Last Resolution No. 16-995
Last Ordinance No. 16-318

REGULAR MEETING OF THE SOLVANG CITY COUNCIL

AND PUBLIC WORKSHOP

COUNCIL CHAMBERS
1644 OAK STREET

July 25, 2016

Please be advised that, pursuant to State Law, any member of the public may address the Council concerning any item on the Agenda. Please be aware that Items on the Consent Calendar are considered to be routine and are normally enacted by one vote of the Council.
If you wish to speak on Items 3, 4, or 5 please do so during Public Communications.
Regular City Council meetings are broadcast live on **Channel 23** in the Santa Ynez Valley

3:00 P.M.

CITYWIDE SIDEWALK MASTER PLAN PUBLIC WORKSHOP

Join the City Council in a public workshop presented by the Public Works Director to review the Citywide Sidewalk Master Plan and help prioritize future sidewalk locations in the city. The public is invited to attend and public input is appreciated.

6:30 P.M.

REGULAR MEETING OF THE SOLVANG CITY COUNCIL

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

CITY MANAGERS REPORT

PROCLAMATIONS

Proclamation for Charlie Jamieson celebrating his induction into the Cleveland Indians Hall of Fame.

PRESENTATIONS

Solvang Conference and Visitor's Bureau Biennial Report (20 minutes)

1. **PUBLIC COMMUNICATIONS – WRITTEN OR VERBAL**

   At this time, please direct comments to the City Council regarding Consent Calendar Items or matters NOT on the agenda but within the jurisdiction of the Council. (Speakers are limited to five (**5**) minutes).

2. **COUNCIL COMMENTS AND REQUESTS**

   Comments and requests from City Council Members. No action will be taken at this meeting.

3. **CORRESPONDENCE RECEIVED BY CITY COUNCIL**

4. **APPROVAL OF AGENDA AS PRESENTED**

5. **CITY COUNCIL MINUTES OF JULY 11, 2016**

   Approval of Minutes.

6. **CONSENT AGENDA**
   a. Receive and File Fire Department Quarterly Report for April – June 2016
   b. Receive and File Sheriff's Department Report for June 2016
   c. Appoint Council Member Skytt as League of California Cities Voting Delegate
   d. Adopt Resolution No. 16-____ approving unrepresented Classic CalPERS members retirement contribution of 6% of Employer Normal Cost

REGULAR AGENDA

7. **MISSION DRIVE IMPROVEMENTS - PRELIMINARY DESIGN UPDATE**
   a. Receive and file attached Mission Drive Improvements Technical Memoranda;
   b. Direct staff to proceed with a cost share agreement with the Santa Barbara County Fire Department for installation of traffic signal preemption devices, authorize the City Manager to execute agreement with the Fire Department, and approve a budget adjustment of $60,000 ($30,000 to be reimbursed by the Fire Department; and
   c. Provide staff with further direction as we move into final design on the Mission Drive Crosswalk Improvements and Signal Upgrades.

8. **COUNCIL MEMBER REPORTS (Oral reports: Each Council Member will give oral reports on their activities in relation to the following committee or agencies. In addition, each member may report on items that will be included on the agenda for such committee or agency and seek guidance from the Council as a whole on such items, including on what position to take on behalf of the City)**

   - Santa Barbara County Association of Governments
   - Air Pollution Control Board
   - Joint Wastewater Committee
   - Finance Committee
   - Chumash Tribe
   - Indian Gaming Benefit Committee
   - California Joint Powers Insurance Authority

9. ADVANCE CALENDAR

Informational Calendar – No Action.

10. ADJOURNMENT

Copies of staff reports and supporting documentation pertaining to each item on this agenda are available for public viewing and inspection at City Hall, 1644 Oak Street, Solvang, during regular business hours and on the City's website www.cityofsolvang.com, in addition, any writings relating to an open session agenda item provided to a majority of the Council that is distributed within 72 hours of the meeting, after the posting of the agenda, will be identified and available separately at City Hall and may be posted to the website.

In Compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, you should contact the office of Administrative Services at 688-5575 or the California Relay Service. Notification 48 hours prior to the meeting would enable the City to make reasonable arrangements to ensure accessibility to this meeting.

Solvang Senior Center
Santa Ynez Valley
Senior Advisory Council
1745 Mission Drive
Solvang, CA 93463

June 24, 2016

the center

City of Solvang
Mayor Richardson and City Council Members
1644 Oak St.
Solvang, CA 93463

Dear Mayor Richardson and City of Solvang Council Members,

Thank you so much for your very generous $40,000 grant approved for 2016/17! We are honored by your partnership and are looking forward to a wonderful year thanks to your support.

In 2015, the Center provided 3,963 meals, 650 activities and 151 bus passes to 435 unduplicated seniors. We have been able to add services and activities this year, thanks to support from the City of Solvang, such as Creative Coloring, Mah Jong, Field Trips and more bus passes. We would love to have you come for lunch.

The Center provides daily lunches and monthly dinners as well as:

- Mah Jong
- Life Issues with Therapist
- Tai Chi
- Arthritis Exercise Class
- Computer Class
- Gardening Class
- Art Class
- Cartooning Class
- Creative Coloring Class
- Emergency Services
- Knitting Circle
- BINGO
- Poker, Texas Hold'em and Bridge
- Bus Passes
- Fall Prevention Classes
- Walking Club
- Field Trips

Thank you for your support! Please join us for lunch anytime.

