6 | | 19:15 | | | 2 | | 2 | | 4 | |
| 07:30 | | | 5 | | 5 | | 10 | | 19:30 | | | 4 | | 4 | | 8 | |
| 07:45 | | | 7 | 18 | 1 | 10 | 8 | 28 | 19:45 | | | 1 | 10 | 4 | 13 | 5 | 23 |
| 08:00 | | | 8 | | 3 | | 11 | | 20:00 | | | 3 | | 4 | | 7 | |
| 08:15 | | | 4 | | 0 | | 4 | | 20:15 | | | 1 | | 0 | | 1 | |
| 08:30 | | | 8 | | 3 | | 11 | | 20:30 | | | 2 | | 2 | | 4 | |
| 08:45 | | | 4 | 24 | 2 | 8 | 6 | 32 | 20:45 | | | 1 | 7 | 3 | 9 | 4 | 16 |
| 09:00 | | | 7 | | 3 | | 10 | | 21:00 | | | 1 | | 2 | | 3 | |
| 09:15 | | | 3 | | 1 | | 4 | | 21:15 | | | 1 | | 1 | | 2 | |
| 09:30 | | | 2 | | 2 | | 4 | | 21:30 | | | 1 | | 2 | | 3 | |
| 09:45 | | | 3 | 15 | 2 | 8 | 5 | 23 | 21:45 | | | 1 | 4 | 0 | 5 | 1 | 9 |
| 10:00 | | | 1 | | 2 | | 3 | | 22:00 | | | 0 | | 1 | | 1 | |
| 10:15 | | | 4 | | 1 | | 5 | | 22:15 | | | 1 | | 1 | | 2 | |
| 10:30 | | | 1 | | 0 | | 1 | | 22:30 | | | 0 | | 0 | | 0 | |
| 10:45 | | | 4 | 10 | 7 | 10 | 11 | 20 | 22:45 | | | 0 | 1 | 0 | 2 | 0 | 3 |
| 11:00 | | | 2 | | 3 | | 5 | | 23:00 | | | 0 | | 0 | | 0 | |
| 11:15 | | | 4 | | 1 | | 5 | | 23:15 | | | 0 | | 0 | | 0 | |
| 11:30 | | | 3 | | 2 | | 5 | | 23:30 | | | 1 | | 1 | | 2 | |
| 11:45 | | | 3 | 12 | 3 | 9 | 6 | 21 | 23:45 | | | 1 | 2 | 2 | 3 | 3 | 5 |
| TOTALS | | | | 101 | | 51 | | 152 | TOTALS | | | | 167 | | 189 | | 356 |
| SPLIT % | | | | 66.4% | | 33.6% | | 29.9% | SPLIT % | | | | 46.9% | | 53.1% | | 70.1% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 268 | 240 | 508 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:45 | 11:45 | 07:15 | PM Peak Hour | | | 17:00 | 17:00 | 17:00 |
| AM Pk Volume | | | 27 | 16 | 35 | PM Pk Volume | | | 31 | 42 | 73 |
| Pk Hr Factor | | | 0.844 | 0.800 | 0.795 | Pk Hr Factor | | | 0.775 | 0.750 | 0.913 |
| 7 - 9 Volume | 0 | 0 | 42 | 18 | 60 | 4 - 6 Volume | 0 | 0 | 48 | 65 | 113 |
| 7 - 9 Peak Hour | | | 07:45 | 07:15 | 07:15 | 4 - 6 Peak Hour | | | 17:00 | 17:00 | 17:00 |
| 7 - 9 Pk Volume | 0 | 0 | 27 | 11 | 35 | 4 - 6 Pk Volume | 0 | 0 | 31 | 42 | 73 |
| Pk Hr Factor | 0.000 | 0.000 | 0.844 | 0.550 | 0.795 | Pk Hr Factor | 0.000 | 0.000 | 0.775 | 0.750 | 0.913 |

Prepared by NDS/ATD

# VOLUME

Summit Dr W/o Kalorama St

Day: Sunday
Date: 3/23/2014

City: Ventura
Project #: CA14_5163_007

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 298 | 281 | 579 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 1 | | 1 | | 2 | | 12:00 | | | 5 | | 4 | | 9 | |
| 00:15 | | | 0 | | 0 | | 0 | | 12:15 | | | 5 | | 6 | | 11 | |
| 00:30 | | | 0 | | 1 | | 1 | | 12:30 | | | 6 | | 5 | | 11 | |
| 00:45 | | | 1 | 2 | 0 | 2 | 1 | 4 | 12:45 | | | 4 | 20 | 5 | 20 | 9 | 40 |
| 01:00 | | | 0 | | 0 | | 0 | | 13:00 | | | 7 | | 4 | | 11 | |
| 01:15 | | | 1 | | 0 | | 1 | | 13:15 | | | 9 | | 7 | | 16 | |
| 01:30 | | | 0 | | 0 | | 0 | | 13:30 | | | 10 | | 10 | | 20 | |
| 01:45 | | | 0 | 1 | 0 | | 0 | 1 | 13:45 | | | 5 | 31 | 6 | 27 | 11 | 58 |
| 02:00 | | | 1 | | 1 | | 2 | | 14:00 | | | 8 | | 7 | | 15 | |
| 02:15 | | | 0 | | 1 | | 1 | | 14:15 | | | 6 | | 5 | | 11 | |
| 02:30 | | | 0 | | 1 | | 1 | | 14:30 | | | 8 | | 4 | | 12 | |
| 02:45 | | | 1 | 2 | 0 | 3 | 1 | 5 | 14:45 | | | 6 | 28 | 7 | 23 | 13 | 51 |
| 03:00 | | | 0 | | 0 | | 0 | | 15:00 | | | 7 | | 3 | | 10 | |
| 03:15 | | | 1 | | 0 | | 1 | | 15:15 | | | 8 | | 7 | | 15 | |
| 03:30 | | | 0 | | 0 | | 0 | | 15:30 | | | 11 | | 10 | | 21 | |
| 03:45 | | | 0 | 1 | 0 | | 0 | 1 | 15:45 | | | 5 | 31 | 5 | 25 | 10 | 56 |
| 04:00 | | | 0 | | 0 | | 0 | | 16:00 | | | 6 | | 6 | | 12 | |
| 04:15 | | | 0 | | 0 | | 0 | | 16:15 | | | 4 | | 9 | | 13 | |
| 04:30 | | | 0 | | 0 | | 0 | | 16:30 | | | 9 | | 4 | | 13 | |
| 04:45 | | | 0 | | 0 | | 0 | | 16:45 | | | 5 | 24 | 6 | 25 | 11 | 49 |
| 05:00 | | | 0 | | 0 | | 0 | | 17:00 | | | 5 | | 4 | | 9 | |
| 05:15 | | | 0 | | 0 | | 0 | | 17:15 | | | 5 | | 7 | | 12 | |
| 05:30 | | | 0 | | 0 | | 0 | | 17:30 | | | 8 | | 10 | | 18 | |
| 05:45 | | | 1 | 1 | 1 | 1 | 2 | 2 | 17:45 | | | 4 | 22 | 5 | 26 | 9 | 48 |
| 06:00 | | | 1 | | 0 | | 1 | | 18:00 | | | 14 | | 11 | | 25 | |
| 06:15 | | | 0 | | 0 | | 0 | | 18:15 | | | 3 | | 5 | | 8 | |
| 06:30 | | | 1 | | 2 | | 3 | | 18:30 | | | 5 | | 11 | | 16 | |
| 06:45 | | | 3 | 5 | 0 | 2 | 3 | 7 | 18:45 | | | 6 | 28 | 4 | 31 | 10 | 59 |
| 07:00 | | | 1 | | 0 | | 1 | | 19:00 | | | 4 | | 6 | | 10 | |
| 07:15 | | | 1 | | 1 | | 2 | | 19:15 | | | 5 | | 8 | | 13 | |
| 07:30 | | | 4 | | 1 | | 5 | | 19:30 | | | 4 | | 2 | | 6 | |
| 07:45 | | | 3 | 9 | 2 | 4 | 5 | 13 | 19:45 | | | 6 | 19 | 2 | 18 | 8 | 37 |
| 08:00 | | | 0 | | 1 | | 1 | | 20:00 | | | 0 | | 1 | | 1 | |
| 08:15 | | | 1 | | 3 | | 4 | | 20:15 | | | 3 | | 3 | | 6 | |
| 08:30 | | | 2 | | 0 | | 2 | | 20:30 | | | 4 | | 4 | | 8 | |
| 08:45 | | | 4 | 7 | 1 | 5 | 5 | 12 | 20:45 | | | 3 | 10 | 1 | 9 | 4 | 19 |
| 09:00 | | | 0 | | 3 | | 3 | | 21:00 | | | 0 | | 1 | | 1 | |
| 09:15 | | | 4 | | 2 | | 6 | | 21:15 | | | 3 | | 2 | | 5 | |
| 09:30 | | | 4 | | 4 | | 8 | | 21:30 | | | 1 | | 2 | | 3 | |
| 09:45 | | | 4 | 12 | 3 | 12 | 7 | 24 | 21:45 | | | 1 | 5 | 1 | 6 | 2 | 11 |
| 10:00 | | | 2 | | 5 | | 7 | | 22:00 | | | 0 | | 0 | | 0 | |
| 10:15 | | | 4 | | 2 | | 6 | | 22:15 | | | 1 | | 1 | | 2 | |
| 10:30 | | | 5 | | 3 | | 8 | | 22:30 | | | 1 | | 1 | | 2 | |
| 10:45 | | | 5 | 16 | 6 | 16 | 11 | 32 | 22:45 | | | 2 | 4 | 0 | 2 | 2 | 6 |
| 11:00 | | | 3 | | 4 | | 7 | | 23:00 | | | 0 | | 0 | | 0 | |
| 11:15 | | | 6 | | 7 | | 13 | | 23:15 | | | 2 | | 2 | | 4 | |
| 11:30 | | | 5 | | 4 | | 9 | | 23:30 | | | 0 | | 1 | | 1 | |
| 11:45 | | | 4 | 18 | 6 | 21 | 10 | 39 | 23:45 | | | 0 | 2 | 0 | 3 | 0 | 5 |
| TOTALS | | | | 74 | | 66 | | 140 | TOTALS | | | | 224 | | 215 | | 439 |
| SPLIT % | | | | 52.9% | | 47.1% | | 24.2% | SPLIT % | | | | 51.0% | | 49.0% | | 75.8% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 298 | 281 | 579 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:15 | 10:45 | 11:15 | PM Peak Hour | | | 13:15 | 17:15 | 17:15 |
| AM Pk Volume | | | 20 | 21 | 41 | PM Pk Volume | | | 32 | 33 | 64 |
| Pk Hr Factor | | | 0.833 | 0.750 | 0.788 | Pk Hr Factor | | | 0.800 | 0.750 | 0.640 |
| 7 - 9 Volume | 0 | 0 | 16 | 9 | 25 | 4 - 6 Volume | 0 | 0 | 46 | 51 | 97 |
| 7 - 9 Peak Hour | | | 07:00 | 07:30 | 07:30 | 4 - 6 Peak Hour | | | 16:00 | 16:45 | 16:45 |
| 7 - 9 Pk Volume | 0 | 0 | 9 | 7 | 15 | 4 - 6 Pk Volume | 0 | 0 | 24 | 27 | 50 |
| Pk Hr Factor | 0.000 | 0.000 | 0.563 | 0.583 | 0.750 | Pk Hr Factor | 0.000 | 0.000 | 0.667 | 0.675 | 0.694 |

Prepared by NDS/ATD

# VOLUME

Upper City Hall Parking Driveway N/o Poli St

**Day:** Friday
**Date:** 3/21/2014

**City:** Ventura
**Project #:** CA14_5163_008

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 115 | 115 | 0 | 0 | 230 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 0 | | 0 | | | | | | 0 | |
| 00:15 | 0 | | 0 | | | | | | 0 | |
| 00:30 | 0 | | 0 | | | | | | 0 | |
| 00:45 | 0 | | 0 | | | | | | 0 | |
| 01:00 | 0 | | 0 | | | | | | 0 | |
| 01:15 | 0 | | 0 | | | | | | 0 | |
| 01:30 | 0 | | 0 | | | | | | 0 | |
| 01:45 | 0 | | 0 | | | | | | 0 | |
| 02:00 | 0 | | 0 | | | | | | 0 | |
| 02:15 | 0 | | 0 | | | | | | 0 | |
| 02:30 | 0 | | 0 | | | | | | 0 | |
| 02:45 | 1 | 1 | 1 | 1 | | | | | 2 | 2 |
| 03:00 | 0 | | 0 | | | | | | 0 | |
| 03:15 | 0 | | 0 | | | | | | 0 | |
| 03:30 | 0 | | 0 | | | | | | 0 | |
| 03:45 | 0 | | 0 | | | | | | 0 | |
| 04:00 | 0 | | 0 | | | | | | 0 | |
| 04:15 | 0 | | 0 | | | | | | 0 | |
| 04:30 | 0 | | 0 | | | | | | 0 | |
| 04:45 | 0 | | 0 | | | | | | 0 | |
| 05:00 | 0 | | 0 | | | | | | 0 | |
| 05:15 | 0 | | 0 | | | | | | 0 | |
| 05:30 | 0 | | 0 | | | | | | 0 | |
| 05:45 | 2 | 2 | 0 | | | | | | 2 | 2 |
| 06:00 | 1 | | 1 | | | | | | 2 | |
| 06:15 | 1 | | 0 | | | | | | 1 | |
| 06:30 | 1 | | 1 | | | | | | 2 | |
| 06:45 | 1 | 4 | 2 | 4 | | | | | 3 | 8 |
| 07:00 | 1 | | 0 | | | | | | 1 | |
| 07:15 | 2 | | 1 | | | | | | 3 | |
| 07:30 | 2 | | 1 | | | | | | 3 | |
| 07:45 | 2 | 7 | 2 | 4 | | | | | 4 | 11 |
| 08:00 | 3 | | 1 | | | | | | 4 | |
| 08:15 | 5 | | 4 | | | | | | 9 | |
| 08:30 | 5 | | 3 | | | | | | 8 | |
| 08:45 | 4 | 17 | 5 | 13 | | | | | 9 | 30 |
| 09:00 | 2 | | 1 | | | | | | 3 | |
| 09:15 | 4 | | 5 | | | | | | 9 | |
| 09:30 | 3 | | 2 | | | | | | 5 | |
| 09:45 | 3 | 12 | 4 | 12 | | | | | 7 | 24 |
| 10:00 | 0 | | 1 | | | | | | 1 | |
| 10:15 | 4 | | 2 | | | | | | 6 | |
| 10:30 | 2 | | 2 | | | | | | 4 | |
| 10:45 | 5 | 11 | 0 | 5 | | | | | 5 | 16 |
| 11:00 | 5 | | 1 | | | | | | 6 | |
| 11:15 | 5 | | 3 | | | | | | 8 | |
| 11:30 | 4 | | 10 | | | | | | 14 | |
| 11:45 | 1 | 15 | 4 | 18 | | | | | 5 | 33 |
| **TOTALS** | | 69 | | 57 | | | | | | 126 |
| **SPLIT %** | | 54.8% | | 45.2% | | | | | | 54.8% |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | 1 | | 1 | | | | | | 2 | |
| 12:15 | 2 | | 3 | | | | | | 5 | |
| 12:30 | 1 | | 4 | | | | | | 5 | |
| 12:45 | 1 | 5 | 2 | 10 | | | | | 3 | 15 |
| 13:00 | 2 | | 3 | | | | | | 5 | |
| 13:15 | 0 | | 3 | | | | | | 3 | |
| 13:30 | 0 | | 1 | | | | | | 1 | |
| 13:45 | 2 | 4 | 2 | 9 | | | | | 4 | 13 |
| 14:00 | 4 | | 1 | | | | | | 5 | |
| 14:15 | 2 | | 0 | | | | | | 2 | |
| 14:30 | 2 | | 2 | | | | | | 4 | |
| 14:45 | 0 | 8 | 2 | 5 | | | | | 2 | 13 |
| 15:00 | 0 | | 3 | | | | | | 3 | |
| 15:15 | 2 | | 1 | | | | | | 3 | |
| 15:30 | 1 | | 2 | | | | | | 3 | |
| 15:45 | 1 | 4 | 2 | 8 | | | | | 3 | 12 |
| 16:00 | 0 | | 0 | | | | | | 0 | |
| 16:15 | 3 | | 1 | | | | | | 4 | |
| 16:30 | 1 | | 2 | | | | | | 3 | |
| 16:45 | 1 | 5 | 0 | 3 | | | | | 1 | 8 |
| 17:00 | 1 | | 1 | | | | | | 2 | |
| 17:15 | 1 | | 1 | | | | | | 2 | |
| 17:30 | 2 | | 0 | | | | | | 2 | |
| 17:45 | 3 | 7 | 2 | 4 | | | | | 5 | 11 |
| 18:00 | 4 | | 1 | | | | | | 5 | |
| 18:15 | 2 | | 3 | | | | | | 5 | |
| 18:30 | 1 | | 0 | | | | | | 1 | |
| 18:45 | 2 | 9 | 5 | 9 | | | | | 7 | 18 |
| 19:00 | 0 | | 3 | | | | | | 3 | |
| 19:15 | 0 | | 2 | | | | | | 2 | |
| 19:30 | 0 | | 1 | | | | | | 1 | |
| 19:45 | 0 | | 0 | 6 | | | | | 0 | 6 |
| 20:00 | 1 | | 1 | | | | | | 2 | |
| 20:15 | 0 | | 0 | | | | | | 0 | |
| 20:30 | 1 | | 0 | | | | | | 1 | |
| 20:45 | 0 | 2 | 1 | 2 | | | | | 1 | 4 |
| 21:00 | 0 | | 0 | | | | | | 0 | |
| 21:15 | 0 | | 0 | | | | | | 0 | |
| 21:30 | 1 | | 1 | | | | | | 2 | |
| 21:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 |
| 22:00 | 0 | | 0 | | | | | | 0 | |
| 22:15 | 0 | | 0 | | | | | | 0 | |
| 22:30 | 1 | | 1 | | | | | | 2 | |
| 22:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 |
| 23:00 | 0 | | 0 | | | | | | 0 | |
| 23:15 | 0 | | 0 | | | | | | 0 | |
| 23:30 | 0 | | 0 | | | | | | 0 | |
| 23:45 | 0 | | 0 | | | | | | 0 | |
| **TOTALS** | | 46 | | 58 | | | | | | 104 |
| **SPLIT %** | | 44.2% | | 55.8% | | | | | | 45.2% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 115 | 115 | 0 | 0 | 230 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 10:45 | 11:00 | | | 10:45 | **PM Peak Hour** | 17:30 | 12:15 | | | 12:15 |
| **AM Pk Volume** | 19 | 18 | | | 33 | **PM Pk Volume** | 11 | 12 | | | 18 |
| **Pk Hr Factor** | 0.950 | 0.450 | | | 0.589 | **Pk Hr Factor** | 0.688 | 0.750 | | | 0.900 |
| **7 - 9 Volume** | 24 | 17 | 0 | 0 | 41 | **4 - 6 Volume** | 12 | 7 | 0 | 0 | 19 |
| **7 - 9 Peak Hour** | 08:00 | 08:00 | | | 08:00 | **4 - 6 Peak Hour** | 17:00 | 16:15 | | | 17:00 |
| **7 - 9 Pk Volume** | 17 | 13 | 0 | 0 | 30 | **4 - 6 Pk Volume** | 7 | 4 | 0 | 0 | 11 |
| **Pk Hr Factor** | 0.850 | 0.650 | 0.000 | 0.000 | 0.833 | **Pk Hr Factor** | 0.583 | 0.500 | 0.000 | 0.000 | 0.550 |

Prepared by NDS/ATD

# VOLUME

Upper City Hall Parking Driveway N/o Poli St

**Day:** Saturday
**Date:** 3/22/2014

**City:** Ventura
**Project #:** CA14_5163_008

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 138 | 142 | 0 | 0 | 280 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 0 | | 0 | | | | | | 0 | | 12:00 | 2 | | 1 | | | | | | 3 | |
| 00:15 | 0 | | 0 | | | | | | 0 | | 12:15 | 1 | | 4 | | | | | | 5 | |
| 00:30 | 1 | | 1 | | | | | | 2 | | 12:30 | 3 | | 2 | | | | | | 5 | |
| 00:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 | 12:45 | 2 | 8 | 6 | 13 | | | | | 8 | 21 |
| 01:00 | 0 | | 0 | | | | | | 0 | | 13:00 | 1 | | 4 | | | | | | 5 | |
| 01:15 | 1 | | 1 | | | | | | 2 | | 13:15 | 3 | | 2 | | | | | | 5 | |
| 01:30 | 0 | | 0 | | | | | | 0 | | 13:30 | 0 | | 1 | | | | | | 1 | |
| 01:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 | 13:45 | 3 | 7 | 1 | 8 | | | | | 4 | 15 |
| 02:00 | 0 | | 0 | | | | | | 0 | | 14:00 | 2 | | 7 | | | | | | 9 | |
| 02:15 | 0 | | 0 | | | | | | 0 | | 14:15 | 1 | | 0 | | | | | | 1 | |
| 02:30 | 0 | | 0 | | | | | | 0 | | 14:30 | 1 | | 3 | | | | | | 4 | |
| 02:45 | 0 | | 0 | | | | | | 0 | | 14:45 | 3 | 7 | 1 | 11 | | | | | 4 | 18 |
| 03:00 | 0 | | 0 | | | | | | 0 | | 15:00 | 8 | | 1 | | | | | | 9 | |
| 03:15 | 0 | | 0 | | | | | | 0 | | 15:15 | 4 | | 0 | | | | | | 4 | |
| 03:30 | 0 | | 0 | | | | | | 0 | | 15:30 | 2 | | 3 | | | | | | 5 | |
| 03:45 | 0 | | 0 | | | | | | 0 | | 15:45 | 0 | 14 | 4 | 8 | | | | | 4 | 22 |
| 04:00 | 0 | | 0 | | | | | | 0 | | 16:00 | 4 | | 3 | | | | | | 7 | |
| 04:15 | 0 | | 0 | | | | | | 0 | | 16:15 | 0 | | 2 | | | | | | 2 | |
| 04:30 | 0 | | 0 | | | | | | 0 | | 16:30 | 2 | | 4 | | | | | | 6 | |
| 04:45 | 0 | | 0 | | | | | | 0 | | 16:45 | 2 | 8 | 4 | 13 | | | | | 6 | 21 |
| 05:00 | 0 | | 0 | | | | | | 0 | | 17:00 | 2 | | 2 | | | | | | 4 | |
| 05:15 | 1 | | 0 | | | | | | 1 | | 17:15 | 1 | | 2 | | | | | | 3 | |
| 05:30 | 0 | | 0 | | | | | | 0 | | 17:30 | 2 | | 1 | | | | | | 3 | |
| 05:45 | 0 | 1 | 0 | | | | | | 0 | 1 | 17:45 | 1 | 6 | 1 | 6 | | | | | 2 | 12 |
| 06:00 | 1 | | 1 | | | | | | 2 | | 18:00 | 0 | | 2 | | | | | | 2 | |
| 06:15 | 0 | | 0 | | | | | | 0 | | 18:15 | 3 | | 1 | | | | | | 4 | |
| 06:30 | 0 | | 0 | | | | | | 0 | | 18:30 | 1 | | 2 | | | | | | 3 | |
| 06:45 | 2 | 3 | 2 | 3 | | | | | 4 | 6 | 18:45 | 2 | 6 | 3 | 8 | | | | | 5 | 14 |
| 07:00 | 0 | | 0 | | | | | | 0 | | 19:00 | 2 | | 1 | | | | | | 3 | |
| 07:15 | 1 | | 0 | | | | | | 1 | | 19:15 | 0 | | 2 | | | | | | 2 | |
| 07:30 | 3 | | 0 | | | | | | 3 | | 19:30 | 0 | | 1 | | | | | | 1 | |
| 07:45 | 2 | 6 | 1 | 1 | | | | | 3 | 7 | 19:45 | 0 | 2 | 0 | 4 | | | | | 0 | 6 |
| 08:00 | 4 | | 3 | | | | | | 7 | | 20:00 | 1 | | 1 | | | | | | 2 | |
| 08:15 | 4 | | 1 | | | | | | 5 | | 20:15 | 0 | | 0 | | | | | | 0 | |
| 08:30 | 2 | | 2 | | | | | | 4 | | 20:30 | 0 | | 0 | | | | | | 0 | |
| 08:45 | 2 | 12 | 3 | 9 | | | | | 5 | 21 | 20:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 |
| 09:00 | 5 | | 2 | | | | | | 7 | | 21:00 | 0 | | 0 | | | | | | 0 | |
| 09:15 | 3 | | 2 | | | | | | 5 | | 21:15 | 0 | | 0 | | | | | | 0 | |
| 09:30 | 6 | | 4 | | | | | | 10 | | 21:30 | 0 | | 1 | | | | | | 1 | |
| 09:45 | 8 | 22 | 5 | 13 | | | | | 13 | 35 | 21:45 | 0 | | 0 | 1 | | | | | 0 | 1 |
| 10:00 | 4 | | 2 | | | | | | 6 | | 22:00 | 1 | | 0 | | | | | | 1 | |
| 10:15 | 3 | | 7 | | | | | | 10 | | 22:15 | 0 | | 0 | | | | | | 0 | |
| 10:30 | 6 | | 8 | | | | | | 14 | | 22:30 | 0 | | 1 | | | | | | 1 | |
| 10:45 | 3 | 16 | 5 | 22 | | | | | 8 | 38 | 22:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 |
| 11:00 | 6 | | 3 | | | | | | 9 | | 23:00 | 1 | | 1 | | | | | | 2 | |
| 11:15 | 0 | | 3 | | | | | | 3 | | 23:15 | 0 | | 0 | | | | | | 0 | |
| 11:30 | 5 | | 5 | | | | | | 10 | | 23:30 | 0 | | 0 | | | | | | 0 | |
| 11:45 | 3 | 14 | 5 | 16 | | | | | 8 | 30 | 23:45 | 1 | 2 | 1 | 2 | | | | | 2 | 4 |
| **TOTALS** | | 76 | | 66 | | | | | | 142 | **TOTALS** | | 62 | | 76 | | | | | | 138 |
| **SPLIT %** | | 53.5% | | 46.5% | | | | | | 50.7% | **SPLIT %** | | 44.9% | | 55.1% | | | | | | 49.3% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 138 | 142 | 0 | 0 | 280 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 09:00 | 10:15 | | | 09:45 | **PM Peak Hour** | 14:45 | 12:15 | | | 12:15 |
| **AM Pk Volume** | 22 | 23 | | | 43 | **PM Pk Volume** | 17 | 16 | | | 23 |
| **Pk Hr Factor** | 0.688 | 0.719 | | | 0.768 | **Pk Hr Factor** | 0.531 | 0.667 | | | 0.719 |
| **7 - 9 Volume** | 18 | 10 | 0 | 0 | 28 | **4 - 6 Volume** | 14 | 19 | 0 | 0 | 33 |
| **7 - 9 Peak Hour** | 07:30 | 08:00 | | | 08:00 | **4 - 6 Peak Hour** | 16:00 | 16:00 | | | 16:00 |
| **7 - 9 Pk Volume** | 13 | 9 | 0 | 0 | 21 | **4 - 6 Pk Volume** | 8 | 13 | 0 | 0 | 21 |
| **Pk Hr Factor** | 0.813 | 0.750 | 0.000 | 0.000 | 0.750 | **Pk Hr Factor** | 0.500 | 0.813 | 0.000 | 0.000 | 0.750 |

