AGENDA TRANSMITTAL

MEETING DATE: September 16, 2014

CITY AGENDA ITEM: PUBLIC HEARING - Zephyr Estates Development Project:

a. City Council Adoption of Resolution No. 2014-___: Approving General Plan Amendment No. GP 13/14-001, Re-Designating APN 0174-120-230 from 6 Acres of General Commercial and 2.6 Acres of High-Density Residential to 7.1 Acres of Medium Density Residential and 1.5 Acres of General Commercial for the Zephyr Estates Project.

b. City Council Waiver of Reading and Introduction of Ordinance No. ____: Amending the Suisun City Zoning Map for APN 0174-120-230 to Rezone the Property to 7.1 Acres of Residential Medium Density (RM) and 1.5 Acres of General Commercial (GC) for the Zephyr Estates Project.

c. City Council Adoption of Resolution No. 2014-___: Approving Tentative Subdivision Map No. SM 13/14-001 Creating a Total of 59 Residential Lots and a 1.5 Acre General Commercial Parcel, Planned Unit Development No. PD 13/14-001 Providing Deviations from Zoning Regulations in the Medium Density Residential Zoning District, and Site Plan/Architectural No. 13/14-005 APN 0174-120-230.

d. City Council Adoption of Resolution No. 2014-___: Accepting the Mitigation Monitoring and Reporting Program, Exhibit A, and Adopting a Mitigated Negative Declaration for the Zephyr Estates Project.

FISCAL IMPACT: The Project Sponsor is required to offset increased municipal service costs, including but not limited to: police services, fire services, landscape and facilities, storm drainage, and recreation through a variety of financial programs. These programs include, but are not limited to: park fees, impact fees, and annexation to a Community Facilities District No. 2. The project is required to upgrade existing facilities, construct new roadways, and offset other agencies costs to serve the development. The Project Sponsor/Developer is required to pay for and implement all mitigation measures associated with the project.

Staff has prepared the table on the following page, which provides an estimated breakdown of ongoing and one-time revenues that are estimated to be generated by the project that would offset basic City services funded by the General Fund, as well as public improvements such as: streets, streetlights, drainage, police, fire, general government, etc. These services and improvements would be funded by both the residential, as well as the commercial components of the project. Overall the General Fund would receive one-time revenues of about $235,500 to $259,300, and ongoing revenues of about $127,500 to $168,400 per year to offset the costs of services. In addition, between $677,000 and $695,600 would be generated for public improvements.

PREPARED BY: John Kearns, Associate Planner
REVIEWED/APPROVED BY: Suzanne Bragdon, City Manager

ESTIMATED FISCAL IMPACT OF ZEPHYR ESTATES PROJECT

REVENUE TYPE	COMMERCIAL		RESIDENTIAL		TOTAL	
Assumed Project	17,000 sq. ft.		59 units			
Ongoing Revenues	**Low**	**High**	**Low**	**High**	**Low**	**High**
Property Taxes	$ 5,200	$ 5,700	$ 28,800	$ 31,200	$ 34,000	$ 36,900
Sales Taxes	$ 34,000	$ 72,000	$ -	$ -	$ 34,000	$ 72,000
CFD No. 2	$ 13,300	$ 13,300	$ 46,200	$ 46,200	$ 59,500	$ 59,500
Subtotal Ongoing	**$ 52,500**	**$ 91,000**	**$ 75,000**	**$ 77,400**	**$ 127,500**	**$ 168,400**
One-Time Revenues						
Building Permits	$ 15,500	$ 19,300	$ 220,000	$ 240,000	$ 235,500	$ 259,300
Impact Fees	$ 53,000	$ 71,600	$ 624,000	$ 624,000	$ 677,000	$ 695,600
Subtotal One-Time	**$ 68,500**	**$ 90,900**	**$ 844,000**	**$ 864,000**	**$ 912,500**	**$ 954,900**

The impacts of not approving the project would include: loss of revenue (permit, impact, and CFD fees), additional costs for the applicant to redesign the project (and the cost and time of updating the environmental work for the project), and not being able to immediately develop a key parcel within the existing city limits.

BACKGROUND: As a part of the Peterson Ranch Development Agreement, the site at the corner of East Tabor and Walters Road was intended for a mix of General Commercial and High-Density Residential. However, the site could not move forward until the Aero Club was relocated, which occurred in 2006. The Development Agreement has since expired and the site been made available for development. The subject application was initiated in late 2013, following City Council consideration of the Revenue-Based Land Use Policy in September 2013. At the meeting, a number of conditions were approved to facilitate viable commercial development compatible with the existing residential neighborhood. These are presented more fully under the Revenue-Based Land Use Policy discussion below, which includes 1.5 acres of neighborhood-serving commercial, as well as the balance of single-family residential housing.

At the Planning Commission's regular meeting of July 22, 2014, a public hearing was held on the development project and the Planning Commission chose to add the following two additional conditions of approval:

1. Applicant shall replace all existing shared fences that abut to the project; and
2. Applicant is responsible for obtaining all necessary permits and approval from the City of Fairfield.

At the conclusion of the public hearing, the Commission voted 6-0 recommending City Council approval of the project.

The project was scheduled for a Public Hearing before the City Council on August 19, 2014, but following distribution of the packet staff was notified by the Airport Land Use Commission (ALUC) staff that the City Council could not take action until the ALUC had done so first. Thus the item was continued to allow the ALUC to consider the project at their September 11, 2014 meeting.

STAFF REPORT:

Project Description

Schwartz Land Development Company is proposing to subdivide the property located at the southeast corner or E. Tabor Avenue & Walter Road into 59 single-family residential lots and a commercial parcel of 1.5 acres.

The project site is located in Solano County, within the incorporated area of the City of Suisun City. The property is adjacent to Walters Road to the west, E. Tabor Avenue to the north, Charleston Street to the east, and Carswell Lane to the south. The site is approximately 8.6 acres in size and is currently undeveloped. The site is adjacent to single-family residential homes to the south and east, and a Jehovah's Witness facility to the north. The topography of the site is relatively flat with a slight downslope from east to west.

The residential lots are proposed to range in size from approximately 3,000 square feet to 6,000 square feet. Houses are anticipated to be two stories and approximately 2,000 square feet in size. The project proposes multiple accesses off of existing roadways. The main access into the residential portion of the property is proposed via E. Tabor Avenue with additional access via Charleston Street and Carswell Lane. Access to the commercial parcel is anticipated via E. Tabor Avenue and a right turn in / right turn out access via Walters Drive. The existing zoning and General Plan designation on the property allows for approximately 6 acres of General Commercial and 2.6 acres of multi-family residential. The project proposes one commercial parcel of 1.5 acres and the remainder of the site consisting of 59 single-family residential homes.

The commercial portion of the project is located at the northwest corner of the site with the highest visibility. The commercial area is expected to yield approximately 14,000 – 17,000 square feet, based on parking ratios between 1:250 S.F. and 1:300 S.F. Upon issuance of a grading permit for the project, the developer has agreed to install a "Welcome" monument sign on the site near the corner of Walters/E. Tabor intersection. Additionally, to keep the commercial parcel aesthetically pleasing prior to development, the perimeter of the site will be landscaped and the remainder of the site covered with hydro-seed. If a commercial project has not commenced within two years of grading permit issuance, the developer has agreed to transfer the 1.5 acre commercial parcel to the City. Further details are outlined in Resolution No. 2013-52, passed and adopted by the City Council on September 3, 2013.

The following land use applications are included for the project:

- **Tentative Subdivision Map** – To subdivide the property into 60 lots (59 residential lots and 1 commercial lot).
- **General Plan Amendment & Rezone** – To allow for approximately 7.1 acres of single-family residential and 1.5 acres of commercial.
- **Planned Unit Development** - To allow flexibility to the City standard, including but not limited to minimum lot sizes, lot frontage, building setbacks, etc.
- **Site Plan/Architectural Review** - To generally identify potential floor plans, elevations and perspectives, as well as general design standards related to materials.

Required Permits

The City of Suisun City requires a Rezone (RZ), General Plan Amendment (GPA), Tentative Subdivision Map (TSM), Site Plan/Architectural Review Permit (SP/AR) and Planned Unit Development (PUD) Permit for this project.

The existing Zoning and General Plan designation on the property allows for approximately 6 acres of General Commercial and 2.6 acres of multi-family residential. The project proposes one commercial parcel of 1.5 acres and the remainder of the site consisting of 59 single-family residential homes. The Planning Commission has made a recommendation to the City Council regarding the Rezone ordinance and General Plan Amendment. The City Council must now take action.

The Tentative Subdivision Map shows all lot and roadway configurations with site characteristics and context. Sections 66452-66455.9 of the Government Code "Subdivision Map Act: Tentative Maps" and Title 17 Article II "Subdivisions" of the City of Suisun City Municipal Code govern are determined to be necessary for the preservation of the public health, safety and general welfare, and for the promotion of orderly growth and development. The Planning Commission has made a recommendation to the City Council for the requested entitlements. The City Council must now take action.

A Site Plan/Architectural Review Permit is required in the RS, RM and RH districts where two or more dwelling units are proposed to be constructed on the same lot or on separate lots which are controlled by the same owner or developer. This permit allows the reviewing body to evaluate the aesthetics of the project and confirm consistency with surrounding properties. Entitlement of the commercial site will require a separate Site Plan/Architectural Review Permit when such a project is brought forward in the future. The Planning Commission has made a recommendation to the City Council for the requested entitlements. City Council must now take action.

The PUD permit is designed and intended to provide for the orderly development of land in conformance with the comprehensive scheme contemplated by the land use element and other elements of the City's General Plan. The permit allows a flexible design approach to the establishment of a community environment equal to or better than that resulting from the application of the minimum standards of Section 18.63 et seq. of the City's Zoning Ordinance. The permit is designed and intended to accommodate various types of development including residential developments. The Planning Commission has made a recommendation to the City Council for the requested entitlements. City Council must now take action.

Below is a table which identifies particular exceptions that are being requested by the applicant:

Table 1: Proposed Development Standards-Zephyr Estates

Proposed Development Standards		
Project Activity	**Zoning Standard**	**Proposed Standard**
Parking Requirements: Single-Family Homes	2 parking spaces per unit, 1 of which is within a garage or carport	2 parking spaces per unit, 1 of which is within a garage or carport
Building Height Main dwelling unit Accessory buildings	 35' 15'	 35' 15'
Lot Width	100'	*40'*
Lot Depth	Maximum: 3 times width	*Minimum: 50'* *Maximum: 130'*
Setbacks (to Exterior Wall): Front yard (minimum) Side Yard (minimum) Rear Yard (minimum)	 20' 15' total, 5' one side 15'	 **20'* *5'* *10'*
Min. distance between buildings	10'	10'
Minimum Land Area	4000 S.F.	3000 S.F.
Lot Coverage	N/A	70% Maximum

**Front Yard setback may be reduced to 10' for Lots 49-52 & 55*

Revenue-Based Land Use Policy

In July 2006, the City Council adopted a Revenue Based Land Use Policy (the "Policy") for projects requiring a general plan amendment and rezoning of commercial zoned lands for alternative development scenarios. It was adopted with the intent to foster development activity by providing significant flexibility to developers and the City by providing guidelines to work together to meet the broad interests of the community, including the long-term fiscal health of the City of Suisun City.

The Policy provides the following guidelines:

- Applied to development proposals that require a General Plan Amendment and change in current Zoning Designation of commercially zoned lands to non-commercial uses, which will be considered on a case-by-case basis.
- Comparison of revenue generated by a proposed project relative to a development scenario developed in a study prepared by Applied Development Economics ("ADE") input into revenue model developed by ADE (the "ADE Fiscal Model" that was created as part of the Policy).
- Components to a proposed development that provide "value" to the City, however not necessarily in terms of revenue generation (i.e. land bank/swap/credit, fire station site, retail synergy, etc.) will be considered. These "value" components could be provided in lieu of perceived revenue generation shortfalls.

At the September 3, 2013 City Council meeting, the Council adopted a resolution determining whether a combination of land uses were consistent with the Revenue-Based Land Use Policy subject to the below conditions:

1. The proposed land use for the 8.6-acre site located at the southeast corner of Walters Road and East Tabor Avenue (APN 0174-120-230) is for a not less than 1.5-acre developable commercial parcel (the "Commercial Parcel") at the northwestern most portion of the site, with the remainder of the site single-family residential.
2. The Developer shall cause the Commercial Parcel to be transferred to the City (or other entity as designated by the City) not later than the second anniversary of the date a grading permit is issued if a commercial project has not commenced.
3. At any point at which the Developer desires to convey title to the Commercial Parcel, Developer shall present the proposed conveyance to the Revenue-based Land Use Ad Hoc to ensure that the proposed conveyance is consistent with the intent of the Revenue-based Land Use Policy.
4. In order to eliminate potential for blight on the vacant Commercial Parcel and to create an aesthetically pleasing entryway to Suisun City until a commercial project is commenced, Developer agrees to commence with the following improvements upon issuance of a grading permit:
    a. Developer shall acquire all necessary approvals and shall install a "Welcome" monument sign at the northwestern corner of the site.
    b. If a commercial project has not commenced, Developer shall proceed with the landscaping of the commercial site, consisting of ground cover and shrubbery around the perimeter of the site on Walters Road and East Tabor Avenue, with necessary irrigation, and the remainder of the site covered with hydro-seed.
    c. The aforementioned signage and landscaping improvements shall be completed within 6-months of the issuance of a grading permit and must be completed prior to a conveyance of the commercial parcel to the City (or other entity as designated by the City).

In preparation of the staff report, staff has proposed some relatively minor changes to these conditions which can be found in the Conditions of Approval under RBLU 1-4 for purposes of clarity.

Mitigated Negative Declaration

An Initial Study and Mitigated Negative Declaration have been prepared according to Title 14 California Code of Regulations Chapter 3 Guidelines for Implementation of California Environmental Quality Act Section 15070. Staff completed an initial study and subsequently determined that a Mitigated Negative Declaration was the appropriate environmental document to prepare. As part of the environmental document, staff is proposing 20 mitigations which can be found as an exhibit to the environmental resolution. In addition to the Mitigated Negative Declaration that is provided, other environmental reports prepared for the project can be found at http://www.suisun.com/zephyr-estates/.

Comments Received

At the time of publication of this report, staff has received a comment letter from the California Public Utilities Commission (CPUC), City of Fairfield, and Solano County Mosquito Abatement District which are attached, as well as both written and oral questions and concerns from nearby residents. Comments received from nearby neighbors have included topics related to:

- Shared fencing with existing residents.
- Potential of sound wall on East Tabor Avenue.
- Use of the commercial parcel.
- Civil improvements.
- Traffic/Circulation improvements.
- Aesthetics.
- Air Quality mitigation measures.

Proposed Conditions of Approval

Conditions of approval are included as an exhibit to the entitlement resolution. The conditions are provided alphabetically by department or subject matter. The conditions added at the Planning Commission meeting have been included in the entitlement resolution as well.

STAFF RECOMMENDATION: Staff recommends that the City Council:

1. Open the public hearing and take public comment; and
2. Close the public hearing; and
3. Adopt Resolution No. 2014-___: Approving General Plan Amendment No. GP 13/14-001, Re-Designating APN 0174-120-230 from 6 Acres of General Commercial and 2.6 Acres of High Density Residential to 7.1 Acres of Medium Density Residential and 1.5 Acres of General Commercial for the Zephyr Estates Project; and
4. Waive Reading and Introduce of Ordinance No. ____: Amending the Suisun City Zoning Map for APN 0174-120-230 to Rezone the Property to 7.1 Acres of Residential Medium Density (RM) and 1.5 Acres of General Commercial (GC) for the Zephyr Estates Project; and
5. Adopt Resolution No. 2014-___: Approving Tentative Subdivision Map No. SM 13/14-001 Creating a Total of 59 Residential Lots and a 1.5 Acre General Commercial Parcel, Planned Unit Development No. PD 13/14-001 Providing Deviations from Zoning Regulations in the Medium Density Residential Zoning District, and Site Plan/Architectural No. 13/14-005 APN 0174-120-230; and
6. Adopt Resolution No. 2014-___: Accepting the Mitigation Monitoring and Reporting Program, Exhibit A, and Adopting a Mitigated Negative Declaration for the Zephyr Estates Project.

ATTACHMENTS:

1. Resolution No. 2014-___: Approving General Plan Amendment No. GP 13/14-001, Re-Designating APN 0174-120-230 from 6 Acres of General Commercial and 2.6 Acres of High Density Residential to 7.1 Acres of Medium Density Residential and 1.5 Acres of General Commercial for the Zephyr Estates Project.

2. Ordinance No. ____: Amending the Suisun City Zoning Map for APN 0174-120-230 to Rezone the Property to 7.1 Acres of Residential Medium Density (RM) and 1.5 Acres of General Commercial (GC) for the Zephyr Estates Project.
3. Adopt Resolution No. 2014-___: Approving Tentative Subdivision Map No. SM 13/14-001 Creating a Total of 59 Residential Lots and a 1.5 Acre General Commercial Parcel, Planned Unit Development No. PD 13/14-001 Providing Deviations from Zoning Regulations in the Medium Density Residential Zoning District, and Site Plan/Architectural No. 13/14-005 APN 0174-120-230.
4. Adopt Resolution No. 2014-___: Accepting the Mitigation Monitoring and Reporting Program, Exhibit A, and Adopting a Mitigated Negative Declaration for the Zephyr Estates Project.
5. Application materials.
6. Initial Study/MND.
7. Comment letters received.

RESOLUTION NO. 2014-____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUISUN CITY APPROVING GENERAL PLAN AMENDMENT NO. GP 13/14-001, RE-DESIGNATING APN 0174-120-230 FROM 6 ACRES OF GENERAL COMMERCIAL AND 2.6 ACRES OF HIGH DENSITY RESIDENTIAL TO 7.1 ACRES OF MEDIUM DENSITY RESIDENTIAL AND 1.5 ACRES OF GENERAL COMMERCIAL FOR THE ZEPHYR ESTATES PROJECT

WHEREAS, the City Council at its regular meeting of September 16, 2014, held a public hearing to review GP 13/14-001, for the Schwartz Development Company; and

WHEREAS, the City Council at its regular meeting of August 19, 2014, held a public hearing to review GP 13/14-001, for the Schwartz Development Company; the item was continued to September 16, 2014; and

WHEREAS, the Planning Commission at its regular meeting of July 22, 2014, held a public hearing to review GP 13/14-001, for the Schwartz Development Company, and recommended to the City Council approval of GP 13/14-001; and

WHEREAS, notice for the City Council's public hearing was published in the Daily Republic on August 9, 2014, and notices were mailed to individual property owners within 300 feet on August 8, 2014; and

WHEREAS, the Staff, Applicant, City of Suisun City, and members of the public were present to speak on GP 13/14-001 – Zephyr Estates Project; and

WHEREAS, approval of this general plan amendment application by the City Council would re-designate the property know as APN 0174-120-230, containing approximately 8.60 acres, from its existing (GC) General Commercial (6 acres) and (RH) High-Density Residential (2.6 acres) zoning districts to (GC) General Commercial (7.1 acres) and (RM) Medium Density Residential (7.1 acres) zoning district; and

WHEREAS, the City Council of the City of Suisun City made the following findings based on evidence presented at the Public Hearing by City Staff:

1. That the public hearing was held in accordance with State requirements.
2. That the General Plan Amendment is consistent with the Goals, Objectives, and Policies of the General Plan and Zoning Ordinance.
3. That the General Plan Amendment will not be detrimental to the public health, safety, and general welfare.
4. That a Mitigated Negative Declaration of Environmental Impact for this action and the development project has been prepared and public notice provided according to the requirements of CEQA. The Mitigated Negative Declaration has been reviewed and considered by the Planning Commission along with other pertinent information regarding this project and the Commission recommended City Council adoption of the Mitigated Negative Declaration.

5. That the mitigation measures will be incorporated into the proposed project, and are to be expressed as conditions of approval as they apply to the proposed project.
6. That a reasonable and feasible Mitigation Monitoring and Reporting Program was prepared to assure implementation of the mitigation measures during the development of the project.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Suisun City hereby approves of GP 13/14-001 for the Schwartz Development Company, and directs Staff to update the existing City of Suisun City General Plan Map to reflect 7.1 acres of Medium Density Residential and 1.5 acres of General Commercial land use designations for APNs: 0174-120-230, as shown in Exhibit A.

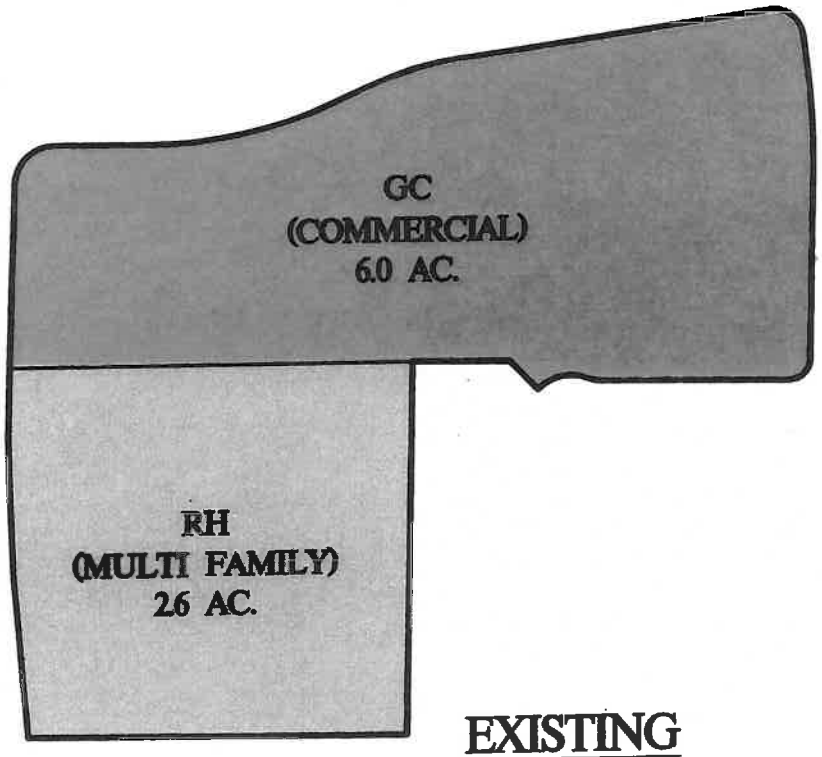
PASSED AND ADOPTED at the Regular Meeting of the City Council of the City of Suisun City duly held on Tuesday, the 16th day of September 2014 by the following vote:

AYES:	Councilmembers:	_____
NOES:	Councilmembers:	_____
ABSENT:	Councilmembers:	_____
ABSTAIN:	Councilmembers:	_____

WITNESS my hand and the seal of the City of Suisun City this 16th of September, 2014.