Sincerely,

Ellen Albertoni
Executive Director

Tel 805.688.3793
Fax 805.688.1792
Email ssctr@verizon.net
www.solvangseniorcenter.org
Federal Tax ID# 77-0236226

MINUTES OF THE REGULAR MEETING OF THE
SOLVANG CITY COUNCIL

Council Chambers
1644 Oak Street
Solvang, CA 93463

July 11, 2016
Monday
6:30 pm

CALL TO ORDER: Mayor Richardson called the meeting to order at 6:30 p.m.

ROLL CALL:

PRESENT: Mayor Richardson and Council Members Duus, Jamieson, Skytt, and Zimmerman

STAFF: Brad Vidro, City Manager; Roy Hanley, City Attorney; Sandra Featherson, Administrative Services Director; Matt van der Linden, Public Works Director; Lt. Shawn O'Grady; and Lisa S. Martin, City Clerk

PLEDGE OF ALLEGIANCE: Led by Mayor Richardson

CITY MANAGERS REPORT: Informational report only

1. PUBLIC COMMUNICATIONS – WRITTEN OR VERBAL

Willi Campbell, Solvang Resident
- Invited the City Council to attend the ribbon cutting ceremony for the Tai Chi Garden at the Solvang Senior Center, which was completely funded by donations to the center
- Proud of the Solvang City Council for all their service to the community

Bruce Porter, Santa Ynez Valley Aquatics Foundation and the American Legion
- Thanked the Council for helping with seed money for the aquatics facility
- Thanked the Council for being great stewards of the Veteran's Memorial Building

Fred Kovol, Solvang Resident
- Traffic on the 4th of July was awful, and there are perpetual traffic delays on north and south Alisal Road
- Suggested that the public be able to speak on the consent items separately
- The Council needs to get behind and represent that they are against the new ID#1 property tax water bill

Don MacFadyen, Solvang Resident
- The intersection of Alisal and Copenhagen is always backed up, needs a pedestrian signal

2. COUNCIL REQUESTS

Council Member Duus asked that an update on the Sphere of Influence/Annexation Study be brought back.

3. CORRESPONDENCE RECEIVED BY COUNCIL

Information only – no discussion.

4. APPROVAL OF AGENDA AS PRESENTED

None.

5. CITY COUNCIL MINUTES OF JUNE 27, 2016

Motion *made by Council Member Duus to approve the minutes as written, seconded by Council Member Zimmerman, and* ***carried*** *with a verbal response of 5 ayes.*

6. CONSENT AGENDA

a. Approval of Warrant Register
b. Second Reading of Proposed Amendment to Title 4, Chapter 10, Amending Regulations for Massage Establishments
    1. Accept the Exemption to the California Environmental Quality Act pursuant to CEQA §15061 and adopt Ordinance No. 16-___, on second reading by title only, an ordinance of the City Council of the City of Solvang amending Title 4
c. Memorandum of Understanding (MOU) between the cities of Solvang and Buellton in the area of Recreation
    1. Approve MOU regarding the joint efforts of providing mutual assistance in the development and operation of recreation programs between the cities of Solvang and Buellton
d. Award Construction Agreement for the 2016/2017 Pavement Maintenance Project
    1. Award a construction agreement with Berry General Engineering Contractors, Inc. in the amount of $432,425 and authorize execution of the agreement by the Mayor; and
    2. Authorize the City Manager to execute any change orders if within the contingency amount of $15,000

Item 6b pulled from the consent agenda for discussion.

Staff report by Roy Hanley, City Attorney. The California Massage Therapy Council now requires massage therapists to have 500 hours of training instead of the previous 250 hours.

Mayor Richardson indicated that he would like to grandfather in all existing business certificate holders until September 30, 2016 and after that date, all new business certificates will require the full 500 hour license.

Council Member Zimmerman considered it a little rigid to require all existing massage therapists to meet the new requirements if they were already doing business in Solvang.

Council Member Jamieson discussed her desire to take care of the existing massage therapists already doing business within the city and that only new therapists who wanted to do business in the city should have to comply with the new 500 hour license in order to obtain a business certificate.

City Attorney Hanley indicated that the Council should let staff know how they would like to see the ordinance drafted, and it will be brought back to the next meeting for a revised second reading. He did find case law that allowed grandfathering of individual licenses.

Council Member Duus would support allowing existing therapists to be grandfathered in, but doesn't agree with the September 30th date.

City Attorney Hanley suggested new language for paragraph b.

Mayor Richardson opened the item for public comment at 7:11 p.m.

Fred Kovol, Solvang Resident

- Asked what the difference was between a massage therapist and a physical therapist.

The public comment period was closed at 7:12 p.m.

***Motion** made by Council Member Duus to approve item 6b, introducing the first reading of the ordinance amendment with substituted paragraph b language, seconded by Mayor Richardson, and **carried** with a verbal response of 5 ayes.*

***Motion** made by Council Member Skytt to approve consent items 6a, 6c and 6d, seconded by Council Member Jamieson, and **carried** with a verbal response of 5 ayes.*

REGULAR AGENDA

7. PROFESSIONAL SERVICES AGREEMENT – WATER/WASTEWATER RATE STUDY

Staff report by Sandra Featherson.

Council Member Jamieson questioned whether the new storm water program costs would be considered and analyzed in the study. Staff responded that the item was included in the RFP.

Council Member Zimmerman asked if the report will show all of the costs of operation of the water system, etc. Staff answered that the study will break down specific costs of operation, maintenance costs, and infrastructure projects.

Mayor Richardson opened the item for public comment at 7:18 p.m.