Prepared by NDS/ATD

# VOLUME

Summit Dr W/o Kalorama St

Day: Friday
Date: 3/21/2014

City: Ventura
Project #: CA14_5163_007

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 290 | 256 | 546 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | | | 1 | | 0 | | 1 | | 12:00 | | | | | 4 | | 0 | | 4 | |
| 00:15 | | | | | 0 | | 0 | | 0 | | 12:15 | | | | | 5 | | 2 | | 7 | |
| 00:30 | | | | | 0 | | 0 | | 0 | | 12:30 | | | | | 4 | | 3 | | 7 | |
| 00:45 | | | | | 0 | 1 | 1 | 1 | 1 | 2 | 12:45 | | | | | 2 | 15 | 4 | 9 | 6 | 24 |
| 01:00 | | | | | 1 | | 0 | | 1 | | 13:00 | | | | | 6 | | 7 | | 13 | |
| 01:15 | | | | | 0 | | 0 | | 0 | | 13:15 | | | | | 7 | | 4 | | 11 | |
| 01:30 | | | | | 0 | | 0 | | 0 | | 13:30 | | | | | 6 | | 8 | | 14 | |
| 01:45 | | | | | 0 | 1 | 0 | | 0 | 1 | 13:45 | | | | | 5 | 24 | 5 | 24 | 10 | 48 |
| 02:00 | | | | | 0 | | 0 | | 0 | | 14:00 | | | | | 5 | | 4 | | 9 | |
| 02:15 | | | | | 0 | | 0 | | 0 | | 14:15 | | | | | 5 | | 3 | | 8 | |
| 02:30 | | | | | 0 | | 0 | | 0 | | 14:30 | | | | | 2 | | 2 | | 4 | |
| 02:45 | | | | | 0 | | 0 | | 0 | | 14:45 | | | | | 0 | 12 | 4 | 13 | 4 | 25 |
| 03:00 | | | | | 0 | | 0 | | 0 | | 15:00 | | | | | 7 | | 6 | | 13 | |
| 03:15 | | | | | 0 | | 0 | | 0 | | 15:15 | | | | | 5 | | 3 | | 8 | |
| 03:30 | | | | | 1 | | 0 | | 1 | | 15:30 | | | | | 9 | | 11 | | 20 | |
| 03:45 | | | | | 0 | 1 | 0 | | 0 | 1 | 15:45 | | | | | 6 | 27 | 7 | 27 | 13 | 54 |
| 04:00 | | | | | 0 | | 0 | | 0 | | 16:00 | | | | | 8 | | 6 | | 14 | |
| 04:15 | | | | | 0 | | 0 | | 0 | | 16:15 | | | | | 3 | | 5 | | 8 | |
| 04:30 | | | | | 0 | | 0 | | 0 | | 16:30 | | | | | 6 | | 4 | | 10 | |
| 04:45 | | | | | 2 | 2 | 0 | | 2 | 2 | 16:45 | | | | | 4 | 21 | 7 | 22 | 11 | 43 |
| 05:00 | | | | | 2 | | 3 | | 5 | | 17:00 | | | | | 6 | | 6 | | 12 | |
| 05:15 | | | | | 3 | | 0 | | 3 | | 17:15 | | | | | 1 | | 7 | | 8 | |
| 05:30 | | | | | 1 | | 0 | | 1 | | 17:30 | | | | | 7 | | 8 | | 15 | |
| 05:45 | | | | | 1 | 7 | 1 | 4 | 2 | 11 | 17:45 | | | | | 4 | 18 | 5 | 26 | 9 | 44 |
| 06:00 | | | | | 0 | | 0 | | 0 | | 18:00 | | | | | 10 | | 3 | | 13 | |
| 06:15 | | | | | 1 | | 1 | | 2 | | 18:15 | | | | | 7 | | 12 | | 19 | |
| 06:30 | | | | | 4 | | 1 | | 5 | | 18:30 | | | | | 4 | | 5 | | 9 | |
| 06:45 | | | | | 3 | 8 | 1 | 3 | 4 | 11 | 18:45 | | | | | 5 | 26 | 9 | 29 | 14 | 55 |
| 07:00 | | | | | 3 | | 1 | | 4 | | 19:00 | | | | | 5 | | 2 | | 7 | |
| 07:15 | | | | | 1 | | 0 | | 1 | | 19:15 | | | | | 6 | | 3 | | 9 | |
| 07:30 | | | | | 14 | | 1 | | 15 | | 19:30 | | | | | 3 | | 4 | | 7 | |
| 07:45 | | | | | 2 | 20 | 0 | 2 | 2 | 22 | 19:45 | | | | | 1 | 15 | 0 | 9 | 1 | 24 |
| 08:00 | | | | | 5 | | 1 | | 6 | | 20:00 | | | | | 0 | | 3 | | 3 | |
| 08:15 | | | | | 8 | | 1 | | 9 | | 20:15 | | | | | 2 | | 3 | | 5 | |
| 08:30 | | | | | 4 | | 5 | | 9 | | 20:30 | | | | | 1 | | 1 | | 2 | |
| 08:45 | | | | | 5 | 22 | 2 | 9 | 7 | 31 | 20:45 | | | | | 3 | 6 | 3 | 10 | 6 | 16 |
| 09:00 | | | | | 1 | | 3 | | 4 | | 21:00 | | | | | 2 | | 3 | | 5 | |
| 09:15 | | | | | 4 | | 1 | | 5 | | 21:15 | | | | | 0 | | 2 | | 2 | |
| 09:30 | | | | | 6 | | 5 | | 11 | | 21:30 | | | | | 2 | | 4 | | 6 | |
| 09:45 | | | | | 4 | 15 | 3 | 12 | 7 | 27 | 21:45 | | | | | 2 | 6 | 2 | 11 | 4 | 17 |
| 10:00 | | | | | 4 | | 3 | | 7 | | 22:00 | | | | | 1 | | 3 | | 4 | |
| 10:15 | | | | | 4 | | 1 | | 5 | | 22:15 | | | | | 1 | | 2 | | 3 | |
| 10:30 | | | | | 4 | | 4 | | 8 | | 22:30 | | | | | 1 | | 3 | | 4 | |
| 10:45 | | | | | 3 | 15 | 2 | 10 | 5 | 25 | 22:45 | | | | | 2 | 5 | 3 | 11 | 5 | 16 |
| 11:00 | | | | | 2 | | 2 | | 4 | | 23:00 | | | | | 1 | | 1 | | 2 | |
| 11:15 | | | | | 5 | | 4 | | 9 | | 23:15 | | | | | 1 | | 0 | | 1 | |
| 11:30 | | | | | 7 | | 6 | | 13 | | 23:30 | | | | | 0 | | 1 | | 1 | |
| 11:45 | | | | | 5 | 19 | 7 | 19 | 12 | 38 | 23:45 | | | | | 2 | 4 | 3 | 5 | 5 | 9 |
| TOTALS | | | | | | 111 | | 60 | | 171 | TOTALS | | | | | | 179 | | 196 | | 375 |
| SPLIT % | | | | | | 64.9% | | 35.1% | | 31.3% | SPLIT % | | | | | | 47.7% | | 52.3% | | 68.7% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 290 | 256 | 546 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:30 | 11:00 | 11:00 | PM Peak Hour | | | 15:15 | 15:30 | 17:30 |
| AM Pk Volume | | | 29 | 19 | 38 | PM Pk Volume | | | 28 | 29 | 56 |
| Pk Hr Factor | | | 0.518 | 0.679 | 0.731 | Pk Hr Factor | | | 0.778 | 0.659 | 0.737 |
| 7 - 9 Volume | 0 | 0 | 42 | 11 | 53 | 4 - 6 Volume | 0 | 0 | 39 | 48 | 87 |
| 7 - 9 Peak Hour | | | 07:30 | 08:00 | 07:30 | 4 - 6 Peak Hour | | | 16:00 | 16:45 | 16:45 |
| 7 - 9 Pk Volume | 0 | 0 | 29 | 9 | 32 | 4 - 6 Pk Volume | 0 | 0 | 21 | 28 | 46 |
| Pk Hr Factor | 0.000 | 0.000 | 0.518 | 0.450 | 0.533 | Pk Hr Factor | 0.000 | 0.000 | 0.656 | 0.875 | 0.767 |

Prepared by NDS/ATD

# VOLUME

Upper City Hall Parking Driveway N/o Poli St

**Day:** Sunday
**Date:** 3/23/2014

**City:** Ventura
**Project #:** CA14_5163_008

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 170 | 171 | 0 | 0 | 341 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 0 | | 0 | | | | | | 0 | |
| 00:15 | 0 | | 0 | | | | | | 0 | |
| 00:30 | 0 | | 0 | | | | | | 0 | |
| 00:45 | 2 | 2 | 1 | 1 | | | | | 3 | 3 |
| 01:00 | 0 | | 1 | | | | | | 1 | |
| 01:15 | 0 | | 0 | | | | | | 0 | |
| 01:30 | 0 | | 0 | | | | | | 0 | |
| 01:45 | 0 | | 0 | 1 | | | | | 0 | 1 |
| 02:00 | 0 | | 0 | | | | | | 0 | |
| 02:15 | 0 | | 0 | | | | | | 0 | |
| 02:30 | 0 | | 0 | | | | | | 0 | |
| 02:45 | 0 | | 0 | | | | | | 0 | |
| 03:00 | 0 | | 0 | | | | | | 0 | |
| 03:15 | 0 | | 0 | | | | | | 0 | |
| 03:30 | 0 | | 0 | | | | | | 0 | |
| 03:45 | 0 | | 0 | | | | | | 0 | |
| 04:00 | 0 | | 0 | | | | | | 0 | |
| 04:15 | 0 | | 0 | | | | | | 0 | |
| 04:30 | 0 | | 0 | | | | | | 0 | |
| 04:45 | 0 | | 0 | | | | | | 0 | |
| 05:00 | 0 | | 0 | | | | | | 0 | |
| 05:15 | 0 | | 0 | | | | | | 0 | |
| 05:30 | 0 | | 0 | | | | | | 0 | |
| 05:45 | 0 | | 0 | | | | | | 0 | |
| 06:00 | 0 | | 0 | | | | | | 0 | |
| 06:15 | 0 | | 0 | | | | | | 0 | |
| 06:30 | 0 | | 0 | | | | | | 0 | |
| 06:45 | 2 | 2 | 0 | | | | | | 2 | 2 |
| 07:00 | 1 | | 0 | | | | | | 1 | |
| 07:15 | 1 | | 0 | | | | | | 1 | |
| 07:30 | 0 | | 0 | | | | | | 0 | |
| 07:45 | 1 | 3 | 1 | 1 | | | | | 2 | 4 |
| 08:00 | 2 | | 2 | | | | | | 4 | |
| 08:15 | 3 | | 1 | | | | | | 4 | |
| 08:30 | 4 | | 0 | | | | | | 4 | |
| 08:45 | 2 | 11 | 2 | 5 | | | | | 4 | 16 |
| 09:00 | 1 | | 2 | | | | | | 3 | |
| 09:15 | 5 | | 7 | | | | | | 12 | |
| 09:30 | 9 | | 3 | | | | | | 12 | |
| 09:45 | 2 | 17 | 2 | 14 | | | | | 4 | 31 |
| 10:00 | 5 | | 5 | | | | | | 10 | |
| 10:15 | 4 | | 3 | | | | | | 7 | |
| 10:30 | 6 | | 3 | | | | | | 9 | |
| 10:45 | 6 | 21 | 7 | 18 | | | | | 13 | 39 |
| 11:00 | 5 | | 4 | | | | | | 9 | |
| 11:15 | 4 | | 4 | | | | | | 8 | |
| 11:30 | 6 | | 2 | | | | | | 8 | |
| 11:45 | 6 | 21 | 5 | 15 | | | | | 11 | 36 |
| **TOTALS** | | **77** | | **55** | | | | | | **132** |
| **SPLIT %** | | **58.3%** | | **41.7%** | | | | | | **38.7%** |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | 5 | | 5 | | | | | | 10 | |
| 12:15 | 12 | | 5 | | | | | | 17 | |
| 12:30 | 3 | | 10 | | | | | | 13 | |
| 12:45 | 6 | 26 | 11 | 31 | | | | | 17 | 57 |
| 13:00 | 1 | | 6 | | | | | | 7 | |
| 13:15 | 3 | | 2 | | | | | | 5 | |
| 13:30 | 4 | | 6 | | | | | | 10 | |
| 13:45 | 4 | 12 | 6 | 20 | | | | | 10 | 32 |
| 14:00 | 0 | | 1 | | | | | | 1 | |
| 14:15 | 3 | | 2 | | | | | | 5 | |
| 14:30 | 1 | | 4 | | | | | | 5 | |
| 14:45 | 3 | 7 | 3 | 10 | | | | | 6 | 17 |
| 15:00 | 2 | | 1 | | | | | | 3 | |
| 15:15 | 4 | | 5 | | | | | | 9 | |
| 15:30 | 5 | | 3 | | | | | | 8 | |
| 15:45 | 0 | 11 | 2 | 11 | | | | | 2 | 22 |
| 16:00 | 4 | | 3 | | | | | | 7 | |
| 16:15 | 6 | | 3 | | | | | | 9 | |
| 16:30 | 5 | | 3 | | | | | | 8 | |
| 16:45 | 1 | 16 | 5 | 14 | | | | | 6 | 30 |
| 17:00 | 5 | | 3 | | | | | | 8 | |
| 17:15 | 3 | | 3 | | | | | | 6 | |
| 17:30 | 5 | | 2 | | | | | | 7 | |
| 17:45 | 2 | 15 | 4 | 12 | | | | | 6 | 27 |
| 18:00 | 0 | | 6 | | | | | | 6 | |
| 18:15 | 1 | | 1 | | | | | | 2 | |
| 18:30 | 1 | | 2 | | | | | | 3 | |
| 18:45 | 2 | 4 | 1 | 10 | | | | | 3 | 14 |
| 19:00 | 2 | | 2 | | | | | | 4 | |
| 19:15 | 0 | | 2 | | | | | | 2 | |
| 19:30 | 0 | | 4 | | | | | | 4 | |
| 19:45 | 0 | 2 | 0 | 8 | | | | | 0 | 10 |
| 20:00 | 0 | | 0 | | | | | | 0 | |
| 20:15 | 0 | | 0 | | | | | | 0 | |
| 20:30 | 0 | | 0 | | | | | | 0 | |
| 20:45 | 0 | | 0 | | | | | | 0 | |
| 21:00 | 0 | | 0 | | | | | | 0 | |
| 21:15 | 0 | | 0 | | | | | | 0 | |
| 21:30 | 0 | | 0 | | | | | | 0 | |
| 21:45 | 0 | | 0 | | | | | | 0 | |
| 22:00 | 0 | | 0 | | | | | | 0 | |
| 22:15 | 0 | | 0 | | | | | | 0 | |
| 22:30 | 0 | | 0 | | | | | | 0 | |
| 22:45 | 0 | | 0 | | | | | | 0 | |
| 23:00 | 0 | | 0 | | | | | | 0 | |
| 23:15 | 0 | | 0 | | | | | | 0 | |
| 23:30 | 0 | | 0 | | | | | | 0 | |
| 23:45 | 0 | | 0 | | | | | | 0 | |
| **TOTALS** | | **93** | | **116** | | | | | | **209** |
| **SPLIT %** | | **44.5%** | | **55.5%** | | | | | | **61.3%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 170 | 171 | 0 | 0 | 341 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:30 | 11:45 | | | 11:45 | **PM Peak Hour** | 12:00 | 12:15 | | | 12:00 |
| **AM Pk Volume** | 29 | 25 | | | 51 | **PM Pk Volume** | 26 | 32 | | | 57 |
| **Pk Hr Factor** | 0.604 | 0.625 | | | 0.750 | **Pk Hr Factor** | 0.542 | 0.727 | | | 0.838 |
| **7 - 9 Volume** | 14 | 6 | 0 | 0 | 20 | **4 - 6 Volume** | 31 | 26 | 0 | 0 | 57 |
| **7 - 9 Peak Hour** | 08:00 | 08:00 | | | 08:00 | **4 - 6 Peak Hour** | 16:15 | 16:00 | | | 16:15 |
| **7 - 9 Pk Volume** | 11 | 5 | 0 | 0 | 16 | **4 - 6 Pk Volume** | 17 | 14 | 0 | 0 | 31 |
| **Pk Hr Factor** | 0.688 | 0.625 | 0.000 | 0.000 | 1.000 | **Pk Hr Factor** | 0.708 | 0.700 | 0.000 | 0.000 | 0.861 |

Prepared by NDS/ATD

# VOLUME

Kalorama St N/o Poli St

Day: Saturday
Date: 3/22/2014

City: Ventura
Project #: CA14_5163_006

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 879 | 759 | 0 | 0 | 1,638 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | | PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 1 | | 1 | | | | | | 2 | | 12:00 | 19 | | 15 | | | | | | 34 | |
| 00:15 | 1 | | 1 | | | | | | 2 | | 12:15 | 11 | | 20 | | | | | | 31 | |
| 00:30 | 1 | | 3 | | | | | | 4 | | 12:30 | 17 | | 10 | | | | | | 27 | |
| 00:45 | 1 | 4 | 0 | 5 | | | | | 1 | 9 | 12:45 | 10 | 57 | 10 | 55 | | | | | 20 | 112 |
| 01:00 | 0 | | 0 | | | | | | 0 | | 13:00 | 15 | | 16 | | | | | | 31 | |
| 01:15 | 1 | | 0 | | | | | | 1 | | 13:15 | 28 | | 8 | | | | | | 36 | |
| 01:30 | 1 | | 0 | | | | | | 1 | | 13:30 | 13 | | 10 | | | | | | 23 | |
| 01:45 | 0 | 2 | 1 | 1 | | | | | 1 | 3 | 13:45 | 18 | 74 | 13 | 47 | | | | | 31 | 121 |
| 02:00 | 2 | | 1 | | | | | | 3 | | 14:00 | 15 | | 16 | | | | | | 31 | |
| 02:15 | 1 | | 0 | | | | | | 1 | | 14:15 | 15 | | 13 | | | | | | 28 | |
| 02:30 | 0 | | 2 | | | | | | 2 | | 14:30 | 15 | | 23 | | | | | | 38 | |
| 02:45 | 1 | 4 | 0 | 3 | | | | | 1 | 7 | 14:45 | 13 | 58 | 13 | 65 | | | | | 26 | 123 |
| 03:00 | 1 | | 1 | | | | | | 2 | | 15:00 | 18 | | 14 | | | | | | 32 | |
| 03:15 | 0 | | 1 | | | | | | 1 | | 15:15 | 10 | | 10 | | | | | | 20 | |
| 03:30 | 0 | | 2 | | | | | | 2 | | 15:30 | 12 | | 10 | | | | | | 22 | |
| 03:45 | 0 | 1 | 0 | 4 | | | | | 0 | 5 | 15:45 | 11 | 51 | 13 | 47 | | | | | 24 | 98 |
| 04:00 | 0 | | 0 | | | | | | 0 | | 16:00 | 22 | | 22 | | | | | | 44 | |
| 04:15 | 1 | | 1 | | | | | | 2 | | 16:15 | 18 | | 11 | | | | | | 29 | |
| 04:30 | 0 | | 1 | | | | | | 1 | | 16:30 | 16 | | 12 | | | | | | 28 | |
| 04:45 | 1 | 2 | 0 | 2 | | | | | 1 | 4 | 16:45 | 27 | 83 | 8 | 53 | | | | | 35 | 136 |
| 05:00 | 0 | | 1 | | | | | | 1 | | 17:00 | 23 | | 16 | | | | | | 39 | |
| 05:15 | 1 | | 0 | | | | | | 1 | | 17:15 | 17 | | 12 | | | | | | 29 | |
| 05:30 | 1 | | 1 | | | | | | 2 | | 17:30 | 16 | | 19 | | | | | | 35 | |
| 05:45 | 0 | 2 | 1 | 3 | | | | | 1 | 5 | 17:45 | 17 | 73 | 10 | 57 | | | | | 27 | 130 |
| 06:00 | 1 | | 0 | | | | | | 1 | | 18:00 | 19 | | 11 | | | | | | 30 | |
| 06:15 | 2 | | 1 | | | | | | 3 | | 18:15 | 18 | | 19 | | | | | | 37 | |
| 06:30 | 4 | | 3 | | | | | | 7 | | 18:30 | 13 | | 14 | | | | | | 27 | |
| 06:45 | 8 | 15 | 6 | 10 | | | | | 14 | 25 | 18:45 | 15 | 65 | 10 | 54 | | | | | 25 | 119 |
| 07:00 | 5 | | 4 | | | | | | 9 | | 19:00 | 13 | | 10 | | | | | | 23 | |
| 07:15 | 5 | | 4 | | | | | | 9 | | 19:15 | 16 | | 15 | | | | | | 31 | |
| 07:30 | 7 | | 6 | | | | | | 13 | | 19:30 | 17 | | 8 | | | | | | 25 | |
| 07:45 | 12 | 29 | 5 | 19 | | | | | 17 | 48 | 19:45 | 6 | 52 | 4 | 37 | | | | | 10 | 89 |
| 08:00 | 8 | | 12 | | | | | | 20 | | 20:00 | 10 | | 6 | | | | | | 16 | |
| 08:15 | 4 | | 6 | | | | | | 10 | | 20:15 | 8 | | 8 | | | | | | 16 | |
| 08:30 | 5 | | 18 | | | | | | 23 | | 20:30 | 10 | | 6 | | | | | | 16 | |
| 08:45 | 16 | 33 | 13 | 49 | | | | | 29 | 82 | 20:45 | 13 | 41 | 4 | 24 | | | | | 17 | 65 |
| 09:00 | 12 | | 9 | | | | | | 21 | | 21:00 | 4 | | 8 | | | | | | 12 | |
| 09:15 | 6 | | 13 | | | | | | 19 | | 21:15 | 8 | | 3 | | | | | | 11 | |
| 09:30 | 9 | | 13 | | | | | | 22 | | 21:30 | 11 | | 3 | | | | | | 14 | |
| 09:45 | 11 | 38 | 20 | 55 | | | | | 31 | 93 | 21:45 | 7 | 30 | 8 | 22 | | | | | 15 | 52 |
| 10:00 | 15 | | 13 | | | | | | 28 | | 22:00 | 6 | | 7 | | | | | | 13 | |
| 10:15 | 12 | | 17 | | | | | | 29 | | 22:15 | 13 | | 4 | | | | | | 17 | |
| 10:30 | 13 | | 18 | | | | | | 31 | | 22:30 | 6 | | 7 | | | | | | 13 | |
| 10:45 | 13 | 53 | 10 | 58 | | | | | 23 | 111 | 22:45 | 7 | 32 | 4 | 22 | | | | | 11 | 54 |
| 11:00 | 17 | | 10 | | | | | | 27 | | 23:00 | 4 | | 1 | | | | | | 5 | |
| 11:15 | 18 | | 17 | | | | | | 35 | | 23:15 | 2 | | 2 | | | | | | 4 | |
| 11:30 | 13 | | 17 | | | | | | 30 | | 23:30 | 9 | | 5 | | | | | | 14 | |
| 11:45 | 10 | 58 | 13 | 57 | | | | | 23 | 115 | 23:45 | 7 | 22 | 2 | 10 | | | | | 9 | 32 |
| TOTALS | 241 | | 266 | | | | | | | 507 | TOTALS | 638 | | 493 | | | | | | | 1131 |
| SPLIT % | 47.5% | | 52.5% | | | | | | | 31.0% | SPLIT % | 56.4% | | 43.6% | | | | | | | 69.0% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 879 | 759 | 0 | 0 | 1,638 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | 10:30 | 09:45 | | | 11:15 | PM Peak Hour | 16:15 | 13:45 | | | 16:45 |
| AM Pk Volume | 61 | 68 | | | 122 | PM Pk Volume | 84 | 65 | | | 138 |
| Pk Hr Factor | 0.847 | 0.850 | | | 0.871 | Pk Hr Factor | 0.778 | 0.707 | | | 0.885 |
| 7 - 9 Volume | 62 | 68 | 0 | 0 | 130 | 4 - 6 Volume | 156 | 110 | 0 | 0 | 266 |
| 7 - 9 Peak Hour | 08:00 | 08:00 | | | 08:00 | 4 - 6 Peak Hour | 16:15 | 17:00 | | | 16:45 |
| 7 - 9 Pk Volume | 33 | 49 | 0 | 0 | 82 | 4 - 6 Pk Volume | 84 | 57 | 0 | 0 | 138 |
| Pk Hr Factor | 0.516 | 0.681 | 0.000 | 0.000 | 0.707 | Pk Hr Factor | 0.778 | 0.750 | 0.000 | 0.000 | 0.885 |