_____
Linda Hobson, CMC
City Clerk

REZONE & GENERAL PLAN AMENDMENT EXHIBIT



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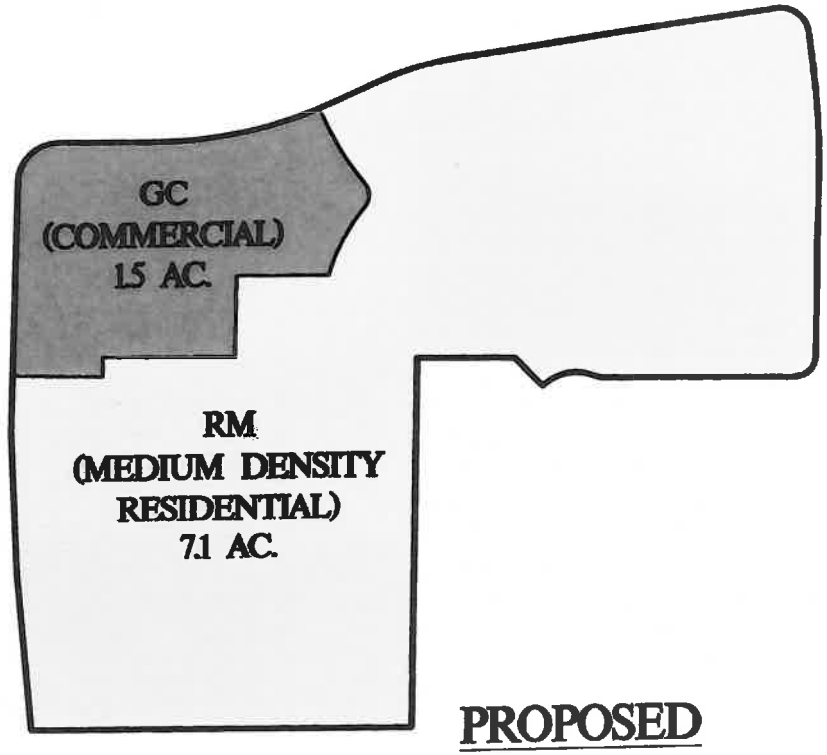

PROPOSED

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Zephyr Estates

Schwartz Land Development Company

JULY 16, 2014

ITEM 1
Attachment

ORDINANCE NO. ____

ITEM 12
Attachment 2

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SUISUN CITY, CALIFORNIA, AMENDING THE SUISUN CITY ZONING MAP FOR APN 0174-120-230 TO REZONE THE PROPERTY TO 7.1 ACRES OF RESIDENTIAL MEDIUM DENSITY (RM) AND 1.5 ACRES OF GENERAL COMMERCIAL (GC) FOR THE ZEPHYR ESTATES PROJECT

WHEREAS, the City Council at their regular meeting of September 16, 2014, held a public hearing to review RZ 13/14-002, for Schwartz Development Company, and approved RZ 13/14-002 an Ordinance rezoning and amending the Suisun City Zoning Map to 7.1 acres RM and 1.5 acres GC; and

WHEREAS, the City Council at their regular meeting of August 19, 2014, held a public hearing to review RZ 13/14-002, for Schwartz Development Company, and approved RZ 13/14-002 an Ordinance rezoning and amending the Suisun City Zoning Map to 7.1 acres RM and 1.5 acres GC; the item was continued to September 16, 2014; and

WHEREAS, the Planning Commission at its regular meeting of July 22, 2014, held a public hearing to review RZ 13/14-002, for Schwartz Development Company, and recommended to the City Council approval of RZ 13/14-002 and an Ordinance rezoning and amending the Suisun City Zoning Map to RM; and

WHEREAS, the Applicant, members of the public, and City staff were present to speak on RZ 13/14-002 – Zephyr Estates Project; and

WHEREAS, approval of the rezone application by the City Council would rezone the property known as APN 0174-120-230, containing approximately 8.60 acres, from its existing (GC) General Commercial (6 acres) and (RH) High-Density Residential (2.6 acres) zoning districts to (GC) General Commercial (7.1 acres) and (RM) Medium Density Residential (7.1 acres) zoning district; and

WHEREAS, notice for the City Council public hearing was published in the *Daily Republic* on August 9, 2014, and notices were mailed to individual property owners within 300 feet on August 8, 2014; and

WHEREAS, the City Council of the City of Suisun City made the following findings based on evidence presented at the Public Hearing by City staff:

1. That a mitigated negative declaration was prepared for the project and no significant environmental impacts were identified that could not be mitigated to a less than significant impact.
2. That the proposal will not conflict with the Goals, Objectives and Policies of the General Plan.
3. That the proposal will not be detrimental to the public health, safety or welfare of persons residing or working in the City, nor detrimental to properties or to the general welfare of the City.

THE CITY COUNCIL OF THE CITY OF SUISUN CITY does hereby ordain as follows:

PART 1. The City of Suisun City amends Title 18, Chapter 18.02, Section 18.02.010 Zoning Plan, of the City of Suisun City Municipal Code is hereby amended as follows:

Amend the Suisun City Zoning Map, Zoning Plan, for APN 0174-120-230 to 7.1 acres of Medium-Density Residential (RM) and 1.5 acres of General Commercial (GC) for the Zephyr Estates Development Project.

PART 2. If any section, subsection, subdivision, paragraph, sentence, clause of phrase of this Ordinance or any part thereof is for any reason held to unconstitutional, such decision shall not affect the validity of the remaining portion of this Ordinance or any part thereof. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, subsections, subdivisions, paragraphs, sentences, clauses, or phrases be declared unconstitutional.

PART 3. This Ordinance, amends the existing City of Suisun City Zoning Map to reflect 7.1 acres of Medium-Density Residential (RM) and 1.5 acres of General Commercial (GC) for APN 0174-120-230, as shown in Exhibit A, shall become effective thirty (30) days after the date of its adoption, and within fifteen (15) days after its adoption, it shall be published once, together with the names of the Council Members voting thereon, in a newspaper of general circulation within the City.

BE IT FURTHER ORDAINED that the City Council of the City of Suisun City hereby introduces and waives the reading of RZ 13/14-002 for the Zephyr Estates Development Project and directs staff to return to the City Council at its next regularly scheduled meeting for the adoption of the Ordinance.

_____

Pete Sanchez, Mayor

CERTIFICATION

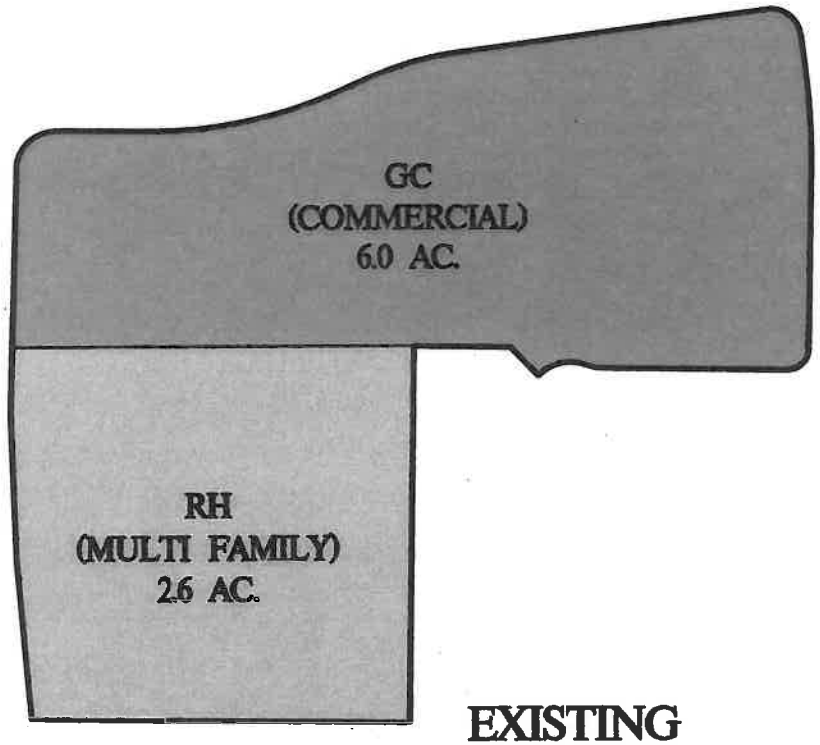
I, Linda Hobson, City Clerk of the City of Suisun City and ex-officio Clerk of City Council of said City, do thereby certify that the above and foregoing ordinance was regularly introduced at a meeting of said City Council held on Tuesday, September 16, 2014 and regularly passed and adopted at a regular meeting of said City Council held on Tuesday, October 7, 2014 by the following vote.

AYES:	Councilmembers:	_____
NOES:	Councilmembers:	_____
ABSENT:	Councilmembers:	_____
ABSTAIN:	Councilmembers:	_____

WITNESS my hand and the seal of the City of Suisun City this 7th of October, 2014.

_____
Linda Hobson, CMC
City Clerk

REZONE & GENERAL PLAN AMENDMENT EXHIBIT



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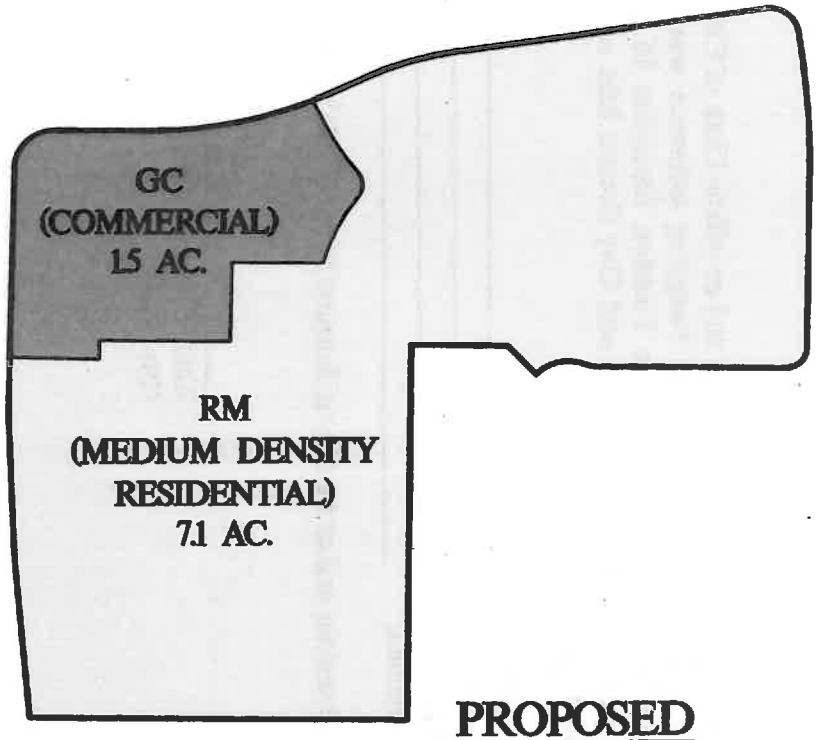

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TRUCKEE OFFICE:
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Zephyr Estates

Schwartz Land Development Company

JULY 16, 2014

RESOLUTION 2014-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUISUN CITY APPROVING TENTATIVE SUBDIVISION MAP NO. SM 13/14-001 CREATING A TOTAL OF 59 RESIDENTIAL LOTS AND A 1.5 ACRE GENERAL COMMERCIAL PARCEL, PLANNED UNIT DEVELOPMENT NO. PD 13/14-001 PROVIDING DEVIATIONS FROM ZONING REGULATIONS IN THE MEDIUM DENSITY RESIDENTIAL ZONING DISTRICT, AND SITE PLAN/ARCHITECTURAL REVIEW NO. 13/14-005 APN 0174-120-230

WHEREAS, the City Council held a Public Hearing on Tuesday September 16, 2014, to review and consider the development project known as Zephyr Estates: and said property is located east of Walters Road and south of East Tabor Avenue (APN 0174-120-230); and

WHEREAS, the City Council held a Public Hearing on Tuesday August 19, 2014, to review and consider the development project known as Zephyr Estates: and said property is located east of Walters Road and south of East Tabor Avenue (APN 0174-120-230); the item was continued to September 16, 2014; and

WHEREAS, the Planning Commission held a Public Hearing on Tuesday July 22, 2014, to review and consider the development project known as Zephyr Estates: and said property is located west of Walters Road and south of East Tabor Avenue (APN 0174-120-230); and

WHEREAS, notices for the City Council's public hearing were published in the *Daily Republic* on August 9, 2014, and notices were mailed to individual property owners within 300 feet on August 8, 2014; and

WHEREAS, the City Council of the City of Suisun City made findings recommending approval of the Tentative Subdivision Map No. SM 13/14-001, Planned Unit Development No. PD 13/14-001, and Site Plan/Architectural Review No. AR 13/14-005 through its adoption of Resolution No. 2014-_____, dated September 16, 2014; and

WHEREAS, the City Council of the City of Suisun City hereby makes the following findings:

1. Notice has been given in the time and in the manner required by State Law and Suisun City Code.
2. The proposed Tentative Subdivision Map, with the conditions of approval, is in conformity with both the intent and provisions of the Zoning Ordinance of the City of Suisun City Code of Ordinances.
3. The discharge from the proposed subdivision into the sewer system will not result in the violation of existing requirements prescribed by the City of Suisun City.
4. The site is physically suitable for the proposed type and intensity of development in that the approval process for Tentative Subdivision Map No. SM 13/14-001 provides sufficient opportunity to review the proposed development and ensure minimal impacts on surrounding properties.
5. The approval of Tentative Subdivision Map No. SM 13/14-001, creating 59 lots, will not be detrimental to the health, safety, peace, morals, comfort and general welfare of persons residing or working in the neighborhood in the proposed uses are similar to and compatible with neighboring uses in the area.

6. In conformance with Section 17.12.040 the City Council finds that the tentative subdivision map is in conformance to city general plan, policies, and ordinances and all elements of Title 18 Zoning with the approval of deviations to development standards as noted in the Preliminary Planned Development Permit No. PD 13/14-001 – Zephyr Estates.
7. The City Council further finds that findings requiring disapproval as codified under Section 17.12.050 do not exist.
8. The City of Suisun City Community Development Department has conducted an Initial Study on the proposed Zephyr Estates Project. The Initial Study on the above project was evaluated for a potential adverse impact on the environment and has concluded that no evidence exists that the project will have an adverse effect on the environment. The following documents were recommended for adoption through separate action and is herein referenced and included in this finding.
9. The proposed Project is consistent with the General Plan's policies for PUD's. The deviations to the Zoning Standards are for uses permitted, building site area, lot width and depth, yard setbacks, and useable open space. As a Planned Unit Development, the Project has provided a higher level of design than the City might otherwise have obtained for the site, as well as a high degree of certainty about that design. As a result, deviation from the strict requirements of the General Plan and Zoning Ordinance are justified under the General Plan's policies for PUD's.
10. The density of the residential project is most consistent with the Medium-Density designation in the General Plan.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Suisun City hereby approves Tentative Subdivision Map Application No. SM 13/14-001, Planned Unit Development No. PD 13/14-001, and Site Plan/Architectural Review No. 13/14-005 subject to this Resolution and as illustrated in Exhibit A - PUD Preliminary Development Plan Zephyr Estates, and Exhibit B - Conditions of Approval, attached hereto and by this reference incorporated herein.

PASSED AND ADOPTED at the Regular Meeting of the City Council of the City of Suisun City duly held on Tuesday, the 16th day of September, 2014 by the following vote:

AYES:	Councilmembers:	_____
NOES:	Councilmembers:	_____
ABSENT:	Councilmembers:	_____
ABSTAIN:	Councilmembers:	_____

WITNESS my hand and the seal of the City of Suisun City this 16th of September, 2014.

_____
Linda Hobson, CMC
City Clerk

EXHIBIT A

PUD Preliminary Development Plan
Zephyr Estates

1. **Zoning Ordinance:**

   Except as specifically modified by the provisions of this PUD Preliminary Development Plan, all applicable general requirements and procedures of the Suisun City Zoning Ordinance shall be applied to the land uses designated in the PUD district.

2. **Zoning & General Plan Land Use Designation:**

   - The current zoning & General Plan allows for 6.0 acres of General Commercial (GC) and 2.6 acres of multi-family housing (RH).
   - The proposed zoning & General Plan would allow for 1.5 acres of General Commercial (GC) and 7.1 acres of single-family housing (RM).

3. **Permitted Uses & Conditional Uses:**

   - Permitted Uses within the residential portion of the project are limited to single-family dwellings and associated accessory structures allowed within the Zoning Ordinance.
   - Refer to the Zoning Ordinance for Permitted Uses and Conditional Uses within the commercial portion of the project.

4. **Site Plan & Architecture:**

   - The commercial layout shown on the Site Plan is intended to be "conceptual" only. Site layout and architecture shall comply with the Zoning Ordinance.
   - Floor plans and architecture for the residential portion of the project are shown on Sheets A1 & A2. Substantial modifications shall be of equal or superior materials and design quality and approved by the Planning Director.

5. **Density:**

   - Single Family Zoning = 7.1 acres
   - 59 Residential Units
   - Approximate Density = 8.3 units/acre

6. **Phasing Plan:**

One Final Map is anticipated for this project and will subdivide the property into 59 residential parcels and 1 Commercial Parcel (1.5 acres). Build-out of individual homes is anticipated to be constructed in multiple phases, dependent upon economic conditions.

7. **Medium-Density Residential Development Standards & Deviations:**

The Development Standards for the proposed residential development are as follows:

Development Standards		
	Zoning Standard	**Proposed Standard**
Parking Requirements: Single Family Homes	2 parking spaces per unit, 1 of which is within a garage or carport	2 parking spaces per unit, 1 of which is within a garage or carport
Building Height Main dwelling unit Accessory buildings	 35' 15'	 35' 15'
Lot Width	100'	*40'*
Lot Depth	Maximum: 3 times width	*Minimum: 50'* *Maximum: 130'*
Setbacks (to Exterior Wall): Front yard (minimum) Side Yard (minimum) Rear Yard (minimum)	 20' 15' total, 5' one side 15'	 **20'* *5'* *10'*
Min. distance between buildings	10'	10'
Minimum Land Area	4000 S.F.	3000 S.F.
Lot Coverage	N/A	70% Maximum

**Front Yard setback may be reduced to 10' for Lots 49-52 & 55*

8. Parking & Loading:

- Residential: As shown in Table above.
- Commercial: Per Zoning Ordinance or as approved by Planning Commission.

9. Landscaping Plan:

Final Landscape Plan to be submitted and approved by Planning Director prior to issuance of Grading Permit.

EXHIBIT B -
ZEPHYR ESTATES CONDITIONS OF APPROVAL

COMMUNITY DEVELOPMENT

CD-1 The Community Development Director (or designated person) shall, in accordance with Section 18.63 of the Suisun City Municipal Code, review the Precise Development Plan for Planned Development Permit PUD13-001, Zephyr Estates Development Plan and when appropriate shall notify the applicant in writing that the Precise Plan is in compliance with the approved Preliminary Development Plan. Should the Precise Plan not be in compliance with the approved Preliminary Development Plan, the Community Development Director shall schedule a hearing before the City Council for their review and approval.

CD-2 No chain link fencing shall be utilized within the project, unless specified in the Mitigated Negative Declaration as a mitigation measure.

CD-3 The Community Development Director (or designated person) may approve minor modifications to the project and implement the project and mitigation measures as deemed appropriate.

CD-4 Prior to final map, the applicant, or applicant's successor shall submit landscape plans to the Community Development Department which comply with Title 20, Water-Efficient Landscaping, of the City of Suisun City Municipal Code.

CD-5 The residential project shall comply with the Suisun City Municipal Code by providing an area, outside of public view, for refuse containers.

CD-6 The applicant of his/her successor in interest shall provide the City with a deposit consistent with the adopted City fee schedule for Mitigation Monitoring and Reporting of all adopted mitigations for the project.

CD-7 Applicant shall replace existing wood fences of property owners that abut the Zephyr Estates Project.

DEVELOPMENT IMPACT FEES

DIF-1 Pursuant to the City of Suisun City Resolution No. 94-6 dated February 1, 1994, the project applicant or heirs shall pay fees as identified in the 1993 Update to Park Improvement Program and New Construction Fees and Off-Site Street Improvement Program dated December 30, 1993, or those fees in effect at the time of building permit issuance.

FAIRFIELD-SUISUN SEWER DISTRICT:

FSSD-1 The improvement plans shall be submitted to the Fairfield-Suisun Sewer District (District) for review and approval, with respect to work on the District facilities.

FSSD-2 The District's signature block shall be provided on title sheets of improvement plans containing District facilities. The signature block must be signed and

dated by the District prior to bid and/or commencement of construction of any District facilities.

FSSD-3 The improvement plans shall comply with the latest District standard specifications, standard details, design standards, standard General Notes, dewatering requirements, and regulations.

FSSD-4 Tie-in to the existing 18-inch sanitary sewer stub on East Tabor Avenue and to other District facilities shall require the preparation of a geotechnical report to identify conditions for dewatering, shoring, bedding materials, and so forth.

FSSD-5 The Applicant shall submit satisfactory evidence of insurance to the District. Also, the District, its officers, directors, agencies and employees shall be named as an additional insured. All insurance required of the Applicant and its contractors by the City of Suisun City shall be afforded to the District as well.

FSSD-6 Prior to commencing construction, submittals related to the District's facilities shall be submitted to the District for review and approval. Construction work involving these items and the District facilities shall not commence until the District has approved the submittals in writing.

FIRE

FD-1 Each unit must have fire sprinklers. This includes garage, attic, and concealed spaces. The system may be approved to run off the domestic water supply. If the domestic water supply is used the water meter must be rated to continuously support the fire sprinkler flow requirements. SID consultation and approval will be needed.

FD-2 Fire hydrants will be located by the Fire Department for best access and water supply.

FD-3 The eves of each unit shall be boxed.

FD-4 The outside materials shall be fire rated. Stucco or a fire rated hardy plank is recommended but other materials that have a high fire resistive rating may be considered, to the satisfaction of the Fire Department.

FD-5 The roofs shall have a non-combustible covering.

FD-6 Either a MAD or SID will be responsible for maintenance and testing of the public water system.

FD-7 Prior to building permit issuance, applicant shall obtain approval from the Fire Department for a parking plan, including enforcement provisions, for all private roads, permanent or temporary, to be constructed as part of the project.

GENERAL

G-1 The applicant or applicants successor in interest shall indemnify, defend and hold harmless the City of Suisun City it's agents, officers, and employees from any and all claims, actions or proceedings against the City of Suisun City, its agents, officers, and employees to attach, set aside, void or annul, any approval by the City of Suisun City and its advisory agency, appeal board, or legislative body concerning this application which action is brought within applicable statutes of limitations. The City of Suisun City shall promptly

notify the applicant or applicant's successor in interest of any claim or proceedings and shall cooperate fully in the defense. If the City fails to do so, the applicant or applicant's successor in interest shall not thereafter be responsible to defend, indemnify or hold the City harmless. This condition may be placed on any plans, or other documents pertaining to this application

G-2 All improvements shall comply with local, state and federal laws, regulations and codes.

G-3 The provisions of the Mitigation Monitoring and Reporting Program as recommended by Planning Commission Resolution No. 2014-____ dated _____, 2014 are incorporated as conditions of project approval.

G- 4 The applicant or applicant's successor in interest shall fund and be responsible for the implementation of all conditions relating to the Zephyr Estates Development Project including but not limited to the conditions established for the Tentative Subdivision Map and Preliminary Development Plan Approval, and the Mitigation Monitoring and Reporting Program.

G-5 During construction of this project, a designated contact person with phone number shall be posted on the project site.

G-6 Applicant shall apply for and obtain any and all necessary approvals from the City of Fairfield.

G-7 All development shall comply with the Travis Air Force Base Land Use Compatibility Plan compatibility policies and criteria.

PUBLIC WORKS

PW-1 All work performed shall conform to these conditions as well as to all City ordinances, rules, standard specifications and details, design standards, and any special requirements imposed by the City Engineer. The Public Works Department will provide inspection to ensure conformance. Any deviation from the aforementioned documents shall require review and written approval by the City Engineer. Deviations or exceptions to the design requirements in the listed documents for private improvements must be identified in the design guidelines, or submitted to the City Engineer for approval.

PW-2 As a condition to Final Map approval, the applicant shall agree, with respect to all property covered by the Final Map, to either establish a community facilities district (CFD) or annex such property to an existing community facilities district, as deemed appropriate by the applicant and the City, for the purpose of financing the cost of providing the following public services to the property: police; fire; paramedical; and maintenance of parks, parkways and open space (landscaping), street lighting, and storm drains. The rate and method of apportionment of special tax applicable to the property shall establish a special tax designed to offset public services per City Council Resolution 2005-70. The City shall not be obligated to issue certificates of occupancy with respect to the property until formation of the new community facilities district or annexation to an existing community facilities district is completed.

PW-3 The Public Works Director may approve and/or negotiate minor changes or exceptions to Public Works Department conditions of approval.

PW-4 The Applicant shall designate a design professional as the main point of contact in submitting plans, reports and other documents to the City during the design and plan review phase. Submittals from any other person will not be accepted by the City.

PW-5 The Improvement Plans shall include a General Note that: any revisions to the approved Improvement Plans and/or City Standards, including those due to field conditions, shall require review and written approval by the City Engineer. The Applicant shall have the revised plans prepared by the Project Professional Designer and shall have the revised plans submitted for review and approval by the City Engineer. Any revisions to the Improvement Plans resulting from these or other conditions contained herein shall be subject to written approval of the City Engineer.

PW-6 When submitting Improvement Plans, the engineer's estimate of costs for the public improvements necessary to accommodate the project shall be included. This estimate shall show quantities as well as unit prices used to obtain the final cost of each item and is subject to City review and approval.

PW-7 The Applicant shall pay all public works fees as established by the City Public Works Fee Schedule at the time of submittal of Improvement Plans. The Applicant shall also pay Suisun-Solano Water Authority (SSWA) plan check and inspection fees within 30 calendar days upon receipt of invoice from the Solano Irrigation District (SID). The invoice will be for actual expenses incurred by SSWA for providing plan checking and inspection services for the project. At the time of submittal of Improvement Plans, Applicant shall pay a deposit of $2,500 to be applied towards SSWA fees.