Fred Kovol, Solvang Resident

- Every five years the Council has the rate payers pay for this study, and sometimes the City doesn't even follow the recommended rates.
- Thinks the Finance Department should perform this study themselves.
- Thinks the commercial rates are low, especially since the businesses can write the costs off on their taxes.

Karen Waite, Solvang Resident and Candidate for City Council

- Feels that it is very important to have a third party develop a rate study as it could be construed by the public as a conflict of interest

Mayor Richardson closed the item to public comment at 7:24 p.m.

City Attorney Hanley added that the water supply agreement with ID#1 requires that infrastructure costs be paid for by the ratepayers and does not allow the Council to pay those defined costs out of the General Fund.

Council Member Skytt discussed the previous rate study and the benefits of the study, and the reasons why the Council may not have followed the rate increases in accordance with the study. The 2011 study did not account for a 5-year drought.

***Motion** made by Council Member Duus to approve the professional services agreement and authorize the City Manager to execute any change orders within the contingency amount, seconded by Council Member Skytt. **Motion carried** with a roll call vote of 5 ayes.*

8. ADDITIONAL SOLVANG LIBRARY FUNDING

Staff report by Brad Vidro, City Manager.

Discussion ensued regarding the supervisor position.

Council Member Skytt indicated that a County Library Advisory Committee meeting will occur in September and Solvang and Buellton will both attend. The committee will decide if the 50/50 split will remain or if Solvang's share would go up to 60/40.

Council Member Jamieson commented that there may be a proposed library tax per district.

Mayor Richardson opened the item to public comment at 7:47 p.m.

Fred Kovol, Solvang Resident

- Nobody has even questioned the numbers in the attachment to the staff report
- Doesn't believe that a lot of Solvang residents use the library
- Need to step up to the plate relating to technology

Shirley Stacy, Library Advisory Committee member for Solvang

- The library is much more than just technology
- The Santa Ynez and Los Olivos branches use their own funds for their libraries
- If there is any way that the funding can be found to restore the full time supervisor position the library will be able to get back to a full level of programs

The item was closed to public comment at 7:55 p.m.

Mayor Richardson would suggest that the item be tabled until after the Library Advisory Committee meeting so that the per capita can be determined.

Council Member Jamieson doesn't understand the 50/50 population split when we are also responsible for the Santa Ynez and Los Olivos branches.

Council Member Duus supports the funding and feels the same way about the per capita split. Buellton is being very generous with their library funding, but we spend millions promoting not only Solvang but the entire Santa Ynez Valley. They don't even come close to matching the amount of our community grants.

Council Member Skytt discussed the need to add the library as a line item, not a grant. A lot of minority students use the library because they don't have a computer at home.

Council Member Zimmerman concerned that we are spending additional money, but is on board with the one-time expense to fund the supervisor. We need to look at other ways to fund the library.

Motion *made by Council Member Duus to approve additional one-time library funding of up to $20,000, seconded by Council Member Jamieson.* ***Motion carried*** *with a vote of 5 ayes.*

11. COUNCIL MEMBER REPORTS (Oral reports: Each Council Member will give oral reports on their activities in relation to the following committee or agencies. In addition, each member may report on items that will be included on the agenda for such committee or agency and seek guidance from the Council as a whole on such items, including on what position to take on behalf of the City)

- Santa Barbara County Association of Governments
- Air Pollution Control Board
- Joint Wastewater Committee
- Finance Committee
- Chumash Tribe
- Water Committee
- Indian Gaming Benefit Committee
- California Joint Powers Insurance Authority

12. ADVANCE CALENDAR

Information only, no action.

ADJOURNMENT Mayor Richardson adjourned the City Council meeting at 8:12 p.m.

Santa Barbara County Fire Department

Quarterly Report

For

The City of Solvang

April – June 2016

This Quarterly Report is provided to the City of Solvang by the Santa Barbara County Fire Department. It is a summary of emergency responses and calls for service as well as Fire Prevention activities.

EMERGENCY RESPONSES AND CALLS FOR SERVICE

The statistics below document the 129 calls for service for the City of Solvang for April – June 2016

Fire Incident Type	Incident Type Count
Incident District/Zone: 30	
Alarm system sounded due to malfunction	1
Animal rescue	3
Assist invalid	11
Assist police or other governmental agency	1
Brush or brush-and-grass mixture fire	2
Chemical spill or leak	1
Cooking fire, confined to container	1
Dispatched and cancelled en route	19
EMS call, excluding vehicle accident with injury	74

Fire Incident Type	Incident Type Count
False alarm or false call, other	5
Gas leak (natural gas or LPG)	1
Motor vehicle accident with no injuries.	1
No incident found on arrival at dispatch address	1
Outside rubbish, trash or waste fire	1
Person in distress, other	1
Power line down	1
Public service	1
Smoke detector activation due to malfunction	1
Smoke detector activation, no fire - unintentional	1
Smoke or odor removal	1
Wrong location	1
	Total: 129
	Total: 129

INCIDENTS BY UNIT AND DISTRICT

The statistics below document the 221 calls for service by unit and district for Station 30 April –June 2016

Incident District/Zone	Incident District
Apparatus ID: E30	
	10
30	7

Incident District/Zone	Incident District
31	5
	Total: 22
Apparatus ID: E330	
	1
13	1
18	3
24	1
30	2
31	3
32	3
51	1
Out of County	2
	Total: 17
Apparatus ID: ME30	
	36
18	2
30	109
31	9
32	23
51	3
	Total: 182
	Total: 221

FIRE PREVENTION DIVISION ACTIVITY

The Fire Prevention Division recorded the following activity for the months of April – June 2016

Fire Prevention Activities	April	May	June
Fire Protection Certificates	1	0	2
Plan Checks	1	0	0
Development Reviews	1	0	0

If you have questions or comments regarding this report, please contact Captain Dave Zaniboni at (805) 681-5531.