Prepared by NDS/ATD

# VOLUME

Upper City Hall Parking Driveway N/o Poli St

**Day:** Monday
**Date:** 3/24/2014

**City:** Ventura
**Project #:** CA14_5163_008

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 98 | 98 | 0 | 0 | 196 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 0 | | 0 | | | | | | 0 | |
| 00:15 | 0 | | 0 | | | | | | 0 | |
| 00:30 | 0 | | 0 | | | | | | 0 | |
| 00:45 | 0 | | 0 | | | | | | 0 | |
| 01:00 | 1 | | 1 | | | | | | 2 | |
| 01:15 | 0 | | 0 | | | | | | 0 | |
| 01:30 | 0 | | 0 | | | | | | 0 | |
| 01:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 |
| 02:00 | 0 | | 0 | | | | | | 0 | |
| 02:15 | 0 | | 0 | | | | | | 0 | |
| 02:30 | 0 | | 0 | | | | | | 0 | |
| 02:45 | 0 | | 0 | | | | | | 0 | |
| 03:00 | 0 | | 0 | | | | | | 0 | |
| 03:15 | 0 | | 0 | | | | | | 0 | |
| 03:30 | 0 | | 0 | | | | | | 0 | |
| 03:45 | 0 | | 0 | | | | | | 0 | |
| 04:00 | 0 | | 0 | | | | | | 0 | |
| 04:15 | 0 | | 0 | | | | | | 0 | |
| 04:30 | 0 | | 0 | | | | | | 0 | |
| 04:45 | 0 | | 0 | | | | | | 0 | |
| 05:00 | 0 | | 0 | | | | | | 0 | |
| 05:15 | 0 | | 0 | | | | | | 0 | |
| 05:30 | 0 | | 0 | | | | | | 0 | |
| 05:45 | 0 | | 0 | | | | | | 0 | |
| 06:00 | 0 | | 0 | | | | | | 0 | |
| 06:15 | 0 | | 0 | | | | | | 0 | |
| 06:30 | 0 | | 0 | | | | | | 0 | |
| 06:45 | 0 | | 0 | | | | | | 0 | |
| 07:00 | 1 | | 0 | | | | | | 1 | |
| 07:15 | 2 | | 1 | | | | | | 3 | |
| 07:30 | 1 | | 1 | | | | | | 2 | |
| 07:45 | 1 | 5 | 1 | 3 | | | | | 2 | 8 |
| 08:00 | 2 | | 0 | | | | | | 2 | |
| 08:15 | 2 | | 1 | | | | | | 3 | |
| 08:30 | 1 | | 1 | | | | | | 2 | |
| 08:45 | 4 | 9 | 3 | 5 | | | | | 7 | 14 |
| 09:00 | 5 | | 2 | | | | | | 7 | |
| 09:15 | 1 | | 1 | | | | | | 2 | |
| 09:30 | 1 | | 3 | | | | | | 4 | |
| 09:45 | 2 | 9 | 3 | 9 | | | | | 5 | 18 |
| 10:00 | 1 | | 2 | | | | | | 3 | |
| 10:15 | 1 | | 1 | | | | | | 2 | |
| 10:30 | 1 | | 2 | | | | | | 3 | |
| 10:45 | 1 | 4 | 1 | 6 | | | | | 2 | 10 |
| 11:00 | 1 | | 3 | | | | | | 4 | |
| 11:15 | 0 | | 1 | | | | | | 1 | |
| 11:30 | 1 | | 0 | | | | | | 1 | |
| 11:45 | 1 | 3 | 0 | 4 | | | | | 1 | 7 |
| **TOTALS** | | **31** | | **28** | | | | | | **59** |
| **SPLIT %** | | **52.5%** | | **47.5%** | | | | | | **30.1%** |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | 1 | | 1 | | | | | | 2 | |
| 12:15 | 2 | | 1 | | | | | | 3 | |
| 12:30 | 1 | | 3 | | | | | | 4 | |
| 12:45 | 4 | 8 | 0 | 5 | | | | | 4 | 13 |
| 13:00 | 2 | | 3 | | | | | | 5 | |
| 13:15 | 3 | | 2 | | | | | | 5 | |
| 13:30 | 1 | | 2 | | | | | | 3 | |
| 13:45 | 1 | 7 | 3 | 10 | | | | | 4 | 17 |
| 14:00 | 1 | | 0 | | | | | | 1 | |
| 14:15 | 3 | | 2 | | | | | | 5 | |
| 14:30 | 1 | | 1 | | | | | | 2 | |
| 14:45 | 1 | 6 | 2 | 5 | | | | | 3 | 11 |
| 15:00 | 5 | | 2 | | | | | | 7 | |
| 15:15 | 2 | | 1 | | | | | | 3 | |
| 15:30 | 0 | | 0 | | | | | | 0 | |
| 15:45 | 0 | 7 | 4 | 7 | | | | | 4 | 14 |
| 16:00 | 2 | | 0 | | | | | | 2 | |
| 16:15 | 1 | | 4 | | | | | | 5 | |
| 16:30 | 2 | | 2 | | | | | | 4 | |
| 16:45 | 4 | 9 | 1 | 7 | | | | | 5 | 16 |
| 17:00 | 2 | | 1 | | | | | | 3 | |
| 17:15 | 1 | | 1 | | | | | | 2 | |
| 17:30 | 7 | | 4 | | | | | | 11 | |
| 17:45 | 5 | 15 | 4 | 10 | | | | | 9 | 25 |
| 18:00 | 3 | | 2 | | | | | | 5 | |
| 18:15 | 7 | | 3 | | | | | | 10 | |
| 18:30 | 1 | | 5 | | | | | | 6 | |
| 18:45 | 1 | 12 | 4 | 14 | | | | | 5 | 26 |
| 19:00 | 0 | | 2 | | | | | | 2 | |
| 19:15 | 0 | | 1 | | | | | | 1 | |
| 19:30 | 0 | | 5 | | | | | | 5 | |
| 19:45 | 0 | | 1 | 9 | | | | | 1 | 9 |
| 20:00 | 1 | | 1 | | | | | | 2 | |
| 20:15 | 0 | | 0 | | | | | | 0 | |
| 20:30 | 0 | | 0 | | | | | | 0 | |
| 20:45 | 0 | 1 | 0 | 1 | | | | | 0 | 2 |
| 21:00 | 0 | | 0 | | | | | | 0 | |
| 21:15 | 1 | | 1 | | | | | | 2 | |
| 21:30 | 1 | | 1 | | | | | | 2 | |
| 21:45 | 0 | 2 | 0 | 2 | | | | | 0 | 4 |
| 22:00 | 0 | | 0 | | | | | | 0 | |
| 22:15 | 0 | | 0 | | | | | | 0 | |
| 22:30 | 0 | | 0 | | | | | | 0 | |
| 22:45 | 0 | | 0 | | | | | | 0 | |
| 23:00 | 0 | | 0 | | | | | | 0 | |
| 23:15 | 0 | | 0 | | | | | | 0 | |
| 23:30 | 0 | | 0 | | | | | | 0 | |
| 23:45 | 0 | | 0 | | | | | | 0 | |
| **TOTALS** | | **67** | | **70** | | | | | | **137** |
| **SPLIT %** | | **48.9%** | | **51.1%** | | | | | | **69.9%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 98 | 98 | 0 | 0 | 196 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 08:15 | 08:45 | | | 08:45 | **PM Peak Hour** | 17:30 | 17:45 | | | 17:30 |
| **AM Pk Volume** | 12 | 9 | | | 20 | **PM Pk Volume** | 22 | 14 | | | 35 |
| **Pk Hr Factor** | 0.600 | 0.750 | | | 0.714 | **Pk Hr Factor** | 0.786 | 0.700 | | | 0.795 |
| **7 - 9 Volume** | 14 | 8 | 0 | 0 | 22 | **4 - 6 Volume** | 24 | 17 | 0 | 0 | 41 |
| **7 - 9 Peak Hour** | 08:00 | 08:00 | | | 08:00 | **4 - 6 Peak Hour** | 17:00 | 17:00 | | | 17:00 |
| **7 - 9 Pk Volume** | 9 | 5 | 0 | 0 | 14 | **4 - 6 Pk Volume** | 15 | 10 | 0 | 0 | 25 |
| **Pk Hr Factor** | 0.563 | 0.417 | 0.000 | 0.000 | 0.500 | **Pk Hr Factor** | 0.536 | 0.625 | 0.000 | 0.000 | 0.568 |

PROJECT : VENTURA BOTANICAL GARDENS
COUNT LOCATION : BRAKEY ROAD s/o GRANT PARK GATE

Site: ATE# 14024

Seven Day Volume, per Channel (Volume factor 0.500)

Channel 1

| Interval Start | Fri 3/28/2014 | Sat 3/29/2014 | Sun 3/30/2014 | Mon 3/31/2014 | Tue 4/1/2014 | Wed 4/2/2014 | Thu 4/3/2014 | Mon - Fri Average | 7 Day Average |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM | 0 | 12 | 6 | 0 | 0 | - | - | 0.0 | 3.6 |
| 1:00 AM | 0 | 0 | 9 | 0 | 0 | - | - | 0.0 | 1.8 |
| 2:00 AM | 0 | 0 | 0 | 2 | 0 | - | - | 0.7 | 0.4 |
| 3:00 AM | 0 | 0 | 6 | 0 | 5 | - | - | 1.7 | 2.2 |
| 4:00 AM | 0 | 0 | 0 | 0 | 0 | - | - | 0.0 | 0.0 |
| 5:00 AM | 0 | 0 | 0 | 0 | 0 | - | - | 0.0 | 0.0 |
| 6:00 AM | 4 | 0 | 6 | 4 | 4 | - | - | 4.0 | 3.6 |
| 7:00 AM | 8 | 12 | 12 | 11 | 6 | - | - | 8.3 | 9.8 |
| 8:00 AM | 19 | 12 | 16 | 13 | 6 | - | - | 12.7 | 13.2 |
| 9:00 AM | 18 | 34 | 32 | 22 | 2 | - | - | 14.0 | 21.6 |
| 10:00 AM | 22 | 30 | 18 | 9 | 26 | - | - | 19.0 | 21.0 |
| 11:00 AM | 26 | 16 | 35 | 18 | 32 | - | - | 25.3 | 25.4 |
| 12:00 PM | 26 | 36 | 58 | 34 | 32 | - | - | 30.7 | 37.2 |
| 1:00 PM | 33 | 50 | 56 | 41 | 39 | - | - | 37.7 | 43.8 |
| 2:00 PM | 27 | 40 | 38 | 20 | 26 | - | - | 24.3 | 30.2 |
| 3:00 PM | 28 | 34 | 53 | 18 | 28 | - | - | 24.7 | 32.2 |
| 4:00 PM | 38 | 31 | 33 | 24 | 42 | - | - | 34.7 | 33.6 |
| 5:00 PM | 18 | 33 | 34 | 23 | 27 | - | - | 22.7 | 27.0 |
| 6:00 PM | 34 | 32 | 35 | 40 | 36 | - | - | 36.7 | 35.4 |
| 7:00 PM | 35 | 31 | 34 | 27 | 30 | - | - | 30.7 | 31.4 |
| 8:00 PM | 22 | 8 | 12 | 18 | 17 | - | - | 19.0 | 15.4 |
| 9:00 PM | 13 | 16 | 0 | 4 | 10 | - | - | 9.0 | 8.6 |
| 10:00 PM | 10 | 12 | 1 | 5 | 7 | - | - | 7.3 | 7.0 |
| 11:00 PM | 5 | 6 | 4 | 8 | 0 | - | - | 4.3 | 4.6 |
| Totals | 386 | 445 | 498 | 341 | 375 | 0 | 0 | 367.3 | 409.0 |

**Peak Hours**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM - 12:00 PM | 11:00 AM | 9:00 AM | 11:00 AM | 9:00 AM | 11:00 AM | - | - | 11:00 AM | 11:00 AM |
| Volume | 26 | 34 | 35 | 22 | 32 | - | - | 25.3 | 25.4 |
| 12:00 PM - 12:00 AM | 4:00 PM | 1:00 PM | 12:00 PM | 1:00 PM | 4:00 PM | - | - | 1:00 PM | 1:00 PM |
| Volume | 38 | 50 | 58 | 41 | 42 | - | - | 37.7 | 43.8 |

WEEKDAY AVG. = 367 ADT

WEEKEND AVG. = 472 ADT

Seven Day Volume, per Channel (Volume factor 0.500)

Channel 1

| Interval Start | Sat 5/10/2014 | Sun 5/11/2014 | Mon 5/12/2014 | Tue 5/13/2014 | Wed 5/14/2014 | Thu 5/15/2014 | Fri 5/16/2014 | Mon - Fri Average | 7 Day Average |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM | 4 | 0 | 0 | 0 | - | - | - | 0.0 | 1.0 |
| 1:00 AM | 4 | 1 | 0 | 0 | - | - | - | 0.0 | 1.3 |
| 2:00 AM | 0 | 0 | 1 | 0 | - | - | - | 0.5 | 0.3 |
| 3:00 AM | 0 | 0 | 0 | 1 | - | - | - | 0.5 | 0.3 |
| 4:00 AM | 0 | 0 | 0 | 0 | - | - | - | 0.0 | 0.0 |
| 5:00 AM | 2 | 3 | 4 | 4 | - | - | - | 4.0 | 3.3 |
| 6:00 AM | 14 | 1 | 26 | 24 | - | - | - | 25.0 | 16.3 |
| 7:00 AM | 28 | 15 | 86 | 114 | - | - | - | 100.0 | 60.8 |
| 8:00 AM | 42 | 51 | 154 | 136 | - | - | - | 145.0 | 95.8 |
| 9:00 AM | 56 | 62 | 94 | 158 | - | - | - | 126.0 | 92.5 |
| 10:00 AM | 82 | 86 | 90 | 78 | - | - | - | 84.0 | 84.0 |
| 11:00 AM | 77 | 74 | 80 | 91 | - | - | - | 85.5 | 80.5 |
| 12:00 PM | 50 | 66 | 120 | 132 | - | - | - | 126.0 | 92.0 |
| 1:00 PM | 37 | 73 | 126 | 142 | - | - | - | 134.0 | 94.5 |
| 2:00 PM | 30 | 56 | 106 | 98 | - | - | - | 102.0 | 72.5 |
| 3:00 PM | 44 | 42 | 95 | 78 | - | - | - | 86.5 | 64.8 |
| 4:00 PM | 34 | 55 | 95 | 78 | - | - | - | 86.5 | 65.5 |
| 5:00 PM | 36 | 34 | 206 | 142 | - | - | - | 174.0 | 104.5 |
| 6:00 PM | 28 | 32 | 104 | 137 | - | - | - | 120.5 | 75.3 |
| 7:00 PM | 32 | 34 | 54 | 53 | - | - | - | 53.5 | 43.3 |
| 8:00 PM | 13 | 15 | 44 | 60 | - | - | - | 52.0 | 33.0 |
| 9:00 PM | 8 | 4 | 10 | 41 | - | - | - | 25.5 | 15.8 |
| 10:00 PM | 15 | 0 | 64 | 8 | - | - | - | 36.0 | 21.8 |
| 11:00 PM | 0 | 5 | 8 | 1 | - | - | - | 4.5 | 3.5 |
| Totals | 636 | 709 | 1567 | 1576 | 0 | 0 | 0 | 1571.5 | 1122.0 |

**Peak Hours**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 AM - 12:00 PM | 10:00 AM | 10:00 AM | 8:00 AM | 9:00 AM | - | - | - | 8:00 AM | 8:00 AM |
| Volume | 82 | 86 | 154 | 158 | - | - | - | 145.0 | 95.8 |
| 12:00 PM - 12:00 AM | 12:00 PM | 1:00 PM | 5:00 PM | 1:00 PM | - | - | - | 5:00 PM | 5:00 PM |
| Volume | 50 | 73 | 206 | 142 | - | - | - | 174.0 | 104.5 |

WEEKDAY AVG. = 1572

WEEKEND AVG. = 673

## ROADWAY CAPACITY TABLE

FIGURE 4.2.2

| AVERAGE DAILY TRAFFIC (ADT) LEVEL OF SERVICE (LOS) THRESHOLDS COUNTY ROADS AND CONVENTIONAL STATE HIGHWAYS | | | | | |
|---|---|---|---|---|---|
| | CLASS I | | | CLASS II | CLASS III |
| LOS | 2 LANES | 4 LANES | 6 LANES | 2 LANES | 2 LANES |
| A | 2,400 | 19,000 | 29,000 | 1,500 | 350 |
| B | 5,600 | 28,000 | 42,000 | 3,900 | 2,000 |
| C | 10,000 | 38,000 | 57,000 | 7,000 | 3,300 |
| D | 16,000 | 47,000 | 70,000 | 11,000 | 5,900 |
| E | 27,000 | 58,000 | 87,000 | 21,000 | 16,000 |

| ADT/LOS THRESHOLDS FREEWAYS | | | | |
|---|---|---|---|---|
| LOS | 4 LANES | 6 LANES | 8 LANES | 10 LANES |
| A | 31,000 | 46,000 | 62,000 | 77,000 |
| B | 48,000 | 71,000 | 95,000 | 119,000 |
| C | 68,000 | 102,000 | 136,000 | 169,000 |
| D | 82,000 | 123,000 | 164,000 | 205,000 |
| E | 88,000 | 132,000 | 176,000 | 220,000 |

SOURCE: VENTURA COUNTY PUBLIC WORKS AGENCY 9/94

R. 12/20/94

**ATTACHMENT F**

**VWRF PLANT CAPACITY MEMO, JANUARY 6, 2015**
**(UPDATES JUNE 9, 2014 MEMO)**

CITY OF VENTURA

# VENTURA WATER

## Memorandum

Update Numbers 1-6-15 See June 17, 2014 attached email & spreadsheet S. Rungren

**Date:** ~~June 9, 2014~~ 1-6-15 (Page 1 only)

**To:** Dave Ward, Planning Manager

**From:** Susan Rungren, Water Resource Manager SR
Betsy Cooper, Utilities Engineer

**Subject:** Ventura Botanical Gardens
VWRF Plant Capacity

As requested, we have evaluated the plant capacity at the Ventura Wastewater Reclamation Facility (VWRF) for use in CEQA documents for the proposed Ventura Botanical Gardens (VBG).

The following wording has been used in previous Planning CEQA documentation and is still valid:

> *Currently, the Ventura Wastewater Reclamation Facility (VWRF) is averaging approximately 8.8 MGD. The treatment plant is currently* ***permitted*** *for 14 MGD; however, the secondary treatment capacity limits the plant capacity to 12 MGD*

Attached is a spreadsheet that estimates sewer loads from projects that are under construction or approved, based on projects listed in Table 2-4 of the 2014 Comprehensive Water Resources Report (plus the La Barranca Project). See updated 6-17-2014

In addition, the Final EIR for the Olivas Park Drive Extension Project indicates that there is adequate plant capacity to accommodate flows from the Olivas Park Drive Project in addition to flows from the Montalvo CSD Plant.

Based on these projects, sewer flows from existing and committed projects are estimated as follows:

Existing influent flows: 8.8 MGD
Flows from projects under construction or approved: ~~0.67~~ .69 MGD
Olivas Park Drive Extension (FEIR): 0.37 MGD
Montalvo CSD Plant (FEIR): 0.26 MGD
Total Flow (Existing and Committed): ~~10.1~~ MGD 10.4 MGD

Active (6-17-2014 spreadsheet) = .23 MGD
VBG = .016 MGD

## Estimated Wastewater Flows

June 17, 2014

| *Project Name* | Description | | Estimate Avg Water Demand (gpd) | Return to Sewer Ratio (1) | Estimated Avg Sewer Flow (gpd) | Notes |
|---|---|---|---|---|---|---|
| ***Under Construction and Approved Projects (From Table 3-6, 2014 Comprehensive Water Resources Report)*** | | | | | | |
| Residential (0-8 du/ac) | | | 223,110 | 69% | 153,946 | |
| Residential (9-20+ du/ac) | | | 447,750 | 69% | 308,948 | |
| Commercial/Ind/Retail | | | 150,978 | 80% | 120,782 | |
| Hospital | | | 125,350 | 80% | 100,280 | |
| La Barranca | 9 Single Family Lots | | 3,330 | 69% | 2,298 | |
| Westside Renaissance - Dyer Sheehan (adj to Centex) | 50 affordable senior apartments | | 12,500 | 69% | 8,625 | |
| ***Subtotal (Approved)*** | | | | | 694,879 | |
| ***Active Projects (In Planning Process)*** | | | | | | |
| The Grove | Potential Development of 198-250 townhomes, apartments, courtyard, and stacked units | | 62,500 | 69% | 43,125 | |
| World Oil | Main and Encinal. 2438sf two-story mixed use | | 1,396 | 75% | 1,047 | |
| Mar-Y-Cell | 24 E. Santa Clara. 138 units-central above grade | | 35,924 | 75% | 26,943 | |
| Ventura Downtown (Ashkar) | 260 apartments - mix of 3-4 stories | | 65,000 | 69% | 44,850 | |
| WE5-Daly North Bank | Northbank-Vince Daly: 117 Single Family Units, 31 Affordable, and 50 apartments | | 73,680 | 69% | 50,839 | |
| 1254 & 1268 Santa Clara (previously Hilty Apartments) | 8 Residential Units | | 2,000 | 69% | 1,380 | |
| Mehdiani (1926 E. Thompson) | 4200 sf commercial, 4 apartments | | 1,000 | 75% | 750 | |
| Ravello Holdings (Johnson/Northbank) | 10,000 sf commercial, 306 apartments | | 76,500 | 75% | 57,375 | |
| Darling Apartments | approx 40 apartments | | 10,000 | 69% | 6,900 | |
| ***Subtotal (Active)*** | | | | | 233,209 | |

| | | | | | |
|---|---|---|---|---|---|
| *Focus Area 1* | | | | | |
| Olivas Park Dr Extension | Max. 1,258,000 sf commercial, 75,000 sf industrial | | | 373,240 | Sewer flow from EIR |
| Montalvo CSD Plant | | | | 260,000 | Sewer flow from EIR |
| ***Ventura Botanical Gardens*** | Flow estimates from Kennedy Jenks | 17,662 | 90% | 15,896 | |
| ***Total (All projects listed above)*** | | | | 1,577,224 | |
| ***Existing Sewer Flows*** | | | | 8,800,000 | |
| ***Total (Existing and Projected)*** | | | | **10,377,224** | |

(1) Return-to-Sewer Ratios based on Table 2-3 of the 2010 Wastewater Masterplan.

**ATTACHMENT G**

**SEWER INFRASTRUCTURE REVIEW**
**SEPTEMBER 15, 2014**

**Kennedy/Jenks Consultants**
**Engineers & Scientists**
2775 North Ventura Road, Suite 100
Oxnard, California 93036
805-973-5700
FAX: 805-973-1440

15 September 2014

Mr. Joseph Cahill
Ventura Botanical Gardens, Inc.
P.O. Box 3127
Ventura, CA 93006

Subject: Sewer Infrastructure Review (Revision No. 1) – Botanical Gardens Project
K/J 1444210*00

Dear Mr. Cahill:

The City of Ventura (City) requested this work to evaluate the ability of the City's existing collection system to accommodate a planned development at Grant Park above City Hall. Ventura Botanical Gardens (VGB) has identified Grant Park as the desired location to create a botanical garden. Kennedy/Jenks previously worked with the City on the Wastewater System Master Plan (Master Plan) in 2010. The goal of this study is to determine what effect the additional sewer flow from the botanical gardens (Project) will have on the City's existing collection system.

## 1.0 - Introduction and Background

The proposed development (known as The Project) includes converting approximately 107 acres of City park facilities into gardens and associated support facilities including a visitor center, book and gift shop, plant sales, café, event and lecture center, restaurant, other garden centers, garages and storage areas.

## 2.0 - Existing Wastewater Infrastructure

The wastewater from the Project will connect to the City's sewer collection system at two locations. Connection point #1 is at the west end of Summit Drive and connection point #2 is on Poli Street, just west of Chestnut Street, as shown on Figure 1. The connection on Summit Drive will be to an existing 8-inch sewer, which then connects to an 8-inch sewer to the east in Kalorama Drive. Once in Kalorama, the wastewater flows south to Thompson Boulevard, and then west, eventually reaching the Seaside Transfer station. The connection on Poli Street will be to an existing 6-inch sewer, which connects to an existing 8-inch sewer in California Street. Once in California, the wastewater flows south to Thompson Boulevard, and then west, eventually reaching the Seaside Transfer station. The wastewater is pumped from the Seaside Transfer station to the southeast to the Ventura Water Reclamation Facility.

## 3.0 – Updated Flow Estimate

The Project was not listed in the Master Plan as a near-term project. However, the parcels in the area of Grant Park that are included in the current plan for the Project did have both existing and ultimate sewer loads assigned to them in the Master Plan model. The existing loads assigned to these parcels totaled 2.56 gpm, while the loads estimated for these parcels under ultimate conditions totaled 28.64 gpm.

The current plan for the Project estimates a total non-irrigation water demand of 12.27 gpm. To estimate the wastewater loads from the Project, a return-to-sewer ratio of 0.9 was used. This is higher, and therefore more conservative, than the return-to-sewer ratios estimated in the Master Plan. However, the Project is a unique development that does not fit easily into the categories for land uses developed in the Master Plan, and, more importantly, the typical land use wastewater flow factors and return-to-sewer ratios take into account that a portion of water use is for irrigation purposes. Because the water demand estimates for the Project are separated into domestic and irrigation demands, the domestic demands are dealt with separately, and a more conservative return-to-sewer ratio of 0.9 was used. When this ratio was applied to the non-irrigation water demand, an estimated flow of 11.04 gpm was calculated for the Project for both the existing and the ultimate scenarios.

A summary of the sewer flow estimate for each of the Project's areas is shown in Table 1.

Table 1: Table 1: Sewer Flow Estimate for the Botanical Gardens

| Project Area | Manhole ID | Sewer Connection Point | Non-Irrigation Water Demand (gpd) | Return-to-Sewer Ratio | Sewer Flow (gpd) | Sewer Flow (gpm) |
|---|---|---|---|---|---|---|
| Welcome Zone | MH-5531 | 2 | 1,528 | 0.9 | 1,375 | 0.95 |
| Discovery Zone | MH-724 | 1 | 11,890 | 0.9 | 10,701 | 7.43 |
| Horticulture Zone | MH-724 | 1 | 3,400 | 0.9 | 3,060 | 2.12 |
| Heritage Zone | MH-724 | 1 | 844 | 0.9 | 759 | 0.52 |
| **TOTAL** | | | 17,662 gpd (12.27 gpm) | | | 11.04 gpm |

Note that the estimated flow for the Project of 11.04 gpm is larger than the current flows assigned to the same parcels in the Master Plan model (2.56 gpm), but smaller than the flows assigned to the same parcels in the Master Plan model for ultimate conditions (28.64 gpm).

## 4.0- Hydraulic Model Analysis

The flow monitoring that was conducted by Gold Coast Environmental was used to recalibrate the model in the area around the Project. The four flow monitoring (FM) locations are shown on Figure 1.

The results from flow monitoring location 1 indicate an average flow of 1.4 gpm and a peak flow of 40.1 gpm. The Master Plan model showed an average flow of 23.4 gpm and a peak flow of 51.5 gpm in pipe P-5824, which corresponds to flow monitoring location 1. The average flows of the 33 manholes upstream from pipe P-5824 were scaled down equally so that with the Master Plan peaking equation, the peak dry weather flow in the model equaled 40.1 gpm. These adjustments were made to the existing, near-term and ultimate demand scenarios in the model.

The results from flow monitoring location 2 indicate an average flow of 3.7 gpm and a peak flow of 36.5 gpm. The Master Plan model showed an average flow of 4.5 gpm and a peak flow of 10.4 gpm in pipe P-5749, which corresponds to flow monitoring location 2. The average flows of the 14 manholes upstream from pipe P-5749 and downstream from flow monitoring location 1 were scaled up equally so that with the peaking equation, the peak dry weather flow in the model equaled 36.4 gpm. These adjustments were made to the existing, near-term and ultimate demand scenarios in the model.

The results from flow monitoring location 3 indicate an average flow of 26.3 gpm and a peak flow of 111.4 gpm. The Master Plan model showed an average flow of 35 gpm and a peak flow of 76 gpm in pipe P-5706, which corresponds to flow monitoring location 3. The average flows of the 14 manholes upstream from pipe P-5706 and downstream from flow monitor location 1 were scaled up equally so that with the peaking equation, the peak dry weather flow in the model equaled 111.6 gpm. These adjustments were made to the existing, near-term and ultimate demand scenarios in the model.

The results from flow monitoring location 4 indicate an average flow of 1.2 gpm and a peak flow of 18.9 gpm. The Master Plan model showed an average flow of 5.8 gpm and a peak flow of 13.4 gpm in pipe P-6054, which corresponds to flow monitoring location 4. The average flows of the 7 manholes upstream from pipe P-6054 were scaled up equally so that with the peaking equation, the peak dry weather flow in the model equaled 18.8 gpm. These adjustments were made to the existing, near-term and ultimate demand scenarios in the model.

## 5.0- Evaluation Criteria

The Peak Wet Weather Flow (PWWF) scenario was analyzed based on the design criteria outlined in Section 2.4 of the Master Plan. For the basis of evaluating system deficiencies, the flow d/D ratios defining a deficient pipe are as follows per the Master Plan:

- For pipes 15 inches and smaller, the allowable d/D is 66 percent for existing system flows and 50 percent when receiving additional flows from near-term and ultimate developments.

- For pipes greater than 15 inches, the allowable d/D is 75 percent.
- For pipes passing under a freeway, the allowable d/D is 50 percent.

## 6.0 - Findings

The existing, near-term and ultimate scenarios were adjusted to account for the increased flow from the Project. The model was tested under existing, near-term and ultimate scenarios. When analyzing the results for the existing scenario, it was determined that the additional flows from the Project do not make a significant difference in terms of the performance of the collection system for the area of the system immediately downstream from the Project. This is also true for near-term and ultimate flow conditions.

Tables 2 and 3 compare results from the Master Plan modeling to the results from the model that was updated with revised flows for the Project, the model recalibration effort, and the updated invert elevations from record drawings. Table 2 compares the flows and d/D ratios for existing flow conditions. Table 3 compares the flows and d/D ratios for ultimate flow conditions. The pipes that are included in Tables 2 and 3 are indicated in Figures 2, 3 and 4. The d/D ratios in red do not meet the design criteria of either 0.66 for pipes 15 inches or smaller, or 0.75 for pipes larger than 15 inches. The d/D ratios shown in yellow are between 0.5 and 0.66, and are shown to be receiving additional flows under ultimate conditions. Tables 2 and 3 are divided into the different paths shown in Figure 2. Within each flow path, the pipes are ordered with the upstream-most pipe at the top of the section for each path, and the downstream-most pipe at the bottom of the section for each path.