PW-8 Upon the approval of the Improvement Plans, the Applicant shall submit electronic AutoCAD files of the plans to the Public Works Department.

PW-9 The Applicant shall dedicate required street right-of-way by Final Map or approved instrument prior to start of construction.

PW-10 The Applicant shall dedicate, as required, on-site easements for new utilities by means of Final Map or approved instrument prior to start of construction.

PW-11 The Applicant shall dedicate ten-foot (10') minimum utility service easements along all roadways.

PW-12 If existing easements and utilities are located within the proposed lots, the utilities shall be relocated within the public streets or into appropriate easements, as required by the City Engineer.

PW-13 The Applicant shall obtain all necessary permits from all applicable agencies prior to development.

PW-14 All work within the public right-of-way, which is to be performed by the Applicant, the general contractor, and all subcontractors shall be included within a single City Encroachment Permit issued by the City Public Works Department. Issuance of the Encroachment Permit and payment of all appropriate fees shall be completed prior to commencement of work, and all work under the permit shall be completed prior to issuance of occupancy permit.

PW-15 The Applicant shall prepare a notice, subject to the review by the City Engineer, that lists all construction mitigation requirements, permitted hours of

construction, and identifies a contact person as well as the Applicant who will respond to complaints related to the proposed construction. The notice shall be mailed to property owners and residents within a 300-foot radius from the subject site, including all property owners fronting Carswell Lane and Carswell Court, at least ten (10) calendar days prior to the start of construction.

PW-16 A sign shall be posted on the property in a manner consistent with the public hearing sign requirements, which shall identify the address and phone number of the Applicant and/or Applicant's representative for the purposes of responding to questions and complaints during the construction period. Said sign shall also indicate the hours of permissible construction work.

PW-17 The Applicant shall have a superintendent present at all times at the job site. Superintendent shall provide the quality control for the Applicant; respond to the City's concerns; coordinate inspections with the City Inspector; make construction decisions on behalf of the Applicant; and coordinate work of the Applicant's subcontractors.

PW-18 Unless otherwise approved by the City Engineer, all existing sidewalks shall be kept clear and passable during all phases of the project.

PW-19 Any existing wells shall be abandoned per County of Solano Health Department standards prior to development of the property. Owner shall submit documentation to the Public Works Director that this condition has been satisfied prior to any construction on this project.

PW-20 If any archaeological resources are found during the grading of the site or during performance of any work, work shall be halted, the City Engineer shall be notified and a certified archaeological firm shall be consulted for advice at Applicant's expense.

PW-21 Visual obstructions over three feet in height will not be allowed within the driver's sight triangle near driveways and corners in order to allow an unobstructed view of oncoming traffic. Improvements at driveways and corners are subject to the review and approval of the City Engineer.

PW-22 Any relocation or modification of any existing facilities necessary to accommodate subject project shall be at the Applicant's expense. It shall be the responsibility of the Applicant to coordinate all necessary utility relocations with the appropriate utility company.

PW-23 Any existing frontage, or street, improvements, which in the opinion of the City Engineer, are currently damaged or become damaged as a part of the work shall be removed and replaced as required to the current City Standards, or as directed.

PW-24 During construction a security fence, the height of which shall be the maximum permitted by the Zoning Ordinance, shall be installed and maintained around the perimeter of the lot. The lot shall be kept clear of all trash, weeds, etc… throughout the construction activity.

PW-25 Improvement Plans shall show the installation of and the Applicant shall install concrete curb, gutter, sidewalks, curb ramps and driveway improvements on all street frontages. The Typical Street Sections must include aggregate base material under all concrete and all asphalt improvements per City of Suisun City

Standards. The driveways and curb ramps shall comply with the State and Federal accessibility regulations.

PW-26 The minimum longitudinal slopes of gutter flow lines shall be 0.004.

PW-27 The Improvement Plans shall show the installation of and the Applicant shall install street signage and pavement markings and striping. All pavement markings and striping shall be thermoplastic or as required by City Engineer.

PW-28 The Solano Irrigation District (SID) and the Fairfield-Suisun Sewer District (FSSD) may have separate comments and conditions which shall be resolved or met.

PW-29 All water and sewer lines shall have a minimum of five feet horizontal clearance from a fence, wall, or other structure as determined by the Public Works Director. All relocated facilities shall meet state and local separation standards.

PW-30 Direct tapping of City or SSWA water mains is not permitted. Applicant shall install the required fittings in the existing or new main lines to accommodate the proposed water system. No existing water mains shall be shut down without specific permission of the City Engineer and the Solano Irrigation District.

PW-31 Storm drainage shall comply with Solano County Hydrology and Drainage Design as described in the City Standards. The Applicant shall provide a hydrology and hydraulic study for the project.

PW-32 The Applicant shall obtain all necessary permits for storm water discharges.

PW-33 Applicants whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (State Water Resources Control Board Construction General Permit, 2009-0009 DWQ). Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

PW-34 The project shall use best management practices (BMPs) during construction to mitigate construction impacts and during post-construction to mitigate post-construction impacts to water quality.

PW-35 The project shall comply with the requirements of the most current National Pollutant Discharge Elimination System (NPDES) permit issued to the Fairfield-Suisun Urban Runoff Management Program.

PW-36 The applicant shall fill out completely and submit to the City the "New and Redevelopment Post Construction Stormwater Requirements Application", attached to these conditions, no later than with development or grading plans.

PW-37 The applicant shall include the design and implementation of stormwater treatment measures.

PW-38 To limit pollutant generation, discharge and runoff to the maximum extent practicable, the project shall include stormwater pollution control measures listed within the document entitled "Storm Water Pollution Control Measures

List". This list is provided within Appendix B of the document entitled "Storm Water Requirements for Development Projects- Packet for Project Applicants".

PW-39 Stormwater pollution control measures shall be requested as a condition of the project. Sources of pollutants shall be identified and appropriate control measures shall be identified for each source. Storm water control measures shall be approved by City Engineer.

PW-40 All stormwater treatment measures shall be adequately operated and maintained. To ensure operation and maintenance of stormwater treatment measures, the Applicant shall enter into a Stormwater Treatment Measures Maintenance Agreement with the City. A copy of agreement is included in the attached compact disk, "Fairfield-Suisun Urban Runoff Management Program - New and Redevelopment Stormwater Requirements, dated July 2006."

PW-41 Improvement Plans shall include an Erosion Control Plan or Storm Water Pollution Prevention Plan (SWPPP). No work shall be allowed without an approved and implemented Erosion Control Plan or SWPPP.

PW-42 Improvement Plans shall include a Grading Plan prepared by a registered Civil Engineer and shall comply with the requirements of the soils report for the project and the City's Grading Ordinance prior to approval by the City Engineer. To the extent possible, the Grading Plan shall follow natural contours and maintain any existing native trees. In addition, the Grading Plan shall be prepared to the satisfaction of the City Engineer, and is to reflect a positive drainage to existing drain inlets as well as to proposed drain inlet.

PW-43 The project will incorporate site design measures for reducing water quality impacts of the project, in compliance with the Suisun City NPDES stormwater permit Provision C.3 requirements. Guidance on approved site design measures is available from the City. Final approval for site design measures must be obtained from the Suisun City Public Works Department.

PW-44 Significant natural features and resources on site such as undisturbed forest area, setbacks, easements, trees, steep slopes, erosive soils, wetlands or riparian areas shall be identified within the area to be developed and protected during construction and during future use of the site.

PW-45 Site layout shall conform to natural landforms on-site. Buildings shall be located to utilize natural drainage systems as much as possible and avoid unnecessary disturbance of vegetation and soils. Development on unstable or easily erodible soils shall be avoided due to their greater erosion potential.

PW-46 The applicant shall minimize increases in stormwater flow and volume resulting from the development project to protect creeks and waterways from flooding and erosion impacts

PW-47 The project shall utilize infiltration measures to reduce stormwater discharge to the greatest extent feasible.

PW-48 Where feasible, parking lots and other impervious areas shall be designed to drain stormwater runoff to vegetated drainage swales, filter strips, and/or other treatment devices that can be integrated into required landscaping areas and traffic islands prior to discharge into storm drain systems.

PW-49 The amount of impervious area associated with parking lots shall be minimized by providing compact car spaces, reducing stall dimensions, incorporating

efficient parking lanes, and using permeable pavement in overflow parking areas where feasible.

PW-50 Curb cuts (one every 10 feet), tire stops, or other means shall be provided to protect landscaped areas and allow maximum flow of stormwater into landscaped areas.

PW-51 The use of permeable paving for parking and driveway surfaces is encouraged, to reduce runoff from the site. Such paving should meet Suisun City Fire Department requirements and be structurally appropriate for the location.

PW-52 Dust control shall be in conformance with City Standards and Ordinances. Vehicles hauling dirt or other construction debris from the site shall cover any open load with a tarpaulin or other secure covering to minimize dust emissions.

PW-53 The maximum allowable slope in landscape areas shall be 3:1, or as approved by City Engineer. One-foot concrete mow strips for public landscaping shall be as required by the City Engineer. Drainage runoff to adjacent property shall not be allowed.

PW-54 Storm water runoff shall drain toward the streets and not onto the neighboring lot(s).

PW-55 The project shall install on-site street lighting and the Applicant shall submit a photometric analysis to the City for review and approval.

PW-56 New City street lights shall not share electrical circuits with City of Fairfield street lights.

PW-57 The project shall optimize the timing for the traffic signal at Walters Road and East Tabor Avenue. The Applicant shall coordinate this work with the City of Fairfield.

PW-58 The project shall provide for adequate onsite parking. In addition, project shall install "no parking" signs every 200 feet (maximum) along the south side of E. Tabor Avenue between Charleston Street and Walters Road.

PW-59 On-site driveways/roadways shall be minimum 3" asphalt concrete over a minimum 15" Class 2 aggregate base with road stabilization fabric. The Applicant shall construct driveways/roadways in accordance with the geotechnical report for the project. On-site driveways and roadways shall be inspected by the Public Works Inspector during construction.

PW-60 The proposed right-in/right-out driveway on Walters Road, on Lot A, shall be constructed prior to construction of homes on lots 21-54. Improvements shall include an 11-ft wide right-turn lane in advance of the driveway, the driveway apron and paved connection from the driveway apron to Street B. Pavement structure of this connection shall match the pavement structure for Streets A, B and C. Pavement stripes and markings on northbound Walters Road shall be removed and replaced as necessary to accommodate the construction of the right-turn lane.

The 11-foot wide right-turn lane and right-in/right-out driveway is to be constructed prior to the construction of the houses in Lots 21 through 54. Furthermore, at the Applicant's discretion the Project could be constructed in two phases in which Phase 1 would include constructing the improvements and houses located west of Street A along East Tabor Avenue, Street B, Street C,

Charleston Street and Carswell Lane. The houses that can be included for construction in Phase 1 are in Lots 1 through 20, and in Lots 55 through 59. At the Applicant's discretion, the civil improvements (excluding the houses) along Street B south and east of Street A could be included in Phase 1 as an added alternative. Phase 2 would include the remaining improvements and houses (Lots 21 through 55), including the 11-foot wide right-turn lane and right-in/right-out driveway on Walters Road.

PW-61 An easement for the purposes of public ingress/egress and public utilities for the Walters Road driveway (from Waters Road to Street B shall be provided by the Applicant, and easement shall be included on the Final Map.

PW-62 The construction of the driveway on Walters Road and right-turn lane along Walters Road shall include lowering the existing 10' wide concrete path on each side of the driveway so that path meets the right-in/right-out driveway at the same grade and provides adequate sight distance for motorist, bicyclists and pedestrians. Also, the Applicant shall install STOP signs on the path at the Walters Road driveway.

PW-63 Public utility easements for the public utilities in Lot A shall be prepared by the Applicant for the City's review and approval, and easement shall be included in the Final Map.

PW-64 The Applicant shall dedicate Lot B and the internal roadways to the City by a Final Map or via an approved instrument prior to beginning construction.

PW-65 The Applicant shall enclose Lot B within a fencing or railing system acceptable to the Public Works Director.

PW-66 Street section dimensions shall match or be greater than existing typical street sections in the adjoining Peterson Ranch Subdivision

PW-67 The project shall provide concrete pad of adequate size for the garbage and recycling containers behind side fence of each parcel. Furthermore, the pathway in the side yard shall be wide enough so that there is enough room for foot traffic to pass by parked garbage and recycling containers.

PW-68 8-foot tall soundwalls are to match the design and materials of the existing soundwalls in the Peterson Ranch Subdivision.

PW-69 All required soundwalls shall be constructed as part of the medium-density-residential improvements.

PW-70 The Applicant shall dedicate a five-foot (minimum) fence easement along the proposed north-south soundwall alignment along Walters Road, specifically within Lots 35, 36, 37, 38, 39, 40 and 41. The Applicant shall also dedicate a five-foot (minimum) fence easement on Lot A along the soundwall alignment which separates Street A and Lot A. In addition, the Applicant shall dedicate a 10-foot wide fence easement (5 feet within Lot A and 5 feet within the residential lots, specifically within Lots 21, 22, 34 and 35, for the other soundwall alignments. These latter soundwall alignments shall be centered on the 10-foot wide fence easement.

PW-71 The soundwalls along Walters Road shall be offset from the existing pathway to allow for a landscape strip matching the width of the adjacent landscape strip. Landscaping and automatic irrigation shall be installed by the Applicant along this soundwall segment. Furthermore, the Applicant shall install landscaping

and automatic irrigation in all areas fronting soundwalls. Landscaping shall match existing adjacent landscaping.

PW-72 Landscaping and automatic irrigation shall be installed by the Applicant along the pubic frontage of E. Tabor Avenue and Charleston Street.

PW-73 Dumpsters to be used on this project shall be dumpsters supplied by the Solano Garbage Company. This is pursuant to the agreement between the City and the Solano Garbage Company for all areas within Suisun City.

PW-74 Prior to the issuance of Certificate of Occupancy, the Applicant shall submit to the Public Works Department electronic AutoCAD files of the "as-built" Improvement Plans.

REVENUE BASED LAND USE

RBLU-1 The proposed land use for the 8.6-acre site located at the southeast corner of Walters Road and East Tabor Avenue (APN 0174-120-230) is for a not less than 1.5-acre commercial parcel (the "Commercial Parcel") at the northwestern most portion of the site, with the remainder of the site single-family residential.

RBLU-2 The Developer shall cause the Commercial Parcel to be transferred to the City (or other entity as designated by the City) not later than the second anniversary of the date the first grading permit is issued for the Zephyr Estates residential project unless an application for the Commercial Parcel has been submitted and deemed complete by the City. To reflect such obligation, Developer shall execute a document in a form reasonably acceptable to the City (such as an option agreement) ("Option Agreement"), a memorandum of which shall be recorded on the Commercial Parcel only concurrently with recordation of the Final Map for the Zephyr Estates project and concurrently insured by a title insurance policy in favor of the City subject to only non-delinquent real property taxes and exceptions reasonably acceptable to the City. The Option Agreement shall provide that the City will subordinate the Option Agreement to certain obligations such as subdivision improvement agreement for the Zephyr Estates project and CC&Rs which are approved by the City.

RBLU-4 In order to eliminate potential for blight on the vacant Commercial Parcel and to create an aesthetically pleasing entryway to Suisun City until a commercial project is commenced, Developer agrees to commence with the following improvements upon issuance of the first grading permit:

a. Developer shall acquire all necessary approvals and shall install a "Welcome" monument sign at the northwestern corner of the site.
b. If a commercial project has not commenced, Developer shall proceed with the landscaping of the commercial site, consisting of ground cover and shrubbery around the perimeter of the site on Walters Road and East Tabor Avenue, with necessary irrigation, and the remainder of the site covered with hydro-seed.
c. The aforementioned signage and landscaping improvements shall be completed within 6-months of the issuance of a grading permit and must

be completed prior to a conveyance of the commercial parcel to the City (or other entity as designated by the City).

d. If aforementioned signage or landscaping improvements are not complete within 6 months of issuance of first grading permit, the City shall cease with inspections and shall not grant any Certificate of Occupancies until said improvements have been installed.

SOLANO IRRIGATION DISTRICT:

SID-1 The improvement plans, Final Map and Parcel Maps shall be submitted to the Solano Irrigation District (SID) for review, approval and signature.

SID-2 The Applicant shall pay SSWA Plan/Map Review Fees upon submittal of the plans and maps for review.

SID-3 The water improvements will be looped from existing the existing 12" water stub on Carswell Lane to Charleston Street through Streets B and C.

SID-4 Connection onto the City of Fairfield water system shall not be permitted. The existing 12' water main on East Tabor Avenue is a City of Fairfield facility.

SID-5 Any extension and/or connection to the existing stubs or water main shall be in accordance with the Suisun-Solano Water Authority (SSWA) Standard Specifications, and at the Applicant's expense.

SID-6 Water service laterals shall not be located within driveway approaches.

SID-7 Per the SSWA Cross-Connection Control Resolution No. 99-01, all types of commercial buildings and landscape irrigation services are required to include an approved backflow prevention assembly, at the Applicant's expense. Prior to commencing construction work, the proposed location, service size and flow-rate for the backflow prevention assembly shall be submitted to SID for review and approval. Based on the proposed commercial use, a Reduced Pressure Principle (RPP) Assembly will be required for each of the domestic water services.

SID-8 The SSWA Cross-Connection Control Resolution No. 99-01, fire protection systems are required to include an approved backflow prevention assembly, at the developer's expense. Prior to commencing construction work, the proposed location, service size and flow-rate for the fire protection system shall be submitted to SID for review and approval. Based on the proposed commercial use, a Double Check-Detector Check (DCDC) Assembly will be required for each of the fire protection systems.

SID-9 The Applicant shall provide and install freeze protection for all RPBFP's and DCDC's at the Applicant's expense.

SID-10 At the time the Building Permit issued, the Applicant shall pay the appropriate SSWA Connection Fee and Meter Installation Fee at the City of Suisun City. These fees shall be based on the latest SSWA fee schedule at time of payment, and are determined by the size of meter requested. All domestic water services shall be metered.

SID-11 Prior to the issuance of Certificate of Occupancy, the Applicant shall submit to SID the electronic AutoCAD files and scanned .tif images at 300 dpi of the "as built" Improvement Plans.

RESOLUTION NO. 2014-___

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUISUN CITY ACCEPTING THE MITIGATION MONITORING AND REPORTING PROGRAM, EXHIBIT A, AND ADOPTING A MITIGATED NEGATIVE DECLARATION FOR THE ZEPHYR ESTATES DEVELOPMENT

WHEREAS, the City Council held a Public Hearing on Tuesday September 16, 2014, to review and consider the development project known as Zephyr Estates and said property is located east of Walters Road and south of East Tabor Avenue (APN 0174-120-230) containing approximately 8.60 acres; and

WHEREAS, the City Council held a Public Hearing on Tuesday August 19, 2014, to review and consider the development project known as Zephyr Estates and said property is located east of Walters Road and south of East Tabor Avenue (APN 0174-120-230) containing approximately 8.60 acres; the item was continued to September 16, 2014; and

WHEREAS, the Planning Commission held a Public Hearing on Tuesday July 22, 2014, to review and consider the development project known as Zephyr Estates and said property is located east of Walters Road and south of East Tabor Avenue (APN 0174-120-230) containing approximately 8.60 acres; and

WHEREAS, notices for the City Council's public hearing were published in the *Daily Republic* on August 9, 2014, and notices were mailed to individual property owners within 300 feet on August 8, 2014; and

WHEREAS, the City of Suisun City accepted all comments received to the proposed mitigated negative declaration; and

WHEREAS, the City Council of the City of Suisun City makes the following findings and recommends acceptance of the environmental documents:

1. Notice has been given in the time and in the manner required by State Law and City Code.
2. The site is physically suitable for the proposed type and intensity of development in that the project has been reviewed and determined to result in less than significant impacts and to be consistent with the City's General Plan and Zoning Ordinance.
3. The approval of development project known as Zephyr Estates would create 59 single-family homes on 7.1 acres, a density of 8.3 units per acre, and 1.5 acres of General Commercial, and will not be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood in that the proposed uses are similar to and compatible with neighboring uses in the area.
4. The Suisun City Community Development Department has completed an Initial Study regarding the proposed development project. The Initial Study was evaluated for potential adverse impacts on the environment and concluded that no evidence exists that the project will have an adverse effect on the environment. The following documents are recommended for acceptance and adoption:

a. Mitigation Monitoring and Reporting Program implementing mitigation measures as identified in the initial study – Exhibit A.
b. The Initial Study and Mitigated Negative Declaration were delivered to the State Clearing House on June 19, 2014 for a 30 day public review period – Reference State Clearinghouse Number - SCH #2014062066 for the development project known as Zephyr Estates.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Suisun City hereby accepts Exhibit A - Mitigation Monitoring and Reporting Program, which were prepared as part of the appropriate environmental document for the Zephyr Estates development project, attached hereto and by this reference incorporated herein; and

BE IT FURTHER RESOLVED that the City Council of the City of Suisun City requires the Project Sponsor and successors to offset all costs, City staff and private, associated with the implementation of and monitoring of the Mitigation Monitoring and Reporting Program and require the Project Sponsor and successors to implement all programs as identified.

PASSED AND ADOPTED at the Regular Meeting of the City Council of the City of Suisun City duly held on Tuesday, the 16th day of September, 2014 by the following vote:

AYES:	Councilmembers:	_____
NOES:	Councilmembers:	_____
ABSENT:	Councilmembers:	_____
ABSTAIN:	Councilmembers:	_____

WITNESS my hand and the seal of the City of Suisun City this 16th of September, 2014.

_____
Linda Hobson, CMC
City Clerk

Exhibit A – Mitigation Monitoring and Reporting Program
Zephyr Estates

Aesthetics

Mitigation Measure AE-1: Final design plans shall be presented to the Architectural Design Review Board for conformance with the City's Development Guidelines for Site Planning and Architecture.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: Suisun City Community Development Department.

Mitigation Measure AE-2: Prior to construction, the City of Suisun City shall review and approve the landscape plan that would be incorporated into the final design of the Zephyr Estates project. The landscape plan shall incorporate the following components, as feasible:

- Drought-resistant plants consistent with the General Plan's plant palette.
- Xeric (adapted to arid conditions) landscaping techniques.
- An irrigation design that conforms to water conservation measures established in AB1881 the Water Conservation in Landscaping Act of 2006 (effective as of January 1, 2010).
- Attractive walls and other visually pleasing hardscape into the final design of the project to enhance the limited open space that would serve the project residents and the travelers using East Tabor and Walters Road.
- Trees and shrubs to break the visual monotony and soften the appearance of walls and vines to deter graffiti to the maximum extent feasible.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: Suisun City Community Development Department.

Mitigation Measure AE-3: New trees shall be incorporated into the landscape plans for the Zephyr Estates subdivision that meet the City's standard for trees within new developments.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: Suisun City Community Development Department.

Mitigation Measure AE-4: All outdoor lighting associated with the proposed development shall be:

- Designed and located to minimize ambient light levels for any given application, consistent with public safety standards.

- Placed in areas of pedestrian activity, at building entrances, and along roadways.

- Shielded with non-glare hoods and focused within the project. Lighting shall minimize glare on adjacent properties and into the night sky.

- Ornamental, pedestrian scale lighting fixtures shall be utilized to the degree possible.

- Area lighting shall be directed downward with no splay of lighting directed offsite. No lighting shall blink, flash or be of unusually high intensity or brightness.

Timing/Implementation: Prior to construction.

Enforcement/Monitoring: Suisun City Community Development Department.

Air Quality

Mitigation Measure AQ-1: Implement the BAAQMD Basic Construction Control Measures.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

- A publicly visible sign shall be posted at the soil transfer site within the BAAQMD, with the telephone number and person to contact at the City of Suisun City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number also shall be visible, to ensure compliance with applicable regulations.

Implementation: Project applicant and construction contractor(s)

Timing: During all construction activities

Enforcement: City of Suisun City and BAAQMD

Biological Resources

Mitigation Measure BIO-1: Avoid Loss of Swainson's Hawk and Other Raptors

To avoid, minimize, and mitigate potential impacts on Swainson's hawk, white-tailed kite, and other raptors (not including burrowing owl) in the project vicinity, the project applicant shall retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.25 mile of the project site for construction activities conducted during the breeding season (March 1-August 31). Guidelines provided in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley* (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. Surveys for other nesting raptors shall be conducted no less than 14 days and no more than 30 days before the beginning of construction for all project phases. If no nests are found, no further avoidance and minimization measures will be required.