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
Incident District/Zone: 30				
4/22/16	30	Dispatched and cancelled en route		
4/22/16	30	Dispatched and cancelled en route	Emergency	
4/23/16	30	Dispatched and cancelled en route	Emergency	
4/23/16	32	Dispatched and cancelled en route	Emergency	
4/23/16	30	Dispatched and cancelled en route	Emergency	
4/23/16	30	Dispatched and cancelled en route	Emergency	
6/24/16	30	Dispatched and cancelled en route		
6/24/16	30	Dispatched and cancelled en route		
5/20/16	30	Dispatched and cancelled en route	Emergency	
5/1/16	30	Dispatched and cancelled en route	Emergency	
5/3/16	30	Dispatched and cancelled en route		
5/3/16	30	Dispatched and cancelled en route		
5/10/16	30	Dispatched and cancelled en route	Emergency	
5/17/16	30	Dispatched and cancelled en route	Non-Emergency	

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
6/16/16	30	Dispatched and cancelled en route	Emergency	
6/16/16	30	Dispatched and cancelled en route	Emergency	
4/25/16	30	Smoke or odor removal	Non-Emergency	-0:00:19
5/30/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:00:21
5/26/16	30	Assist police or other governmental agency	Non-Emergency	-0:00:28
5/19/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:01:20
5/27/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:01:23
4/22/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:01:41
5/19/16	30	Chemical spill or leak	Non-Emergency	-0:02:04
6/26/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:14
5/29/16	30	Wrong location	Emergency	-0:02:25
6/21/16	30	Power line down	Emergency	-0:02:32
5/29/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:34
5/3/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:35
4/7/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:37
4/25/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:40

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
4/24/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:41
4/15/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:41
6/24/16	30	EMS call, excluding vehicle accident with injury		-0:02:42
6/12/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:49
5/10/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:51
6/8/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:54
5/14/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:55
4/24/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:02:58
4/21/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:08
6/12/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:11
6/20/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:27
5/29/16	30	EMS call, excluding vehicle accident with injury	Non-Emergency	-0:03:35
4/13/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:41
6/9/16	30	Assist invalid	Non-Emergency	-0:03:43
5/17/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:47

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
4/22/16	30	Alarm system sounded due to malfunction	Emergency	-0:03:48
5/14/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:52
5/25/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:55
5/8/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:03:59
4/17/16	30	Outside rubbish, trash or waste fire	Emergency	-0:03:59
5/7/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:04
4/15/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:08
4/8/16	30	False alarm or false call, other	Emergency	-0:04:08
5/30/16	30	Dispatched and cancelled en route	Emergency	-0:04:09
4/15/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:10
4/8/16	30	False alarm or false call, other	Emergency	-0:04:12
5/17/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:19
5/16/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:21
4/19/16	30	False alarm or false call, other	Emergency	-0:04:21
6/23/16	30	EMS call, excluding vehicle accident with injury		-0:04:25

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
6/10/16	30	EMS call, excluding vehicle accident with injury	Non-Emergency, Upgraded to Emergency	-0:04:25
4/1/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:27
4/5/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:30
5/28/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:30
6/5/16	30	EMS call, excluding vehicle accident with injury	Emergency, Downgraded to Non-Emergency	-0:04:32
4/20/16	30	EMS call, excluding vehicle accident with injury	Non-Emergency	-0:04:39
4/20/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:39
6/25/16	30	EMS call, excluding vehicle accident with injury		-0:04:40
5/3/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:47
4/9/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:47
6/25/16	30	No incident found on arrival at dispatch address		-0:04:48
6/10/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:52
4/8/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:52
5/23/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:54
5/28/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:54

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
4/9/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:04:59
4/1/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:00
6/11/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:02
5/20/16	30	EMS call, excluding vehicle accident with injury	Emergency, Downgraded to Non-Emergency	-0:05:03
6/3/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:08
5/17/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:11
4/29/16	30	Brush or brush-and-grass mixture fire	Emergency	-0:05:21
5/24/16	30	EMS call, excluding vehicle accident with injury	Emergency, Downgraded to Non-Emergency	-0:05:25
5/3/16	30	Cooking fire, confined to container	Emergency	-0:05:28
5/1/16	30	Person in distress, other	Emergency	-0:05:32
6/13/16	30	EMS call, excluding vehicle accident with injury		-0:05:38
4/8/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:41
4/15/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:47
4/1/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:54
5/10/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:05:57

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
5/29/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:06:06
6/21/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:06:08
4/12/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:06:12
4/23/16	30	False alarm or false call, other	Emergency	-0:06:15
4/8/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:06:16
6/26/16	30	Assist invalid	Non-Emergency	-0:06:22
6/26/16	30	Assist invalid	Non-Emergency	-0:06:24
4/27/16	30	Dispatched and cancelled en route	Emergency	-0:06:34
5/14/16	31	Dispatched and cancelled en route	Emergency	-0:06:39
5/17/16	30	Assist invalid	Non-Emergency	-0:06:42
6/18/16	30	Motor vehicle accident with no injuries.	Emergency	-0:06:44
5/5/16	30	Brush or brush-and-grass mixture fire	Emergency	-0:06:45
5/24/16	30	EMS call, excluding vehicle accident with injury	Non-Emergency	-0:06:51
4/22/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:06:54
5/23/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:07:16
6/9/16	30	Assist invalid	Non-Emergency	-0:07:28