Table 2: Model Results Near the Botanical Gardens for Existing Conditions

| ID | Diameter (in) | WWMP Flow (gpm) | WWMP d/D | Updated Flow (gpm) | Updated d/D |
|---|---|---|---|---|---|
| **Path 1** | | | | | |
| P-5916 | 8 | 19 | 0.07 | 88 | 0.15 |
| P-5915 | 8 | 22 | 0.08 | 90 | 0.16 |
| P-5914 | 8 | 29 | 0.08 | 94 | 0.13 |
| P-5913 | 8 | 47 | 0.10 | 105 | 0.15 |
| P-5912 | 8 | 47 | 0.14 | 105 | 0.21 |
| P-5909 | 8 | 101 | 0.16 | 141 | 0.19 |
| P-5887 | 8 | 119 | 0.17 | 154 | 0.20 |
| P-5871 | 6 | 120 | 0.33 | 155 | 0.38 |
| P-5870 | 6 | 129 | 0.30 | 161 | 0.34 |
| P-128 | 6 | 138 | 0.26 | 168 | 0.28 |
| P-4437 | 6 | 71 | 0.27 | 145 | 0.39 |
| P-5824 | 8 | 101 | 0.25 | 163 | 0.32 |
| P-5826 | 8 | 107 | 0.24 | 178 | 0.31 |
| P-5830 | 8 | 113 | 0.33 | 194 | 0.44 |
| PC-115 | 8 | 113 | 0.20 | 194 | 0.26 |

Mr. Joseph Cahill
Ventura Botanical Gardens,Inc.
15 September 2014
Page 5

| ID | Diameter (in) | WWMP Flow (gpm) | WWMP d/D | Updated Flow (gpm) | Updated d/D |
|---|---|---|---|---|---|
| P-5787 | 15 | 132 | 0.13 | 243 | 0.17 |
| P-5743 | 15 | 0 | 0.00 | 309 | 0.19 |
| P-5706 | 15 | 19 | 0.05 | 333 | 0.18 |
| P-5709 | 15 | 22 | 0.05 | 335 | 0.18 |
| P-5700 | 8 | 856 | 1.00 | 1,063 | 1.00 |
| P-5705 | 8 | 858 | 0.49 | 1,065 | 0.55 |
| P-5975 | 21 | 2,321 | 0.42 | 2,438 | 0.43 |
| P-5978 | 21 | 2,330 | 0.38 | 2,447 | 0.39 |
| P-5977 | 24 | 2,344 | 0.36 | 2,462 | 0.37 |
| P-5981 | 24 | 2,412 | 0.36 | 2,530 | 0.37 |
| P-5982 | 24 | 2,414 | 0.47 | 2,532 | 0.48 |
| P-5983 | 24 | 2,453 | 0.30 | 2,564 | 0.31 |
| P-5984 | 24 | 2,459 | 0.37 | 2,569 | 0.37 |
| P-5985 | 24 | 2,504 | 0.50 | 2,628 | 0.52 |
| P-5986 | 24 | 2,504 | 0.33 | 2,628 | 0.34 |
| PC-52 | 24 | 2,504 | 0.32 | 2,628 | 0.33 |
| P-5993 | 24 | 2,505 | 0.33 | 2,629 | 0.34 |
| P-5987 | 24 | 2,561 | 0.49 | 2,681 | 0.50 |
| P-5955 | 24 | 2,564 | 0.35 | 2,685 | 0.36 |
| P-5952 | 21 | 2,580 | 0.53 | 2,700 | 0.54 |
| P-5950 | 21 | 2,580 | 0.37 | 2,700 | 0.38 |
| P-5948 | 30 | 2,582 | 0.34 | 2,702 | 0.35 |
| P-6185 | 30 | 2,582 | 0.31 | 2,702 | 0.31 |
| P-75 | 30 | 2,582 | 0.12 | 2,702 | 0.12 |
| P-6162 | 18 | 2,587 | 0.27 | 2,708 | 0.28 |
| PC-241 | 30 | 2,819 | 0.35 | 2,939 | 0.35 |
| P-6190 | 42 | 4,750 | 0.18 | 4,852 | 0.18 |
| P-6191 | 42 | 4,750 | 0.21 | 4,852 | 0.21 |
| P-6195 | 42 | 4,750 | 0.54 | 4,852 | 0.55 |
| P-6196 | 42 | 4,768 | 0.30 | 4,871 | 0.30 |
| P-6197 | 42 | 4,768 | 0.33 | 4,871 | 0.33 |
| | | | | | |
| **Path 2** | | | | | |
| P-6081 | 6 | 3 | 0.06 | 14 | 0.10 |
| P-6078 | 8 | 14 | 0.08 | 0 | 0.00 |
| P-6077 | 6 | 44 | 0.18 | 35 | 0.16 |
| P-6067 | 8 | 51 | 0.18 | 41 | 0.16 |
| PC-214 | 8 | 51 | 0.13 | 41 | 0.12 |
| PC-204 | 8 | 102 | 0.34 | 95 | 0.32 |
| P-6070 | 8 | 107 | 0.33 | 99 | 0.32 |
| P-6115 | 8 | 110 | 0.29 | 103 | 0.28 |
| P-6116 | 8 | 118 | 0.36 | 110 | 0.35 |
| P-6056 | 8 | 125 | 0.38 | 118 | 0.36 |

| ID | Diameter (in) | WWMP Flow (gpm) | WWMP d/D | Updated Flow (gpm) | Updated d/D |
|---|---|---|---|---|---|
| P-5991 | 10 | 131 | 0.32 | 123 | 0.31 |
| P-5992 | 10 | 131 | 0.22 | 123 | 0.21 |
| | | | | | |
| **Path 3** | | | | | |
| P-6080 | 8 | 0 | 0.00 | 27 | 0.09 |
| P-6066 | 8 | 12 | 0.06 | 39 | 0.11 |
| PC-207 | 8 | 42 | 0.21 | 74 | 0.27 |
| P-6054 | 8 | 42 | 0.15 | 74 | 0.19 |
| PC-25 | 8 | 81 | 0.29 | 110 | 0.34 |
| PC-211 | 12 | 98 | 0.13 | 126 | 0.15 |
| P-6055 | 8 | 105 | 0.33 | 132 | 0.37 |
| PC-210 | 8 | 110 | 0.29 | 137 | 0.32 |
| P-6008 | 6 | 110 | 0.49 | 137 | 0.56 |
| | | | | | |
| **Path 4** | | | | | |
| P-4438 | 6 | 69 | 0.27 | 25 | 0.15 |
| P-5825 | 6 | 81 | 0.33 | 43 | 0.24 |
| P-5827 | 6 | 87 | 0.32 | 67 | 0.28 |
| P-5831 | 6 | 96 | 0.44 | 100 | 0.45 |
| P-5836 | 6 | 96 | 0.29 | 100 | 0.30 |
| P-5839 | 6 | 97 | 1.00 | 107 | 1.00 |
| P-5838 | 6 | 99 | 0.34 | 112 | 0.36 |
| P-5749 | 6 | 107 | 0.35 | 140 | 0.41 |
| PC-186 | 6 | 234 | 0.49 | 140 | 0.37 |
| PC-191 | 8 | 234 | 0.34 | 140 | 0.26 |
| PC-190 | 8 | 234 | 0.34 | 140 | 0.26 |
| | | | | | |
| **Path 5** | | | | | |
| P-5746 | 6 | 158 | 0.46 | 0 | 0.00 |
| P-5476_2 | 6 | 158 | 0.60 | 0 | 0.00 |
| P-5476_3 | 6 | 158 | 0.73 | 0 | 0.00 |

Table 3: Model Results Near the Botanical Gardens for Ultimate Conditions

| ID | Diameter (in) | WWMP Flow (gpm) | WWMP d/D | Updated Flow (gpm) | Updated d/D |
|---|---|---|---|---|---|
| **Path 1** | | | | | |
| P-5916 | 8 | 25 | 0.08 | 88 | 0.15 |
| P-5915 | 8 | 33 | 0.10 | 94 | 0.17 |
| P-5914 | 8 | 45 | 0.09 | 103 | 0.14 |
| P-5913 | 8 | 66 | 0.12 | 117 | 0.16 |
| P-5912 | 8 | 66 | 0.16 | 117 | 0.22 |
| P-5909 | 8 | 285 | 0.27 | 316 | 0.28 |
| P-5887 | 8 | 315 | 0.28 | 341 | 0.30 |
| P-5871 | 6 | 316 | 0.58 | 342 | 0.61 |
| P-5870 | 6 | 323 | 0.50 | 347 | 0.53 |
| P-128 | 6 | 330 | 0.40 | 353 | 0.42 |
| P-4437 | 6 | 169 | 0.43 | 256 | 0.54 |
| P-5824 | 8 | 208 | 0.36 | 284 | 0.43 |
| P-5826 | 8 | 214 | 0.35 | 298 | 0.41 |
| P-5830 | 8 | 221 | 0.47 | 314 | 0.58 |
| PC-115 | 8 | 221 | 0.28 | 314 | 0.34 |
| P-5787 | 15 | 239 | 0.17 | 360 | 0.21 |
| P-5743 | 15 | 0 | 0.00 | 422 | 0.22 |
| P-5706 | 15 | 23 | 0.05 | 446 | 0.21 |
| P-5709 | 15 | 27 | 0.05 | 448 | 0.21 |
| P-5700 | 8 | 1,117 | 1.00 | 1,381 | 1.00 |
| P-5705 | 8 | 1,122 | 0.57 | 1,385 | 0.66 |
| P-5975 | 21 | 2,857 | 0.47 | 2,972 | 0.48 |
| P-5978 | 21 | 2,868 | 0.42 | 2,984 | 0.43 |
| P-5977 | 24 | 2,883 | 0.40 | 2,998 | 0.41 |
| P-5981 | 24 | 2,971 | 0.40 | 3,087 | 0.41 |
| P-5982 | 24 | 2,973 | 0.53 | 3,089 | 0.54 |
| P-5983 | 24 | 3,041 | 0.34 | 3,156 | 0.34 |
| P-5984 | 24 | 3,046 | 0.41 | 3,162 | 0.42 |
| P-5985 | 24 | 3,094 | 0.57 | 3,224 | 0.59 |
| P-5986 | 24 | 3,095 | 0.37 | 3,225 | 0.38 |
| PC-52 | 24 | 3,095 | 0.36 | 3,225 | 0.37 |
| P-5993 | 24 | 3,096 | 0.37 | 3,226 | 0.38 |
| P-5987 | 24 | 3,193 | 0.56 | 3,319 | 0.57 |
| P-5955 | 24 | 3,197 | 0.40 | 3,323 | 0.40 |
| P-5952 | 21 | 3,219 | 0.60 | 3,345 | 0.62 |
| P-5950 | 21 | 3,219 | 0.41 | 3,345 | 0.42 |
| P-5948 | 30 | 3,221 | 0.38 | 3,347 | 0.39 |
| P-6185 | 30 | 3,221 | 0.35 | 3,347 | 0.35 |

O.K.

| ID | Diameter (in) | WWMP Flow (gpm) | WWMP d/D | Updated Flow (gpm) | Updated d/D |
|---|---|---|---|---|---|
| P-75 | 30 | 3,221 | 0.13 | 3,347 | 0.13 |
| P-6162 | 18 | 3,227 | 0.31 | 3,353 | 0.31 |
| PC-241 | 30 | 3,663 | 0.40 | 3,770 | 0.41 |
| P-6190 | 42 | 6,186 | 0.20 | 6,283 | 0.21 |
| P-6191 | 42 | 6,186 | 0.24 | 6,283 | 0.24 |
| P-6195 | 42 | 6,186 | 0.64 | 6,283 | 0.65 |
| P-6196 | 42 | 6,214 | 0.34 | 6,311 | 0.34 |
| P-6197 | 42 | 6,216 | 0.38 | 6,314 | 0.38 |
| | | | | | |
| **Path 2** | | | | | |
| P-6081 | 6 | 3 | 0.06 | 14 | 0.10 |
| P-6078 | 8 | 14 | 0.08 | 0 | 0.00 |
| P-6077 | 6 | 81 | 0.24 | 73 | 0.23 |
| P-6067 | 8 | 110 | 0.26 | 103 | 0.25 |
| PC-214 | 8 | 110 | 0.19 | 103 | 0.19 |
| PC-204 | 8 | 156 | 0.42 | 149 | 0.41 |
| P-6070 | 8 | 162 | 0.42 | 155 | 0.41 |
| P-6115 | 8 | 167 | 0.36 | 160 | 0.35 |
| P-6116 | 8 | 175 | 0.45 | 169 | 0.44 |
| P-6056 | 8 | 198 | 0.49 | 192 | 0.48 |
| P-5991 | 10 | 205 | 0.41 | 198 | 0.40 |
| P-5992 | 10 | 205 | 0.28 | 198 | 0.27 |
| | | | | | |
| **Path 3** | | | | | |
| P-6080 | 8 | 0 | 0.00 | 27 | 0.09 |
| P-6066 | 8 | 16 | 0.07 | 42 | 0.11 |
| PC-207 | 8 | 47 | 0.22 | 79 | 0.28 |
| P-6054 | 8 | 47 | 0.15 | 79 | 0.20 |
| PC-25 | 8 | 86 | 0.30 | 114 | 0.34 |
| PC-211 | 12 | 103 | 0.14 | 131 | 0.15 |
| P-6055 | 8 | 110 | 0.34 | 137 | 0.38 |
| PC-210 | 8 | 116 | 0.30 | 143 | 0.33 |
| P-6008 | 6 | 116 | 0.51 | 143 | 0.57 |
| | | | | | |
| **Path 4** | | | | | |
| P-4438 | 6 | 164 | 0.43 | 99 | 0.30 |
| P-5825 | 6 | 189 | 0.53 | 131 | 0.43 |
| P-5827 | 6 | 194 | 0.50 | 151 | 0.43 |
| P-5831 | 6 | 202 | 0.70 | 180 | 0.64 |
| P-5836 | 6 | 202 | 0.44 | 180 | 0.41 |
| P-5839 | 6 | 204 | 1.00 | 186 | 1.00 |
| P-5838 | 6 | 206 | 0.51 | 192 | 0.48 |
| P-5749 | 6 | 213 | 0.52 | 217 | 0.52 |

| ID | Diameter (in) | WWMP Flow (gpm) | WWMP d/D | Updated Flow (gpm) | Updated d/D |
|---|---|---|---|---|---|
| PC-186 | 6 | 419 | 0.72 | 217 | 0.47 |
| PC-191 | 8 | 419 | 0.47 | 217 | 0.33 |
| PC-190 | 8 | 419 | 0.46 | 217 | 0.32 |
| | | | | | |
| **Path 5** | | | | | |
| P-5746 | 6 | 263 | 0.64 | 0 | 0.00 |
| P-5476_2 | 6 | 263 | 1.00 | 0 | 0.00 |
| P-5476_3 | 6 | 263 | 1.00 | 0 | 0.00 |

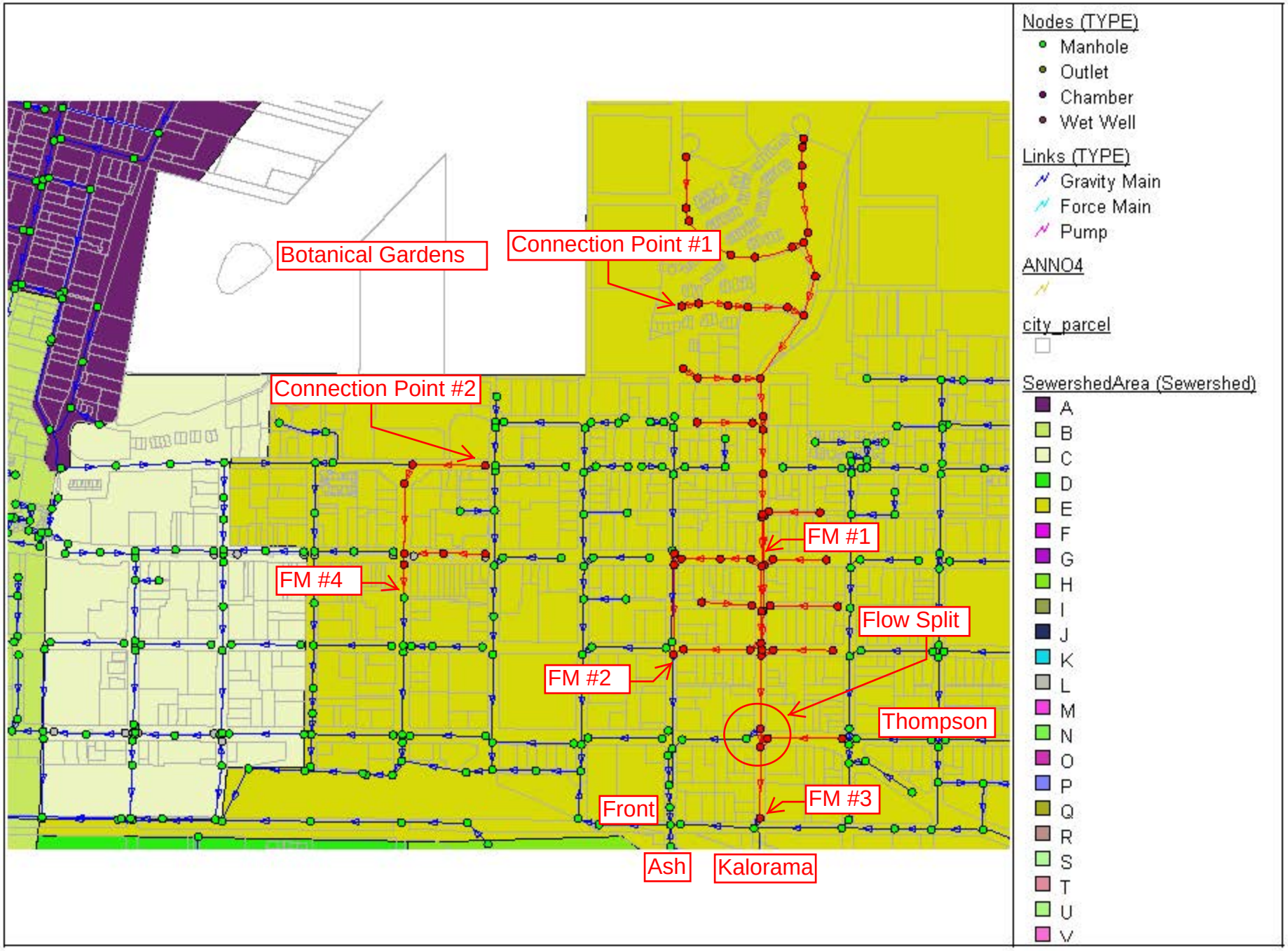
Please let us know if you have any questions or need additional information.

Very truly yours,

KENNEDY/JENKS CONSULTANTS, INC.

Jeff Savard, P.E.
Vice President

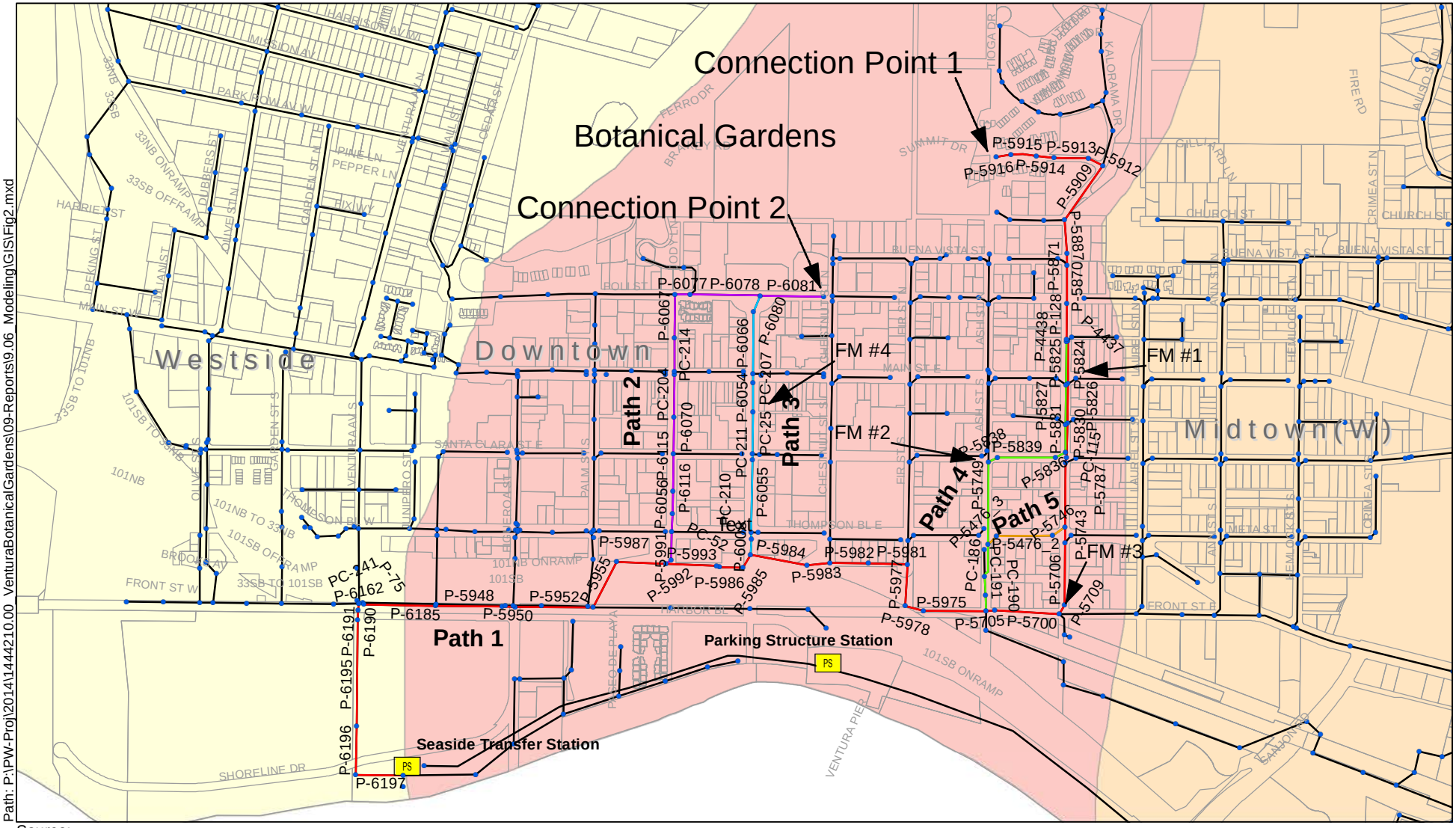
Enclosures: Figures 1 through 4






Botanical Gardens Project
Project Number: 1444210*00

Kennedy/Jenks Consultants
August 28, 2014
Figure 1




Path: P:\PW-Proj\2014\1444210.00_VenturaBotanicalGardens\09-Reports\9.06_Modeling\GIS\Fig2.mxd

Source:

**Legend**

**Flow Paths**

- Path 1
- Path 2
- Path 3
- Path 4
- Path 5

- Manholes
- PS Lift Stations
- Gravity Sewer

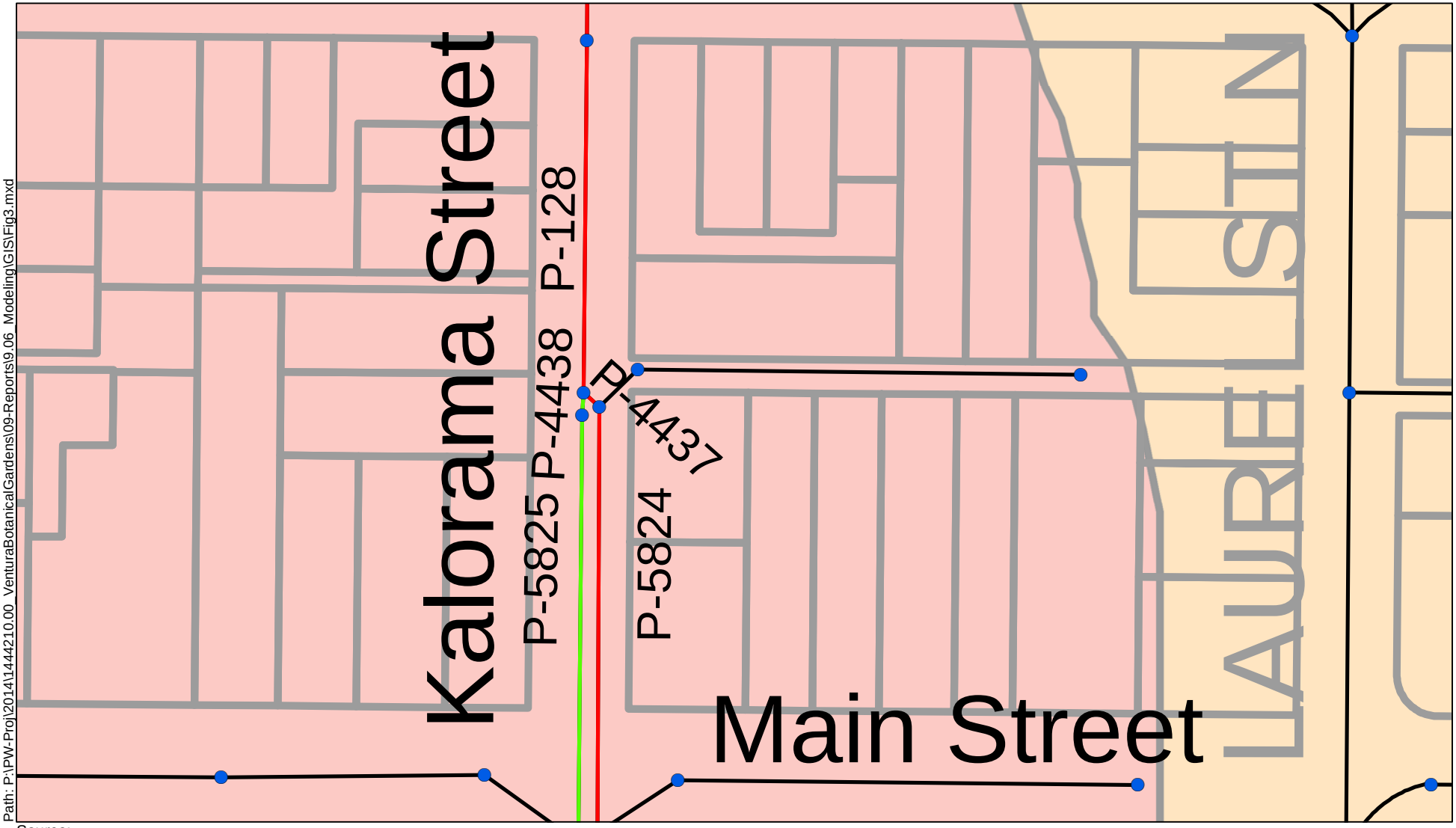
**Kennedy/Jenks Consultants**

City of San Buenaventura
San Buenaventura, California

**Paths for Wastewater Flows from the Ventura Botanical Gardens Project**

K/J 1444210*00
September 2014

**Figure 2**




Path: P:\PW-Proj\2014\1444210.00_VenturaBotanicalGardens\09-Reports\9.06_Modeling\GIS\Fig3.mxd

Source:

**Legend**

**Flow Paths**

- Path 1
- Path 2
- Path 3
- Path 4
- Path 5

- Manholes
- PS Lift Stations
- Gravity Sewer

N

0 100

Scale: Feet

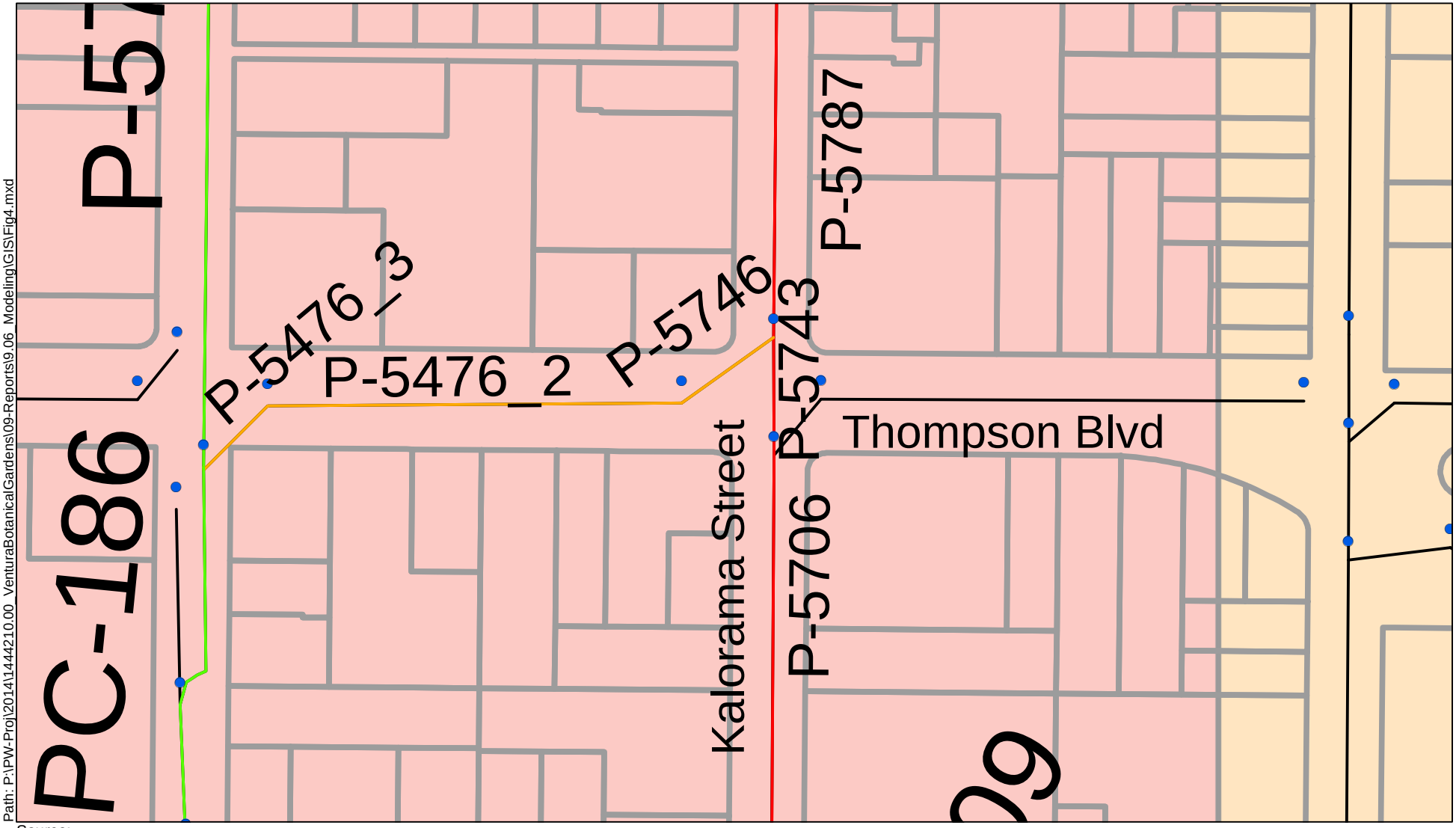
**Kennedy/Jenks Consultants**

City of San Buenaventura
San Buenaventura, California

**Flow Split on Kalorama Near Main**

K/J 1444210*00
September 2014

**Figure 3**




Path: P:\PW-Proj\2014\1444210.00_VenturaBotanicalGardens\09-Reports\9.06_Modeling\GIS\Fig4.mxd

Source:

**Legend**

**Flow Paths**

- Path 1
- Path 2
- Path 3
- Path 4
- Path 5

- Manholes
- Lift Stations (PS)
- Gravity Sewer

N

0 100

Scale: Feet

**Kennedy/Jenks Consultants**

City of San Buenaventura
San Buenaventura, California

**Flow Split on Kalorama Near Thompson**

K/J 1444210*00
September 2014

**Figure 4**

**ATTACHMENT H**

**WATER SYSTEM ALTERNATIVES EVALUATION,
HYDRAULIC EVALUATION, AND SUPPLY DISCUSSION
NOVEMBER 4, 2014**

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# MEMORANDUM

**To:** Mr. Douglas Singletary, AIA
Ventura Botanical Gardens, Inc.

**JN:** 140736

**From:** Kevin Gustorf, P.E., RBF Consulting KJG
Sam Valdez, P.E., RBF Consulting SW

**Date:** November 4, 2014

**Subject:** Water System Alternatives Evaluation, Water System Hydraulic Evaluation, and Supply Discussion for the Ventura Botanical Gardens in the City of Ventura

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## Introduction

Ventura Botanical Gardens, Inc. is proposing to construct a botanical garden at the location currently known as Grant Park in the City of San Buenaventura (City, or Ventura) referred to as the "Ventura Botanical Gardens" (Project, or VBG). The proposed project site is located at Grant Park, 398 Ferro Drive in the City of Ventura. The 106.98 acre site is intersected by Ferro Drive, Brakey Road and Summit Drive. The site is bounded by Poli Street to the South, Cedar Street to the West, North Kalorama Street to the East and undeveloped open space to the North. The Project includes the development of botanical gardens as well as supporting facilities and buildings. The Project is proposed to be developed in approximately ten phases over a period of 20 to 30 years. See Attachment 1 for the Project Site Garden and Facilities Plans. The Project is proposed to be served from the City's domestic water distribution system and is expected to generate additional water usage, which will have an impact on the City's water system. There are plans to develop an on-site well in the future to help supply water for irrigation; however, at this time the well is still in the conceptual phase, and therefore, it will not be included in this analysis. The purpose of this analysis is to identify the recommended alternative or alternatives for water service, quantify the expected addition of water demand for the Project over the various Project phases, and utilize the City's existing hydraulic model to determine if the City's existing distribution system can accommodate the proposed Project while meeting the requirements of the water system criteria established in the City's 2011 Water Master Plan (WMP). This analysis will also discuss the City's existing water supply.

## References


1. Constraints and Opportunities Analysis, Ventura Botanical Gardens, Volume 1 (DRAFT). September 2011. Sespe Consulting, Inc., Rincon Consultants, Inc.
2. Constraints and Opportunities Analysis, Ventura Botanical Gardens, Volume 2. September 2011. Sespe Consulting, Inc., Rincon Consultants, Inc.
3. Opportunities and Constraints Analysis, Ventura Botanical Gardens. November 2011. Sespe Consulting, Inc., Rincon Consultants, Inc.
4. Ventura Botanical Gardens Master Plan, Conditional Use Permit and Rezone Application. Draft March 2014. City of Ventura – Community Development. Project No. 5810.
5. Ventura Water 2014 Comprehensive Water Resources Report. May 2014. RBF Consulting.
6. 2010 California Fire Code.


## Background

As part of the City's 2011 WMP, RBF Consulting prepared a calibrated hydraulic model for the City's domestic water distribution system. The existing water demands were allocated to the model based on the water consumption data for the calendar years 2004 and 2005. Currently, the Project site is mostly vacant, with land uses that include the one-acre Serra Cross Conservancy parcel, which includes irrigated landscaping, paving and parking areas, as well as a cross monument; paved roads; a few parking areas; two small water tanks (a 24,000 gallon lower tank and 4,000 gallon upper tank); cellular communication tower relay sites; a group barbeque area; a City-owned water reservoir (Grant Park Reservoir); a gunnery range operated by the City; and limited hiking trails. Water to the site is currently provided by one (1) 250 gallon per minute (gpm) pump at the Modella Booster Pump Station (BPS). This pump fills the lower tank for irrigation of the Serra Cross Park site, which is considered non-potable water due to the low turnover as a result of the limited demand. The upper tank is filled periodically by Ventura City Fire personnel for fire protection purposes. Due to the minimal amount of existing demand, it is assumed that there are currently no water demands associated with this parcel for the purpose of this analysis. Any new water demand introduced as part of the Project will be treated as a direct addition to the City's existing water demands.

In addition, the City maintains a database of projects, known as "Planning Projects" that are in various phases of the planning process. The database includes all projects from those that are in construction to those that are in the conceptual phase. Ventura Botanical Gardens is currently identified as Project No. 5810. All Planning Projects as identified by the City as of December 31, 2013 have been incorporated into this hydraulic model analysis.

The City completed a Comprehensive Water Resources Report (CWRR), which was accepted by City Council on May 5, 2014. The CWRR accounts for only those Projects that are either "Under Construction" or have "All Planning Approvals". The CWRR will be updated on annual basis to reflect the changes to the existing land use and water demand, as well as future development and related water demand requirements.

The current baseline water demand and predicted future water demand, which includes only the Under Construction and Approved Projects as of December 31, 2013, as stated in the CWRR are as follows:

- Total Current Baseline Water Demand = 17,343 acre-feet/year
- Total Predicted Future Water Demand = 18,428 acre-feet/year

**Proposed Land Use**

Ventura Botanical Gardens proposes to develop gardens representing five major climate zones of the world (California, Chile, Cape of Africa, South Australia, and Mediterranean) and a garden section referred to as "The Ramble", which will be comprised of a progression of native California plantings. The Project will also include support facilities, grouped into four zones: the Welcome, Discovery, Heritage, and Horticultural Zones. Facilities within these zones include centers, classrooms, offices, event venue, shops, restaurants, plant growing areas, workshops, and storage. Areas not part of the development include the Serra Cross Park site, the water tank site, the communications site, the Grant Park Reservoir site, and the gunnery range. If the gunnery range becomes available to incorporate into VBG, an amendment to the Ventura Botanical Gardens Master Plan would need to be made.

**Demand Estimates**

As previously stated, it is assumed that the parcel for the proposed Project is currently vacant and does not currently have any water usage. The expected addition of water demand for the Project will be a result of the irrigation demand needed for the garden areas and landscaped areas of the Zones, and the non-irrigation demand for all of the support facilities. The demand estimates for the Project were calculated using the water demand factors from the CWRR.

Water demand factors allow for the estimation of water demands for new developments based the land use type/area, number of dwelling units (DU), and building square footage. Water demand factors also account for water loss and are generally considered to be conservative.

These factors, taken directly from the CWRR, are listed in Table 1. It should be noted that these factors correspond to average day demand.

**Table 1: Water Demand Factors**[1]

| Water Demand Factor Classification | | Water Demand Factor |
|---|---|---|
| Residential | Residential (0-8 du/ac) | 370 gpd/du |
| | Residential (9-20 du/ac) | 250 gpd/du |
| | Residential (21+ du/ac) | 250 gpd/du |
| Non-Residential | Commercial/Retail/Industrial/Hotel<br>Public/Institutional | 265 gpd/ksf |
| | Hospital/Assisted Living | 545 gpd/bed |
| | Park/Landscape/Irrigation | 2,000 gpd/acre |

[1] Source: Table 3-3 of the May 1, 2014 Comprehensive Water Resources Report, prepared by RBF Consulting

In order to determine the total irrigated area, “unusable” areas were first subtracted from the total site area. These “unusable” areas include roadways, gunnery range, the reservoir, proposed building footprints, existing and future pathways, existing communications sites, the Serra Cross Park site, and a few miscellaneous areas. After excluding these areas, the net “usable” area is 84.80 acres according to VBG. Of the “usable” area, VBG estimates that approximately 60 percent is to be irrigated due to the amount of steep slopes or other features (wetland, eucalyptus groves, etc.) that are unlikely to be irrigated. This results in a total irrigated area of 51 acres. A summary of this calculation is provided in Table 2.

**Table 2: Irrigated Area**

| Land Summary | Area (Acres) |
|---|---|
| Total Project Area | 106.98 |
| Total Net Usable Area[1] | 84.80 |
| Total Irrigated Area[2] | 51.00 |

[1] Excludes areas for roadways, gunnery range, the reservoir, proposed building footprints, existing and future pathways, existing communications sites, the Cross Conservancy, and a few miscellaneous areas.

[2] Irrigated area estimated to be approximately 60 percent of Total Net Usable Area due to amount of steep slopes or other features (wetland, eucalyptus groves, etc.) that are unlikely to be irrigated.

Based on the site plan (refer to Attachment 1) estimates were made for the total irrigated area for each Garden area and irrigated area for each Zone. All Garden and irrigated Zone areas were classified in the "Park/Landscape/Irrigation" land use category, with a water demand factor of 2,000 gallons per day per acre (gpd/ac). Multiplying the water demand factor by the total number irrigated acres results in a total irrigation average day demand of 70.83 gpm, or 114.26 acre-feet per year (AFY). This calculation is illustrated in Table 3. It should be noted that while ultimately the VBG water system could possibly be used to serve the Serra Cross Park and the Gunnery Range, these demands have not been included in this analysis.

**Table 3: Estimated Average Day Irrigation Water Demand**

| Net Usable Area Land Use | Approx % of Net Usable Area[1] | Irrigated Area (Acres) | Water Demand Factor Classification[2] | Planning Water Consumption Factor[3] | Avg Daily Water Demand (gpd) | Avg Daily Water Demand (gpm) | Avg Daily Water Demand (AFY) |
|---|---|---|---|---|---|---|---|
| Chilean Garden and Welcome Zone | 15% | 7.65 | Park/Landscape/Irrigation | 2,000 gpd/ac | 15,300 | 10.63 | 17.14 |
| Mediterranean Garden | 7% | 3.57 | Park/Landscape/Irrigation | 2,000 gpd/ac | 7,140 | 4.96 | 8.00 |
| The Ramble | 26% | 13.26 | Park/Landscape/Irrigation | 2,000 gpd/ac | 26,520 | 18.42 | 29.71 |
| Cape Garden and Discovery Zone | 18% | 9.18 | Park/Landscape/Irrigation | 2,000 gpd/ac | 18,360 | 12.75 | 20.57 |
| California Garden and Heritage Zone | 17% | 8.67 | Park/Landscape/Irrigation | 2,000 gpd/ac | 17,340 | 12.04 | 19.42 |
| Australia Garden and Horticulture Zone | 17% | 8.67 | Park/Landscape/Irrigation | 2,000 gpd/ac | 17,340 | 12.04 | 19.42 |
| **Totals** | **100%** | **51.00** | | | **102,000** | **70.83** | **114.26** |

[1] Estimated from areas indicated on Attachment 1 – Site Plan.

[2] From 2013 CWRR.

[3] From 2013 CWRR.

The remaining support facilities in each of the four Zones were classified into either the "Commercial/Retail/Industrial/Hotel" or "Public/Institutional" land use category, both of which have a water demand factor of 265 gallons per day per thousand square feet (ksf) of gross building area. Multiplying a factor of 265 gpd/ksf by each building's gross area results in a total non-irrigation average day demand of 12.27 gpm, or 19.79 acre-feet per year (AFY). This calculation is illustrated in Table 4.

**Table 4: Estimated Average Day Non-irrigation Water Demand (cont'd on Page 7)**

| Support Facilities[1] | Building Area (SF)[1] | Water Demand Factor Classification | Planning Water Consumption Factor | | Avg Daily Water Demand (gpd) | Avg Daily Water Demand (gpm) | Avg Daily Water Demand (AFY) |
|---|---|---|---|---|---|---|---|
| Welcome Zone Permanent Facilities | | | | | | | |
| Visitor Center | 1,256 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 333 | 0.23 | 0.37 |
| Book & Gift Shop | 2,228 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 590 | 0.41 | 0.66 |
| Plant Sales | 1,620 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 429 | 0.30 | 0.48 |
| Snack Bar | 662 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 175 | 0.12 | 0.20 |
| ***Subtotals*** | ***5,766*** | | | | ***1,528*** | ***1.06*** | ***1.71*** |
| Discovery Zone Permanent Facilities | | | | | | | |
| Event & Lecture Center | 11,570 | Public/Institutional | 265 | gpd/ksf | 3,066 | 2.13 | 3.43 |
| Restaurant | 6,048 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 1,603 | 1.11 | 1.80 |
| Headquarters | 6,710 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 1,778 | 1.23 | 1.99 |
| Conservation Center | 9,060 | Public/Institutional | 265 | gpd/ksf | 2,401 | 1.67 | 2.69 |
| Discovery Center | 7,992 | Public/Institutional | 265 | gpd/ksf | 2,118 | 1.47 | 2.37 |
| Children's Center | 2,288 | Public/Institutional | 265 | gpd/ksf | 606 | 0.42 | 0.68 |
| Public Seedling "Cage" | 1,200 | Public/Institutional | 265 | gpd/ksf | 318 | 0.22 | 0.36 |
| ***Subtotals*** | ***44,868*** | | | | ***11,890*** | ***8.26*** | ***13.32*** |

**Table 4: Estimated Average Day Non-irrigation Water Demand (cont'd)**

| Support Facilities[1] | Building Area (SF)[1] | Water Demand Factor Classification | Planning Water Consumption Factor | | Avg Daily Water Demand (gpd) | Avg Daily Water Demand (gpm) | Avg Daily Water Demand (AFY) |
|---|---|---|---|---|---|---|---|
| Horticulture Zone Permanent Facilities | | | | | | | |
| Lath House #1 | 600 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 159 | 0.11 | 0.18 |
| Lath House #2 | 600 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 159 | 0.11 | 0.18 |
| Shade House #1 | 300 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 80 | 0.06 | 0.09 |
| Shade House #2 | 600 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 159 | 0.11 | 0.18 |
| Shade House #3 | 600 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 159 | 0.11 | 0.18 |
| Shade House #4 | 400 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 106 | 0.07 | 0.12 |
| Seed & Propagation Center | 1,450 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 384 | 0.27 | 0.43 |
| Equipment & Storage Garages | 2,338 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 620 | 0.43 | 0.69 |
| Workshops | 2,313 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 613 | 0.43 | 0.69 |
| Horticulture & Maintenance Staff | 2,754 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 730 | 0.51 | 0.82 |
| Growing Areas | 0 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 0 | 0.00 | 0.00 |
| Material Storage | 0 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 0 | 0.00 | 0.00 |
| Stone Storage & Handling | 0 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 0 | 0.00 | 0.00 |
| Service Yards | 0 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 0 | 0.00 | 0.00 |
| Tram Service & Storage | 875 | Commercial/Retail/Industrial/Hotel | 265 | gpd/ksf | 232 | 0.16 | 0.26 |
| ***Subtotals*** | ***12,830*** | | | | ***3,400*** | ***2.36*** | ***3.81*** |
| Heritage Zone Permanent Facilities | | | | | | | |
| Heritage Center | 3,186 | Public/Institutional | 265 | gpd/ksf | 844 | 0.59 | 0.95 |
| ***Subtotals*** | ***3,186*** | | | | ***844*** | ***0.59*** | ***0.95*** |
| **Totals** | **66,650** | | | | **17,662** | **12.27** | **19.79** |

[1] Source: Ventura Botanical Gardens Master Plan, Conditional Use Permit and Rezone Application. Draft March 2014. City of Ventura – Community Development. Project No. 5810.

Water demand peaking factors were then applied to the total average day demand of 83.10 gpm to translate this value to a maximum day demand and peak hour demand, which are considered the critical demand conditions for this hydraulic analysis. Maximum day demand represents the highest demand day of the year, while the peak hour demand represents the hour of highest demand during a maximum day demand based on the demand diurnal patterns, which represent demand variations throughout the day. Based on the peaking factors from the 2011

WMP of 1.52 for maximum day demand and 3.97 for peak hour demand, demand totals of 126.31 gpm and 329.90 gpm have been calculated for maximum day and peak hour demand, respectively. It should be noted that the peak hour condition is simulated in the hydraulic model over an extended period simulation (EPS) during a maximum day, and may not match the calculated peak hour values exactly. It should also be noted that the peak demand period for the entire City system, 260 Zone, 605K Zone, or VBG project, may not correspond to the same time during the day. See Table 5 for a summary of the separate demand conditions. A detailed breakdown of all demands occurring over each Project phase in included as Table A in Attachment 2.

**Table 5: Demand Summary Based on Water Demand Planning Factors**[1]

| Demand Condition | Peaking Factor | Demand (gpm) | Demand (AFY) |
|---|---|---|---|
| Average Day | N/A | 83.10 | 134.05 |
| Maximum Day | 1.52 x Average Day | 126.31 | 203.75 |
| Peak Hour | 3.97 x Average Day | 329.90 | 532.17 |

[1] Adapted Table III-2 from the City of San Buenaventura Water Master Plan, March 2011, prepared by RBF Consulting

[2] Note: Actual demand under EPS simulation may vary slightly due to diurnal patterns.

## Fire Flow Requirements

The City's domestic water distribution system must be capable of providing the maximum day demand plus the required fire flow for the VBG project for open systems (with gravity storage), and peak hour demand plus fire flow for closed systems (no gravity storage). The information for the building with the largest floor plan, which is for the Discovery Zone Event & Lecture Center, is listed in Table 6. All buildings will be equipped with automatic fire sprinkler systems.

**Table 6: Building Information**

| | |
|---|---|
| Construction Type | Unknown |
| Largest Individual Total Building Floor Area ($ft^2$) | 11,570 |
| Sprinklered? | Yes |

The fire flow requirements used for this analysis are summarized in Table 7.

**Table 7: Fire Flow Requirements[1]**

| | |
|---|---|
| Hydrant Flow (gpm) | 1,500 |
| Duration (hours) | 2 |
| Residual Pressure (psi) | 20 |

[1] Per discussions with Ventura City Fire Department.

It should be noted that on-site private fire sprinkler system pressure requirements were not included as part of this analysis. Reported pressure results correspond to the City's system pressures upstream of any meters and/or backflow prevention devices.

## Alternatives Evaluation

Due to the size of the Project, large variation in the elevation of the terrain, and proximity to a number of pressure zones of the City's water distribution system, a number of alternatives have been developed and evaluated for the Project's on-site domestic water and fire service system. Existing ground elevations across the site range from as low as 130 feet at the southern end, as high as 570 feet at the gunnery range setback line, and as high as 710 feet at the far north end of the site (see Attachment 3). Adjacent pressure zones include the 210 Zone, 430R Zone, 260 Zone, and 605K Zone as shown on Exhibit 1. Each of these pressure zones has varying facility sizes and locations, hydraulic gradients, available reservoir storage, and pumping capacities, which presents different potential methods of serving the water demands of the Project. Different pressure zones can also be used in conjunction with one another to provide optimized service to the Project. Potential alternatives have been evaluated based on hydraulic performance, constructability, practicality, cost effectiveness, and flexibility in terms of phasing in construction. Potential mitigation issues are also summarized herein, which may include property constraints, environmental concerns, hydraulic constraints, capital improvements, etc.

Due to the nature of the funding, long term planning, and phased construction, Ventura Botanical Gardens has expressed the desire to expedite water service to the first phase of construction, which would include interim facilities at the Welcome Zone, and potentially lower portions of the Chilean Garden and The Ramble, in order to generate interest in and foster the continuing development of the Project. With that in mind, a set of initial phase improvements has been developed with the goal of minimizing initial capital costs while still meeting minimum water and fire service hydraulic criteria for the first phase of the Project.

The existing area where the Welcome Zone is to be located is a relatively flat paved area that gently slopes up to the feet of steeper hills that surround the area. The elevations in the

Welcome Zone area range from approximately 140 feet to 170 feet. It was determined through modeling analysis that domestic water service may be provided at a minimum of 40 pounds per square inch (psi) to elevations of 145 feet or less, and fire service may be provided at a minimum residual pressure of 20 psi to elevations of 165 feet or less. These results, listed in Table 8, do not include any losses in pressure from backflow preventers or meters. These losses can be expected to be on the order of 6 to 7 psi, although it will vary based on manufacturer and flow rate. The minimum pipeline diameter required is 8-inches, which is governed by the fire flow requirements. In order for the proposed hydrant to be within the required 250 feet of a building, the hydrant must be located on the Project site, and therefore, must be a private hydrant.

**Table 8 – Initial Phase Hydraulic Model Results**

| Location | Elev (ft) | Demand Condition | Min Press (psi) | Pipe Dia (in) | Max Vel (ft/s) |
|---|---|---|---|---|---|
| Welcome Zone | 145 | Max Day | 46.28 | 8 | 0.06 |
| Welcome Zone | 145 | Max Day + Fire Flow 1,500 gpm | 35.56 | 8 | 9.63 |
| Welcome Zone | 165 | Max Day | 37.61 | 8 | 0.06 |
| Welcome Zone | 165 | Max Day + Fire Flow 1,500 gpm | 26.89 | 8 | 9.63 |

The improvements required and associated capital costs for the initial phase improvements required to begin constructing the interim Welcome Zone and first phase are shown in Exhibit 2 and Table 13. While evaluating the Welcome Zone area, it was noted that the area is surrounded by steep hills – estimated slopes of roughly 2:1 to 1:1 (horizontal:vertical) – and valleys that would be prohibitive for the construction and maintenance of pipelines. Interconnection of the Welcome Zone, located at a lower relative elevation, with a higher hydraulic grade line (HGL) of the upper development could also result in excessive pressures in the Welcome Zone. For those reasons, it is recommended, at least in the earlier stages of Project development, to operate the Welcome Zone area on a separate service from the remainder of the development. If at some point in the future of development it becomes practical and is desired to interconnect the Welcome Zone with the rest of the development, that option may be explored at that time.

With the initial phase improvements in place, several alternatives have been evaluated that would provide water service to buildout conditions. A summary of all alternatives included in this evaluation are listed in Table 9. Each alternative is described in further detail in subsequent sections of this report. It should be noted that facilities assumed to be duplicated across all alternatives have been neglected for cost comparison purposes.

**Table 9 – Potential Water Service Alternatives**

| Alternative No. | Domestic Service Zone | Fire Service Zone | Additional Storage Location | Pumping Method |
|---|---|---|---|---|
| 1 | 210 | 210 | N/A | HP + Fire Pump |
| 2 | 430R | 430R | N/A | HP + Fire Pump |
| 3 | 260 | 260 | N/A | HP + Fire Pump |
| 4 | 605K | 605K | Kalorama Tank Site | N/A (Gravity Service) |
| 5 | 605K | 605K | On-site | N/A (Gravity Service) |
| 6 | 605K | 605K | N/A | Add Fire Pump to Kalorama BPS |
| 7 | 605K | 260 | N/A | Fire Pump |

Note: HP = Hydropneumatic

Alternative No. 1

Alternative No. 1 consists of both domestic and fire water service being provided by the 210 Zone. The 210 Zone is located along the western and southern borders of the Project site. According to the Opportunities and Constraints analysis (November 2011), the Project site is currently, and has historically been served by a series of booster pumps from the 210 Zone to the lower tank that was subsequently pumped to the upper tank, although the booster pump and pipeline to the upper tank are currently out of service. According to the 2011 WMP Condition Assessment, the pump that currently serves the lower tank is located within the Modella Booster Pump Station building and is a 30 horsepower vertical multi-stage type pump with a rated flow of 250 gallons per minute (rated total dynamic head is unknown). The existing pipeline, which is a 6-inch cast iron pipe installed in 1941, runs from East Park Row Avenue and Wall Street through steep, hilly terrain up to the Serra Cross Park and on to the lower tank. While the 210 Zone has the largest amount of excess storage capacity in the entire system, Alternative No. 1 has been discounted as a viable alternative primarily due to its low HGL, which would result in higher pumping energy costs relative to other available supply sources with higher HGLs. In addition, existing facilities serving the area would not be able to be utilized as they are undersized for the proposed Project, aging, located in a space-constrained building, and constructed through difficult terrain. For these reasons, Alternative No. 1 was excluded from further evaluation.

Alternative No. 2

Alternative No. 2 consists of both domestic and fire water service being provided by the 430R Zone, which is located to the east of the Project site. While the 430R Zone is in the general vicinity of the project, the closest 430 Zone facility is a dead-end 8-inch pipeline located approximately 1,500 feet from the Project. The 430R Zone has no storage capacity, and is supplied through pressure reduction from the 588 Zone. The 588 Zone is solely supplied by the

McElrea Booster Pump Station, which is not equipped with emergency backup power. The 588 Zone is also deficient in storage capacity. With service to the Project provided by the 430R Zone, not only would supply reliability and redundancy be limited, it would also be energy inefficient, as the 588 foot gradient would be reduced to 430 feet, only to be subsequently boosted again to serve the Project. For these hydraulic reasons, in addition to the distance from the Project, Alternative No. 2 has been discounted as a potential alternative and is excluded from further evaluation.

Alternative No. 3

Alternative No. 3 consists of both domestic and fire water service being provided by the 260 Zone, without the need to construct additional storage. The 260 Zone is located along the southern border of the Project site. While the 260 Zone is able serve a limited portion of the Welcome Zone at the southern end of the Project by gravity, service to the remainder of the site would require pumping due to the higher elevations. Domestic demands would be met by a hydropneumatic pump station with three pumps (two duty, one stand-by) with a hydropneumatic tank. Hydropneumatic tanks are vessels that are pressurized with a combination of air and water that help to regulate system pressure and can also supply the system during periods of low demands. It is assumed that all of the domestic water pumps will be equipped with variable frequency drives (VFD), which allow greater pump turndown and efficiency in closed systems. Instead of providing fire flow in the form of reservoir storage, this alternative would propose to use a fire pump, which would be a large, constant speed pump that would access excess storage in the 210 Zone through the 260 Zone.