If active Swainson's hawk or other raptor nests are found, appropriate buffers shall be established around active nest sites, in coordination with CDFW, to provide adequate protection for nesting hawks and their young. No project activity shall commence within the buffer areas until a qualified biologist has determined in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment.

Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

Implementation: Project applicant and construction contractor(s)

Timing: Less than 14 days and no more than 30 days before the beginning of construction for all project phases

Enforcement: City of Suisun City and CDFW

Mitigation Measure BIO-2: Avoid Loss of Burrowing Owl

To avoid, minimize, and mitigate potential impacts on burrowing owl, the project applicant shall retain a qualified biologist to conduct focused breeding and nonbreeding season surveys for burrowing owls in areas of suitable habitat on and within 1,500 feet of the project site. Surveys will be conducted prior to the start of construction activities and in accordance with Appendix D of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). If no occupied burrows are found, no further avoidance and minimization measures will be required.

If an active burrow is found during the nonbreeding season (September 1 through January 31), the project applicant will consult with CDFW regarding protection buffers to be

established around the occupied burrow and maintained throughout construction. If occupied burrows are present that cannot be avoided or adequately protected with a no-disturbance buffer, a burrowing owl exclusion and relocation plan will be developed according to guidance provided in Appendix E of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Owls will be relocated outside of the impact area using passive or active methodologies developed in consultation with CDFW and may include active relocation to preserve areas if approved by CDFW and the preserve managers. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

If an active burrow is found during the breeding season (February 1 through August 31), occupied burrows will not be disturbed and will be provided with a 150- to 1,500-foot protective buffer unless a qualified biologist verifies through noninvasive means that either: (1) the birds have not begun egg laying, or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. The appropriate size of the buffer (between 150 to 1,500) will depend on the time of year and level of disturbance as outlined in the CDFW Staff Report (2012:9).The size of the buffer may be reduced if a qualified biologist, in consultation with CDFW, determines burrowing owls would not be adversely affected by the proposed activities. If a smaller than recommended buffer is used, a scientifically- rigorous monitoring program approved by the City and CDFW shall be implemented to ensure burrowing owls are not detrimentally affected. Once the fledglings are capable of independent survival, the owls will be relocated outside the impact area following a burrowing owl exclusion and relocation plan developed according to guidance provided in Appendix E of CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) and the burrow will be destroyed to prevent owls from reoccupying it. No burrowing owls will be excluded from occupied burrows until the burrowing owl exclusion and relocation plan is approved by CDFW.

If active burrowing owl nests are found on the project site and these nest sites are lost as a result of implementing the project, then the project applicant shall mitigate the loss through preservation of other known nest sites at a ratio of 1:1, which is the current ratio identified in the draft SMHCP. Preservation shall be provided through purchase of credits from a CDFW-approved burrowing owl conservation bank if credits are available for the project area.

All burrowing owl mitigation lands shall be preserved in perpetuity and incompatible land uses shall be prohibited in habitat conservation areas. Burrowing owl mitigation lands shall be located as close as possible, based on availability of sufficient suitable habitat, to the project site.

Implementation: Project applicant and construction contractor(s)

Timing: Prior to the start of construction activities

Enforcement: City of Suisun City and CDFW

Mitigation Measure BIO-3: Avoid Loss of Loggerhead Shrike

To the extent feasible, vegetation removal, grading, and other ground disturbing activities will be carried out during the nonbreeding season (September 1-February 31) for

migratory birds to avoid and minimize impacts to loggerhead shrike and other migratory birds.

If project activities occur during the nesting season for loggerhead shrike (March 1 through August 31), a focused survey to identify active shrike and other migratory bird nests shall be conducted by a qualified biologist before commencement of activities. Surveys shall include all areas of suitable nesting habitat within 200 feet of the project footprint. If no active nests are found, no further avoidance and minimization measures will be required.

If active nests are found during the surveys, appropriate buffers shall be established to avoid impacts. No project activity shall commence within the buffer area until a qualified biologist, in consultation with CDFW, confirms that the nest is no longer active. Given the project location and proposed construction methods, it is anticipated that CDFW would recommend a 200-foot buffer around a loggerhead shrike nest to provide adequate protection for nesting shrikes and their young. The size of the buffers may be reduced if a qualified biologist determines that project activity within a reduced buffer will not be likely to adversely affect the nest. This should be confirmed with CDFW. The appropriate buffer for common migratory bird nests is 50 feet.

Implementation: Project applicant and construction contractor(s)

Timing: If project activities occur during the nesting season for loggerhead shrike (March 1 through August 31), prior to the start of construction activities

Enforcement: City of Suisun City and CDFW

Cultural Resources

Mitigation Measure CUL-1: Procedures for Inadvertent Discovery of Cultural Resources.

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, human remains, bottle glass, ceramics, building remains) is made during project-related construction activities, ground disturbances in the area of the find shall be halted and the City shall be notified immediately. The City shall retain a qualified professional archaeologist to determine whether the resource is potentially significant. If the resource is potentially significant and project implementation may result in potential impacts, the City, with help from the professional archaeologist, shall develop additional appropriate protection measures, as needed. Additional protection measures may include, but are not necessarily limited to additional documentary research, subsurface testing, excavation, and preservation in-place.

Implementation: Project applicant and construction contractor(s)

Timing: During all earth-disturbing activities.

Enforcement: City of Suisun City

Mitigation Measure CUL-2: Procedures for Inadvertent Discovery of Human Remains.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities in the vicinity of the find shall be halted and the City, the Solano County coroner and a qualified professional archaeologist shall be contacted immediately. The coroner is required to examine all discoveries of human remains within two working days of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are of Native American origin, he or she must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). The City or its appointed representative and the professional archaeologist shall consult with a Most Likely Descendent determined by the Native American Heritage Commission (NAHC) regarding the removal or preservation and avoidance of the remains and determine if additional burials could be present within the project site.

Implementation: Project applicant and construction contractor(s)

Timing: During all earth-disturbing activities.

Enforcement: City of Suisun City

Geology and Soils

Mitigation Measure GEO-1a: Prepare Final Geotechnical Report and Implement Recommendations.

Before building permits are issued and construction activities begin in any phase, the project applicant shall hire a licensed geotechnical engineer to prepare a final geotechnical report, which shall be submitted for review and approval to the Suisun City Division of Building and Public Works. The final geotechnical engineering report shall address and make recommendations on the following topics:

- seismic design parameters;
- site preparation;
- soil bearing capacity;
- appropriate sources and types of fill;
- potential need for soil amendments;
- road, pavement, and parking areas;
- structural foundations, including retaining-wall design;
- grading practices;
- soil corrosion of concrete and steel;
- erosion/winterization;
- seismic ground shaking;

- liquefaction; and
- expansive/unstable soils.

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions (as appropriate), and shall determine appropriate foundation designs that are consistent with the version of the California Building Standards Code (CBC) that is applicable at the time of building and grading permits applications.

All recommendations contained in the final geotechnical engineering report shall be implemented. Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented, as appropriate, before construction begins. Design and construction of all project development shall be in accordance with the CBC. The project applicant shall provide for engineering inspection and certification that earthwork has been performed, in conformity with recommendations contained in the geotechnical report.

Implementation: Project applicant and construction contractor(s)

Timing: Prior to issuance of building permits

Enforcement: City of Suisun City

Mitigation Measure GEO-1b: Monitor Earthwork during Earthmoving Activities.

All earthwork shall be monitored by a licensed geotechnical or civil engineer retained by the project applicant. The geotechnical or civil engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on construction areas.

Implementation: Project applicant and construction contractor(s)

Timing: During all earthmoving construction activities

Enforcement: City of Suisun City

Mitigation Measure GEO-2: Prepare and Implement a Grading and Erosion Control Plan.

Before grading permits are issued, the project applicant shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the Suisun City Division of Building and Public Works for review before issuance of any grading permit for on-site work. The plan shall be consistent with Suisun City's Grading, Erosion Control, and Creekside Development Ordinance and the state's National Pollutant Discharge Elimination System permit, and shall include the site-specific grading associated with development for all project phases.

The plan referenced above shall include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance,

and a description of the location and methods of storage and disposal of construction materials.

Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.

Implementation: Project applicant and construction contractor(s)

Timing: Prior to issuance of any grading permit

Enforcement: City of Suisun City

Hazards and Hazardous Materials

Mitigation Measure HAZ-1: Implement Mitigation Measure HYDRO-1 (Prepare and Implement a Storm Water Pollution Prevention Plan and Associated Best Management Practices).

Hydrology

Mitigation Measure HYDRO-1: Prepare and Implement a Storm Water Pollution Prevention Plan and Associated Best Management Practices.

Prior to the start of earth-moving activities, the project applicant shall obtain coverage under the *San Francisco Bay Region Municipal Regional Stormwater NPDES Permit* (Order R2-2009-0074) (San Francisco Bay RWQCB 2009), including preparation and submittal of a project-specific storm water pollution prevention plan (SWPPP) at the time the Notice of Intent to discharge is filed. The project applicant shall also prepare and submit erosion and sediment control and engineering plans and specifications for pollution prevention and control to the Suisun City Building and Public Works Department. The SWPPP shall identify and specify:

- the use of an effective combination of robust erosion and sediment control Best Management Practices (BMPs) and construction techniques accepted by Suisun City for use in the project area at the time of construction, that would reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences as discussed and described in the *Fairfield-Suisun Urban Runoff Management Program* (Cities of Fairfield and Suisun City 2006);

- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;

- the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- the means of waste disposal;
- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that would be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to:

- Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with state and local standards in effect at the time of construction. These measures may include, but are not limited to, silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.
- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.
- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.

A copy of the approved SWPPP shall be maintained and available at all times on the construction site.

Implementation: Project applicant and contractor(s)

Timing: Prior to the issuance of any grading permit

Enforcement: City of Suisun City and San Francisco Bay RWQCB

Mitigation Measure HYDRO-2: Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans.

Before the approval of grading plans and building permits, the project applicant shall submit final drainage plans to the Suisun City Building and Public Works Department

demonstrating that off-site upstream runoff would be appropriately conveyed through the project site, and that project-related on-site runoff would be appropriately contained in detention basins or managed with through other improvements (e.g., source controls) to reduce flooding, erosion, and water quality impacts.

The plans shall include, but are not limited to, the following items:

- an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods consist with the Suisun City Engineering Standards and Specifications, that accurately evaluates potential changes to runoff, including increased surface runoff;
- runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase;
- a description of the proposed maintenance program for the on-site drainage system;
- project-specific standards for installing drainage systems;
- a description of on-site features designed to treat storm water and maintain storm water quality before it is discharged from the project site (e.g., vegetated swales, infiltration trenches, and constructed wetland filter strips);
- pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by Suisun City and including details regarding the size, geometry, and functional timing of storage and release pursuant to the Suisun City Engineering Standards and Specifications; and
- source control programs to control water quality pollutants on the project site, which may include but are not limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.

Implementation: Project applicant and contractor(s)

Timing: Before the approval of grading plans and building permits

Enforcement: City of Suisun City

Mitigation Measure HYDRO-3: Prepare and Implement a Construction Dewatering Plan.

The project applicant shall prepare a Dewatering Plan prior to commencing dewatering activities. All dewatering activities shall comply with applicable waste discharge requirements issued by the San Francisco Bay RWQCB. The Dewatering Plan shall specify measures to prevent/minimize sediment and contaminant releases into groundwater during excavation activities and methods to clean up releases. These methods may include, but are not limited to, using temporary berms or dikes to isolate construction activities; using vacuum trucks to capture contaminant releases; and

maintaining absorbent pads and other containment and cleanup materials on-site to allow an immediate response to contaminant releases if they occur.

Implementation: Project applicant and contractor(s)

Timing: Prior to the issuance of any grading permit

Enforcement: City of Suisun City and San Francisco Bay RWQCB

Noise

Mitigation Measure NOI-1: Implement Best Management Practices to Control Construction Noise.

- Fixed/stationary equipment (e.g., generators, compressors, cement mixers) shall be operated in locations that are as far as possible from existing noise-sensitive receptors. All impact tools shall be shrouded or shielded, and all intake and exhaust ports on powered construction equipment shall be muffled or shielded.
- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.
- Equipment engine shrouds will be closed during equipment operation.
- All motorized construction equipment shall be shut down when not in use.
- Written notification of heavy construction activities (heavy earth-moving) shall be provided to all noise-sensitive receptor properties located within 500 feet of the project site. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) will be included in the notification.
- Temporary property line barriers (e.g., sound blankets) shall be installed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers will be designed to obstruct the line of sight between the noise-sensitive land use (adjacent, ground level backyards receptors) and on-site construction equipment within 100 feet of the property line.
- Site preparation construction activities (grading and any other heavy earth moving) shall be limited to the hours between 7:00 A.M. and 6:00 P.M. on weekdays and 8:00 A.M. to 6:00 P.M. on Saturdays. No such activities shall occur on Sundays or federal holidays.

Implementation: Project applicant and contractor(s)

Timing: During all phases of construction

Enforcement: City of Suisun City

Mitigation Measure NOI-2: Implement Construction Vibration Measures.

- Operate earthmoving equipment on the construction lot as far away from vibration-sensitive sites as possible.
- Phase earthmoving and ground-impacting operations so as not to occur in the same time period.
- Large bulldozers and other construction equipment that would produce vibration levels at or above 86 VdB shall not be operated within 50 feet of adjacent, occupied residences. Small bulldozers shall be used instead of large bulldozers in these areas, if construction activities are required. For any other equipment types that would produce vibration levels at or above 86 VdB, smaller versions or different types of equipment shall be substituted for construction areas within 50 feet of adjacent, occupied residences.

Implementation: Project applicant and contractor(s)

Timing: During all phases of construction

Enforcement: City of Suisun City

Traffic

Mitigation Measure TRAF-1:

The project applicant shall contribute fair-share funding to the City of Fairfield for improvements planned for the intersection of Air Base Parkway and Walters Road to address cumulative congestion. The fair-share of such improvements at this time is estimated to be $16,259.71.

Implementation: Project applicant

Timing: Prior to issuance of building permits

Enforcement: City of Suisun City and City of Fairfield

Zephyr Estates

Project Description

Schwartz Land Development Company is proposing to subdivide the property located at the southeast corner or E. Tabor Avenue & Walter Road into 59 single-family residential lots and a commercial parcel of 1.5 acres.

The project site is located in Solano County, within the incorporated area of the City of Suisun City. The property is adjacent to Walters Road to the west, E. Tabor Avenue to the north, Charleston Street to the east, and Carswell Lane to the south. The site is approximately 8.6 acres in size and is currently undeveloped. The site is adjacent to single-family residential homes to the south and east and a church to the north. The topography of the site is relatively flat with a slight downslope from east to west.

The residential lots are proposed to range in size from approximately 3,000 square feet to 6,000 square feet. Houses are anticipated to be 2 stories with living spaces of approximately 2000+/- square feet.

The project proposes multiple accesses off of existing roadways. The main access into the residential portion of the property is proposed via E. Tabor Avenue with additional access via Charleston Street and Carswell Lane. Access to the commercial parcel is anticipated via E. Tabor Avenue and an optional right turn in / right turn out access via Walters Drive.

The existing zoning and General Plan designation on the property allows for approximately 6 acres of General Commercial and 2.6 acres of multi-family residential. The project proposes one commercial parcel of 1.5 acres and the remainder of the site consisting of 59 single-family residential homes.

The commercial portion of the project is located at the northwest corner of the site with the highest visibility. The commercial area is expected to yield approximately 14,000 – 17,000 square feet, based on parking ratios between 1:250 S.F. and 1:300 S.F. Upon issuance of a grading permit for the project, the developer has agreed to install a "Welcome" monument sign on the site near the corner of Walters/E. Tabor intersection. Additionally, to keep the commercial parcel aesthetically pleasing prior to development, the perimeter of the site will be landscaped and the remainder of the site covered with hydro-seed. If a commercial project has not commenced within 2 years of grading permit issuance, the developer has agreed to transfer the 1.5 acre commercial parcel to the City. Further details are outlined in Resolution No. 2013-52, passed and adopted by the City Council on September 3, 2013.

The following land use applications are included for the project:

- **Tentative Subdivision Map** – To subdivide the property into 60 lots (59 residential lots and 1 commercial lot)
- **General Plan Amendment & Rezone** – To allow for approximately 7.1 acres of single-family residential and 1.5 acres of commercial
- **Planned Unit Development** - To allow flexibility to the City standard including but not limited to minimum lot sizes, lot frontage, building setbacks, etc.
- **Site Plan/Architectural Review** - To generally identify potential floor plans, elevations and perspectives as well as general design standards related to materials
- **Development Permit** – To be submitted later (if needed), once we have a better understanding of the related issues

Zephyr Estates

General Plan Amendment & Rezone Justification

The existing zoning and General Plan designation on the property allows for approximately 6 acres of General Commercial and 2.6 acres of multi-family residential. The project proposes one commercial parcel of 1.5 acres and the remainder of the site consisting of 59 single-family residential homes.

The City's General Plan was last updated in 1992. An update to the General Plan is currently underway and includes subject property. The proposed General Plan and Zoning proposed as part of this project is consistent with the proposed uses in the General Plan update. Resolution 2013-52 was passed and adopted by the City Council on September 3, 2013 which provided alternative means of value to the City in lieu of revenue generation thresholds identified in the City's Revenue-Based Land Use Policy. The City Council found that the proposed General Plan Amendment from the current land use designation to 1.5 acres of commercial and 7.1 acres of single-family residential, in addition to certain concessions identified in Exhibit A of the Resolution, was consistent with the City's Policy.

California housing demands are changing rapidly due to a shift in demographics. Single occupancy households now outnumber married couples in residential suburbs, apartment and condominium/townhome developments. The new demographic for single occupancy households are generally above average wage earners employed in professional fields and/or active retired seniors. This demographic group generally ranges between 45 and 70 years of age. The United States Bureau of Labor Statistics earnings and expenditures data for the Vallejo-Fairfield area shows the average gross annual income at approximately $79,000 per person. The income available for expenditures in this statistical group, after taxes, is over $54,000 per year. Rising professionals and active retired seniors have, for the most part, financially stable portfolios or retirement incomes and have the luxury of discretionary spending power. These people generally prefer housing different from the traditional suburban model. Housing preferences tend towards smaller, more efficient utilization of space and energy consumption and small yards with minimal maintenance requirements. Households in general consist of singles, couples with no children or nonfamily cohabitants.

This development is designed to meet the demands of this demographic profile as people transition or grow out of traditional residential housing now provided in the area. This project provides the opportunity to capture and/or retain the high wage earner professionals and active seniors that no longer desire to maintain their traditional suburban home and yard or seek more efficient and smaller living accommodation. The horizontal mixed-use design concept transitions from the traditional suburban form to narrow, compact parcels to accommodate

smaller, well-designed homes approximately 2000 +/- square feet. Typical homes are intended to include private back yards, low maintenance utilitarian landscaping and efficient floor plans. The neighborhood commercial retail component offers an opportunity to serve both the project and the surrounding residential developments.

One of the key components of maintaining a vibrant community is to provide necessary housing needed to attract and retain the high wage earner professional workforce and the active senior retiree. This project provides the type of housing that a growing segment of the population desires and is located less than 5 miles to the Suisun-Fairfield Amtrack Station. Availability of transit service in the area creates additional opportunities for working professionals and active seniors living in the area. By retaining and attracting this new demographic, this project generates economic activity beneficial to the City. The following outlines some of the economic contributors:

- As outlined above, average single household income for the area is $74,099 with average annual expenditures per person of $54,675.
- Average annual Household expenditures (assuming 1.6 people/unit) can exceed over $87,480/unit, creating over $5,248,800 in annual spending power (assuming 60 units). This creates positive benefits for existing and proposed retail developments and professional services further generating retail sales tax revenue for the City. Discretionary spending power has the potential to generate as much is 2.5 times more when the economic multiplier effects are considered.
- The small service area combined with existing infrastructure and generally higher property tax assessment as a result of new construction associated with this Project can have a net positive fiscal impact for the City. Assuming a $285,000 unit sales price, the Project would generate $3,485 (1.0223 x 285,000) per unit in new property taxes resulting in a total of $209,133 annually at build-out.
- The Project will generate over $2.4 million in Residential Development Fees and over $150,000 in Commercial Development Fees.

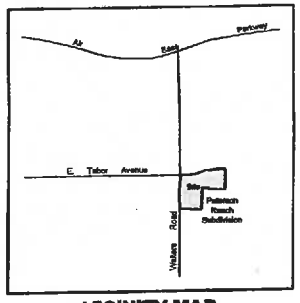
Zephyr Estates

TSM 13/4-001

Schwartz Land Development Company

Overall Site Plan

December, 2013



VICINITY MAP

Scale: 1" = 1000'

PROJECT SUMMARY

Commercial Parcel = 1.50 Acres
Commercial (Footprint) = 14,500 S.F.
Commercial Parking = 58 Stalls (1:250)
- 54 Standard Spaces (9'x18')
- 4 ADA Van Accessible Spaces

Residential = 59 Lots

PROJECT INFORMATION

OWNER
Stanley M. Davis Co.
P.O. Box 1230
Davis, CA 95616

APPLICANT
Robert Schwartz
114 Raven Hill Road
Orinda, CA 94563

PLANNING & ENGINEERING
SCO Planning, Engineering & Surveying
140 Litton Drive, Suite 240
Grass Valley, CA 95945
530-272-5841
Contact: Rob Wood

APN
0174-120-230

SITE AREA
8.6± Acres

EXISTING ZONING
GC (General Commerial) - ~6.0 Acres
RH (Multi-Family) - ~2.6 Acres

PROPOSED ZONING
GC (General Commerial) - 1.5 Acres
RM (Medium Density Residential) - 7.1 Acres

WATER SERVICE
Solano Irrigation District

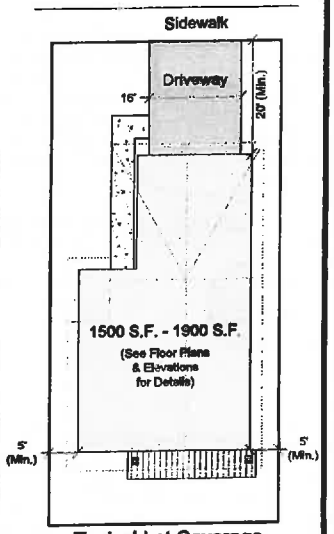
SEWER SERVICE
Fairfield-Suisun Sewer District

ELECTRIC & GAS SERVICE
Pacific Gas & Electric (PG&E)

PHONE & CABLE
AT&T and Comcast

GRAPHIC SCALE

(30 FEET)
1 inch = 60 ft.