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
4/10/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:07:39
6/24/16	30	EMS call, excluding vehicle accident with injury		-0:07:41
4/21/16	30	Assist invalid	Non-Emergency	-0:07:42
5/30/16	30	EMS call, excluding vehicle accident with injury	Non-Emergency	-0:07:42
4/24/16	30	False alarm or false call, other	Emergency	-0:07:46
6/27/16	30	Animal rescue	Non-Emergency	-0:07:49
5/27/16	30	Assist invalid	Non-Emergency	-0:08:05
5/29/16	31	EMS call, excluding vehicle accident with injury	Non-Emergency	-0:08:11
6/7/16	18	Smoke detector activation due to malfunction	Emergency	-0:08:19
5/3/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:08:30
5/20/16	30	EMS call, excluding vehicle accident with injury	Emergency, Downgraded to Non-Emergency	-0:08:39
5/2/16	30	Assist invalid	Non-Emergency	-0:09:13
4/8/16	30	EMS call, excluding vehicle accident with injury	Emergency	-0:09:24
6/10/16	30	Smoke detector activation, no fire - unintentional	Emergency	-0:09:25
6/12/16	30	Assist invalid	Non-Emergency	-0:09:44
6/24/16	30	EMS call, excluding vehicle accident with injury		-0:10:06

Solvang - Response Time Report

Incident Date (FD1.3)	Incident Primary Station (FD1.4)	Fire Incident Type	Response Mode To Scene	Response Time
4/28/16	30	Public service	Non-Emergency	-0:10:18
6/23/16	30	Gas leak (natural gas or LPG)		-0:10:21
5/15/16	30	Assist invalid	Non-Emergency	-0:12:19
5/3/16	30	Animal rescue		-0:16:20
6/4/16	30	Animal rescue	Non-Emergency	-0:16:46
4/7/16	31	Assist invalid	Non-Emergency	-0:17:21
4/21/16	24	EMS call, excluding vehicle accident with injury		-0:19:34

City of Solvang April – June 2016

Response time greater than 8 minutes

5/27/16	30	Assist invalid	Non-Emergency	-0:08:05
5/29/16	31	EMS call, excluding vehicle accident with injury	Non-Emergency	-0:08:11
6/7/16	18	Smoke detector activation due to malfunction	Emergency (out of district)	-0:08:19
5/3/16	30	EMS call, excluding vehicle accident with injury	Emergency , Downgraded to Non-Emergency	-0:08:30
5/20/16	30	EMS call, excluding vehicle accident with injury	Emergency, Downgraded to Non-Emergency	-0:08:39
5/2/16	30	Assist invalid	Non-Emergency	-0:09:13
4/8/16	30	EMS call, excluding vehicle accident with injury	Emergency (out of district)	-0:09:24
6/10/16	30	Smoke detector activation, no fire - unintentional	Non-Emergency	-0:09:25
6/12/16	30	Assist invalid	Non-Emergency	-0:09:44
6/24/16	30	EMS call, excluding vehicle accident with injury	Non-emergency	-0:10:06
4/28/16	30	Public service	Non-Emergency	-0:10:18
6/23/16	30	Gas leak (natural gas or LPG)	Rural location	-0:10:21
5/15/16	30	Assist invalid	Non-Emergency	-0:12:19
5/3/16	30	Animal rescue	Non-Emergency	-0:16:20
6/4/16	30	Animal rescue	Non-Emergency	-0:16:46
4/7/16	31	Assist invalid	Non-Emergency	-0:17:21
4/21/16	24	EMS call, excluding vehicle accident with injury	(out of district)	-0:19:34

M E M O R A N D U M

Date: July 13, 2016

To: Solvang City Council

From: Senior Deputy Charlie Uhrig

Subject: Solvang Statistics and Activity Report for June

CC: Lt. Shawn O'Grady

This statistics report is designed to provide a general overview of law enforcement activity in the City of Solvang for the month of June. The report highlights and describes patterns of activity, significant felonies in the city, and noteworthy performances by deputies assigned to the Solvang station.

Burglary:

Five burglaries were reported in Solvang during the month of June.

On 06-12-16 **(case 16-8568),** Solvang Patrol was dispatched to the 1600 block of Eucalyptus Drive for a report of vandalism to an automobile. Upon arrival, the victim said that unknown suspect(s) had broken the front passenger side window and taken her purse. The purse contained personal items, insurance and identification cards, a checkbook, and about $100 in cash. There was also a blank check for $50, signed by the victim. After a search for any latent evidence, a canvas of the area revealed no witnesses to the burglary. However, one witness recalled hearing a "gunshot sound" earlier in the morning, but didn't see anybody or anything, after looking out his window. There are no suspect(s) at this time and the case is suspended [ending further leads.

On 06-19-16 **(case 16-8886)**, Solvang Patrol was dispatched to a report of a commercial burglary alarm in the 600 block of Alamo Pintado Road. While enroute, the alarm company advised Dispatch that the "Back Showroom Motion," sensor triggered the alarm. Upon arrival, it initially appeared nothing was disturbed and the front glass door was closed and secured with metal security fencing visible on the inside. As the

deputy moved closer and peered through the front glass door, they could see to the rear of the store and noticed the rear door was open. As more deputies arrived and made entry to conduct a sweep, they observed that the business had been entered, via the rear door, which had been forced open, and the cash register drawer was open and empty. There were also a few items strewn on the floor, but otherwise the business was in order, according to the owner, who had arrived shortly after.