The pump station would take its supply from the Grant Park Reservoir, which is a partially buried concrete reservoir that is separated into two compartments by a baffle. According to the 2011 WMP, the Grant Park Reservoir has had a history of turnover problems, one half of the reservoir is typically taken out of service in the winter, and only half of the reservoir is currently in service. Due to the proposed pump station's location directly adjacent to a partially buried reservoir, the pump station location and net required/available suction head should be verified during design.

Although not always necessary, it is assumed that the pumps equipped with VFDs would require installation inside an air conditioned building. Since the pump station would be running the majority of the time, except for low demand periods when the hydropneumatic tank would be providing service, the pump would present relatively high energy costs in addition to higher operation and maintenance costs. The fire pump would also require routine testing and servicing to ensure that it is in working order, which has been assumed to occur on a monthly basis. In addition, since the pump station would be the only source of water supply to the

Project, this alternative includes the installation of a permanent stand-by generator, which would also require routine testing and maintenance. It is anticipated that the pump station could be constructed adjacent to the existing Grant Park Reservoir, although an agreement would need to be reached with the City.

The improvements required and associated capital costs for Alternative No. 3 are shown in Exhibit 3 and Table 14.

Some potential cost saving measures that could possibly be implemented for this alternative include the following:

- If not required, omit air conditioning for VFDs (dependent on temperature)
- If air conditioning is not required, omit building – or substitute a shade structure instead of a building. Noise could be a potential concern without a building.
- Instead of providing a permanent generator, provide a generator receptacle for the hookup of a portable generator.

Cost saving measures should be confirmed during final design.

Alternative No. 4

Alternative No. 4 consists of both domestic and fire water service being provided by gravity service from the 605K Zone. The 605K Zone is located to the east of the Project site, separated by a valley, but joined by Summit Drive. The 605K Zone currently consists of two abovegrade steel water storage tanks, each with a capacity of 0.15 million gallons (MG), for a combined capacity of 0.30 MG. The dimensions and elevations of the existing Kalorama Tanks are listed in Table 10. It was also noted that the Kalorama BPS has approximately 400 gpm of excess capacity, and would be able to serve the demands of VBG.

**Table 10 – Existing Kalorama Tank Parameters**

| Reservoir | Diameter (ft) | Tank Floor Elev (ft) | Operational Level (ft above floor) | Overflow Level (ft above floor) | Nominal Storage Volume (MG) |
|---|---|---|---|---|---|
| Kalorama (1) - T | 42 | 591 | 12 | 15 | 0.15 |
| Kalorama (2) - T | 42 | 591 | 12 | 15 | 0.15 |

According to the 2011 WMP, the Kalorama Tanks have had a history of turnover problems, one of the two tanks is typically taken out of service during the winter, and only one of the tanks is currently in service. It was also noted that the fire flow storage requirement of the 605K Zone is based on a 1,500 gpm fire flow for a duration of 2 hours, which is equivalent to a storage

volume of 0.18 MG. Since the Project has an equivalent fire flow requirement, no additional storage is required for fire flow. However, the regulatory storage required for the Project is 175 percent of maximum day demand, which is equivalent to approximately 0.32 MG, which would result in requiring roughly double the amount of storage that is currently at the Kalorama Tank site. The regulatory storage could be gradually phased in as demands increase over time. The phased regulatory water storage requirements are listed in Table 11.

**Table 11 – Water Storage Phasing**

| Phase | Req'd Regulatory Storage (gal) [1] | Req'd Regulatory Storage (MG) [1] |
|---|---|---|
| 1 | 22,324 | 0.02 |
| 2 | 81,301 | 0.08 |
| 3 | 119,430 | 0.12 |
| 4 | 157,849 | 0.16 |
| 5 | 208,694 | 0.21 |
| 6 | 266,051 | 0.27 |
| 7 | 316,056 | 0.32 |
| 8 | 316,056 | 0.32 |
| 9 | 316,056 | 0.32 |
| 10 | 318,302 | 0.32 |

Note: See Table A in Attachment 2 for Water Demand Phasing
[1] Regulatory Storage = 175% of Maximum Day Demand

This alternative proposes to construct two additional 0.16 MG tanks at the existing Kalorama Tank site, which would be dependent on reaching an agreement with the City. While there appears to be roughly enough space at the site to create a pad for the required additional amount of storage, a tank siting study and geotechnical investigation would need to be done to confirm that the site can support the new tanks. It also appears that a retaining wall may be required on the north side of the site, as the hill continues to slope upward where the new tanks are proposed. It is anticipated that the tank would be above grade bolted steel or welded steel.

In addition to the new storage tanks, service must be brought from the 605K Zone over to the Project site. In order to accomplish this, a connection must be made to the existing 12-inch asbestos cement pipe (ACP) in Summit Drive (see Exhibit 4A for location). Service would be completed by installing a backflow preventer and flow meter. The existing piping configuration, exact zone break location, and pipe rated working pressures should be verified prior to performing any improvements.

The improvements required and associated capital costs for Alternative No. 4 are shown in Exhibits 4A/4B and Table 15.

Some potential cost saving measures that could possibly be implemented for this alternative include the following:

- It has been noted that the City currently experiences difficulty turning both Kalorama tanks over. During summer, it takes approximately one day to turn one tank over, while during winter, turn over takes a few days.
- If an agreement can be reached between the City and VBG in which VBG would share the regulatory storage available in the existing Kalorama Tanks, the City could potentially see an increase in turn over in the Kalorama Tanks due to the additional demand of the Project. This could potentially allow the City to keep both Kalorama Tanks in service year-round.
- This could reduce or eliminate VBG's need to construct additional regulatory storage.

It is recommended for VBG to discuss this option with the City prior to selecting a preferred alternative. It is assumed that the City would own, operate, and maintain these tanks.

Alternative No. 5

Alternative No. 5 consists of both domestic and fire water service being provided by gravity service from the 605K Zone, similar to Alternative 4; however, instead of increasing the storage at the Kalorama Tank site, additional storage would be constructed on-site. As mentioned previously, the additional storage required is the regulatory storage for the Project, which is a total of 0.32 MG when completely built out. The tanks are assumed to be abovegrade bolted steel or welded steel. The regulatory storage could be gradually phased in as demands increase over time. The phased regulatory water storage requirements are listed in Table 11. It was also noted that the Kalorama BPS has approximately 400 gpm of excess capacity, and would be able to serve the demands of VBG.

Initially, the Project site was examined to locate a potential area to site the new tanks. Ideally, the tanks would be sited with a floor elevation roughly equivalent to the Kalorama Tanks, which would be an elevation of 591 feet. At this elevation, the hill ridge on-site is too narrow to accommodate the tanks, and the tanks would also obstruct the existing access road. Lower down the hill, at an elevation of approximately 570 feet, the ridge appears to widen sufficiently to accommodate the new tanks without obstructing the access road. Unless excessively tall tanks are constructed, this would lower the expected HGL serving the Project to approximately 585

feet (20 feet, or 8.7 psi lower than the 605K Zone). Not only would this reduce the Project area serviceable by gravity flows, additional measures would have to be taken in order to control the incoming HGL from the 605K Zone by using either a pressure reducing valve station to reduce the incoming 605K Zone HGL, using altitude valves to prevent the new tanks from overtopping, or by using a combination thereof. This could also potentially result in poor turnover of the new tanks, as the 605K Zone will have a tendency of supplying the Project as it would have a higher HGL. One alternative to controlling the incoming 605K HGL would be instead to fill the new tanks with a pump station off of the 260 Zone; however, it is assumed that it would be cost-prohibitive to construct a new pump station in addition to new storage tanks; therefore, this option has not been included in the further evaluation.

In order to bring the new storage tanks into service, a pipeline must be brought from the 605K Zone to the tank site. In order to accomplish this, a connection must be made to the existing 12-inch ACP in Summit Drive. Service would also require a backflow preventer, flow meter, and approximately 3,200 feet of 12-inch pipeline. The pipeline up to the tank site is proposed to be routed within existing access roads. The existing piping configuration, exact zone break location, and pipe rated working pressures should be verified prior to performing any improvements.

The improvements required and associated capital costs for Alternative No. 5 are shown in Exhibit 5A/5B and Table 16. It is assumed that VBG would own, operate, and maintain these tanks.

Alternative No. 6

Alternative No. 6 consists of both domestic and fire water service being provided by gravity service from the 605K Zone. Unlike Alternatives 4 and 5, instead of relying on the Kalorama Tanks for fire protection, this alternative proposes to add a new 1,500 gpm fire pump to the existing Kalorama Pump Station, which takes service off of the 260 Zone. The issue with this alternative is that the addition of a fire pump would not address the deficiency in regulatory storage, effectively resulting in requiring the provision of additional storage as presented in Alternatives 4 and 5. At that point, it would defeat the purpose of providing a fire pump. Even if a fire pump was provided, there is insufficient space at the existing Kalorama BPS, which would require further studies and high capital costs to potentially relocate and build a new Kalorama BPS. For these reasons, Alternative No. 6 has been discounted as a potential alternative and is excluded from further evaluation.

Alternative No. 7

Alternative No. 7 is similar to Alternative No. 6 except that instead of retrofitting the Kalorama BPS, this alternative proposes to construct a new single 1,500 gpm fire pump adjacent to the Grant Park Reservoir. While construction of a fire pump at the Grant Park Reservoir site would likely be much easier than retrofitting Kalorama BPS, this alternative is subject to the same limitation of regulatory storage as discussed in Alternative No. 6. For that reason, Alternative No. 7 has been discounted as a potential alternative and is excluded from further evaluation.

After performing an initial evaluation of all seven potential alternatives, a resulting three alternatives, Alternative Nos. 3, 4, and 5, were determined to be feasible enough for further evaluation. The improvements unique to each alternative in addition to the pros and cons are summarized in Table 12.

## Table 12 – Alternative Pros/Cons Comparison

| Alternative No. | Domestic Service Zone | Fire Service Zone | Additional Storage Location | Pumping Method | Pros | Cons |
|---|---|---|---|---|---|---|
| 3 | 260 | 260 | N/A | Hydropneumatic + Fire Pump | • Provides good flexibility for phasing.<br>• Capable of serving the highest areas on-site.<br>• Avoids need for additional storage.<br>• Possible to use 605K Zone as a backup emergency supply. | • High operational costs, including energy usage.<br>• High level of maintenance required.<br>• Increased noise.<br>• Requires agreement with City to use Grant Park Reservoir site for pump station building |
| 4 | 605K | 605K | Kalorama Tanks | N/A (Gravity Service) | • Provides good flexibility for phasing.<br>• Relatively low maintenance. | • Siting, geotechnical studies required for new tank site.<br>• Grading required for new tank pad.<br>• Additional pumping would still be required to meet the upper area of the project.<br>• Must utilize existing pipe (install date uknown) for service.<br>• Requires agreement with City. |
| 5 | 605K | 605K | On-site | N/A (Gravity Service) | • Provides good flexibility for phasing.<br>• Relatively low maintenance.<br>• No agreements with City required. | • High capital cost to route pipelines up to tank site.<br>• Siting, geotechnical studies required for new tank site.<br>• Grading required for new tank pad.<br>• Additional pumping would still be required to meet the upper area of the project.<br>• Must utilize existing pipe (install date uknown) for service.<br>• Potential tank turnover issue due to HGL differential. |

In addition, probable costs were developed for Alternative Nos. 3, 4, and 5 for capital improvements as well as ongoing operation and maintenance (O&M) costs. Required improvements and capital costs are included for each alternative in Tables 13 through 16. The total capital costs, O&M costs, and combined total annualized costs are included in Table 17. In terms of capital costs, the alternatives are ordered from least expensive to most expensive below:

1. Alternative No. 4: $1,176,000
2. Alternative No. 3: $1,231,500
3. Alternative No. 5: $1,836,000

In terms of annualized O&M costs, the alternatives are ordered from least expensive to most expensive below:

1. Alternative No. 3: $19,074
2. Alternative No. 4: $33,475
2. Alternative No. 5: $33,475

In terms of annualized total costs, the alternatives are ordered from least expensive to most expensive below:

1. Alternative No. 4: $73,068
2. Alternative No. 3: $76,223
3. Alternative No. 5: $95,289

In summary, out of the three alternatives selected from initial screening, Alternative No. 5 has the highest capital cost, highest annualized total cost, is least friendly to phasing in development, and has potentially the most hydraulic issues. For these reasons, Alternative No. 5 is considered a distant third to Alternative Nos. 3 and 4. Alternative Nos. 3 and 4, however, are much closer in terms of cost, and due to the uncertainty of costs at this level of planning, may be considered equal for all intents and purposes. Each alternative possesses its own unique set of pros and cons, the preferred of which will ultimately be at the discretion of Ventura Botanical Gardens, and subject to agreements with the City of Ventura. It is also noted that the potential cost savings measures mentioned previously could have a large impact on determining the preferred alternative.

**Table 13 – Initial Phase Conceptual Costs**

| Item No. | Item Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|---|
| 1 | 8-inch Pipeline | 600 | LF | $ 160 | $ 96,000 |
| 2 | 8-inch Reduced Pressure Detector Assembly | 1 | EA | $ 8,000 | $ 8,000 |
| 3 | Fire Hydrant Assembly | 1 | EA | $ 3,500 | $ 3,500 |
| 4 | 2-inch Water Service Meter | 1 | EA | $ 1,200 | $ 1,200 |
| | | | | **Subtotal** | $ 109,000 |
| | | | | **Construction Contingencies** | $ 21,800 |
| | | | | **Engineering and Administration** | $ 32,700 |
| **Total Project Cost:** | **$ 163,500** | | | | |

**Table 14 – Alternative No. 3 Conceptual Costs**

| Item No. | Item Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|---|
| 1 | 30 HP Pump (VFD) | 3 | EA | $ 35,000 | $ 105,000 |
| 2 | 215 HP Fire Pump | 1 | EA | $ 80,000 | $ 80,000 |
| 3 | Electrical Equipment and Controls | 1 | LS | $ 160,000 | $ 160,000 |
| 4 | Emergency Generator 300 kW | 1 | EA | $ 125,000 | $ 125,000 |
| 5 | Building (50'x20') w/ A/C | 1 | EA | $ 200,000 | $ 200,000 |
| 6 | 2,000 gal Hydropneumatic Tank | 1 | EA | $ 87,500 | $ 87,500 |
| 7 | 12-inch Flow Meter Assembly | 1 | EA | $ 10,000 | $ 10,000 |
| 8 | 8-Inch Reduced Pressure Detector Assembly | 1 | EA | $ 8,000 | $ 8,000 |
| 9 | 12-inch Pipeline | 250 | LF | $ 180 | $ 45,000 |
| | | | | **Subtotal** | $ 821,000 |
| | | | | **Construction Contingencies** | $ 164,200 |
| | | | | **Engineering and Administration** | $ 246,300 |
| **Total Project Cost:** | **$ 1,231,500** | | | | |

**Table 15 – Alternative No. 4 Conceptual Costs**

| Item No. | Item Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|---|
| 1 | (2) 0.16 MG Abovegrade Steel Tank | 320,000 | Gal | $ 1.50 | $ 480,000 |
| 2 | Site Grading and Paving | 1 | LS | $120,000 | $ 120,000 |
| 3 | Yard Piping | 1 | LS | $ 50,000 | $ 50,000 |
| 4 | 12-inch Flow Meter Assembly | 1 | EA | $ 10,000 | $ 10,000 |
| 5 | 150 LF Retaining Wall (8-feet high) | 400 | CY | $ 290 | $ 116,000 |
| 6 | 8-Inch Reduced Pressure Detector Assembly | 1 | EA | $ 8,000 | $ 8,000 |
| | | | | **Subtotal** | $ 784,000 |
| | | | | **Construction Contingencies** | $ 156,800 |
| | | | | **Engineering and Administration** | $ 235,200 |
| **Total Project Cost:** | **$ 1,176,000** | | | | |

**Table 16 – Alternative No. 5 Conceptual Costs**

| Item No. | Item Description | Quantity | Unit | Unit Cost | Cost |
|---|---|---|---|---|---|
| 1 | (2) 0.16 MG Abovegrade Steel Tank | 320,000 | Gal | $ 1.50 | $ 480,000 |
| 2 | 12-inch Pipeline | 3,200 | LF | $ 180 | $ 576,000 |
| 3 | 12-inch Flow Meter Assembly | 1 | EA | $ 10,000 | $ 10,000 |
| 4 | 8-Inch Reduced Pressure Detector Assembly | 1 | EA | $ 8,000 | $ 8,000 |
| 5 | Site Grading and Paving | 1 | LS | $120,000 | $ 120,000 |
| 6 | Pressure Reducing Station | 1 | EA | $ 30,000 | $ 30,000 |
| | | | | **Subtotal** | $1,224,000 |
| | | | | **Construction Contingencies** | $244,800 |
| | | | | **Engineering and Administration** | $367,200 |
| **Total Project Cost:** | **$ 1,836,000** | | | | |

## Table 17 – Life Cycle Cost Comparison

| | | | |
|---|---|---|---|
| | | **Interest Rate** | 3% |
| **Alternative** | **3** | **4** | **5** |
| **Life Cycle Costs** | | | |
| Capital Cost PW | $ 1,231,500 | $ 1,176,000 | $ 1,836,000 |
| AW Pumps | $ 15,936 | $ - | $ - |
| AW Electrical | $ 24,550 | $ - | $ - |
| AW Building/Piping | $ 16,662 | $ - | $ - |
| AW Tank Facility/Piping | $ - | $ 39,594 | $ 61,814 |
| | | | |
| Reservoir Relining Costs (Every 15 years) PW | $ - | $ 920,000 | $ 920,000 |
| AW | $ - | $ 30,975 | $ 30,975 |
| | | | |
| Pump Rehabilitation Costs (Every 15 years) | $ 10,000 | $ - | $ - |
| AW | $ 574 | $ - | $ - |
| | | | |
| Annual energy, operational and maintenance costs ($/year) | $ 18,500 | $ 2,500 | $ 2,500 |
| | | | |
| Pump Life (years) | $ 25 | $ - | |
| Electrical Equipment Life (years) | $ 25 | | |
| Building and Piping Life (years) | $ 100 | | |
| Steel Tank Life (years) | $ - | $ 75 | $ 75 |
| | | | |
| **Annual Worth of Total Costs** | **$ 76,223** | **$ 73,068** | **$ 95,289** |
| | | | |

Notes:
1. PW: Present Worth
2. AW: Annual Worth

Due to the hydraulic configuration of Alternative No. 3, which consists of a pump station located directly adjacent to a large reservoir, any demands from the pump station will have a negligible impact on 260 Zone pressures due to the stable gradient provided by the Grant Park Reservoir. The primary hydraulic concern of Alternative No. 3 is ensuring adequate storage is available in the 260 Zone. This has previously been confirmed to be adequate based on the excess storage in the 210 Zone, adequate firm pumping of the 260 Zone, and amount of regulatory/fire storage required by the Project. Alternative No. 4, however, requires flows to be conveyed through some distance of piping through the 605K Zone. For these reasons, only Alternative No. 4 has been included in the Hydraulic Model Evaluation.

### Hydraulic Model Evaluation

The City's existing hydraulic model has been used for this hydraulic model evaluation, which examines the impacts to the City's system that would be caused by the additional demand from the VBG project. The City's existing system has been evaluated for Alternative No. 4 only under maximum day demand 24-hour duration extended period simulations (EPS), which simulates a variation in demand up to the peak hour demand (PHD), and has also been evaluated under a fire flow scenario occurring over the peak hour demand. The evaluation criteria, evaluation procedure, and hydraulic model results are discussed in the following sections.

#### Evaluation Criteria

The criteria used for this evaluation are per the City's 2011 WMP and are summarized herein.

**Recommended Service Pressures (psi)**

| | |
|---|---|
| Minimum | 40 |
| Maximum | 150 |
| Fire Flow | 20 |

Notes:

1. Service pressures above 80 psi require a pressure regulator as stated in the Uniform Plumbing Code.
2. Services pressures above 150 psi require special approval and either individual pressure regulators or a regulating station on the main line.

**Pipeline Velocity Criteria (fps)**

| | |
|---|---|
| Peak Hour Demand [1] | 10 |
| Maximum Day Demand plus Fire Flow | 15 |
| Minimum | 1 |

[1] With a maximum friction loss of 10 ft/1,000 ft.

**Water Demand Peaking Factors**

| Demand Condition | Peaking Factor |
|---|---|
| Maximum Day | 1.52 x Average Day |
| Peak Hour [1] | 3.97 x Average Day |

[1] Actual peak hour factors for individual nodes are per the assigned diurnal in the hydraulic model.

Hydraulic Model Analysis

The VBG project is located in the hills at the southwest end of the City's distribution system, with the 260 Zone located just south of the project, and the 605K Zone located just east of the project. At this stage of the Project's development, it has not yet been determined if the Project will be supplied by the 260 Zone, 605K Zone, or a combination thereof.

The current water supply sources for the 260 Zone include the following:

- Modella Booster Pump Station (1,400 gpm nominal capacity. Note: does not include 250 gpm pump that currently serves Grant Park)
- Hall Canyon Booster Pump Station (791 gpm nominal capacity)
- Telegraph and Mills – Lower PRV (Emergency) (8-inch)

Supply is taken from the 260 Zone by the following facilities:

- Kalorama Booster Pump Station (437 gpm nominal capacity)

Storage for the 260 Zone is provided by the following water storage tanks:

- Grant Park Reservoir (2) (2.24 MG total storage)
- Hall Canyon Tanks (2) (0.50 MG total storage)

The current water supply sources for the 605K Zone include the following:

- Kalorama Booster Pump Station (437 gpm nominal capacity)

Supply is taken from the 605K Zone by the following facilities:

- N/A

Storage for the 605K Zone is provided by the following water storage tanks:

- Kalorama Tanks (2) (0.30 MG total storage)

This hydraulic analysis evaluates Alternative No. 4, which, for the purpose of this analysis, assumes that VBG is served solely by the connection to the existing 12-inch line in Summit Drive, which corresponds to the existing model junction J1701. This single junction was used to simulate the entire proposed Project demand. The demand variation at this junction is based on the “PATN33” diurnal pattern, which is used throughout the model. This diurnal pattern is based on actual meter data from a master meter for a large residential apartment complex performed as part of the 2011 WMP. This diurnal pattern has two peaks, one occurring in the morning at 7:00 AM, and a second peak later in the evening at 7:00 PM, and is expected to be an accurate representation of demand fluctuations for the VBG Project. See Attachment 4 for the assigned diurnal pattern. Scenarios under proposed conditions also included the proposed additional 0.32 MG of storage at the existing Kalorama Tank site.

The City’s existing hydraulic model has been used to run an EPS under maximum day demand, which includes peak hour demand, under existing conditions to establish a baseline set of system pressures and internal pipeline velocities for the 605K Zone. These baseline results have been compared to the post-Project results to determine the sensitivity of the City’s system to changes in demand at the location of the Project. Subsequent EPS simulations were run under maximum day demand with VBG and maximum day demand with VBG plus the required fire flow of 1,500 gpm for a duration of 2 hours from 6:00 AM to 7:00 AM since the system wide peak hour demand occurs at 7:00 AM. An additional set of scenarios have been evaluated that includes all Planning Projects to determine if any deficiencies will be ultimately created at buildout of the currently identified Planning Projects (as of December 31, 2013). A summary of the model scenarios is listed in Table 18.

**Table 18: Model Scenario Summary**

| Scenario No. | Description |
|---|---|
| 1 | Existing MDD |
| 2 | Existing MDD + VBG |
| 3 | Existing MDD + VBG + Fire Flow |
| 4 | Existing MDD + All Planning Projects |
| 5 | Existing MDD + All Planning Projects + Fire Flow |

MDD = Maximum Day Demand

Tables 19 and 20 include model results for elements within the 605K Zone. See Attachment 5 for an exhibit showing the locations and IDs of the nodes and pipes adjacent to the Project.

**Table 19: Hydraulic Model Results - Nodes**

| Node | Pressure Zone | Elev (ft) | Static Press (psi) | ① Ex MDD | | ② Ex MDD + VBG | | ③ Ex MDD + VBG + Fire Flow | | ④ Ex MDD + All Planning Projects | | ⑤ Ex MDD + All Planning Projects + Fire Flow | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Min Pressure (psi) | Min Head (ft) | Min Pressure (psi) | Min Head (ft) | Min Pressure (psi) | Min Head (ft) | Min Pressure (psi) | Min Head (ft) | Min Pressure (psi) | Min Head (ft) |
| **605K ZONE JUNCTIONS** | | | | | | | | | | | | | |
| J1469 | 605K | 322.81 | 122.2 | 119.9 | 600 | 119.9 | 600 | 116.2 | 591 | 120.0 | 600 | 116.1 | 591 |
| J1681 | 605K | 251.51 | 153.0 | 150.8 | 600 | 150.8 | 599 | 145.1 | 586 | 150.8 | 600 | 145.0 | 586 |
| J1683 | 605K | 382.64 | 96.3 | 94.0 | 600 | 93.9 | 599 | 88.3 | 586 | 94.0 | 599 | 88.2 | 586 |
| J1685 | 605K | 200.00 | 175.3 | 173.1 | 600 | 173.1 | 599 | 166.0 | 583 | 173.0 | 599 | 165.9 | 583 |
| J1701 | 605K | 276.74 | 142.1 | 139.9 | 600 | 139.6 | 599 | 128.5 | 573 | 139.6 | 599 | 128.4 | 573 |
| J1703 | 605K | 148.86 | 197.5 | 195.3 | 600 | 195.2 | 599 | 188.2 | 583 | 195.2 | 599 | 188.1 | 583 |
| J7831 | 605K | 147.31 | 198.1 | 196.0 | 600 | 195.9 | 599 | 188.8 | 583 | 195.9 | 599 | 188.8 | 583 |
| J7837 | 605K | 146.36 | 198.5 | 196.4 | 600 | 196.3 | 599 | 189.3 | 583 | 196.3 | 599 | 189.2 | 583 |
| J8147 | 605K | 276.74 | 142.1 | 139.9 | 600 | 139.7 | 599 | 130.1 | 577 | 139.6 | 599 | 130.0 | 577 |
| J8149 | 605K | 276.74 | 142.1 | 139.9 | 600 | 139.7 | 599 | 130.2 | 577 | 139.6 | 599 | 130.1 | 577 |
| J8243 | 605K | 334.27 | 117.2 | 114.9 | 600 | 114.9 | 599 | 109.3 | 586 | 114.9 | 599 | 109.2 | 586 |

**Table 20: Hydraulic Model Results – Pipes**

| ID | Diameter (in) | Length (ft) | Ex MDD | | ② Ex MDD + VBG | | ③ Ex MDD + VBG + Fire Flow | | ④ Ex MDD + All Planning Projects | | ⑤ Ex MDD + All Planning Projects + Fire Flow | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Max Flow (gpm) | Max Velocity (fps) | Max Flow (gpm) | Max Velocity (fps) | Max Flow (gpm) | Max Velocity (fps) | Max Flow (gpm) | Max Velocity (fps) | Max Flow (gpm) | Max Velocity (fps) |
| **605K ZONE PIPES** | | | | | | | | | | | | |
| L10198 | 12 | 17 | 0 | 0.0 | 336 | 1.0 | 1,836 | 5.2 | 336 | 1.0 | 1,836 | 5.2 |
| L10200 | 12 | 773 | 0 | 0.0 | 336 | 1.0 | 1,836 | 5.2 | 336 | 1.0 | 1,836 | 5.2 |
| L10314 | 8 | 444 | 22 | 0.1 | 22 | 0.1 | 22 | 0.1 | 22 | 0.1 | 22 | 0.1 |
| L1548 | 12 | 1,397 | 506 | 1.4 | 540 | 1.5 | 1,706 | 4.8 | 540 | 1.5 | 1,706 | 4.8 |
| L1822 | 12 | 531 | 515 | 1.5 | 541 | 1.5 | 1,699 | 4.8 | 541 | 1.5 | 1,699 | 4.8 |
| L1824 | 8 | 630 | 22 | 0.1 | 22 | 0.1 | 22 | 0.1 | 22 | 0.1 | 22 | 0.1 |
| L1826 | 12 | 419 | 549 | 1.6 | 544 | 1.5 | 1,673 | 4.7 | 544 | 1.5 | 1,673 | 4.7 |
| L1846 | 12 | 486 | 0 | 0.0 | 336 | 1.0 | 1,836 | 5.2 | 336 | 1.0 | 1,836 | 5.2 |
| L1848 | 12 | 453 | 563 | 1.6 | 569 | 1.6 | 1,002 | 2.8 | 567 | 1.6 | 580 | 1.6 |
| L9668 [1] | 12 | 75 | 506 | 1.4 | 5,480 | 15.6 | 5,480 | 15.6 | 3,401 | 9.7 | 3,697 | 10.5 |
| L9670 [1] | 12 | 75 | 0 | 0.0 | 5,480 | 15.6 | 5,480 | 15.6 | 3,401 | 9.7 | 3,697 | 10.5 |
| L9846 | 12 | 19 | 563 | 1.6 | 569 | 1.6 | 1,002 | 2.8 | 567 | 1.6 | 580 | 1.6 |
| L9848 | 12 | 13 | 563 | 1.6 | 569 | 1.6 | 580 | 1.6 | 567 | 1.6 | 580 | 1.6 |

Note: Shaded cells indicate elements that did not meet the evaluation criteria.