Typical Lot Coverage

Not To Scale

COMMERCIAL AMENITIES

- BICYCLE RACKS
- GATHERING/SEATING AREA
- TRASH ENCLOSURE

LEGEND:

- 6' WOOD FENCE
- 8' SOUND WALL (TO MATCH EXISTING)
- PROPOSED MAILBOX CLUSTER
- PROPOSED CROSSWALK
- PROPOSED FIRE HYDRANT (4)
- PROPOSED STREET LIGHT (8)

SHEET INDEX

OVERALL SITE PLAN
TENTATIVE MAP
PRELIMINARY GRADING & DRAINAGE PLAN
PRELIMINARY LANDSCAPE PLAN
NEIGHBORHOOD & PHOTO EXHIBIT
ARCHITECTURAL FLOOR PLANS
ARCHITECTURAL ELEVATIONS

NO.	REVISIONS	DATE

DESIGNED: REW
DRAWN: REW
PROJ. NO: 201308
DWG: Rosemary_Concept10
DATE: December, 2013

ZEPHYR ESTATES
Overall Site Plan

SUISUN CITY CALIFORNIA

SCO PLANNING ENGINEERING & SURVEYING

1 OF 5

Attachment 5

97

12

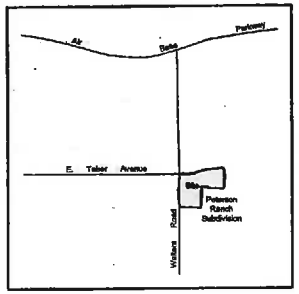
Zephyr Estates

TSM 13/4-001

Schwartz Land Development Company

Tentative Map

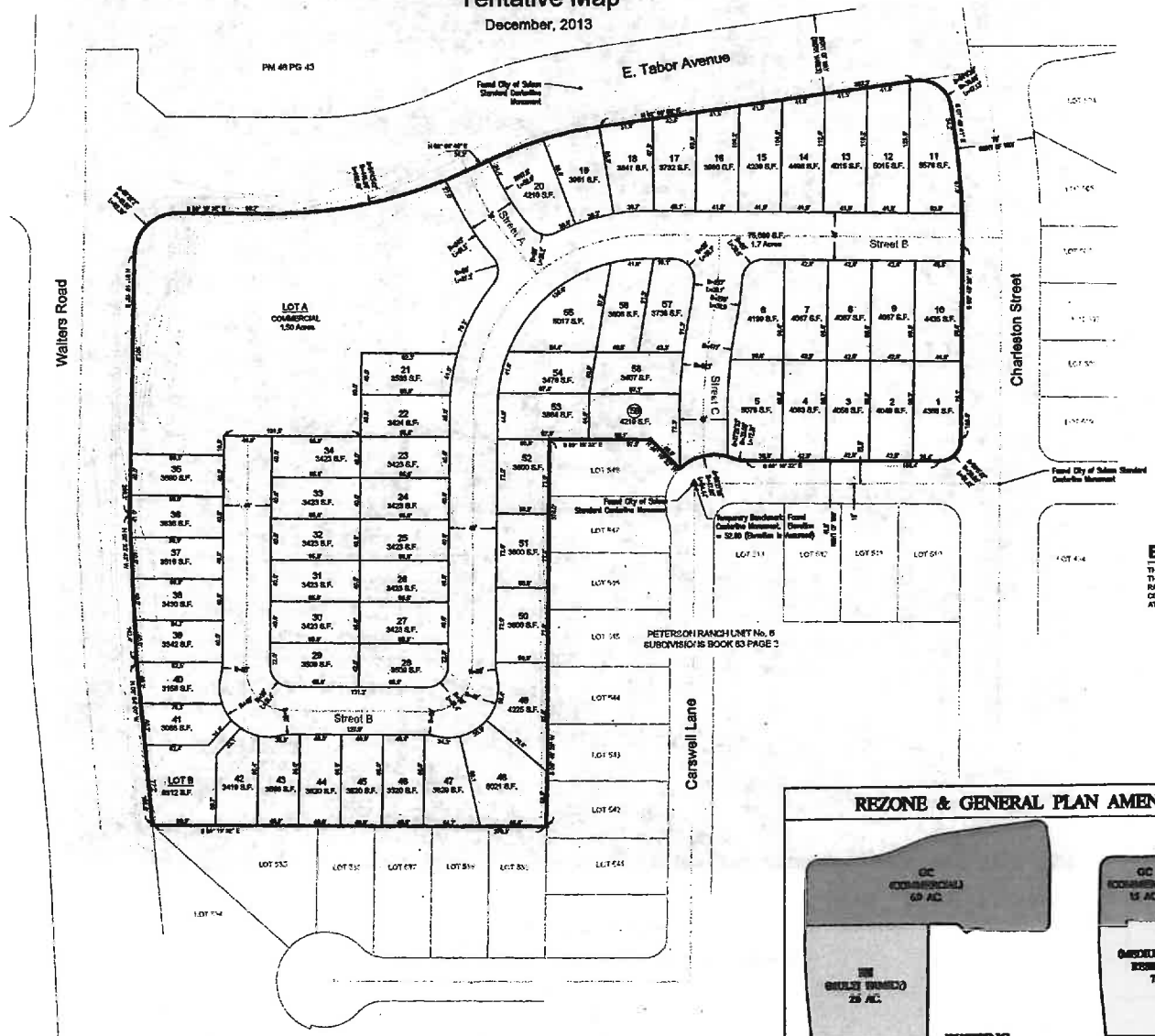
December, 2013



VICINITY MAP

Scale: 1" = 1000'

GRAPHIC SCALE



BASIS OF BEARINGS

THE BASIS OF BEARINGS IS THE SAME AS SHOWN ON THAT CERTAIN SUBDIVISION MAP ENTITLED PETERSON RANCH UNIT NO. 6, FILED IN THE OFFICE OF THE SOLANO COUNTY RECORDER IN BOOK 63 OF SUBDIVISION MAPS, AT PAGE 2 AND IS TAKEN FROM FOUND MONUMENTS.

PROJECT INFORMATION

OWNER
Stanley M. Davis Co.
P.O. Box 1230
Davis, CA 95616

APPLICANT
Robert Schwartz
114 Raven Hill Road
Orinda, CA 94563

PLANNING & ENGINEERING
SCO Planning & Engineering
140 Litton Drive, Suite 240
Grass Valley, CA 95945
530-272-5841
Contact: Rob Wood

APN
0174-120-230

SITE AREA
8.6± Acres

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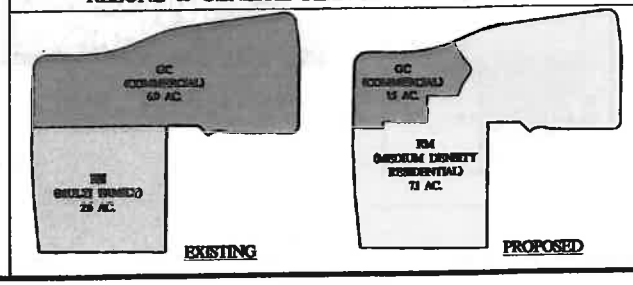
WATER SERVICE
Solano Irrigation District

SEWER SERVICE
Fairfield-Suisun Sewer District

ELECTRIC & GAS SERVICE
Pacific Gas & Electric (PG&E)

PHONE & CABLE
AT&T and Comcast

REZONE & GENERAL PLAN AMENDMENT EXHIBIT



NO.	REVISIONS	DATE

DESIGNED: REW
DRAWN: REW
PROJ. NO: 201306
DWG: Boserings_Concept10
DATE: December, 2013

ZEPHRY ESTATES
Tentative Map

SUISUN CITY CALIFORNIA

SCO PLANNING & ENGINEERING

2 OF 5

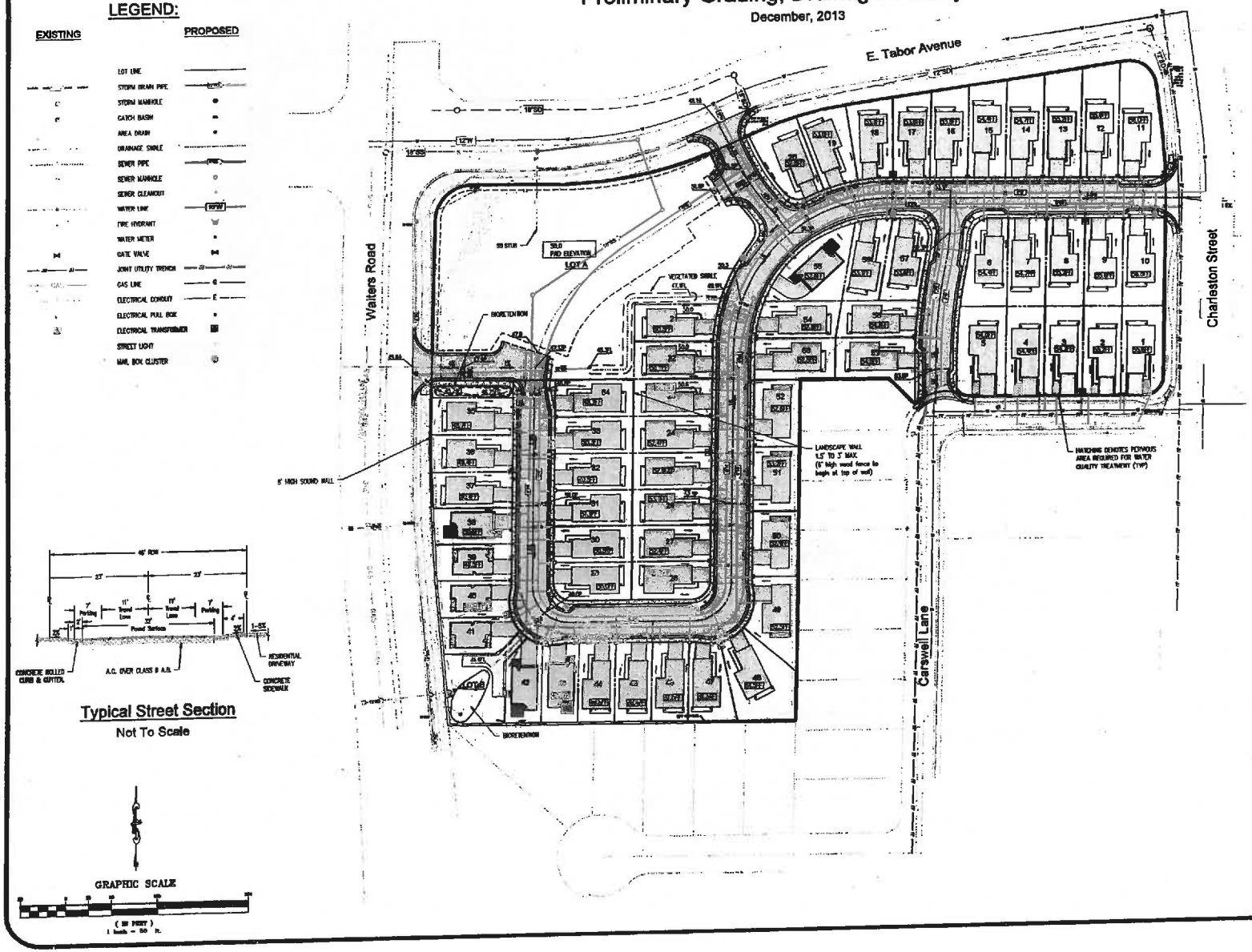
Zephyr Estates

TSM 13/4-001

Schwartz Land Development Company

Preliminary Grading, Drainage & Utility Plan

December, 2013



ZEPHYRY ESTATES

Preliminary Grading, Drainage and Utility Plan

SUISUN CITY CALIFORNIA

NO.	REVISIONS	DATE

DESIGNED: ML
DRAWN: ML
PROJ. NO: 201306
DWG: Basemap_Concept11
DATE: December, 2013

SGC PLANNING ENGINEERING & SURVEYING

Item 12
Attachment 5

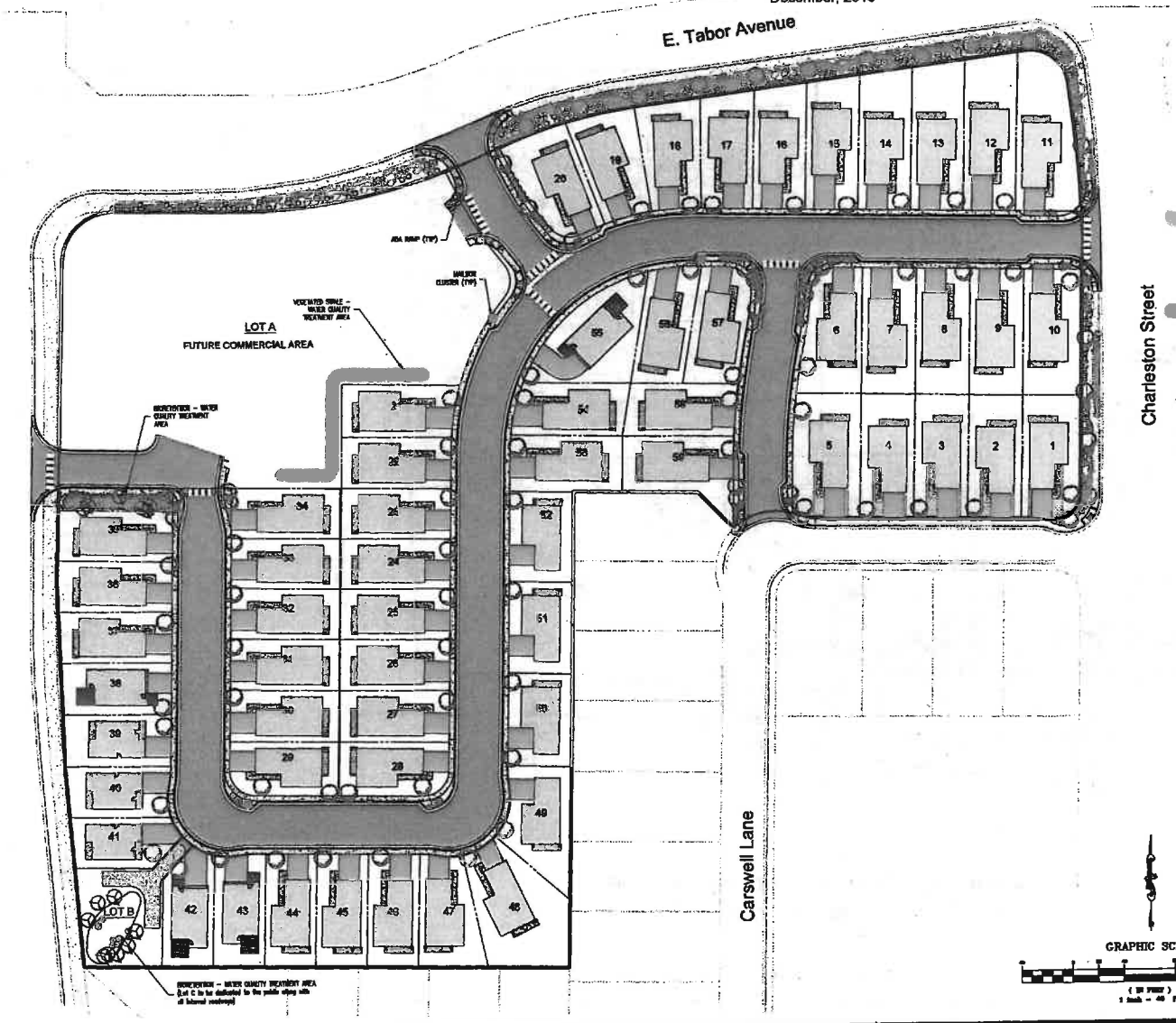
Zephyr Estates

TSM 13/4-001

Schwartz Land Development Company

Preliminary Landscape & Lighting Plan

December, 2013



LEGEND:

SYMBOL	COMMON NAME	BOTANICAL NAME	SIZE
	BIGLEAF MAPLE	ACER MACROPHYLLUM	15 GAL
	REDTWIG DOGWOOD	CORNUS	15 GAL
	CALIFORNIA REDBUD	CERCUS OCCIDENTALLIS	15 GAL
SHRUBS			
	SAGELEAF ROCKROSE	CISTUS SALVIAFOLIUS	1 GAL
	H. MCMINN MANZANITA	ARCTOSTAPHYLOS	1 GAL
	DAY LILIES	HEMEROCALLIS HYBRIDS	1 GAL
	RAMANAS ROSE	ROSO R. "HANSA" VAR.	1 GAL
	MEXICAN MOCK ORANGE	CHOISYA TERNATA	1 GAL
GROUND COVERS			
	PROSTRATE MYOPORUM	MYOPORUM PARVIFOLIUM	1 GAL
	EMERALD CARPET	EMERALD CARPET	1 GAL

PERENNIAL GRASSES/ REVEG MIX

NOTE:
ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REVEGETATED WITH THE FOLLOWING:

		SEED
MOUNDING RED FESCUE	FESTUCA RUBRA	1 GAL
MEADOW SEDGE	CAREX PRAEGRACILLUS	1 GAL
JUNCUS OCCIDENTALLIS	WESTERN RUSH	1 GAL
NODDING NEEDLE GRASS	NASSELLA CERNUA	1 GAL

BIOSWALE/VEGETATED SWALE MIX

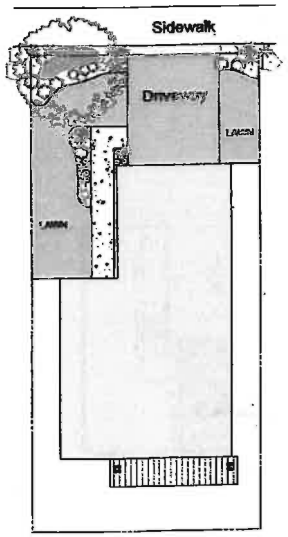
BIOSWALE MIX
DELTA BLUEGRASS CALIFORNIA NATIVE SOD:
PURPLE NEEDLE GRASS
CALIFORNIA BARLEY
MEADOW BARLEY
MOLATE FESCUE

THIS HATCHING DEMOTES AREA SPECIFICALLY UTILIZED FOR WATER QUALITY TREATMENT. NO IMPERVIOUS SURFACE SHALL BE INSTALLED.

PROPOSED STREET LIGHT

PROPOSED FIRE HYDRANT

PROPOSED MAILBOX CLUSTER



Typical Lot Landscape Plan

Not To Scale

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

NO.	REVISIONS	DATE

DESIGNED: JPD
DRAWN: JPD
PROJ. NO: 201308
DWG: Bosemop_Concept11
DATE: December, 2013

ZEPHYR ESTATES
Preliminary Landscape / Lighting Plan

SUISUN CITY CALIFORNIA

SCO PLANNING ENGINEERING & SURVEYING

4 OF 5

Zephyr Estates

TSM 13/4-001

Schwartz Land Development Company

Neighborhood & Photo Exhibit

December, 2013

9 Duplex Units - E. Tabor Ave

8 Project Site from Walters Rd

7 Project Site from Walters Rd

6 Cloud 9 Cocktail Lounge

5 Sound Wall - To be Extended

10 Walters / E. Tabor Intersection

1 Kingdom Hall from E. Tabor Ave

2 End of E. Tabor Avenue

3 Charleston Street

4 Carswell Lane

GRAPHIC SCALE

NO.	REVISIONS	DATE	DESIGNED: RDW
			DRAWN: RDW
			PROJ. NO: 201306
			DWG: Beaming_Concept11
			DATE: December, 2013

ZEPHYR ESTATES

Neighborhood and Photo Exhibit

DUBLIN CITY CALIFORNIA

SCO PLANNING ENGINEERING & SURVEYING

5 of 5

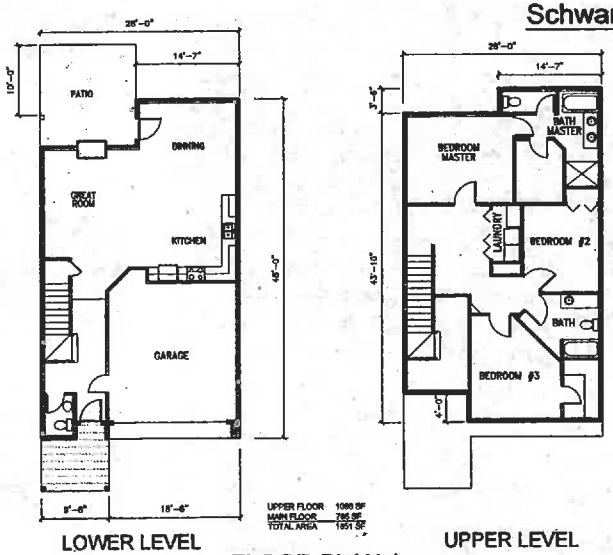
Attachment 5

Zephyr Estates

TSM 13/4-001

Schwartz Land Development Company

Floor Plans

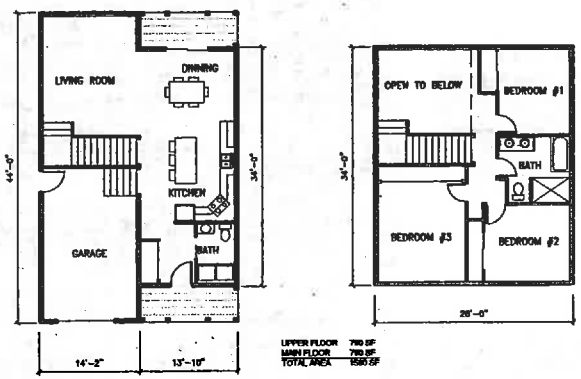


LOWER LEVEL

UPPER LEVEL

FLOOR PLAN 1

1/8" = 1'

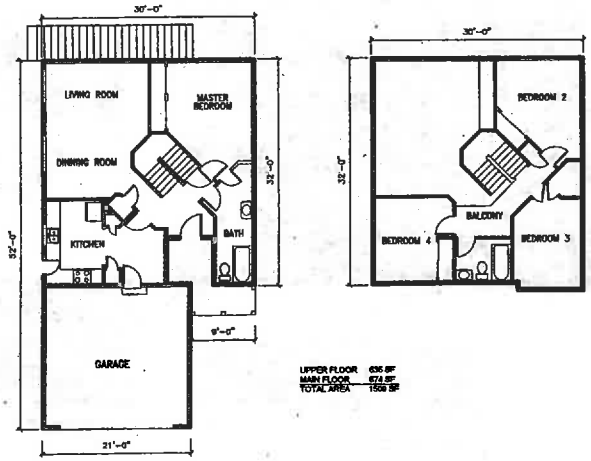


LOWER LEVEL

UPPER LEVEL

FLOOR PLAN 2

1/8" = 1'

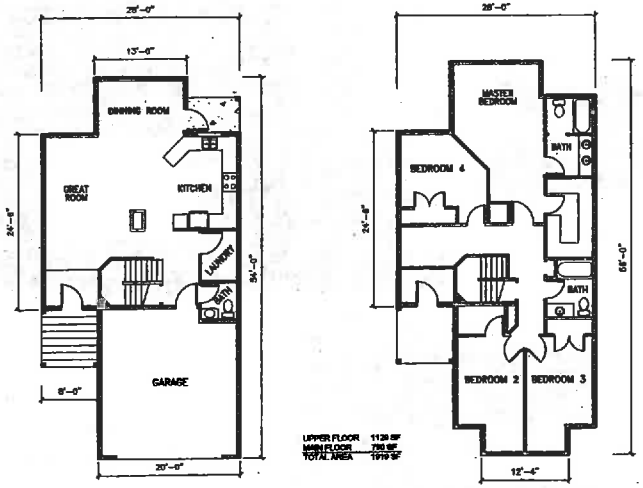


LOWER LEVEL

FLOOR PLAN 3

1/8" = 1'

UPPER LEVEL



LOWER LEVEL

FLOOR PLAN 4

1/8" = 1'

UPPER LEVEL

NO.	REVISIONS	DATE

DESIGNED: RDM
DRAWN: JPD
PROJ. NO: 201308
DWG: Brownsvg_Concept11
DATE: December, 2013

ZEPHYR ESTATES
Floor Plans

SUISUN CITY CALIFORNIA

SCO PLANNING ENGINEERING & SURVEYING

A1 OF A2

Zephyr Estates

TSM 13/4-001

Front Elevations

Front Elevation #1

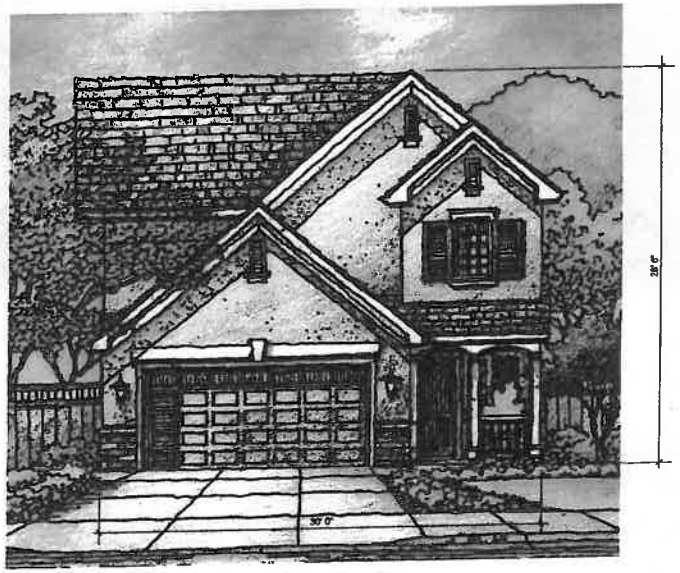
Scale: 1/4" = 1'

Front Elevation #2

Scale: 1/4" = 1'

Notes:

1. Exterior building materials and colors to be approved by City of Suisun prior to building permit issuance.
2. Exterior building materials should match or appear compatible with adjacent Peterson Ranch Subdivision.