The owner was able to provide deputies with video surveillance tapes, and it showed two unknown male suspect's breaking in, and take the cash from the register. The two suspects' appear to be the same ones involved in similar type burglaries around the Valley. The case is still open and leads are being followed up, but no arrests have been made at this time.

On 06-24-16 **(case 16-9175),** Solvang Patrol was dispatched to the 1600 block of Mission Drive for a commercial burglary alarm. Upon arrival, it was observed the rear door was open and damaged. Additional deputies arrived and secured the building, while others made a sweep inside the business. It was observed that the cash register was open and empty. The owner arrived shortly after, and confirmed that cash was missing, but nothing else was disturbed. Later in the day, it was learned that a master key to the entire was also missing. The loss value, including repair for the damage to the door, rekeying the building, and the cash taken was over $350. There were no witness to the burglary and no surveillance of the building. The case is pending further leads.

On 06-25-16 **(case 16-9194),** deputies responded to the 1500 block of Oak Street to investigate a report of a suspicious male sleeping on a doorstep of a residential unit. While enroute to this call, another call went out, regarding a dog tethered to a table, without an owner in sight. The dog was located and secured inside the Patrol vehicle, which then continued on to the initial suspicious male call. Upon arrival, deputies discovered a male subject, outside and asleep, and surrounded by food wrappers and a portable turntable lying next to him. The front door of the unit was open, and the kitchen was in immediate view, and it was observed that the refrigerator door was open, and several food items were on the floor, including an open box of frozen turkey corn dogs. Further inspection of the door showed signs of forced entry. The subject was extremely intoxicated and his responses were incoherent. Medics responded to assess the subjects' health condition, and transported him to SYV Cottage Hospital, where he was eventually arrested.

Prior to transporting to the hospital, the suspect was searched and frozen corn dogs were located in his pockets. It was also learned that the tethered dog belonged to his uncle, and he remembered he had been walking the dog, but couldn't remember what happened after that, other than he had been drinking. In addition, it was also learned he

was out on bail for a commercial burglary committed in Los Angeles. He was arrested for **felony** burglary, committing a felony while on bail, and public intoxication.

On 06-26-16 **(case 16-9242),** Solvang Patrol responded to a business located in the 1600 block of Fir Avenue. Upon arrival, the owner/victim told the following: When he arrived earlier he immediately noticed that someone used a pry bar to try and open the front door of his business. He said he checked the building and found no other signs of damage or attempts to enter his building. He also said this attempt was unsuccessful. Deputies conducted a canvass and no other witnesses were found. The case is closed pending anything further that would warrant an investigation.

Other Significant Activity:

During the month of June deputies conducted 42 traffic stops which resulted in 16 citations written for various offenses, including 1 arrest for DUI, 2 for Driving without a License, and 2 moving violations. There were 18 calls for alarms and10 calls for 9-1-1 follow ups. In addition, there were 7 traffic related investigations during the month of June. There were no coroner cases reported in Solvang during the month of June.

On 06-02-16 **(case 16-8064)**, the Solvang deputy while patrolling in the area of Viborg and Alamo Pintado, came upon a male subject rummaging through a parked vehicle. Upon contact, it was learned the vehicle had expired tags and the driver did not have current registration for the vehicle, and had been on active parole. During a search of the vehicle several bags of methamphetamine, and paraphernalia were located. The subject was subsequently arrested for **felony** possession of narcotics, transportation of narcotics, sales of narcotics, and being under the influence. He was transported and booked into County Jail. The vehicle was towed, incident to the arrest.

On 06-21-16 **(case 16-9017),** the Solvang Unit was on night patrol in the 1600 block of Laurel Avenue, when a white truck was observed pulling a large horse trailer that did not have any working running lights. The deputy conducted a traffic stop on the driver, and while waiting for the required paperwork, observed an ammunition box, and a rifle in the truck. During a consensual search of the truck, a handgun was also found concealed in the console. It was noted that both weapons were loaded, and the driver was arrested and cite released for misdemeanor carrying loaded weapons inside a vehicle.

Murder:

No murders were reported in Solvang for the month of June.

Rape:

No rapes were reported in Solvang for the month of June.

Robbery:

No robberies were reported in Solvang during the month of June.

Domestic Assault/Assault:

There were two felony cases and one misdemeanor domestic violence case reported for the month of June.

On 06-01-16 **(case 16-7999)**, the Solvang deputy responded to a local residence to investigate a disturbance. Upon arrival, the female victim was contacted, who stated she and her live-in boyfriend had been arguing just prior to their arrival. The victim had a visible traumatic injury to her left eye which she stated was caused by her boyfriend, when he struck her on the left side of her face. The victim refused medical attention, prosecution, or an Emergency Protective Order. Based on the investigation the male suspect was arrested for **felony** domestic violence and booked into County Jail.

On 06-18-16 **(case 16-8880)**, the Solvang deputy responded to a residential area to a report of a woman heard screaming for help. The reporting person said a dark colored vehicle was associated with the incident, and was last seen speeding south, away from that area. The deputy located a bumper in the roadway, and debris from a possible vehicle collision at a nearby intersection. The bumper still contained a license plate, which returned as registered to a male subject who was on parole and a registered sex offender. Deputies contacted his parole officer, who pinged the suspects GPS ankle bracelet, and then directed deputies to his location. The victim, who is confined to a wheelchair, was also found, slightly injured and fearful for her life, but otherwise safe.