[1] Pipes L9668 and L9670 are Kalorama Tank inlet/outlets. High velocities are a result of modeling software anomaly that can occur when two tanks are located in close proximity to one another.

Based on the hydraulic model results, all pressures were found to be acceptable within the 605K Zone under all of the evaluated scenarios. Under the fire flow scenario, all 605K Zone pressures remained above the required 20 psi. Reservoir levels were also observed to be within normal ranges. Overall, the additional Project demand had a very minor impact on 605K Zone pressures, decreasing them by approximately 0.2 psi. With all Planning Projects in place, there were essentially no further changes in 605K Zone pressure.

Based on the hydraulic model results, all pipeline internal velocities were found to be acceptable within the 605K Zone under all of the evaluated scenarios, with the exception of pipes L9668 and L9670, which are Kalorama Tank inlet/outlets; however, this is the result of a modeling software anomaly that can occur when two tanks are located in close proximity to one another. This was verified to be an anomaly by checking the piping downstream of this location (model ID L1548), which yielded no excessive velocities. The maximum pipeline velocity, excluding the Kalorama Tank inlet/outlets, was approximately 5.2 feet per second under fire flow conditions. Overall the additional demand had a minor impact on pipe velocities, increasing by a maximum of 1.0 feet per second, with this increase occurring in the Summit Drive Pipeline. With all Planning Projects in place, there were essentially no further changes in pipeline velocities.

As previously discussed, the additional demand of the Project will also require a nominal increase in regulatory reservoir storage equal to 175 percent of the maximum day demand. This equates to an increase in required storage of 318,302 gallons. Under Alternative No. 3, there is available storage in the 210 Zone that can be used through the 260 Zone pumping to mitigate this requirement. Under Alternative No. 4, additional storage will be constructed at the existing Kalorama Tank site.

<u>Known Hydraulic Issues in the 260 Zone</u>

The 2011 WMP had identified the following issues related to the 260 Zone:

- The hydraulic analysis identified a number of pressure junctions throughout the 260 Zone, primarily located at the top of the zone boundary. No recommendations were made regarding these locations in the 2011 WMP.

- The Grant Park Reservoir has had chronic turnover problems, one half of the reservoir is typically taken off line during winter, and only one half of the reservoir is currently in service.

- The 260 Zone reservoir storage was determined to be deficient by 1.12 MG under near-term conditions; however, it was determined that pump capacity was available to utilize

excess storage of the 210 Zone in the 260 Zone. No recommendations were made regarding the 260 Zone reservoir storage in the 2011 WMP.

- The 2011 WMP recommended reconfiguring the 260 Zone boundary to address low pressures in the 210 Zone along Thompson Boulevard and Main Street. This capital improvement project would include shifting the 260 Zone boundary south from Thompson Boulevard and Main Street roughly to the 101 Freeway between Sanjon Road to the west and the 101 Freeway to the east.

- The hydraulic analysis identified a number fire flow deficient nodes. The recommendation was made to implement the small diameter replacement program to increase all small diameter pipe (smaller than 6-inches) to a minimum of 6-inch diameter pipe.

Known Hydraulic Issues in the 605K Zone

The 2011 WMP had identified the following issues related to the 605K Zone:

- There is not enough demand to turnover both Kalorama Tanks, one of the tanks is typically taken off line during winter, and only one tank is currently in service.
- The 605K Zone reservoir storage was determined to be deficient by 0.02 MG under near-term conditions, although it was noted that the deficiency was negligible, and therefore deemed to be adequate.
- The 605K Zone has very high pressures. No recommendations were made.
- The 605K Zone currently does not have a redundant source of supply. Recommendation was made to add fixed emergency power at the Kalorama BPS.

Additional Hydraulic Considerations

This hydraulic analysis portion of this memorandum examines the impacts of the Project specifically on the City's domestic water distribution system; however, the on-site system (anything including or downstream of a meter and/or backflow prevention device) has been specifically excluded from this evaluation. It should be understood that the pressures reported in this analysis be taken as the pressure in the City's system at ground elevation. Additional headlosses through backflow prevention devices, meters, and on-site piping must be taken into account by others. The water pressure will also decrease for each building story at an amount of roughly 5.2 psi per story (assuming 12 feet per floor). Any private on-site piping should be verified during final design.

## Summary and Conclusions

The proposed Ventura Botanical Gardens project consists of a 106.98 acre site with botanical gardens and supporting facilities and buildings, which is expected to produce an average day demand of 83.10 gpm, maximum day demand of 126.31 gpm, and peak hour demand of 329.90 gpm. This project is also expected to require a fire flow of 1,500 gpm for a duration of 2 hours. The Project requires a regulatory storage of 318,302 gallons.

Due to the size of the Project, large variation in the elevation of the terrain, and proximity to a number of pressure zones of the City's water distribution system, a number of alternatives were evaluated for the Project's on-site domestic water and fire service system. The results of that evaluation identified an initial phase of improvements to serve just the Welcome Zone, and two recommended alternatives to serve the remainder of the Project that meet the goals of VBG to be practical, cost effective, and conducive to phasing. These two alternatives include: Alternative No. 3, which includes a hydropneumatic pump station with fire pump and stand-by generator, and Alternative No. 4, which includes adding storage at the existing Kalorama Tank site.

Since Alternative No. 3 would have a negligible impact on 260 Zone hydraulics due to its configuration, a hydraulic analysis was performed for Alternative No. 4 only. For Alternative No. 4, hydraulic model results indicated that with the added storage at the existing Kalorama Tank site, the City's existing domestic water distribution system has available capacity to support the increased water demand of the Project and is able to meet the required fire flow under current conditions and build out of all Planning Projects without any pressure or pipeline velocity deficiencies.

The hydraulic model results for the 605K Zone under Alternative No. 4 as a result of the addition of the proposed VBG project and provision of additional storage are as follows:

- 605K Zone pressures will decrease approximately 0.2 psi during maximum day demand, with all pressures remaining above 93 psi.
- At Planning Project build out, 605K Zone pressures are expected to decrease approximately 0.2 psi, with all pressures remaining above 93 psi.
- Under maximum day demand plus fire flow conditions, all 605K Zone pressures remained above 88 psi.
- At Planning Project build out under maximum day demand plus fire flow condition, all 605K Zone pressures remained above 88 psi.
- 605K Zone pipeline velocities are expected to increase by a maximum of approximately 1.0 feet per second.

- At Planning Project build out, local pipeline velocities are expected to increase by a maximum of approximately 1.0 feet per second.
- Local pipeline velocities remain under 11 feet per second during a fire flow condition.

The need for agreements between VBG and the City has been identified for Alternative Nos. 3 and 4. These agreements could have a large impact on cost and whether or not an alternative is feasible. It is recommended that VBG discuss these alternatives with the City prior to selecting the preferred water service method. In addition, it is recommended that the potential cost saving measures identified herein be evaluated during final design.

**Water Supply Discussion**

As mentioned previously in the Background section of this memorandum, a CWRR was accepted by City Council on May 5, 2014 (see Attachment 6). The CWRR identifies the City's existing (as of December 31, 2013) baseline water demand as 17,343 AFY and the existing and reliable water supply as 19,600 AFY. The future water supply projections under non-drought conditions range from 19,535 AFY to 24,284 AFY. The future water demand for all existing land use, under construction and approved projects is projected to be 18,428 AFY. This Project is projected to require an annual water supply of 134.05 AFY to meet the projected water demand requirements. It is noted that this project area lies within the service boundary of the Casitas Municipal Water District.

Attachments:

Exhibit 1: Pipe Pressure Zones
Exhibit 2: Initial Phase Improvements
Exhibit 3: Alternative No. 3
Exhibit 4A: Alternative No. 4
Exhibit 4B: Alternative No. 4
Exhibit 5A: Alternative No. 5
Exhibit 5B: Alternative No. 5

Attachment 1: Project Site Plan and Facilities Plan
Attachment 2: Table A – Water Demand Phasing
Attachment 3: Topographic Map
Attachment 4: Diurnal Curve
Attachment 5: Model Pipe and Junction IDs
Attachment 6: April 29, 2014 City Council Agenda Item - CWRR

cc: Susan Rungren, P.E., Ventura Water
Shaida Baharloo, P.E., City of Ventura
File

Exhibit 1 - Pipe Pressure Zones

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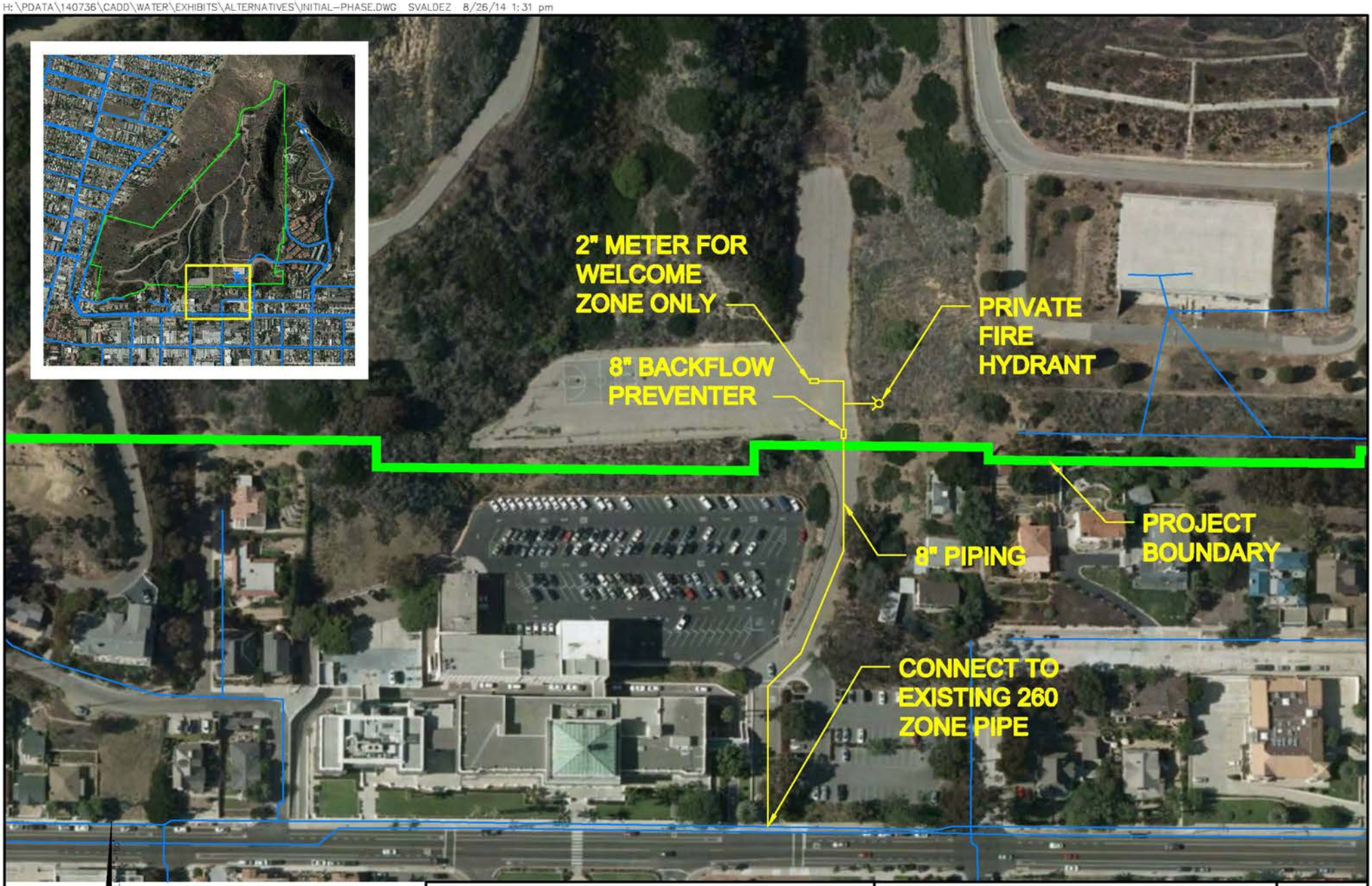


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VENTURA BOTANICAL GARDENS

INITIAL PHASE IMPROVEMENTS

EXHIBIT 2

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ALTERNATIVE NO. 3

EXHIBIT 3

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ALTERNATIVE NO. 4

EXHIBIT 4A

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ALTERNATIVE NO. 4

EXHIBIT 4B

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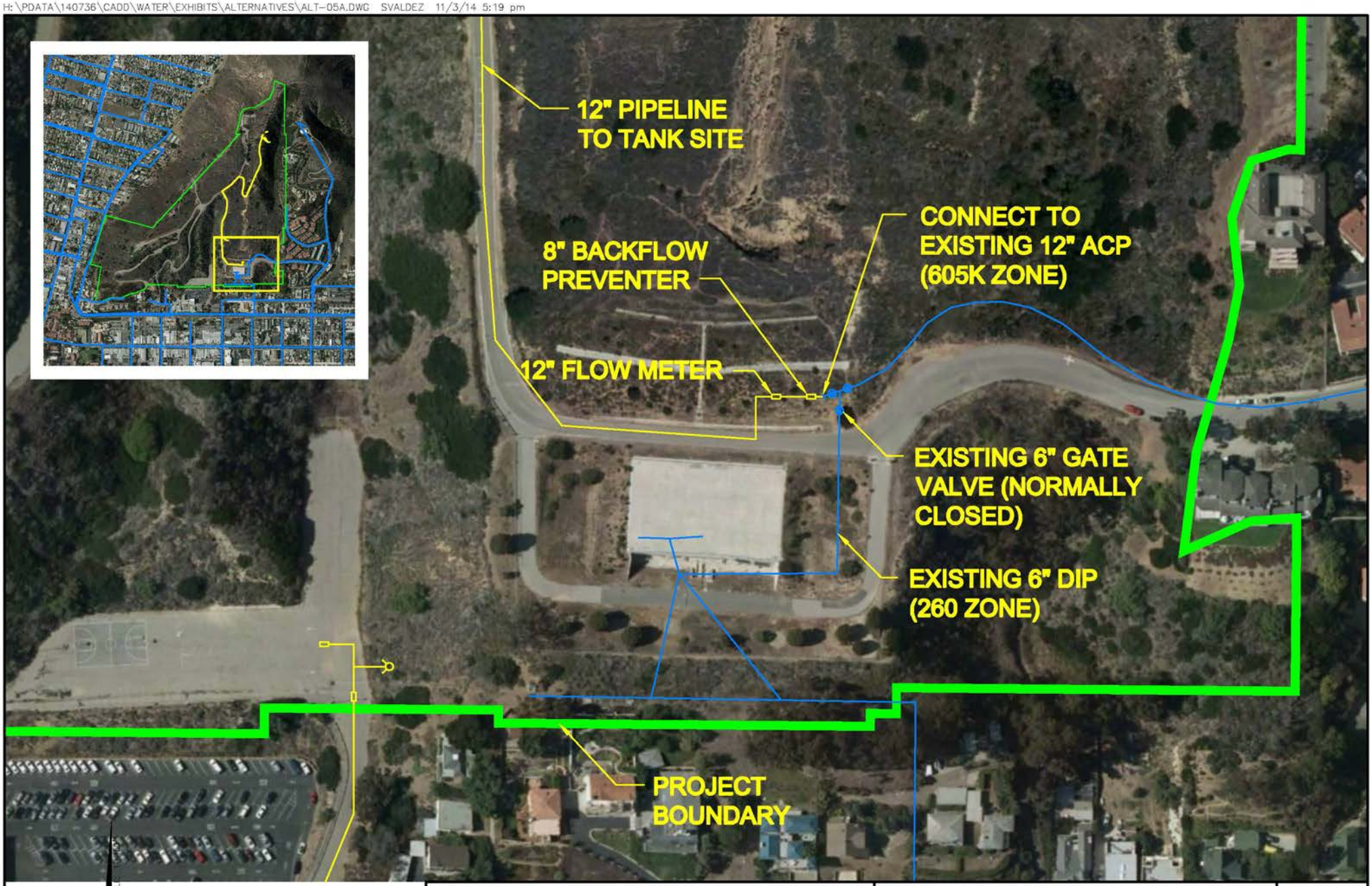


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ALTERNATIVE NO. 5

EXHIBIT

5A

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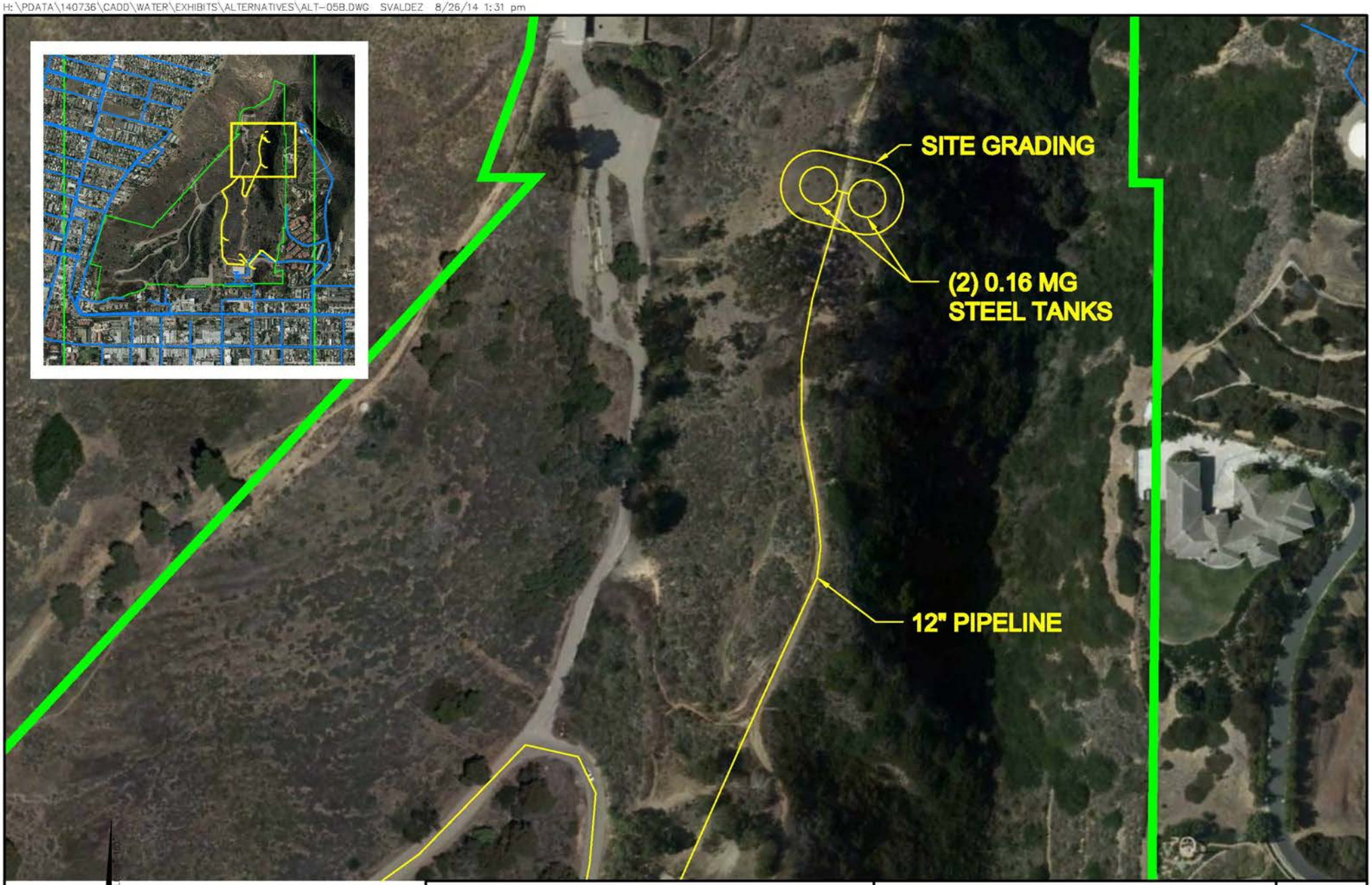