Front Elevation #3

Scale: 1/4" = 1'

Front Elevation #4

Scale: 1/4" = 1'

NO.	REVISIONS	DATE	DESIGNED: HDW
			DRAWN: REV
			PROJ. NO: 201308
			DWG:Basemap_Service10
			DATE: December, 2013

ZEPHYR ESTATES

Conceptual Elevations

SUISUN CITY CALIFORNIA

SCO PLANNING & ENGINEERING

A2 of A2

ITEM 12

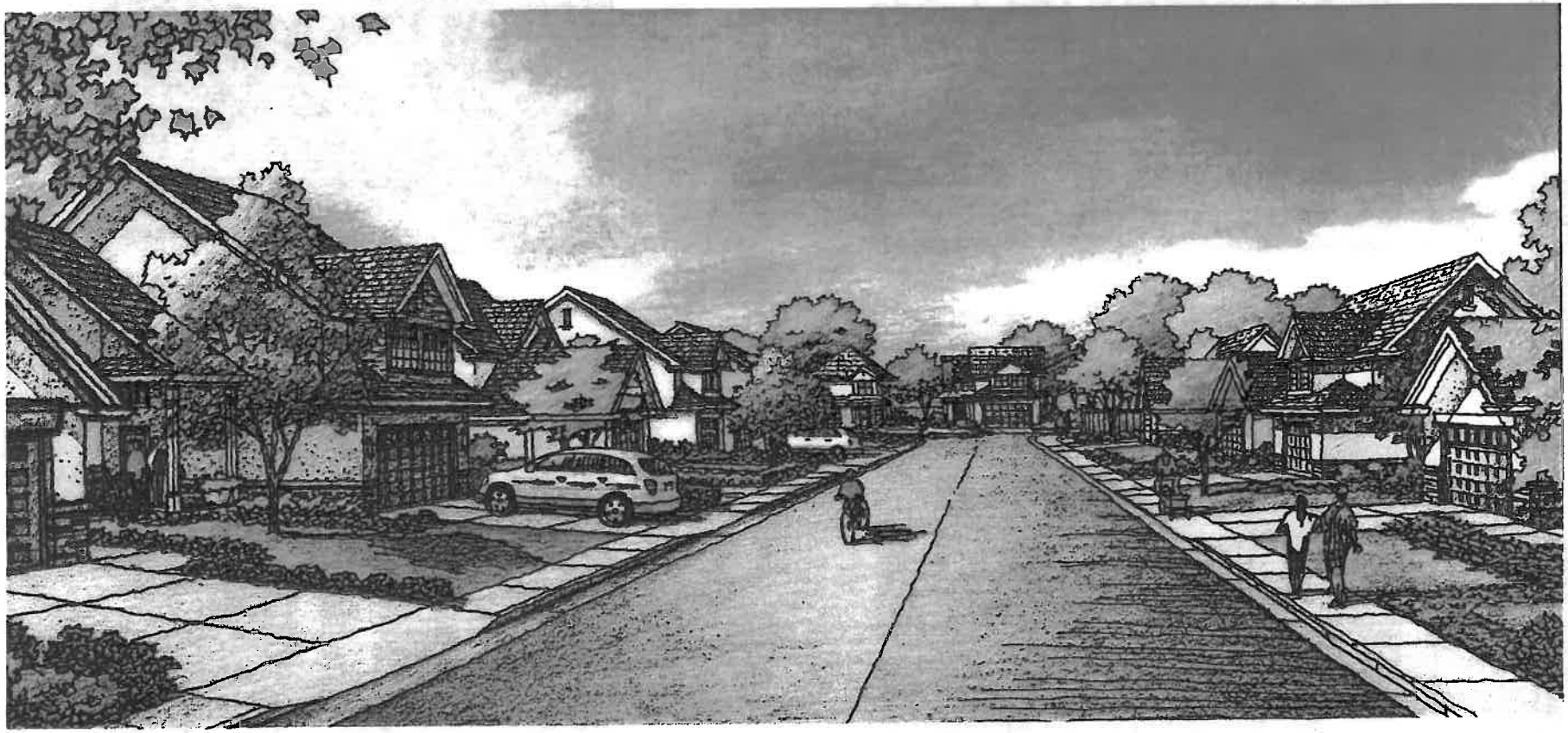
Attachment 5

Zephyr Estates

Schwartz Land Development Company

Street Perspective

December, 2013



Attachment 6

DRAFT

Initial Study/Mitigated Negative Declaration

Project Name: Zephyr Estates

(Separate)

Document is available online at

http://www.suisun.com/wp-content/files/Zephyr_Estates_Mitigated_Negative_Declaration.pdf

From: Letitia Perkins <letitiaperkins2001@yahoo.com>
Sent: Tuesday, July 15, 2014 11:15 PM
To: Anita Skinner
Cc: John Kearns
Subject: Schwartz Land Dev/Zephyre Estates

APN 0174-120-230

I am a resident of Peterson Ranch and my home sits on Carswell Lane/Ct side. I am writing because I would have concerns regarding the proposed dev. on East Tabor and Walters Road. Although most residents welcome new homes and businesses to our area, we nevertheless still have concerns. Questions: Will there be a new fence build behind the home where the backyard faces Carswell side? From the plans it appears that you will be using the existing wooden fence to separate the existing properties from the new property. We would like new fencing if you plan to have a shared fencing deal. Next, as indicated on the plans, there will be a retainin wall (like the existing) that will be placed further down Walters in order to enclose the dev. Question: We would like to see the retaining wall continue on the E. Tabor side along the areas behind the new homes on E. Tabor continuing along Charleston. This retaining wall will provide better separation of two devs and serve for the purpose of continued beautification of the neighborhood. Further, we are concerned about what kind of businesses will be allowed to dwell in the area? How late will they stay open? Will they sale alcohol etc.? We are concerned that the wrong type of business will draw the wrong crowd. Also, if these business go out of business and become vacant, we are concerne that the area will appear abandoned and become an eye sore. We would like a clause reaffirming the businesses and what happens if they become vacant. Thank you for your consideration!
Tish Perkins
"To God Be The Glory"

STATE OF CALIFORNIA EDMUND G. BROWN JR., *Governor*

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013
(213) 576-7083

July 11, 2014

Mr. John Kearns
City of Suisun City
701 Civic Center Boulevard
Suisun City, California 94585

Re: SCH 2014062066 Suisun City Zephyr Estates

Dear Mr. Kearns:

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires the Commission approval for construction or alteration of crossings and grants the Commission exclusive power on design, alteration, and/or closure of crossings in California. The Commission's Rail Crossings Safety Section (RCSS) has received a copy of the *Mitigated Negative Declaration* (MND) for the proposed Zephyr Estates from the State Clearinghouse. The City of Suisun City (City) is the lead agency for the project.

According to the MND, the project will build 59 single-family residences and commercial use on an 8.6-acre land. This project may construct a new public crossing and/or modify of existing public crossings (including closure), which require authorization from the Commission through the formal application or the General Order (GO) 88-B request processes, respectively. This project may also involve modification of an existing private crossing. While modification of private crossings may not need the Commission's authorization, compliance with the Commission's GO 26-D (Clearances on Railroads and Street Railroads as to Side and Overhead Structures, Parallel Tracks and Crossings) and GO 75-B (Regulations Governing Standards for Warning Devices for At-Grade Highway-Rail Crossing) standards are still required. The Emergency Notification Sign (ENS) I-13 shall be also installed with contact information and DOT Number visible in plain sight.

Prior to submission of a formal application or GO 88-B request, the City should arrange a diagnostic meeting with RCSS and related railroad parties to discuss relevant safety issues and requirements for the Commission's authorization. RCSS representatives are available for consultation on crossing safety matters. See the link for more information: http://www.cpuc.ca.gov/PUC/safety/Rail/Crossings/index.htm.

If you have any questions in this matter, please contact Ken Chiang at (213) 576-7076, yen.chiang@cpuc.ca.gov, or Daniellia Fristoe at (916) 928-2108, dvm@cpuc.ca.gov.

Sincerely,

Ken Chiang, P.E.
Utilities Engineer
Rail Crossings Safety Section
Safety and Enforcement Division

C: State Clearinghouse

Solano County Mosquito Abatement District

ITEM 12
Attachment 7

JOE ANDERSON, President - Dixon
RONALD SCHOCK, Vice President - Trustee-at-Large
ROBERT C. MEADOR, Secretary - Vacaville
CHARLES TONNESEN, Fairfield
HOWARD LUTE, Suisun
JOHN RANKINE, Rio Vista
MIKE WHITE, Benicia
LARRY PETRIE, Vallejo

2950 Industrial Ct.
Fairfield, CA 94533-6500
Telephone (707) 437-1116
Fax (707) 437-1187

Meetings: Second Monday Every Month
7:30 P.M.

JON A. BLEGEN, Manager
CAROL EVKHANIAN, Biologist
RICHARD SNYDER, Supervisor
TAMI WRIGHT, Sec./Bkpr.

RECEIVED
JUL 2014

July 16, 2014

John Kearns, Associate Planner
City of Suisun City Planning Department
701 Civic Center Blvd.
Suisun City, CA 94585

Re: Zephyr Estates Project, 0174-120-230

Dear Mr. Kearns:

Solano County Mosquito Abatement District staff has reviewed the hydrology and water quality section prepared in connection with the above-mentioned project and would appreciate the City of Suisun City take into consideration the following in the approval process:

1. CRITERIA FOR MOSQUITO PREVENTION IN DRAINAGEWAY CONTRUCTION AND MAINTAINANCE PRACTICES;
2. CRITIERIA FOR MOSQUITO PREVENTION IN SEDIMENTATION AND RETENTION BASINS;
3. Harbison and Metzger September 2010 publication (highlighted for reference); and,
4. Metzger University of California publication (highlighted).

If you should need any further information please do not hesitate to contact the district at the telephone number listed above or by email at SOLMAD@AOL.COM.

Thank you for providing the Solano County Mosquito Abatement District an opportunity to comment on the Zephyr Estates project.

Sincerely,

Jon A. Blegen
Manager

CRITERIA FOR MOSQUITO PREVENTION IN
DRAINAGEWAY CONSTRUCTION AND MAINTENANCE PRACTICES

Background Statement

Mosquitoes breed in creeks and ditches where ponding occurs due to obstructions, overflow of banks, excessive siltation and back-eddys created from low water flow during the dry months. Consequently, modification of drainageways (digging, and filling, etc.) is often necessary to allow free flow of water. Construction of new ditches must be undertaken to maintain adequate circulation of water.

Although obstructions and ponding in creeks and ditches most often occur naturally, alterations to water flows also arise from new construction, refuse deposits and agricultural activities. The correction and costs of such alterations become the responsibility of the person(s) or agency(s) involved when mosquito production results, and abatement expenditures incurred by SCMAD may be billed to the responsible party, pursuant to the procedures set forth in the California Health and Safety Code, Sections 2000 et. seq.

One type of drainageway used to adequately drain low lands in the marsh is called a spreader ditch. This is a small ditch (18 X 18 inches) which drains into a main ditch or tidal water slough. Main ditches direct flow to a water control structure and thence into a tidal water slough.

Policies For Management of Drainageway Construction and Maintenance

1. Water control structures (flap gates, slide gate, weir box, etc.) should be in working condition to facilitate the flooding and complete draining of managed wetlands.

2. Clear and retrench spreader ditches approximately every three years.

3. Excavate or dredge existing main ditches when necessary.

4. Repair levees and remove debris and vegetation which are obstructing natural stream channels if such materials create a situation which may endanger public health and safety.

5. Fill isolated potholes (depressions found in marsh areas) which may create mosquito problems and cannot feasibly be connected to circulating water.

6. Connect pools (depressions found in streambeds) to the main flow of water by minor hand ditching when it appears that they are problem mosquito breeding sites.

7. Maintain all access roads and levees in good repair to allow continuous mosquito surveillance, and provide access for control equipment.

8. Install and maintain water control structures whenever possible to expedite flood water removal.

The preceding mosquito prevention criteria are intended only to offer guidance when considering the development of design options during the planning process for projects. Be advised that these practices have been found to be effective, however once the project has been completed it is essential that conscientious maintenance and management practices be followed to help ensure the successful prevention of mosquito production.

Be further advised that under the California Health and Safety Code (Sections 2000 et. seq.) the responsibility for the cost of mosquito control may fall on the property owner.

7/13

CRITERIA FOR MOSQUITO PREVENTION IN *SEDIMENTATION PONDS AND RETENTION BASINS*

Background Statement

Sediment basins, sediment traps, diversions or similar required measures shall be installed well in advance of any clearing or grading and maintained by the permit-issuing authority. The design of such structures should account for abating potential mosquito problems. *

1. Sedimentation ponds and retention basins may be any shape but should not have small coves or irregularities around their perimeters.
2. Ponds/basins should be designed to be emptied by gravity or pumping for cleaning or drying and have graded bottoms so all water can be removed.
3. Side slopes of excavations and levees should be as steep as possible, consistent with soil characteristics and risk factors of slope failure.
4. Ponds/basins should be kept dry during the period between April 1 and November 1. This serves to prevent mosquito production and substantially reduce the efforts required to keep the vegetation under control.
5. Where steep side slopes cannot be economically achieved, the slopes should be adequately constructed to support maintenance vehicular traffic.
6. The top width of embankments should be a minimum of 12 feet and should be adequately constructed to support vehicular traffic.
7. An access ramp should be provided on an inside slope for launching a small boat for mosquito control.
8. Ponds designed for long-term storage should have a minimum storage depth of 4 feet.
9. A maintenance program for weed and erosion control along inner slopes is essential.
10. All accumulation of dead algae, vegetation and debris should be routinely removed from the impounded water surface and properly disposed.

Water Conveyance Facilities

1. Ditches must be maintained free of emergent, marginal and floating vegetation.
2. Ditches should be sized and graded for adequate flow and must not be used for water storage.
3. Unpressurized and low-pressure pipelines, commonly used in irrigation systems, should be designed to be emptied when not in use and should not be used for water storage because of the mosquito breeding potential in partially filled pipes.

* This ordinance became effective on January 25, 1980 and is binding on all grading and vegetative removal activities in the county. It is Erosion Control Ordinance 1087 and is contained in Chapter 31 of the Solano County Code, Article III, Section 31-300.

The preceding mosquito prevention criteria are intended only to offer guidance when considering the development of design options during the planning process for projects. Be advised that these practices have been found to be effective, however, once the project has been completed it is essential that conscientious maintenance and management practices be followed to help ensure the successful prevention of mosquito production.

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7/13

We Want *You* to Fight Stormwater Mosquitoes

A call for interagency and interdisciplinary collaboration

By Justin E. Harbison and Marco E. Metzger

Mosquitoes are annoying. No joke. A single mosquito flying around your bedroom when you are trying to sleep can literally test your mental and emotional limits. While one is bad enough, a swarm of mosquitoes can lead to outright panic. What's more, many species have embraced the urban lifestyle, using sources of standing water we've intentionally or unintentionally created as nurseries for their larvae. And, as you might guess, this includes water found within modern infrastructure engineered to manage stormwater runoff. In fact, in many urban areas, there is some evidence that stormwater infrastructure may be the single greatest source of mosquitoes (Harbison et al. 2010). With these rather disturbing visuals in place, we present an argument for increased collaboration between stormwater and mosquito control agencies to improve our chances against these irritatingly persistent foes.

The Rich History Between Stormwater and Mosquitoes

It is easy to understand why agencies tasked with the admirable and difficult jobs of floodwater management and stormwater pollution prevention would be frustrated by spoilsports claiming that certain engineered structures are perfect places for producing mosquitoes. Someone always has to complain. However, the stormwater community should take some comfort in knowing these concerns are not due to a growing conspiracy of mean-spirited people

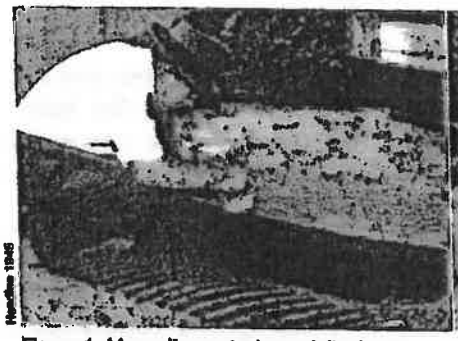
THE BMP PARADOX

The number of structural stormwater treatment best management practices (BMPs) installed in urban areas is rapidly increasing as cities scramble to meet requirements of their National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges. The paradox lies in the fact that although BMPs are designed to mitigate harmful effects of stormwater on both human and environmental health, many of these structures hold temporary or permanent bodies of standing water that are ideal for the development of potentially disease-carrying mosquitoes. Production of mosquitoes is highly variable, often localized, and dependent on many factors, but contrary to popular belief, it can often be greatest in physically smaller BMPs. As the number of BMPs increases, so does the likelihood of creating new sources of mosquitoes.

in the field of mosquito control. Stormwater structures are highly susceptible to mosquito production, and the battle against these opportunistic six-legged flying syringes has raged on for over a century in the United States in the fight to protect public health and quality of life.

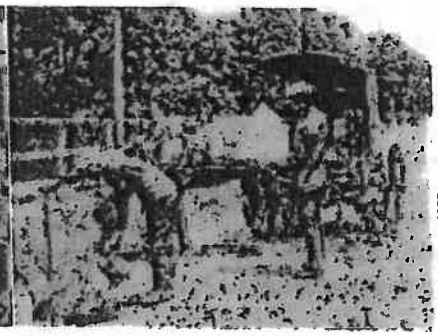
Since the discovery of mosquitoes' ability to transmit diseases in the late 1800s, stormwater structures have been implicated in aiding the spread of malaria, yellow fever, dengue, and other diseases in many urban areas of the United States. The most well-known, recent connection was made shortly after the discovery of West Nile virus (WNV) in New York City in 1999. catch basins (Figures 1 and 2), combined sewage overflows, and, most recently, structural stormwater best management practices (BMPs) (Figures 3 and 4). Cumulatively, more than 40 mosquito species have been identified from these structures (Harbison et al. 2010).

Few realize that during the first half of the 20th century, civil and environmental engineers were among the greatest proponents and leaders of mosquito control efforts in the United States and abroad. This idea is exemplified by the historic work of Joseph LePrince, a sanitary engineer. LePrince performed groundbreaking work controlling mosquitoes responsible



Hamilton 1946

Figure 1. Mosquito control specialist in the 1940s sampling mosquitoes from a street drainage catch basin in New Jersey



Chase and Nyhan 1903

Figure 2. Application of kerosene to catch basins to control mosquitoes in Brookline, MA, circa 1900

A mosquito species common to the city's storm drains and catch basins was identified as the primary disease vector throughout the region (Spielman and D'Antonio 2001). Over the next five years, WNV spread rapidly across North America, and numerous other mosquito species associated with urban stormwater infrastructure were incriminated in spreading the disease (Irwin et al. 2008, Metzger et al. 2008, Calhoun et al. 2007, Gingrich et al. 2006). This is not entirely surprising, because historical data have documented mosquitoes in cisterns, rain barrels, flood control channels and impoundments, storm drains, for outbreaks of malaria and yellow fever during construction of the Panama Canal (Figure 5) and during World War I. Later, in the 1930s, engineers and mosquito control experts in the Tennessee River Valley worked together in a highly successful malaria control program by both managing water levels and applying insecticide to problem areas (Spielman and D'Antonio 2001). The structural and hydrological expertise of engineers directing or collaborating in these efforts led to tremendous advancements in mosquito control, which eventually helped eradicate malaria and yellow fever from the United States.

The Need for Greater Collaboration

Unfortunately, much of the history between stormwater and mosquito control specialists has been obscured by time, and despite repeated proposals for collaboration in published literature, joint ventures between these two disciplines remains relatively uncommon. In light of modern clean water regulations, recent studies yet again have suggested a need for greater interagency and interdisciplinary collaboration to better prevent the spread of mosquitoes and mosquito-borne diseases (Metzger et al. 2008, Harbison et al. 2010). The importance of collaborative work is significant, particularly if one considers the growing potential for exotic mosquitoes and mosquito-borne diseases to be introduced into the United States as international travel and trade increases. The impact of WNV over the past decade was a wakeup call to many people in this regard. However, foreign species of mosquitoes continue to be introduced into the US, including one potential disease vector that has already been found in stormwater BMPs on the East Coast (Linthicum et al. 2003, Gingrich et al. 2006). While it may not always be in the public's eye, the threat to health and quality of life created by mosquitoes still exists and cannot be ignored.

Assessing Mosquitoes and BMPs in the 21st Century

The recent proliferation of stormwater BMPs in urban areas has created widespread concern among mosquito control agencies who view these structures as potentially adding to the mosquito burden generated from the already highly productive stormwater infrastructure. The need for more in-depth information prompted the California Department of Public Health Vector-Borne Disease Section (VBDS) to conduct a nationwide survey of state and local government agencies responsible for mosquito surveillance and control and/or stormwater management (Harbison et al. 2010). The objectives of the survey were to assess the prevalence of BMPs and associated mosquito production, identify current measures taken to control mosquitoes within BMPs, and elucidate the extent of collaboration between these agencies.

Agencies surveyed by VBDS included special districts and city, county, and state entities (Figure 6) with varying land use jurisdictions: urban, 38.3%; suburban, 12.5%; rural, 16.4%; a combination of two, 15.2%; and a combination of all three, 17.6%.

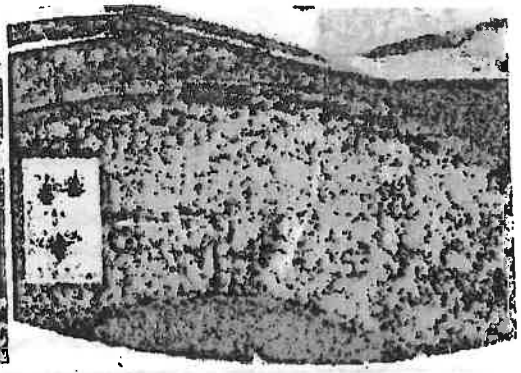
In total, 329 agencies participated in the study, with nearly equal representation of stormwater and mosquito control from all 50 states and the District of Columbia (Figure 7). (The "Other" category shown in Figure 6 consists of six combined city/county agencies, three private companies hired to perform either mosquito control or stormwater activities for local governments, and one agency that declined to provide this information.)

Not surprisingly, agencies from every state (312 of 329 agencies, or 95%) reported BMPs within their jurisdictions, and the presence of mosquitoes was reported within these structures in nearly every state. Only in Maine and Washington DC (with two and one participating agencies, respectively) were there no agencies reporting mosquito production within their BMPs. This reported lack of mosquitoes is likely due to the small number of agencies surveyed in these two regions rather than to any unique difference in mosquito behavior or BMPs in those areas of the United States. Obviously, mosquitoes don't follow political boundaries, and different species can thrive in conditions as cold as those in Alaska and Minnesota and as hot and dry as those in southern California, Texas, and Arizona.

Responses to the survey also suggest that most types of BMPs can support mosquito production. The seven categories of BMPs reported to harbor mosquitoes included detention and/or retention basins, grass swales, stormwater treatment wetlands/ponds, infiltration basins/trenches, belowground proprietary systems, and bioretention systems. This information corroborated previous findings in California by VBDS (Metzger et al. 2002) and clearly indicates BMPs can and do create mosquito habitat throughout the United States.

The Current State of Collaboration

Overall, approximately 40% of survey participants reported some degree of interagency collaboration to minimize mosquito production in BMPs. Among three agency categories (stormwater, mosquito control, or both), those that perform both mosquito control and stormwater activities are more likely to collaborate with other agencies than those that perform only one of these two functions. These multifunctional agencies were able to list the number of BMPs within their jurisdiction significantly more often than were mosquito control agencies, and they were aware of mosquito production within their BMPs and knew whether



Left: Figure 3. Monitoring standing water for mosquitoes in a stormwater treatment system in Ontario, CA. Despite over a century of technological advancements, including air travel, space exploration, and the Internet, we still use pick-axes to remove manhole covers.
Right: Figure 4. Recently emerged adult mosquitoes resting on the sides of an inspection manhole of a hydrodynamic separator in Perris, CA

their BMPs were routinely monitored for mosquitoes significantly more often than did stormwater agencies. This greater breadth of knowledge was no doubt a result of the dual nature of these programs but may also have been boosted through relationships with outside agencies.

It may seem odd that an agency already performing both mosquito control and stormwater activities would need or even want to collaborate with other agencies, particularly as these agencies likely have staff with expertise in both disciplines. The answer to this may be linked to frequently overlapping jurisdictional boundaries of city, county, and state agencies with stormwater programs. For example, a city public works department, county flood control district, and state department of transportation may all have BMPs (and other stormwater structures) installed and operating within the city's limits. If the city public works department also performs mosquito control (and therefore is likely to self-identify as an agency performing "both" functions), this department would require access to all stormwater structures within the city boundaries regardless of ownership, thereby making it necessary to collaborate with outside agencies. Independent mosquito control programs similarly require access to stormwater structures, strongly suggesting that the need for interagency collaboration exists for these agencies as well; however, this assumption was not supported by the questionnaire responses. A significantly smaller percentage of mosquito control agencies (44 of 118, or approximately one third) reported collaboration when compared to almost 60% (33 of 56) of multifunctional agencies. The reason for this is unclear, but it is possible that the educational diversity of staff from multifunctional agencies makes it easier to develop contacts and facilitates collaborative efforts with outside agencies. Regardless, the fact that more multifunctional agencies were able to report critical information regarding both BMPs and mosquitoes underscores the potential benefits resulting from interagency and interdisciplinary work and supports the long-suggested calls for collaboration.