During the subsequent investigation, it was learned the suspect and the victim, had been in a dating relationship for approximately one month. The victim said they had argued while sitting in the suspect's parked vehicle when the suspect became enraged and assaulted the victim. The victim said she then attempted to get out of the vehicle and the suspect grabbed her by her hair and pulled her back into the vehicle. The suspect then recklessly sped away in the vehicle as the victim screamed for help.
Based on the witness and victims' statements, the suspect was arrested for **felony** kidnapping, domestic violence, false imprisonment, and two outstanding misdemeanor warrants.

Grand Theft:

Three grand thefts were reported in Solvang during the month of June.

On 6/3/2016 **(case 16-8118),** Solvang Patrol was dispatched to the area of 2nd Street and Copenhagen Drive regarding the theft of two bicycles. Upon arrival, the victim was contacted, and he said the following: He and his wife had parked their vehicle on the corner of 2nd Street and Copenhagen Drive, with their two road bikes cable locked to the attached rear bicycle rack. He then showed me the cable lock, which had been cut

and was lying on the ground. He estimated only having been parked and away from his vehicle for 15-20 minutes. When he returned to his vehicle, he discovered both bicycles had been stolen and the lock that he had looped through both bicycles frames had been cut. He said he didn't see any suspicious person or vehicle, and couldn't locate any witnesses to the theft. The bikes were valued at over $11,000.

On 06-09-16 **(case 16-8421),** Solvang Patrol responded to the 1600 block of Laurel Avenue regarding a possible theft. Upon arrival, the victim was contacted and advised the following: He is the owner of a company that now operates out of his residence.
Recently he took over the accounting of his company after two employees left, one of which was his accountant, and the other an outside contracted service repairman. He said that both employees had been issued credit cards, but it appeared that one of them had been using the card for personal expenses, amounting to over $2,000. He said he tried to get reimbursement for the expenses, but was not having any luck with the former employee. At this time he advised the deputy that he wanted to press criminal charges for embezzlement.
During the subsequent investigation, the suspect was located, and admitted to the improper use of the credit card. He was arrested without incident for **felony** grand theft, transported and booked into County Jail.

On 06-14-16 **(case 16-8665),** Solvang Patrol was dispatched to a report of a theft of gardening equipment in the 1600 block of Old Mission Drive. Upon arrival the victim was contacted and he said the following: He had been working in the back yard of a residence, and had left his gardening equipment in an open bed trailer, in front of the residence. He said when he returned to get some more equipment; he observed several tools missing from the trailer. He did not see who took the property and he could not provide any suspect information. The gardening tools were valued at over $1000, and there were no witnesses to the theft. The case is suspended pending further leads.

Auto Theft

One theft of a vehicle was reported in Solvang during the month of June.

On 06-05-16 **(case 16-8228),** Solvang Patrol was dispatched to a report of a stolen motorcycle from 200 block of 5th Street. On arrival the reporting party was contacted and he told me the following: He said sometime during the previous night unknown suspect(s) stole his motorcycle. He said he remembered seeing the motorcycle the previous evening, right before he went to bed. He said he noticed the motorcycle was missing that afternoon, and that a chain link fence had been cut to gain access to his property from the street to the rear of the property. He then showed the deputy the area

the fence had been cut and also the drag marks in the dirt created when the suspect(s) pulled the motorcycle through the cut fence. He described the stolen motorcycle, and said he purchased the motorcycle approximately 1 year ago, but had yet to register it in his name. He also said the motorcycle was not operational at this time and he had the only key. There were no witnesses to the theft, and the victim had no suspect information. A search of the area, and adjacent properties yielded nothing of forensic value. At the writing of this report, there was no further vehicle identification information obtained, preventing it from being entered into the Stolen Vehicle System. The case is suspended pending further leads.

Misdemeanors/Thefts:

There was one vandalism case reported in Solvang during June. There were 5 petty thefts, including one pick pocket theft, reported during the month of June.

Arrests:

During the month of June, deputies made a total of 13 arrests, including 4 felony arrests. These arrests also included the following types of Misdemeanor arrests: 1 for DUI, 42 for Public Intoxication and 1 for Narcotics.

On 06-01-16 **(case 16-7999)**, the Solvang deputy responded to a local residence to investigate a disturbance. Upon arrival, the female victim was contacted, who stated she and her live-in boyfriend had been arguing just prior to their arrival. The victim had a visible traumatic injury to her left eye which she stated was caused by her boyfriend, when he struck her on the left side of her face. The victim refused medical attention, prosecution, or an Emergency Protective Order. Based on the investigation the male suspect was arrested for **felony** domestic violence and booked into County Jail.

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offender. Deputies contacted his parole officer, who pinged the suspects GPS ankle bracelet, and then directed deputies to his location. The victim, who is confined to a wheelchair, was also found, slightly injured and fearful for her life, but otherwise safe.

During the subsequent investigation, it was learned the suspect and the victim, had been in a dating relationship for approximately one month. The victim said they had argued while sitting in the suspect's parked vehicle when the suspect became enraged and assaulted the victim. The victim said she then attempted to get out of the vehicle and the suspect grabbed her by her hair and pulled her back into the vehicle. The suspect then recklessly sped away in the vehicle as the victim screamed for help.
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Prior to transporting to the hospital, the suspect was searched and frozen corn dogs were located in his pockets. It was also learned that the tethered dog belonged to his uncle, and he remembered he had been walking the dog, but couldn't remember what happened after that, other than he had been drinking. In addition, it was also learned he was out on bail for a commercial burglary committed in Los Angeles. He was arrested for **felony** burglary, committing a felony while on bail, and public intoxication.