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VENTURA BOTANICAL GARDENS

ALTERNATIVE NO. 5

EXHIBIT

5B

Attachment 1

Figure 3. Ventura Botanical Garden Master Plan

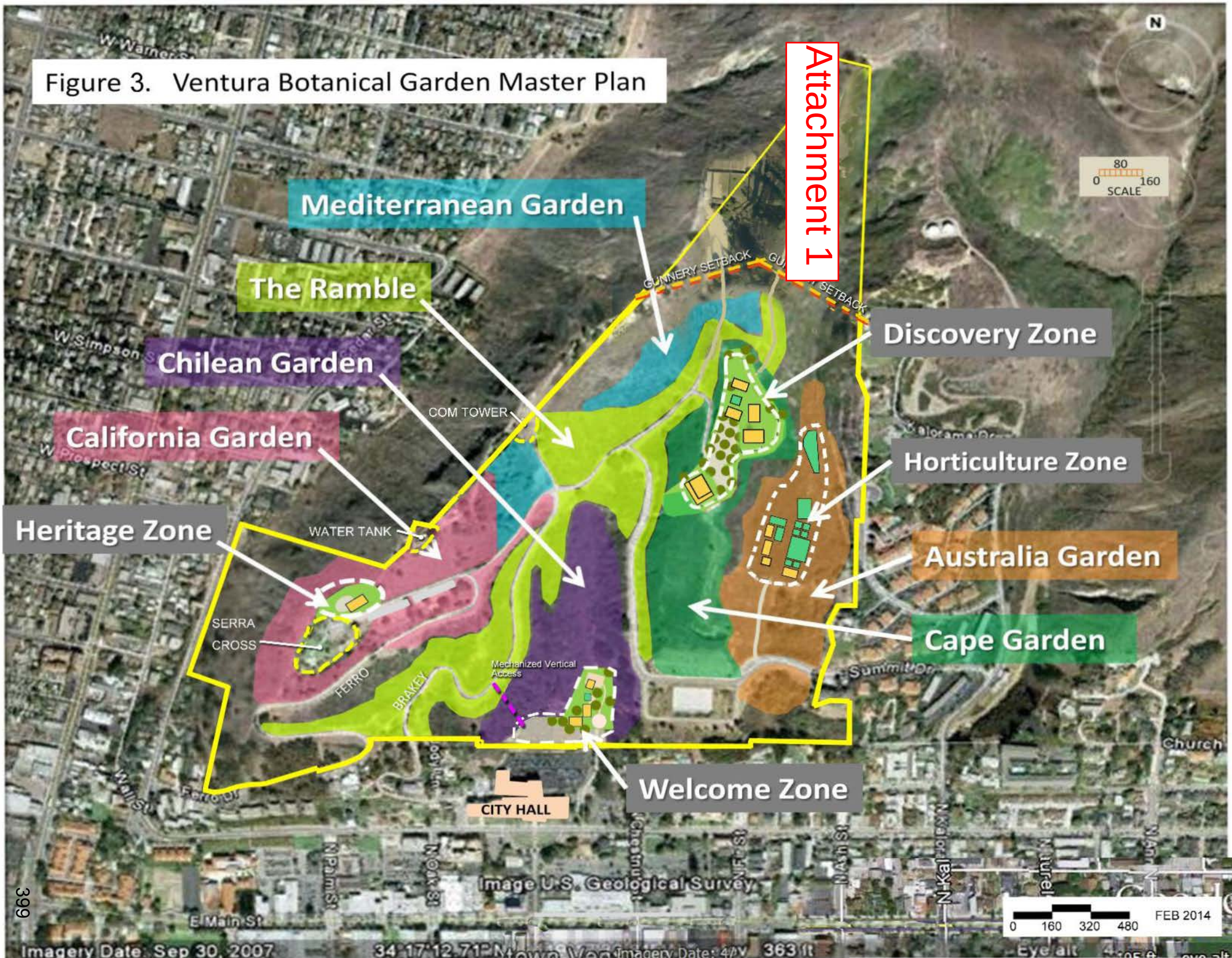


Figure 4. Facilities

Attachment 1

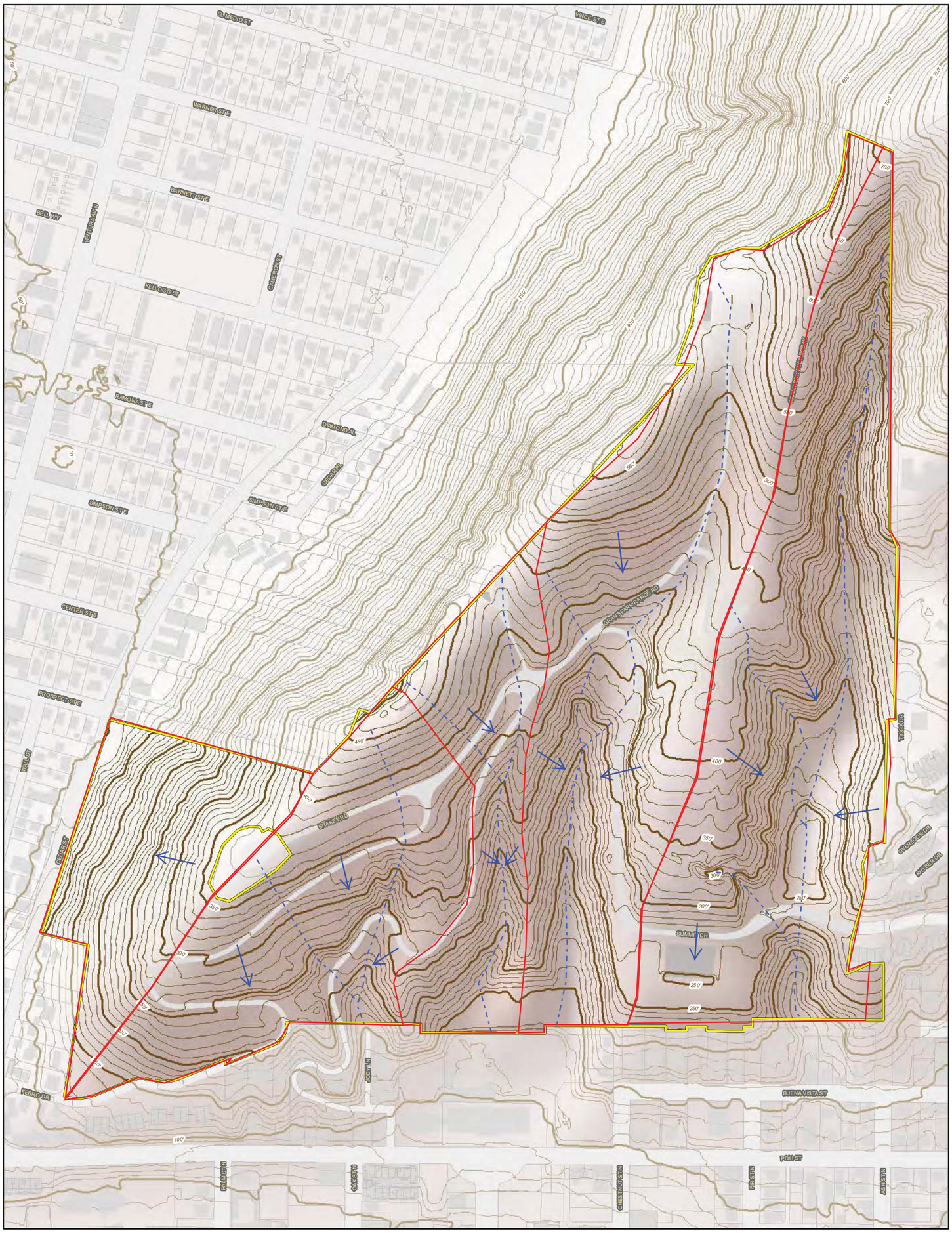
Attachment 2

**Table A - Water Demand Phasing**

| | Max Day Demand (gpm) | Phase 1 Percent Complete | Phase 1 Max Day Demand (gpm) | Phase 2 Percent Complete | Phase 2 Max Day Demand (gpm) | Phase 3 Percent Complete | Phase 3 Max Day Demand (gpm) | Phase 4 Percent Complete | Phase 4 Max Day Demand (gpm) | Phase 5 Percent Complete | Phase 5 Max Day Demand (gpm) | Phase 6 Percent Complete | Phase 6 Max Day Demand (gpm) | Phase 7 Percent Complete | Phase 7 Max Day Demand (gpm) | Phase 8 Percent Complete | Phase 8 Max Day Demand (gpm) | Phase 9 Percent Complete | Phase 9 Max Day Demand (gpm) | Phase 10 Percent Complete | Phase 10 Max Day Demand (gpm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Irrigation Demand** | | | | | | | | | | | | | | | | | | | | | |
| Chilean Garden and Welcome Zone | 16.15 | 40% | 6.46 | 85% | 13.73 | 100% | 16.15 | 100% | 16.15 | 100% | 16.15 | 100% | 16.15 | 100% | 16.15 | 100% | 16.15 | 100% | 16.15 | 100% | 16.15 |
| Mediterranean Garden | 7.54 | 3% | 0.23 | 18% | 1.36 | 63% | 4.75 | 100% | 7.54 | 100% | 7.54 | 100% | 7.54 | 100% | 7.54 | 100% | 7.54 | 100% | 7.54 | 100% | 7.54 |
| The Ramble | 27.99 | 2% | 0.56 | 4% | 1.12 | 9% | 2.52 | 19% | 5.32 | 39% | 10.92 | 69% | 19.32 | 100% | 27.99 | 100% | 27.99 | 100% | 27.99 | 100% | 27.99 |
| Cape Garden and Discovery Zone | 19.38 | 0% | 0.00 | 6% | 1.16 | 17% | 3.29 | 47% | 9.11 | 92% | 17.83 | 100% | 19.38 | 100% | 19.38 | 100% | 19.38 | 100% | 19.38 | 100% | 19.38 |
| California Garden and Heritage Zone | 18.30 | 0% | 0.00 | 4% | 0.73 | 11% | 2.01 | 26% | 4.76 | 46% | 8.42 | 91% | 16.66 | 100% | 18.30 | 100% | 18.30 | 100% | 18.30 | 100% | 18.30 |
| Austrailia Garden and Horticulture Zone | 18.30 | 0% | 0.00 | 0% | 0.00 | 5% | 0.92 | 11% | 2.01 | 23% | 4.21 | 48% | 8.79 | 100% | 18.30 | 100% | 18.30 | 100% | 18.30 | 100% | 18.30 |
| ***Subtotal*** | ***107.67*** | | ***7.25*** | | ***18.10*** | | ***29.64*** | | ***44.89*** | | ***65.06*** | | ***87.82*** | | ***107.67*** | | ***107.67*** | | ***107.67*** | | ***107.67*** |
| **Non-irrigation Demand** | | | | | | | | | | | | | | | | | | | | | |
| Interim Facilities @ Welcome Zone | 1.61 | 100% | 1.61 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 |
| Welcome Zone Permanent Facilities | | | | | | | | | | | | | | | | | | | | | |
| Visitor Center | 0.35 | 0% | 0.00 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 | 100% | 0.35 |
| Book & Gift Shop | 0.62 | 0% | 0.00 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 | 100% | 0.62 |
| Plant Sales | 0.45 | 0% | 0.00 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 | 100% | 0.45 |
| Snack Bar | 0.19 | 0% | 0.00 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 | 100% | 0.19 |
| ***Subtotal*** | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** | | ***1.61*** |
| Interim Facilities @ Discovery Zone | 12.55 | 0% | 0.00 | 100% | 12.55 | * | 7.62 | * | 7.62 | * | 5.39 | * | 4.41 | * | 1.88 | * | 1.88 | 0% | 0.00 | 0% | 0.00 |
| Discovery Zone Permanent Facilities | | | | | | | | | | | | | | | | | | | | | |
| Event & Lecture Center | 3.24 | 0% | 0.00 | 0% | 0.00 | 100% | 3.24 | 100% | 3.24 | 100% | 3.24 | 100% | 3.24 | 100% | 3.24 | 100% | 3.24 | 100% | 3.24 | 100% | 3.24 |
| Restaurant | 1.69 | 0% | 0.00 | 0% | 0.00 | 100% | 1.69 | 100% | 1.69 | 100% | 1.69 | 100% | 1.69 | 100% | 1.69 | 100% | 1.69 | 100% | 1.69 | 100% | 1.69 |
| Headquarters | 1.88 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 1.88 | 100% | 1.88 |
| Conservation Center | 2.53 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 2.53 | 100% | 2.53 | 100% | 2.53 | 100% | 2.53 |
| Discovery Center | 2.24 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 2.24 | 100% | 2.24 | 100% | 2.24 | 100% | 2.24 | 100% | 2.24 | 100% | 2.24 |
| Children's Center | 0.64 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.64 | 100% | 0.64 | 100% | 0.64 | 100% | 0.64 | 100% | 0.64 |
| Public Seedling "Cage" | 0.34 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.34 | 100% | 0.34 | 100% | 0.34 | 100% | 0.34 | 100% | 0.34 |
| ***Subtotal*** | ***12.55*** | | ***0.00*** | | ***12.55*** | | ***12.55*** | | ***12.55*** | | ***12.55*** | | ***12.55*** | | ***12.55*** | | ***12.55*** | | ***12.55*** | | ***12.55*** |
| Interim Facilities @ Horticulture Zone | 3.59 | 0% | 0.00 | 0% | 0.00 | 100% | 3.59 | * | 3.17 | * | 3.17 | * | 3.17 | * | 3.17 | * | 0.45 | 0% | 0.00 | 0% | 0.00 |
| Horticulture Zone Permanent Facilities | | | | | | | | | | | | | | | | | | | | | |
| Lath House #1 | 0.17 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 |
| Lath House #2 | 0.17 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.17 | 100% | 0.17 |
| Shade House #1 | 0.08 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.08 | 100% | 0.08 | 100% | 0.08 | 100% | 0.08 | 100% | 0.08 | 100% | 0.08 | 100% | 0.08 |
| Shade House #2 | 0.17 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 | 100% | 0.17 |
| Shade House #3 | 0.17 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.17 | 100% | 0.17 |
| Shade House #4 | 0.11 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.11 | 100% | 0.11 |
| Seed & Propagation Center | 0.41 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.41 | 100% | 0.41 | 100% | 0.41 |
| Equipment & Storage Garages | 0.65 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.65 | 100% | 0.65 | 100% | 0.65 |
| Workshops | 0.65 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.65 | 100% | 0.65 | 100% | 0.65 |
| Horticulture & Maintenance Staff | 0.77 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.77 | 100% | 0.77 | 100% | 0.77 |
| Growing Areas | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.00 | 100% | 0.00 | 100% | 0.00 |
| Material Storage | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.00 | 100% | 0.00 | 100% | 0.00 |
| Stone Storage & Handling | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.00 | 100% | 0.00 | 100% | 0.00 |
| Service Yards | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.00 | 100% | 0.00 | 100% | 0.00 |
| Tram Service & Storage | 0.24 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.24 | 100% | 0.24 | 100% | 0.24 |
| ***Subtotal*** | ***3.59*** | | ***0.00*** | | ***0.00*** | | ***3.59*** | | ***3.59*** | | ***3.59*** | | ***3.59*** | | ***3.59*** | | ***3.59*** | | ***3.59*** | | ***3.59*** |
| Heritage Zone Permanent Facilities | | | | | | | | | | | | | | | | | | | | | |
| Heritage Center | 0.89 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 0% | 0.00 | 100% | 0.89 |
| ***Subtotal*** | ***0.89*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.00*** | | ***0.89*** |
| **Totals** | **126.31** | | **8.86** | | **32.26** | | **47.39** | | **62.64** | | **82.82** | | **105.58** | | **125.42** | | **125.42** | | **125.42** | | **126.31** |

* = It is assumed that 100 percent of the final construction water demands are required for interim facilities.

Attachment 3




*Map images copyright © 2011 ESRI and its licensors. All rights reserved. Used by permission. Additional data provided by the City of Ventura, 2008 and CIRGIS, 2009.*

0 175 350 Feet

N

Project Boundary

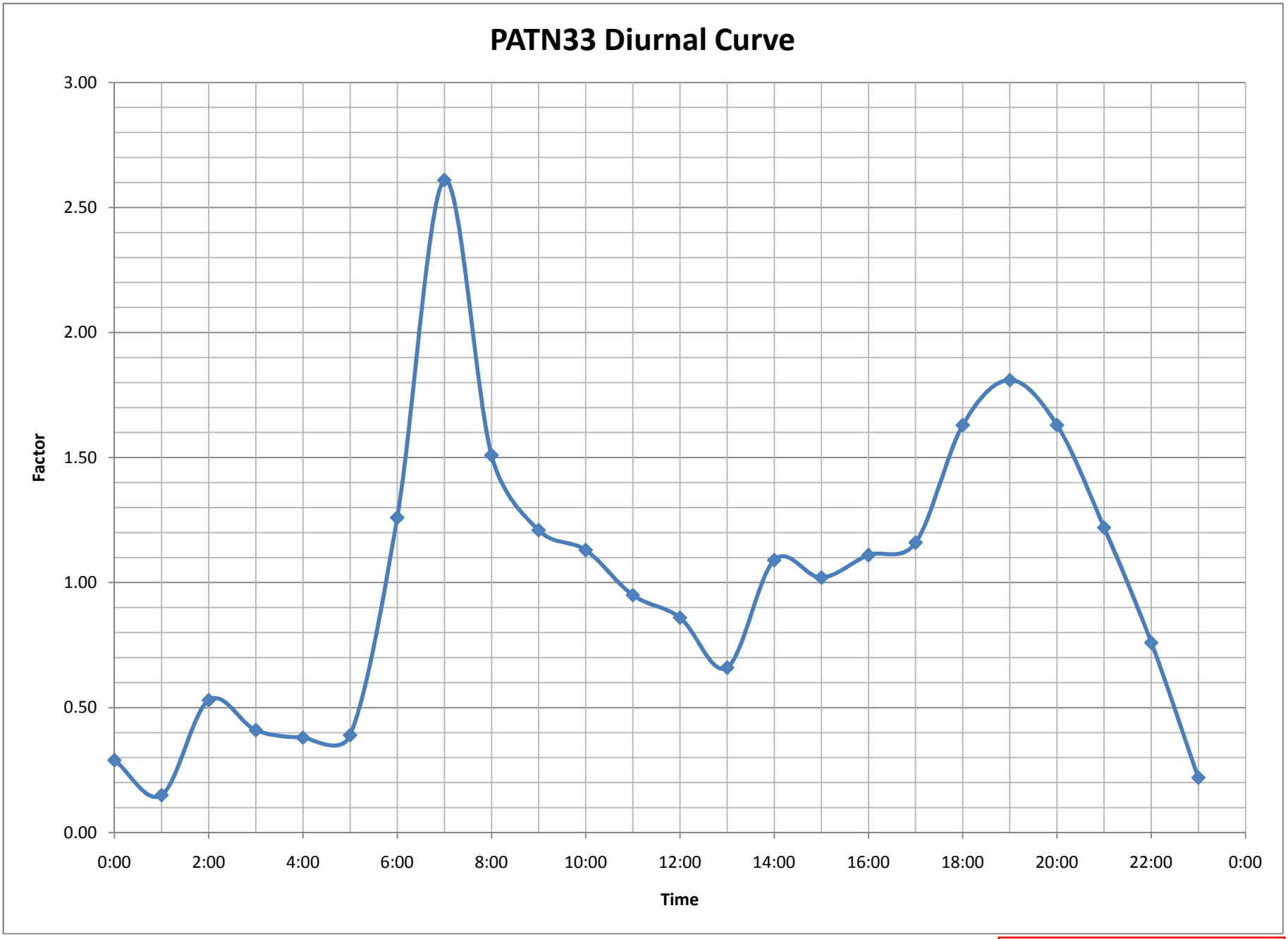
Sub-watershed Boundary

Flow Direction

Flowline/Drainage Path

VENTURA BOTANICAL GARDENS

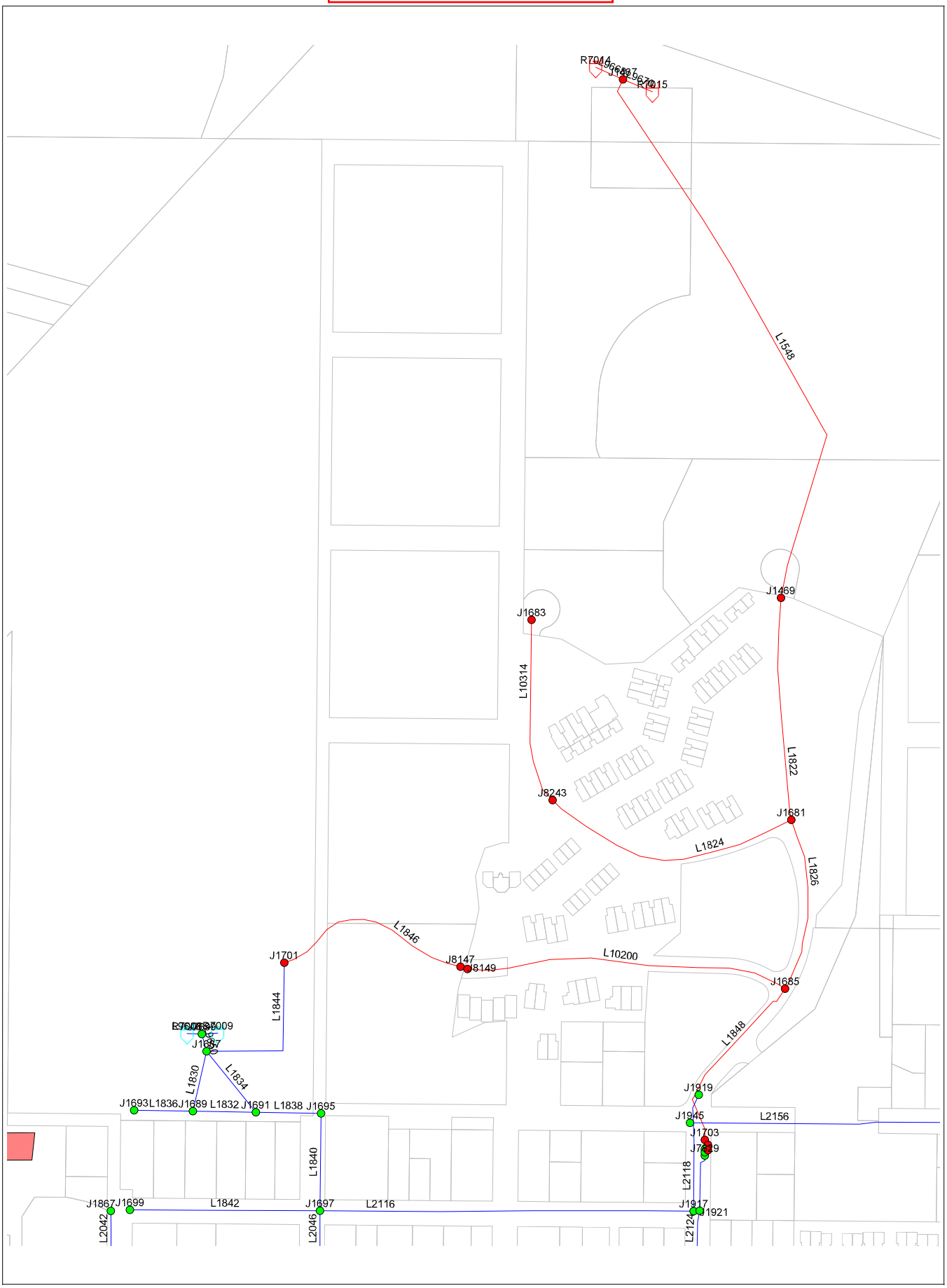
FIGURE 1
Topography and Sub-watershed
Base Map




Attachment 4

Attachment 5





CITY OF VENTURA

# ADMINISTRATIVE REPORT

Date: April 29, 2014
Agenda Item No.: 8
Council Action Date: May 5, 2014

**To:** **Honorable Mayor and City Council**

**From:** **Mark D. Watkins, City Manager**
**Shana Epstein, Ventura Water General Manager**

**Subject:** **2014 Comprehensive Water Resources Report**

## RECOMMENDATION

It is recommended that the City Council:

a. Approve the 2014 Comprehensive Water Resources Report.

b. If desired, provide policy direction to meet long-term water supply and demand beyond the five-year planning horizon outlined in the report.

## COUNCIL PRIORITIES

This program supports the City Council's goal of:

- Delivering core services.

## PREVIOUS COUNCIL ACTION

On March 4, 2013, Council received the Draft 2013 Comprehensive Water Resources Report and directed the City Manager, Ventura Water and Community Development to work together to develop a short term balance of water supply and demand; a predictable use of data to serve pending and projected development over the next 5 years; provide a recommendation for long term water supply and demand policy; and return to Council in May with the final report.

On June 3, 2013 the City Council approved the 2013 Comprehensive Water Resources Report. In addition to approving the report the City Council directed staff to provide an annual update on the City's projected water supply and demand; and to use the local

Attachment 6

water land use demand factors for the evaluation of all development and the standardized "Water Demand Impact Summary" matrix to quantify the water supply demand of each individual project and the cumulative water supply demand of all approved projects.

## DISCUSSION

Understanding and monitoring our water supply and demand is essential to planning for and managing a stable and reliable water system to support our community and economic growth. Our supply and demand plays an important role and dramatically influences the planning for, development of and investment of significant dollars in capital improvements, maintaining our current water supply and investing in new water supplies. Council approved the 2013 Comprehensive Water Resources Report (2013 CWRR) in June 2013 and directed staff to provide an annual update on the City's projected water supply and demand.

Below is the summary of the most current and best information available on our water supply and demand.

| Projected | 2015 Drought (AFY) | 2015 (AFY) | 2020 (AFY) |
|---|---|---|---|
| Supply | 14,846 – 16,846 | 19,560 – 20,960 | 19,767 – 23,667 |
| Demand* | 17,660 | 17,660 | 18,428 |
| **Available Supply** | **(2,814) – (814)** | **1,900 – 3,300** | **1,339 – 5,239** |

**Demand equals baseline 5 year average (17,343 AF) plus the estimated demand from 350 units built annually from the approved projects list for future years.*

As shown in the table above, the projected 2015 drought water supply numbers are less than the projected water demand numbers. This indicates that if the current drought condition continues, the City will need to go into mandatory conservation measures and/or pay penalties for overuse of the City's water supply sources.

Changes from the 2013 CWRR to the 2014 CWRR are summarized below.

### Baseline Demand

The baseline water demand of 17,601 acre feet (AF) in the 2013 CWRR was established utilizing the past 5-year City annual average. The baseline water demand for the 2014 CWRR is 17,343 AF a decrease of approximately 260 AF. This decrease can mainly be attributed to a low calendar year 2013 water demand that decreases the five year average, the prolonged economic downturn, and increased water rates.

## Supply

The 2013 CWRR water supply numbers were revised in the 2014 CWRR to reflect changes to the City's existing supply sources that have come up over the past year including the current drought condition and the projection of the drought through 2015. The water supply source revisions are due to the following water supply issues:

- Casitas: A reduction in the amount of available water from Lake Casitas due to the current drought. Lake Casitas is currently below 60% capacity and is anticipated to reach 50% by this fall. Once Lake Casitas reaches 50% Casitas is anticipated to require a cutback in the City's supply. We have included an anticipated required reduction of 10% to our Casitas supply for the projection of the current drought through 2015.

- Ventura River/Foster Park: Due to the continued drought conditions, the City's ability to draw water from the Ventura River has been significantly impacted. We have included a lower range to reflect the minimum supply anticipated from the Ventura River for the projection of the current drought through 2015.

- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer): After several special meetings in the past two months and several iterations of an emergency ordinance, the Fox Canyon Groundwater Management Agency (FCGMA) Board approved Emergency Ordinance E at a Special Meeting on April 11, 2014. The emergency ordinance limits extractions from groundwater extraction facilities within the FCGMA boundary, suspends use of credits and prohibits the construction of any groundwater extraction facilities and/or the issuance of any groundwater extraction facilities permit. By January 1, 2016, the City will be restricted to 305 AF less (3,799 AF) than the City's current allocation of 4,104 AF and during the duration of the ordinance the City will pay surcharges for exceeding because the City may not rely on its conservation credits that were set aside during wet years.

- Santa Paula Groundwater Basin (Santa Paula Basin): The low range has been increased from zero to the current reliable water supply of 1,600 acre feet based on recent agreements and studies underway. In addition, the City recently acquired 5.8 acre feet of groundwater rights in the Santa Paula Basin from the past development of Tract 4632.

## IMPACTS

There are no financial impacts to receiving the report at this time. The ongoing tracking of water supply and demand will be absorbed by Ventura Water staff. The proposed tracking system will facilitate these efforts.

**ALTERNATIVES**

The City Council could choose to:

- Direct staffs to provide additional information, modify the demand factors, and/or revise the report.

Prepared by Susan Rungren, Ventura Water Principal Engineer for

for CM Rodriguez
Shana Epstein
Ventura Water General Manager

Reviewed as to fiscal impacts

for CM Rodriguez
Jay Panzica
Chief Financial Officer

FORWARDED TO THE CITY COUNCIL

Mark D. Watt
City Manager's Office

ATTACHMENT

A. 2014 Comprehensive Water Resources Report

**ATTACHMENT I**

**VBG CONFIRMATION LETTER,**
**VENTURA WATER SYSTEM – ALTERNATIVE 4,**
**DATED SEPTEMBER 19, 2014**

VENTURA BOTANICAL
GARDENS

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Madhu Bajaj

September 18, 2014

Dave Ward, AICP
Community Development Planning Manager
City of Ventura
501 Poli Street
Ventura, CA 93001

Re: Ventura Botanical Gardens Water System

Dear Dave,

Per our meeting on September 12. 2014 this letter serves as official notification of the Ventura Botanical Gardens (VBG) proposed water system alternatives. VBG is basing this proposed direction on the August 26, 2014 draft evaluation of alternatives created by RBF consulting which is attached for your use and will be referenced further in the discussion below.

**Discussion of Estimated Water Demand**

VBG worked with RBF to develop data included in the analysis including development of the likely future irrigated areas of the project as discussed in the report and summarized in Table 2 and Table 3. The likely future building areas included in the analysis appear to align with the areas provided in the VBG application for a CUP in September 2012.

While the projected areas of irrigation are accurately represented, in the opinion of VBG the water demand for that category of water use appears to be significantly inflated above the probable actual usage.

There are several reasons VBG believes the projected irrigation water use is too high:

- As stated in the VBG project description and master plan, VBG proposes to install and utilize a water well in future phases to replace or reduce the use of potable water sources for irrigation.

- The analysis uses a model that assumes that the rate of irrigation use by VBG would emulate standard "Park/Landscape" standards (RBF Page 5). Unlike parks and other generalized landscapes, VBG will not be irrigating on a constant and continuous basis. While the first year or two in the life of each

Ventura Botanical Gardens, Inc. • P.O. Box 3127 • Ventura, CA 93006-3127
Ventura Botanical Gardens, Inc. is a 501(c)3 Public Benefit Corporation. Tax ID #20-8416864
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new garden area at VBG might approach the demand factors of an ordinary "Park/Landscape", VBG's living collections will be selected to ensure that only plants suitable to the climate region are installed throughout the gardens. After a year or two of irrigation to establish these plantings, it is anticipated that the gardens will be able to survive, and perhaps thrive, with minimal or no irrigation necessary.

- The analysis does not take into account the proposed use of storm water cisterns that VBG intends to install in future phases on the property. Preliminary analysis estimates that VBG could capture 240,000 gallons or more per year that would be recirculated as irrigation for the gardens.

Having highlighted the overly conservative assumptions in the water use model, VBG acknowledges that, for the purposes of CEQA evaluation, some basis of analysis must be used. Therefore, since a well-crafted model for the specific proposed use does not exist, VBG will accept the extreme worst case "Park/Landscape/Irrigation" land use category that the water use model has derived. VBG's objective is to use far less water than the model predicts and we are confident that future data about our actual use will confirm our commitment to this goal.

VBG agrees with the use of the "Commercial/Retail/Hotel" and "Public/Institutional" land use categories for water demand in the proposed buildings (RBF Page 6).

**Proposed Water Strategy**

The RBF analysis describes a two pronged approach to providing a viable water system at VBG. The report envisions a water service for the early stages of VBG Phase 1 that would be provided by connection of service to the 260 pressure zone (RBF Pages 9, 10, and 20). VBG concurs with that recommendation and proposes to execute that strategy.

In addition, to encompass the long term water supply needs of VBG, the RBF analysis evaluates seven additional alternatives. Of those alternatives, VBG proposes to implement Alternative No. 4 (RBF Pages 13-15, and 22; and Exhibits 4A & 4B).

The RBF analysis of Alternative No. 4 was conducted as if water storage in the adjacent 605 Zone was already operating at full capacity. However, as noted in the report (RBF Page 15), there appears to be excess capacity in the existing system. VBG therefore requests that the City share the potable water storage that is available in the existing Kalorama Tanks. The result could allow the City to keep both existing tanks in services year-round rather than shutting one down each year. Such an agreement would also mean that further disruptive construction and additional expense to VBG (perhaps as much as $1.2 million) could be avoided.

VBG also requests approval to make the conversion of the portion of the 260 Zone to 605 Zone as described in the last paragraph on RBF Page 14 and on RBF Exhibit 4A during Phase 1. With that modification in place VBG would have irrigation water at sufficient pressure to reach the portions of the Chilean and other Phase 1 garden elements that are at elevations beyond the reach of the 260 Zone. A review of Table 11 – Water Storage Phasing on Page 14 of the RBF analysis indicates that,

with City approval to share the existing Kalorama Tanks, the calculated time when additional capacity may be needed is prior to the start of Phase 5 (0.16 < 0.18 MG). As discussed above, believes that the extrapolation of water use is much higher than it will actually be, so it is quite possible that additional storage may never be needed or may be much less than calculated. In any case, since Phase 5 begins in 2027, there will be ample time to monitor the actual use and gauge when /whether additional storage is actually needed.

In the spirit of CEQA's bias toward anticipating worst case scenarios, and though we hope that the City will help us avoid unnecessary additional construction and cost by allowing use of the 605 Zone without immediate storage increase, VBG recognizes that it would be prudent to remain on track with our current approval schedule.

Therefore we suggest that the analysis continue forward at this time by analyzing the future water system as if all impacts of Alternative No. 4 will be necessary.

As discussed at our meeting on September 12th, this letter is being submitted to you as the point of distribution for all City departments having an interest in the contents and it constitutes the start of formal review by Ventura Water of the draft report by RBF and VBG's request for shared use of the Kalorama Tanks.

As always, thank you for your hard work on this review. If there are questions or clarification that you believe we can assist with, please don't hesitate to contact me.

Sincerely,

Doug Singletary, AIA
Board Member
Ventura Botanical Gardens