Program Weaknesses and Attitudes Uncovered by the Survey

When you consider the close association between stormwater and mosquitoes, it comes as no shock that mosquitoes were reported in BMPs nationwide by participating agencies. However, responses revealed a number of unexpected program weaknesses and apathetic attitudes that could create barriers to interagency collaboration and compromise mosquito control efforts. Approximately half the agencies perform-

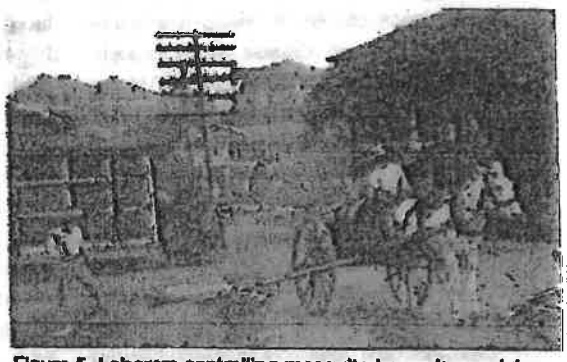


Figure 5. Laborers controlling mosquito larvae by applying crude oil to roadside drainage ditches in the Panama Canal Zone using a pipe apparatus, circa 1912

ing stormwater management (either solely or with mosquito control activities) were unable to state 1) how many BMPs were in their jurisdiction and 2) how often these BMPs were maintained. Because stormwater agencies are often tasked with planning, permitting, installing, and/or maintaining BMPs, one might assume this information is not only easily available to these agencies, but is in fact generated by them. From the mosquito control perspective, knowing the locations of and having access to these potential sources of mosquitoes is critical to adequately control or prevent the spread of mosquitoes. The reported lack of information related to BMP maintenance also raises some concerns. Seeing that BMPs are properly maintained (e.g., removing accumulations of sediment and trash) not only can help minimize mosquito problems, but is necessary to ensure that the water-quality function of these structures is preserved (Metzger et al. 2008). Everybody wins when BMPs are maintained.

Another surprise was the perceived importance of mosquito control to stormwater agencies. When asked to consider the potential benefits of collaboration, one quarter of stormwater agencies reported improved mosquito prevention would be an outcome that is "not important." This apparent lack of appreciation for mosquito control activities is somewhat disconcerting, especially when one considers the decades of compelling evidence supporting the public health value of such programs and the critical role civil and environmental engineers played in early mosquito control efforts. The prevention of death, disease, and discomfort achieved through organized mosquito control has been widely recognized for over a century, and its value continues to be seen worldwide (Spielman and D'Antonio 2001). It is important for the stormwater community to recognize the risks posed by mosquitoes and the need to manage their populations in urban environments. This shouldn't be too much of a stretch, considering the Clean Water Act (the impetus for modern stormwater programs) is built largely on a foundation of public health, requiring waters to be both "fishable and swimmable." Protecting the public from fecal coliform or from eating tainted fish only to increase the risk of mosquito-borne disease suggests a situation where neither stormwater nor mosquito control agencies are meeting their goals. It may seem like a Catch-22, where anything you do can result in people getting sick, but it has been shown that addressing the concerns of both stormwater and mosquito control communities can help both sides meet their needs and sometimes even improve programs and attitudes (Metzger et al. 2008).

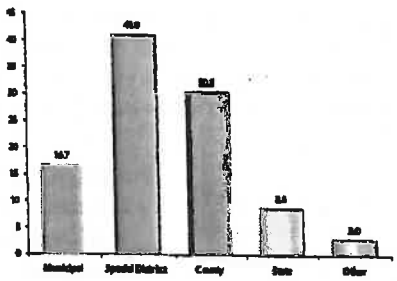


Figure 6. Percentage of 329 government agencies, grouped by category, that were surveyed nationwide regarding mosquito production in structural stormwater BMPs. The "Other" category consisted of six combined city/county agencies, three private companies hired to perform either mosquito control or stormwater activities for local governments, and one agency that declined to provide this information.

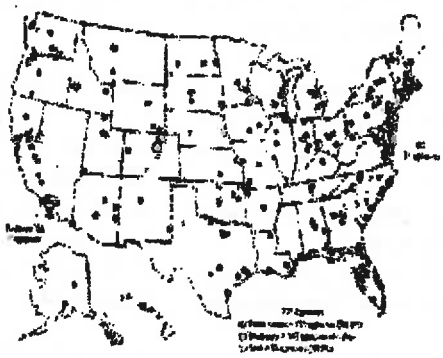


Figure 7. Approximate geographic location of the 329 government agencies that participated in the VBDS survey investigating mosquito production in structural stormwater BMPs

As an example, local mosquito control agencies may be willing to assist stormwater programs by notifying staff of structures that are malfunctioning and/or are in need of maintenance, especially given that it would also be in their own interest to keep BMPs functioning properly and to minimize standing water. The increased attention given to BMPs could help identify possible issues (e.g., overgrown vegetation, clogged structures) before they create serious and likely expensive problems. And, in many cases, just the threat of mosquitoes can promote proper and timely maintenance of BMPs. For example, a homeowners association might be more likely to maintain a detention basin servicing a subdivision if that association and its residents have a better understanding of the connection between these types of structures and mosquitoes. When you consider the growing need to do more with fewer resources, having a little outside help never hurts.

Moving Forward With Collaboration

Results of the survey overwhelmingly suggest a need for greater collaboration. In fact, about 70% of those participating agencies that reported collaborating to minimize mosquitoes in BMPs stated that more or improved collaboration was needed. Based on these findings, we still have a way to go. However, the future is not entirely bleak, and the survey did uncover some ideas to help jumpstart collaborative work. The two most common suggestions to improve collaboration between stormwater and mosquito control agencies were 1) to increase interagency communication, and 2) to raise awareness of the association between stormwater and mosquitoes. The key to addressing either of these suggestions lies in communication. As such, the most elementary approach the stormwater community can use to take the initiative for building collaborative relationships is picking up the telephone.

The potential impact of a simple phone call should never be underestimated. Even if a full-blown working relationship does not result from a phone conversation, shared information can go a long way to help develop an understanding and appreciation for the roles and responsibilities of other agencies, particularly those with overlapping or arguably conflicting goals. At a minimum, a mosquito control agency can provide good advice on keeping irritating insects from ruining your next family outing. Collaborating with mosquito control agencies doesn't have to be a frightening prospect and really shouldn't be motivated by fear or financial worries. Protecting people and the environment from polluted waters and preventing the spread of mosquitoes and their diseases are both worthy pursuits and are important to the public's well-being. Neither needs to take precedence over the other when both sides can work together.

FUN FACT: BMP

Although the ambiguous term "best management practice" or BMP was adopted by politicians and legislators in the 1970s in reference to actions, practices, and structures used to reduce flow rates and constituent concentrations in runoff, it has been used increasingly to describe a myriad of practices, from production of peanuts to patient care in hospitals. Even mosquito control has jumped on the BMP bandwagon (Harbison et al. 2010). Yes, we now have BMPs for minimizing mosquitoes in BMPs. Is it time to retire this term yet?

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Acknowledgements

The authors acknowledge the contributions of all agencies that participated in and aided distribution of the nationwide survey, VBDS staff that assisted in stormwater projects, Camille Harbison for her editing suggestions, and the California Department of Transportation for support. Special thanks to Renjie Hu and Vicki Kramer of VBDS for their support, encouragement, and guidance.

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CALTRANS AND VBDS: A DECADE-LONG CASE STUDY IN COLLABORATION

For many stormwater agencies, there may be few obvious incentives and more headaches involved when considering whether to collaborate with local mosquito control agencies. However, the relationship between the California Department of Transportation (Caltrans) Stormwater Program and California Department of Public Health Vector-Borne Disease Section (VBDS) provides an example of how collaboration can be worth the effort. Since 1999, VBDS has worked closely with Caltrans to develop long-term, non-chemical solutions to reduce mosquito

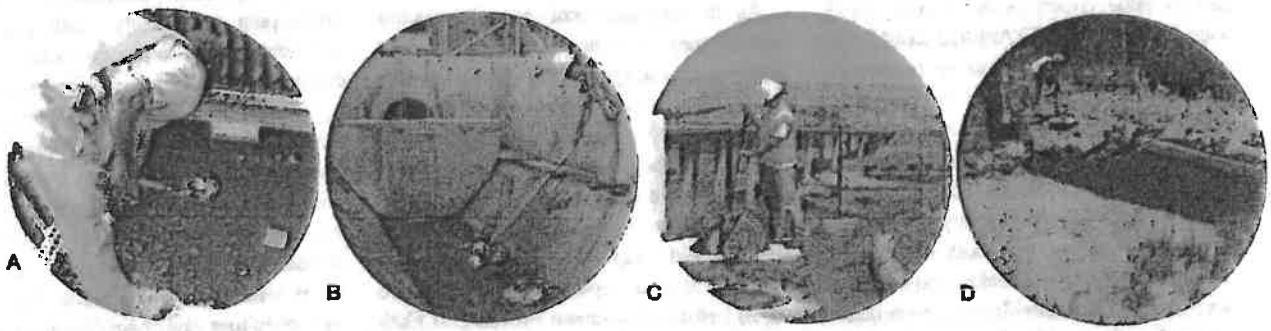

Figure 8. For over a decade, VBDS staff has monitored mosquito populations in over 100 Caltrans BMPs in various parts of California to identify problem areas likely to produce mosquitoes and to develop non-chemical preventive solutions. Some examples illustrating the diversity of structures examined include (A) a multi-chambered treatment train in Los Angeles County, (B) a gross solids removal device in Orange County, (C) a stormwater treatment system in San Diego County, and (D) a traction sand trap in the Lake Tahoe Basin.

Figure 9. Four examples of loose rock riprap installed to dissipate water energy at the inlets of detention basins. This common feature consistently provided suitable mosquito habitat because of its propensity to hold standing water for longer than four days.

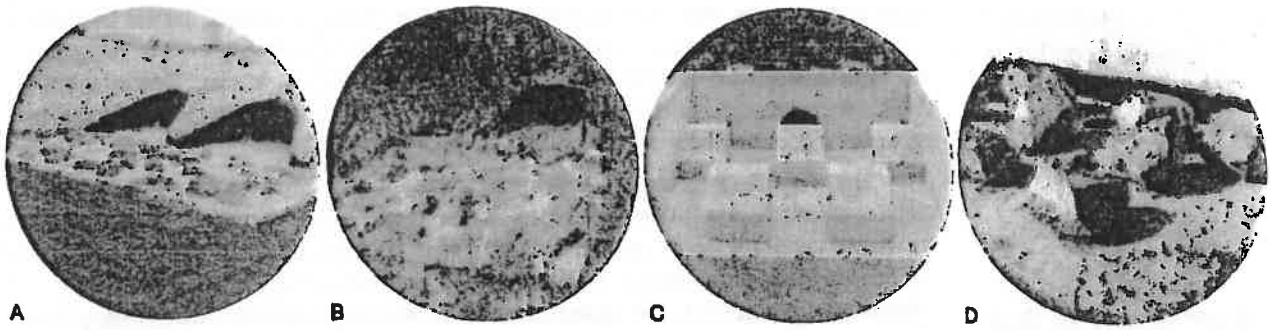

Figure 10. Alternative inlet designs installed by Caltrans in attempts to mitigate persistent mosquito habitat associated with loose rock riprap. Although not entirely fail-proof, each of the alternate designs (A, B: rock embedded in a concrete apron, C: cast concrete blocks, and D: boulders placed on top of a concrete apron) was far superior to the loose riprap and rarely resulted in mosquito production.

production in Caltrans's structural stormwater BMPs. The decade-long working relationship has raised awareness, improved maintenance schedules, and led to the retrofit of many structures with features less likely to hold standing water (Figures 8, 9, and 10). These efforts have potentially reduced the risk of mosquitoes and disease to residents and visitors of surrounding areas while improving water quality through improved maintenance of BMPs.

Some of the significant findings from the VBDS-Caltrans collaboration include:

- Most BMP designs had potential to hold standing water and produce mosquitoes, regardless of their water treatment function.
- Mosquitoes were often found year-round in BMPs, although their presence was difficult to predict for many reasons, including the occurrence of unexpected non-stormwater flows.
- The wide range of habitats created in BMPs allowed for production of many different mosquito species. Seventeen species were documented in California, including several capable of carrying diseases. The two most common species found in BMPs are also the most important vectors of West Nile virus in the state.
- Most BMPs were located within 500 meters of residential, commercial, and recreational areas, well within the flight distance of many mosquito species, reinforcing the fact that these structures can present a public health concern.

Recommendations made by VBDS to minimize mosquitoes in BMPs include the following:

- Stormwater can be detained for as long as four days without creating a mosquito concern throughout California. Water can be held indefinitely between October and April in certain high-altitude areas of the Sierra-Nevada greater than 5,000 feet (e.g., Lake Tahoe Basin) due to the harsh alpine climate lethal to larvae of disease-carrying mosquitoes.
- Replace loose rock riprap (Figure 9) with designs less prone to hold water for longer than four days (Figure 10).
- Install tight-fitting covers and manhole cover inserts to minimize mosquito access to permanent sources of standing water in certain belowground BMPs.
- Maintenance and monitoring of BMPs should be proactive and include frequent inspections, particularly following rain events or where non-stormwater runoff is common.
- Aggressively trace and eliminate sources of non-stormwater runoff, including those that originate from other properties.
- Notify local mosquito control agencies of the locations of all new and current BMP structures to ensure mosquito concerns are addressed.

PUBLICATION 8125

Managing Mosquitoes in Stormwater Treatment Devices

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The federal Clean Water Act, as amended in 1987, requires states to develop and implement nonpoint source pollution management programs (see Copeland 1999, 2003). These mandated programs require that certain measures be taken to abate pollutants carried by rainwater and urban (i.e., dry weather) runoff, herein collectively referred to as stormwater runoff. A principal component of stormwater programs is the implementation of Best Management Practices (BMPs), a term first adopted in the 1970s to represent actions and practices used to reduce the flow rates and the constituent concentrations in runoff (WEF and ASCE 1998).

The regulatory pressure to achieve increasingly higher levels of pollution abatement gave birth to a burgeoning industry that specializes in developing stormwater treatment devices based on the latest available technologies. These treatment BMPs are engineered to maximize the capture and removal of target pollutants from stormwater, often with the added benefit of reducing excessive downstream flows. Hundreds of designs have been developed across the United States, including many proprietary devices, and in some cases existing structures such as flood-control basins and constructed wetlands may be modified to function as treatment BMPs to satisfy local needs. Unfortunately, although best for managing runoff, these devices often provide aquatic habitats suitable for mosquitoes and other vector species as an unintended consequence of their implementation (see CH2M Hill 1999; Chanda and Shisler 1980; Dorothy and Staker 1990; Florida Coordinating Council on Mosquito Control 1998; Kluh et al. 2002; McLean 2000; Metzger et al. 2002, 2003; O'Carroll 1978; Santana et al. 1994; Schimmenti 1979; Schmidt 1980; Smith and Shisler 1981). In this publication, treatment BMP and treatment device are used interchangeably.

Public health and safety is a major component of all stormwater management programs. Flood control and the reduction of waterborne pathogens are high priorities, yet mosquito management is often overlooked. Mosquito management is essential to prevent disease transmission and maintain quality of life and must be integrated into every stormwater program. This publication provides basic guidelines for mosquito management that are relevant to the location, design, and operation of proprietary and nonproprietary stormwater treatment devices. Unfortunately, the rapid growth and evolution of stormwater programs and BMP designs combined with the tremendous number of local factors that may influence mosquito production at any given site preclude any cure-all recommendations or solutions. Careful implementation of these guidelines will help suppress mosquito breeding while reducing health risks and discomfort, lowering costs associated with mosquito abatement, and lessening legal liability.

MOSQUITOES AND MOSQUITO CONTROL

Mosquitoes are regarded as undesirable in both rural and urban areas throughout most of the United States. Not only is their biting activity a nuisance, mosquitoes also vector (transmit) pathogens that cause human and animal diseases. The recent threat of West Nile virus compounds concerns and reinforces the need for effective mosquito control.

There are approximately 3,000 species of mosquitoes worldwide (about 200 in the United States) and all require water to complete their life cycle (fig. 1). Mosquito control is most effective when directed at immature stages in standing water rather than at adults and is best conducted using a combination of techniques including biological, physical, chemical, and in states such as California, legal control (California Health & Safety Code [H&S Code], □□2060-2067, 100170, 100175). Biological control uses or enhances natural enemies of mosquitoes such as fish; physical control makes habitats less suitable for mosquito production; chemical control uses insecticides that target immatures or adults; and legal control can force uncooperative parties to eliminate breeding habitats on their property or face financial penalties.

Despite advances in mosquito management, the importance and need for careful preventative design and maintenance plans is paramount. This becomes apparent especially when faced with the limitations imposed by certain treatment BMPs as a result of their design, location, or accessibility. For example, underground treatment devices that hold permanent sources of water and produce mosquitoes are unlikely to support commonly used biological control agents, and physical controls such as exclusion

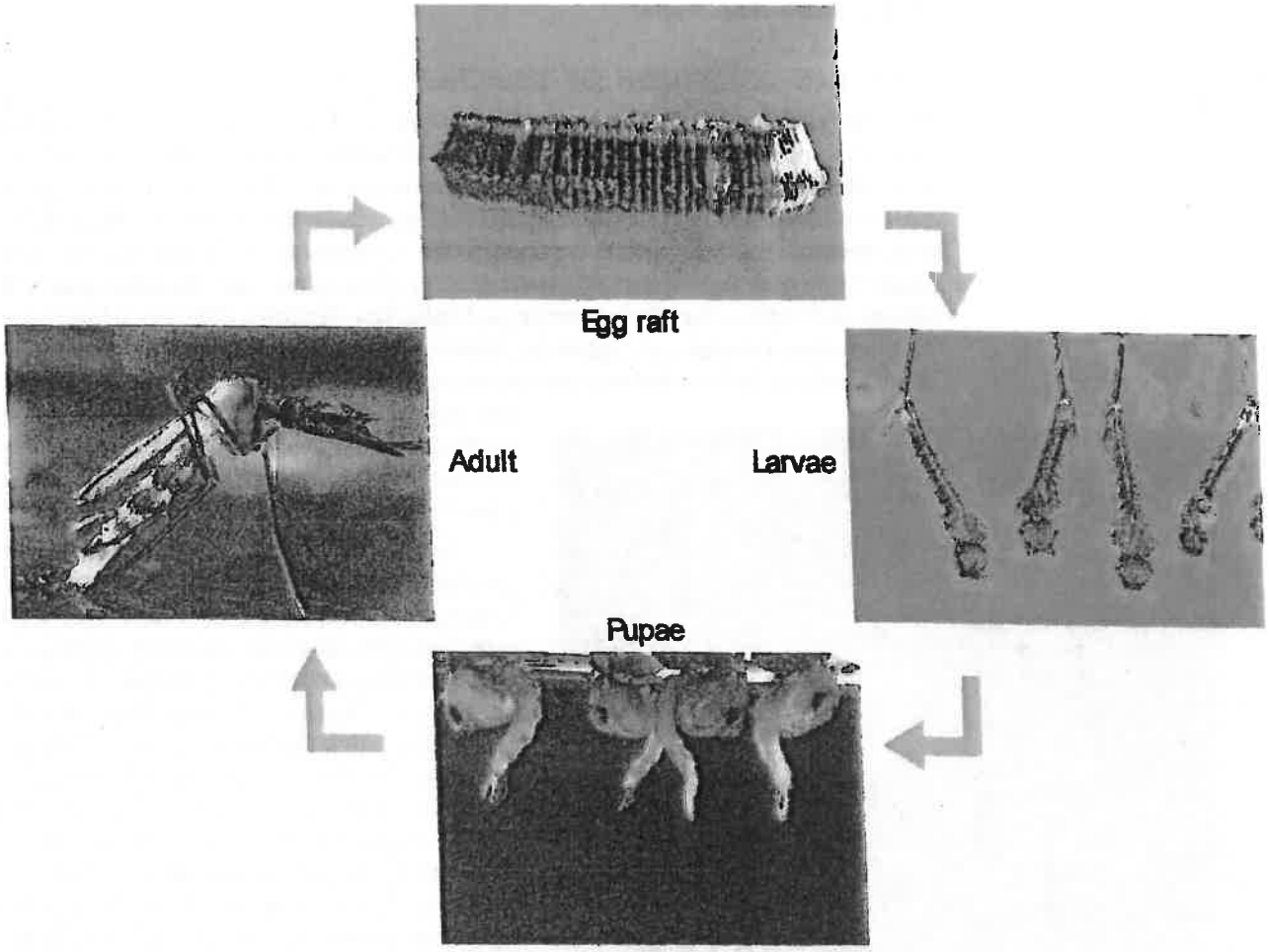

Figure 1. The mosquito life cycle consists of four stages: egg, larva, pupa, and adult. Female mosquitoes lay eggs on or near water. Eggs hatch into aquatic larvae that feed on organic material and grow through four stages before becoming pupae. Winged adults emerge from pupae, mate, and begin the cycle again. Only female mosquitoes feed on blood, which provides the nutrients needed for the development of eggs. Males are more short-lived and feed on plant juices. Photos courtesy of Marin/Sonoma Mosquito and Vector Control District.

(e.g., valves and covers) can be difficult to implement without affecting the devices' intended function. In these situations, chemical treatment, and legal abatement in some states, are the only remaining options. Note that in this publication, chemical treatment refers to the use of registered pesticides to control the aquatic stages of mosquitoes (larvicides), including bacteria, hormone mimics, and oils.

LARVICIDING VERSUS PREVENTATIVE ENGINEERING

As more and more stormwater programs recognize the importance of integrating mosquito control into their lists of public health priorities, the dilemma of how to effectively manage mosquitoes in designs that favor mosquito breeding becomes obvious. Larvicide treatments are increasingly considered as long-term solutions for mosquito control in lieu of costly retrofits, replacements, or redesigns. However, sole reliance on larvicides is not a long-term solution for preventing mosquito production. Every possible effort should be made to design the bugs out during preconstruction planning or via postconstruction retrofits to avoid creating a possible public health hazard. When all else fails, registered pesticides should be applied only by certified professionals due to the risk of establishing pesticide resistance in target organisms, as well as potential liability issues from misuse.

TYPE AND LOCATION OF TREATMENT BMPS

When selecting and installing stormwater treatment devices, agencies consider factors such as the projected runoff for a given area, the available or allocated space, cost, and local pollutants of concern. Structural designs can range from simple to elaborate and appear to be limited only by funding and the imagination of engineers. The most common processes used for pollution management in treatment BMPs that may be used singly or in combination include trash capture, settling and sedimentation, media filtration, and infiltration. Typical urban and suburban treatment devices include vegetated channels (swales), dry detention basins, wet retention ponds or constructed wetlands, media filtration devices, and belowground sumps, vaults, and basins. Of concern to public health officials is that an alarming number of these devices hold nutrient-rich stagnant water that provides breeding places for mosquitoes (fig. 2).

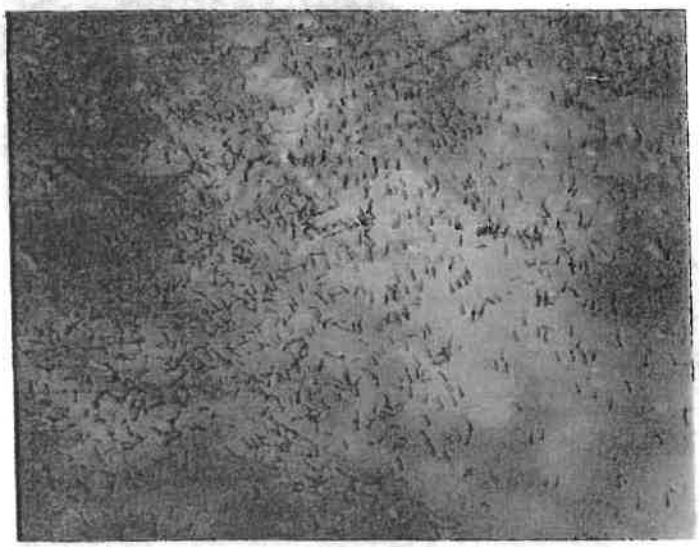

Figure 2. Waters rich in accumulations of organic materials created by some treatment BMPs provide ideal larval habitats for many species of mosquitoes, including those that can transmit human diseases. The standing water in this small roadside stormwater basin harbored hundreds of mosquito larvae and illustrates the reproductive potential of mosquitoes when provided with suitable habitat. Photo: Marco Metzger.

Location can greatly affect whether a treatment BMP becomes a significant source of mosquitoes. For example, identical structures in different locations may vary widely in potential mosquito production due to the number of mosquitoes present in the area, the species composition, and the duration of breeding activity. Elements that may influence the mosquito breeding potential in any given location may include a variety of environmental, construction, and local factors operating singly or in combination (table 1). Because of their propensity to breed mosquitoes, all treatment BMPs, regardless of their design, should be monitored periodically by vector control professionals with knowledge of the biology and ecology of local mosquito species. A more proactive approach would be to include vector

Table 1. Factors that may influence mosquito production potential in treatment BMPs

Elevation
Installation above or below ground
Local climate
Local fauna (i.e., potential predators)
Nonstormwater runoff quantity, quality, and event frequency (e.g., residential and commercial)
Proximity to existing mosquito sources
Stormwater runoff quantity, quality, and event frequency
Surrounding host animals (wild and domestic) potentially available for female mosquitoes to feed upon
Surrounding land use, both present and future
Surrounding structural refuges for adult mosquitoes (e.g., trees, shrubs, storm sewers)
Surrounding vegetation, both native and exotic

Note: This list is incomplete. Other local factors may also be conducive to mosquito production.

control professionals in preconstruction planning. This type of collaborative effort could help prevent costly future retrofits or replacements necessary to meet mosquito management goals.

MOSQUITO SUPPRESSION THROUGH DESIGN AND MAINTENANCE

The majority of treatment BMPs operate as □passive□systems, meaning that they do not require active operational control or adjustment beyond routine maintenance. As a result, most installations remain unsupervised for extended periods, and if conditions are favorable, mosquito breeding could occur unobserved and uncontrolled. Conscientious planning that emphasizes mosquito habitat reduction or elimination in both design and maintenance plans can prevent these problems (Metzger et al. 2002; O'Carroll 1978; Schimmenti 1979). Minimizing the mosquito production potential of treatment BMPs requires that standing water not be available for sufficient time to permit emergence of adult mosquitoes. This can be achieved in one of three ways:

- □Rapid discharge of all captured water.
- □Denying mosquitoes access to standing water (e.g., tight-fitting covers).
- □Making the habitat less suitable for breeding (e.g., vegetation management, mosquitofish).

Mosquito development from egg to adult varies by species and is influenced primarily by temperature and food availability. Certain species can complete the aquatic stages of development and emerge as adults in less than 1 week under ideal conditions. Because of this, a 72-hour maximum residence time for captured water in treatment BMPs is recommended in California and elsewhere as a conservative safeguard to prevent emergence of adult mosquitoes (Florida Coordinating Council on Mosquito Control 1998; Metzger et al. 2003; Santana et al. 1994). In reality, many treatment BMPs hold water for over 72 hours, sometimes due to their outdated designs, and more recently in order to meet stringent effluent water quality requirements. To ensure that public health and safety is maintained, the following suggestions should be considered for any structure that holds water for over 72 hours.

- □Select or design an alternative (or modified) device that provides adequate constituent removal and complete drainage in 72 hours. This is the most reliable and cost-effective choice.
- □Contact state or local public health or vector control agencies to determine whether local mosquito species and local factors (e.g., high elevation) may preclude rapid mosquito emergence, thus safely allowing water residence times to exceed 72 hours. In some areas this may require a detailed study that should be funded by the soliciting party.
- □Provide adequate funds necessary to support routine mosquito monitoring and control.

Possibly the most overlooked aspect of treatment BMP implementation is the long-term commitment of funds necessary for proper maintenance of structures. Routine and timely maintenance is critical for suppressing mosquito breeding as well as for meeting local water quality goals. If maintenance is neglected or inappropriate for a given site, even structures designed to be the least □mosquito friendly□may

become significant breeding sites. Table 2 lists conditions that may increase the probability of breeding mosquitoes over time in various treatment BMPs. Maintenance guidelines for individual BMPs are often site-specific and are beyond the scope of this publication.

Table 2. Postconstruction conditions that may increase the probability of mosquito production in treatment BMPs.

Clogging (e.g., effluent pipes, media filters, infiltration basins)
Establishment of invasive or exotic vegetation
Groundwater fluctuations
Nonstormwater runoff (i.e., increases in runoff frequency, residence time, and/or volume)
Scouring and erosion
Structural damage (e.g., shifting or settling, roots)
Trash and sediment accumulation (e.g., formation of pools, clogging, redirected water flows)
Vandalism
Vegetation overgrowth

Note: This list may be incomplete. Other conditions favorable to mosquito production may become apparent as structures age.

BASIC GUIDELINES FOR MOSQUITO MANAGEMENT

Dry Systems

This category includes all stormwater treatment devices that are designed to drain completely following a storm event and remain dry. Examples include extended detention (dry detention) basins, vegetated swales, infiltration devices, and media filters.

- ☐Design structures so they do not hold standing water for more than 72 hours. Special attention to groundwater depth is essential.
- ☐Incorporate features that prevent or reduce the possibility of clogged discharge orifices (e.g., debris screens). The use of weep holes is not recommended due to rapid clogging.
- ☐Use the hydraulic grade line of the site to select a treatment BMP that allows water to flow by gravity through the structure. Pumps are not recommended because they are subject to failure and often require sumps that hold water.
- ☐Design distribution piping and containment basins with adequate slopes to drain fully and prevent standing water. The design slope should take into consideration buildup of sediment between maintenance periods. Compaction during grading may also be needed to avoid slumping and settling.
- ☐Avoid the use of loose riprap or concrete depressions that may hold standing water (fig. 3).

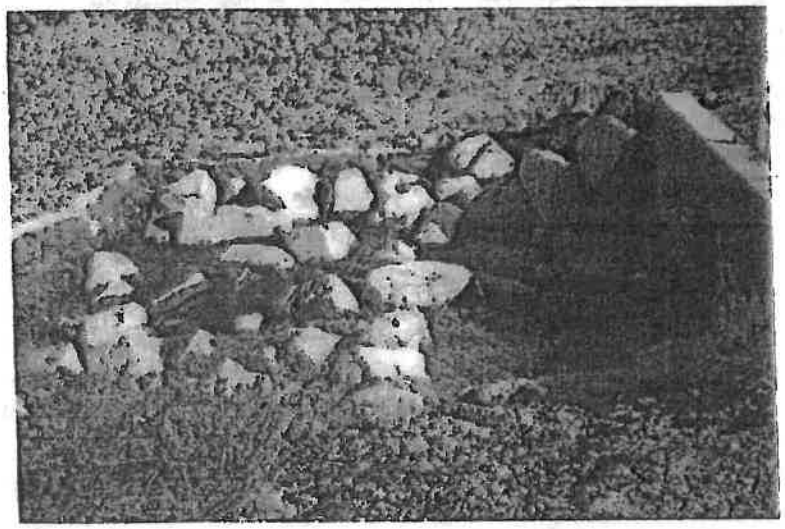

Figure 3. The use of loose rocks (riprap) to dissipate the energy of incoming runoff encourages mosquito production. Inevitably, standing water collects between the rocks, providing habitat for mosquitoes and making monitoring and control very difficult. A low-maintenance sloped concrete slab with imbedded rocks or concrete blocks is recommended as an alternative. Photo: Marco Metzger.

- ☐Avoid barriers, diversions, or flow spreaders that may retain standing water.

Systems with Sumps, Vaults, or Basins

This category includes all stormwater treatment devices, except ponds and wetlands, that incorporate features that hold permanent or semipermanent standing water. Sumps, vaults, and basins may be located both above and below ground, but they are particularly common features of belowground proprietary and nonproprietary treatment devices that tie into existing storm sewers. Examples include above- and belowground media filters, oil-water separators, vortex separators, and vault-type devices (fig. 4).

- ☐ Completely seal structures that retain water permanently or longer than 72 hours to prevent entry of adult mosquitoes. Adult female mosquitoes may

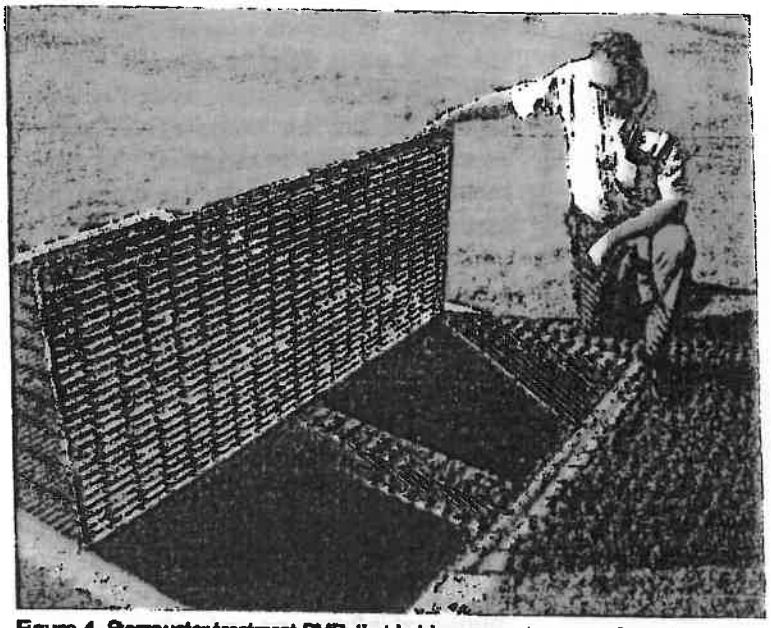

Figure 4. Stormwater treatment BMPs that hold permanent sources of standing water, especially belowground devices, pose a difficult challenge to mosquito exclusion efforts. A cooperative effort between stormwater professionals, municipal planners, public health officials, vector control agencies, and others is crucial to developing novel techniques that eliminate or deny mosquitoes access to standing water. Contact the state or local public health or vector control agency to discuss local vector issues and provide input and consultation on siting, design, and maintenance of proposed treatment BMPs. Photo: Marco Metzger.

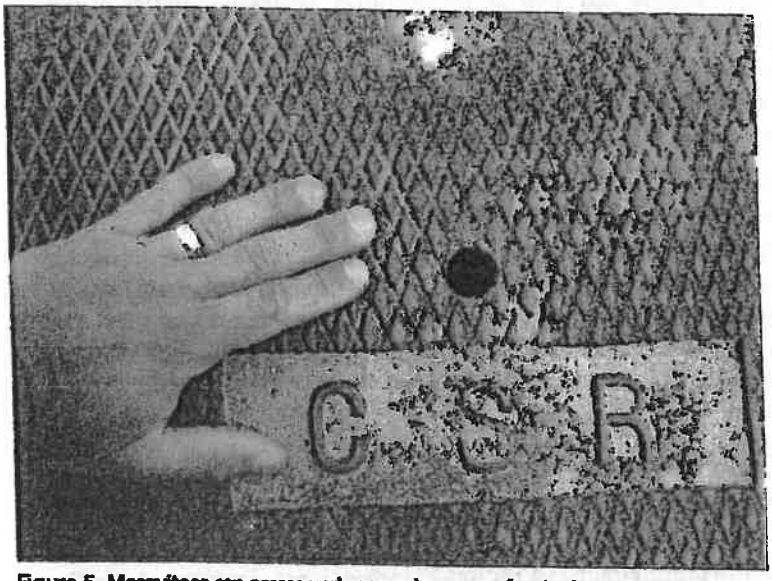

Figure 5. Mosquitoes can access underground sources of water in treatment BMPs from many places, including inlet and outlet pipes, loose-fitting covers, and vent holes. As a general rule, any gap 1/16 inch (2 mm) or greater is large enough to allow egg-laying females to enter. The hole in this manhole cover is more than large enough to allow mosquito entry. Photo: Marco Metzger.

penetrate openings as small as 1/16 inch (2 mm) to gain access to water for egg laying (fig. 5). Screening can exclude mosquitoes, but it is subject to damage and is not a method of choice.

- If using covers, they should be tight fitting with maximum allowable gaps or holes of 1/16 inch (2 mm) to exclude entry of adult mosquitoes. The use of gaskets can provide a much more effective barrier when used properly.
- If the sump, vault, or basin is sealed against mosquitoes, with the exception of the inlet and outlet, submerge the inlet and outlet completely to reduce the available surface area of water for mosquito egg-laying (female mosquitoes can fly through pipes). Alternatively, creative use of flapper or pinch valves, collapsible tubes (Mulligan and Schaefer 1982), and brush curtains might be effective for mosquito exclusion in certain designs.
- Design structures with the appropriate pumping, piping, valves, or other necessary equipment to allow for easy dewatering of the unit if necessary.

Stormwater Ponds and Wetlands

Stormwater ponds and constructed, modified, or restored wetlands that receive runoff and provide stormwater treatment pose a difficult challenge for mosquito control because nearly all produce mosquitoes to some degree (fig. 6). Over time, emergent and shoreline vegetation create habitats conducive to mosquito breeding that may be difficult or even hazardous for mosquito control professionals to access. Hazards increase significantly if proper access (see below) is not provided. If these kinds of structures must be built, it is crucial that appropriate and adequate funds be allocated to support long-term site maintenance as well as routine monitoring and management of mosquitoes by a qualified agency. The long-term costs, jurisdictional and maintenance conflicts associated with establishment of protected species (United States Fish and Wildlife Service 1999), and legal liability (e.g., H&S Code) associated with

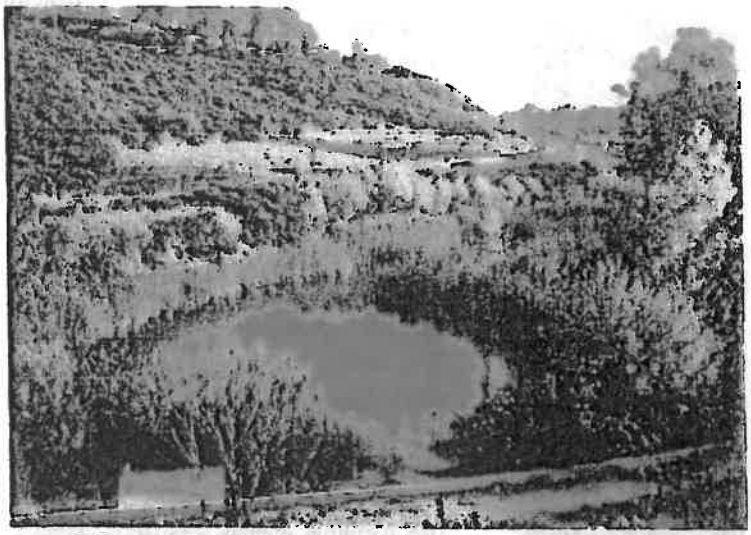

Figure 6. Stormwater treatment ponds and constructed wetlands form complex biological systems in which mosquitoes can be difficult to control. Effective mosquito management in these habitats requires careful planning before, during, and after construction. Mosquito suppression in this stormwater pond was achieved by following guidelines provided in this publication, i.e., weekly larval monitoring, annual removal of emergent vegetation, and maintenance of a healthy mosquitofish population. Additional guidelines for managing mosquitoes in surface-flow constructed wetlands are available and should be consulted (see Walton 2003). Photo: Marco Metzger.

these kinds of projects must be evaluated; if any doubt exists, consider alternate treatment devices. For example, feasibility studies of subsurface flow treatment wetlands are currently under investigation and may provide excellent mosquito-free alternatives (see Anonymous 2002).

Long-term management of mosquitoes in stormwater ponds and wetlands should integrate biological control, vegetation management and other physical practices, and chemical control as appropriate. Also, a provision for regular inspection of sites for detection of developing mosquito populations should be included. Some general guidelines are listed below. Local factors may influence the overall effectiveness of certain approaches for mosquito reduction. Additional information and guidelines are available for surface-flow constructed treatment wetlands and should be consulted (Walton 2003) to ensure that mosquito populations are minimized.

Mosquito Predators and Biological Control

- ☐Stormwater ponds and wetlands should maintain water quality sufficient to support surface-feeding fish such as mosquitofish (Gambusia affinis), which feed on immature mosquitoes and can aid significantly in mosquito control.
- ☐If large predatory fish are present (e.g., perch and bass), mosquitofish populations may be negatively impacted or eradicated. In this case, careful vegetation management remains the only nonchemical mosquito control measure.
- ☐Where mosquitofish are not allowed, careful vegetation management remains the only nonchemical mosquito control measure.
- ☐Other opportunistic predators such as dragonflies, diving beetles, birds, and bats feed on mosquitoes when available, but their effects are generally not sufficient to preclude chemical treatment. Despite popular beliefs, control of adult mosquitoes by birds (e.g., purple martins) and bats cannot be relied on in lieu of habitat maintenance and chemical control (Kale 1968; Tuttle 2000).

Vegetation

- ☐Emergent vegetation provides mosquito larvae with refuge from predators, protection from surface disturbances, and increased nutrient availability while interfering with monitoring and control efforts.
- ☐Perform routine maintenance to reduce emergent plant densities to facilitate the ability of mosquito predators (i.e., fish) to move throughout vegetated areas.
- ☐Whenever possible, maintain stormwater ponds and wetlands at depths in excess of 4 feet (1.2 m) to limit the spread of invasive emergent vegetation such as cattails (Typha spp.). Deep, open areas of exposed water are typically unsuitable for mosquito immatures due to surface disturbances and predation. Deep zones also provide refuge areas for fish and beneficial macroinvertebrates should the densely vegetated emergent zones be drained.

- Build shoreline perimeters as steep and uniform as practicable to discourage dense plant growth.
- Use concrete or liners in shallow areas to discourage unwanted plant growth where vegetation is not necessary.
- Eliminate floating vegetation conducive to mosquito production (i.e., water hyacinth [Eichhornia spp.], duckweed [Lemna and Spirodela spp.], and filamentous algal mats).

Miscellaneous

- Make shorelines accessible to maintenance and vector control crews for periodic maintenance, control, and removal of emergent vegetation, as well as for routine mosquito monitoring and abatement procedures, if necessary.
- Design and obtain necessary approvals for all stormwater ponds and wetlands to allow for complete draining when needed.

General Access Requirements

Providing adequate and safe access for maintenance activities and for mosquito monitoring and management in stormwater treatment devices cannot be over emphasized (fig. 7). An alarmingly high number of treatment BMPs already exist that were constructed with little or no regard to reasonable access and safety. Examples include basins with 1:1 perimeter slopes, devices with deep sumps or vaults, and covered devices with heavy lids or grates.

- All stormwater treatment devices should be easily and safely accessible without the need for special requirements (e.g., OSHA requirements for confined space). This allows vector control personnel to effectively monitor and, if necessary, abate vectors.
- If utilizing covers, the design should include spring-loaded or lightweight access hatches that can be opened easily for inspection.
- Mosquito larvicides are applied with hand-held equipment at small sites and with backpack or truck-mounted high-pressure sprayers at large sites. The effective swath width of most backpack or truck-mounted larvicide sprayers is approximately 20 feet (6 m) on a windless day. Because of these equipment limitations, all-weather road access (with provisions for turning a full-size work vehicle) should be provided along at least one side of large above-ground structures that are less than 25 feet (7.5 m) wide. Structures that have shoreline-to-shoreline distances in excess of 25 feet should have a perimeter road for access to all sides.

Figure 7. An example of a well-designed perimeter road and access ramp to the basin floor. Adequate access in and around BMP devices such as this large extended detention basin are critical for maintenance activities and vector control. Photo: Marco Metzger.

- Access roads should be built as close to the shoreline as possible. Vegetation or other obstacles should not be permitted between the access road and the stormwater treatment device that might obstruct the path of larvicides to the water.
- Vegetation should be controlled (by removal, thinning, or mowing) periodically to prevent barriers to access.

CONCLUSION

Stormwater treatment devices, especially those that hold permanent sources of standing water by design, create a difficult challenge for public health officials and vector control agencies and may pose a legal liability in states such as California (H&S Code). The best solution to managing mosquito populations in stormwater structures lies in fostering interdisciplinary cooperation among stormwater professionals, municipal planners, public health officials, vector control agencies, and others. Existing and future treatment BMPs must incorporate features and follow guidelines to minimize or eliminate mosquitoes. Contact state or local public health or vector control agencies to discuss local vector issues and provide input and consultation into siting, design, and maintenance of proposed treatment BMPs. Ultimately, a proactive rather than reactive approach saves money, time, effort, and most importantly, ensures the public's health.

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FOR MORE INFORMATION

You'll find more information on mosquito control in the following ANR Communication Services publications

Aquatic Pest Control, Publication 3337, 2001.

Managing Mosquitoes in Surface-Flow Constructed Treatment Wetlands, Publication 8117, 2003, available for free downloading at http://anrcatalog.ucdavis.edu/pdf/8117.pdf

Mosquitoes: Pest Notes for Home and Landscape, Publication 7451, 1998.

Mosquitoes of California, 3rd edition, Publication 4084, 1978.

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UC PEER REVIEWED

This publication has been anonymously peer reviewed for technical accuracy by University of California scientists and other qualified professionals. This review process was managed by the ANR Associate Editor for Pest Management.

From: Miller, Brian <BKMILLER@fairfield.ca.gov>
Sent: Tuesday, July 22, 2014 10:40 AM
To: John Kearns
Subject: FW: Schwartz Subdivision (Suisun City)
Attachments: 3773_001.pdf

John:

See below for City of Fairfield comments on the Schwartz Subdivision.

We normally receive a Notice for the CEQA documents associated with projects like this. Did I or we miss this somehow?

BRIAN MILLER
Associate Planner

Planning Comments: The Walters Road frontage shall be landscaped with street trees and shrubs.

From Garland Wong:

Address traffic signal impacts associated with the detector home run loops and conduit system impacted by the proposed driveway on Walters.

From: Paluck, James
Sent: Tuesday, July 22, 2014 10:15 AM
To: Miller, Brian
Cc: Berryhill, Kevin L.; Wong, Garland K; Paluck, James
Subject: RE: Schwartz Subdivision (Suisun City)

Brian

1. The sections of East Tabor Avenue and a portion of Walters Road along the project frontage are within the City of Fairfield city limits. Both of the driveway will need to be installed to Fairfield's standards, and an encroachment permit from Fairfield Public Works will be required.
2. If they are connecting to the City of Fairfield utilities within East Tabor or Walters Road (water, sewer, storm drain), we'll need an encroachment permit for that also.
3. It looks like there is a streetlight along East Tabor Avenue that conflicts with the proposed driveway, so this existing streetlight will need to be relocated as part of the encroachment permit.

James J. Paluck
Senior Civil Engineer
City of Fairfield Dept. of Public Works
(707) 428-7479

John Kearns

To: nvue22
Subject: RE: Public Hearing-Zephyr Estates Development

John,

I don't know if I will be able to make it to the public hearing but below are my comments:

1. The deteriorating intersection of East Tabor Ave and Walters Rd needs to be overlay & re-stripe to compliment the new development.
2. Re-strip faded traffic markings on East Tabor Ave, Walters Rd and Charleston St.
3. Oppose to extending Carswell Ln into the new development. It will be an awkward T-intersection and potentially cause accidents . Install stamped asphalt crossing at Carswell Ln and Westover Ln. There are two ada ramps already constructed but no crosswalk to protect the pedestrians.
4. All new crosswalks need to be stamped asphalt match the existing stamped crosswalk all along Charleston St. Crosswalk striping is not acceptable.
5. What will the "welcome" sign look like that is propose to be located at the corner of Walters Rd and East Tabor Ave.
6. What type of business is the commerical area zoned for? If possible limit the type of future businesses that will locate into the commercial area. Prohibit bars, liquor stores, laundromat, adult store, dry cleaning business, etc. from this area.
7. Who will be designated to maintain the landscaping and bio-retention facilities?
8. Roofing needs to be similar in color and material, to the existing homes at Peterson Ranch.
9. Replace the curb & gutter (C&G) on Carswell Ln (north side where the development will occur) to round curb to match the south side of Carswell Ln (since half or more of the sidewalk, C&G will be replaced by driveway approaches for the 5 new homes).
10. Update the ada ramps on eastern side of East Tabor Ave and Walters Rd to current ADA Standards.

Thanks

Nouae Vue

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