Monthly Activity Report for June

This is the June end of the month report from the Solvang Community Resource Deputy. It highlights all the activities, meetings, and presentations by the Community Resource Deputy for the month of June.

MEETINGS:

On June 8, I met with Sheriff and School Staff to coordinate a parking detail for the Allan Hancock Law Enforcement Graduation ceremony in Lompoc. We will be using Sheriff volunteer Team members for this detail.

On June 13, I met with parents for the Salvation Army Camp that I will be chaperoning kids to this year. The camp is scheduled for July 11-16, and we hope to take 25 kids this year.

On June 14, I help set up and attended a Sheriff Debriefing session for all personnel involved in the fatal incident in Solvang.

On June 15, I attended a meeting of organizers for the Vintners Festival coming in October.

On June 16, I attended a City Staff Quarterly luncheon.

On June 21, I attended a City Staff meeting.

On June 22, I attended a meeting of the organizers for the Rotary Fireworks Show.

On June 23, I met with Matt Van der Linden, to discuss possible security measures for the City and State Water Treatment facilities, in light of the two recent incidents at the facilities.

On June 27, I attended City Council meeting.

On June 28, I met with City Staff to discuss and finalize plans for the July 4 parade.

PRESENTATIONS:

Two presentations were given in the month of June.

On June 22, I did multiple presentations for Safety Town, which included the topics of Stranger Danger, Calling 911, Helmet and Seatbelt Safety. There were about 90 kids who attended the presentations.

On June 23, I did a short presentation on our local Salvation Army services to the newly reformed SYV Ministerial Association. There about 10 people who attended the presentation.

ACTIVITIES:

On June 2, I worked a security detail for the Solvang School Graduation and Dance.

On June 9, I coordinated and worked a parking detail for the AHC Law Enforcement Graduation ceremony. I also worked a Security and traffic detail for the Cabrillo High School Graduation ceremony.

On June 11, I coordinated and worked the Old Santa Ynez Days parade.

On June 14, 17, 20, and 30, I worked security details for the Courts.

On June 18, I worked a Patrol detail for the Sherpa Fire.

On June 24, we had our first Movies in the Park, with “Finding Nemo” as the featured movie. There were about 225 people who attended the event.

On June 25, I worked a traffic detail for the SB Solstice parade.

On June 29, I completed a Sheriff 2nd Quarter Training session.

CITY OF SOLVANG STATISTICS 2015

ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD Total
Log Entries	291	271	354	395	355	398	447	394	370	374	358	342	**4349**
OAI Reports	35	49	38	45	57	54	54	47	46	49	47	43	**564**
Trfc Invest.	11	13	15	10	13	11	12	12	12	8	2	8	**127**
Coroner	0	0	2	0	0	0	1	0	0	0	0	1	**4**
Burglaries	**1**	**5**	**0**	**1**	**8**	**8**	**1**	**2**	**6**	**0**	**4**	**0**	**36**
Attempts	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
Residential	0	1	0	0	1	0	1	1	0	0	3	0	**7**
Vehicle	0	0	0	0	2	0	0	0	6	0	0	0	**8**
Commercial	1	3	0	1	6	8	0	1	0	0	1	0	**21**
Other	0	1	0	0	0	0	0	0	0	0	0	0	**1**
Felonies	**4**	**1**	**5**	**2**	**2**	**2**	**4**	**6**	**6**	**7**	**2**	**8**	**49**
Murder	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Rape	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Robbery	0	0	0	0	0	0	0	2	2	0	0	0	**4**
Assault	2	0	4	1	0	1	3	0	0	2	1	2	**16**
Grand Theft	1	0	1	2	0	0	0	2	2	3	1	2	**14**
Auto Theft	1	0	0	0	0	1	0	0	1	1	0	0	**4**
Other	0	1	0	1	1	0	1	2	1	1	0	4	**12**
Misd./Thefts	0	2	3	0	1	1	1	1	3	7	4	3	**26**
Arrests	**11**	**6**	**5**	**11**	**14**	**12**	**14**	**13**	**10**	**13**	**9**	**8**	**126**
Misd.	8	5	2	9	13	9	10	8	8	10	8	7	**97**
Felony	3	1	3	2	1	3	4	5	2	3	1	1	**29**
DUI	3	2	0	5	4	1	3	2	2	2	0	2	**26**
Public Intox.	2	0	1	0	2	1	3	2	4	3	3	3	**24**
Narcotic	1	1	0	3	1	4	2	1	1	3	2	0	**19**
Citations	**8**	**5**	**23**	**38**	**15**	**21**	**8**	**15**	**20**	**16**	**22**	**12**	**203**
Moving	1	1	9	21	8	6	0	2	8	5	6	7	**74**
Equipment	0	1	14	3	0	6	2	4	1	4	5	1	**41**
Other	7	1	0	12	7	9	6	9	11	6	11	4	**83**
Parking	0	2	0	2	0	0	0	1	4	1	1	0	**11**
Viborg Rd.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Skate Park	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

CITY OF SOLVANG STATISTICS 2016

ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD Total
Log Entries	255	282	317	340	423	351							**1968**
OAI Reports	45	35	34	33	65	51							**263**
Trfc Invest.	10	5	10	13	9	7							**54**
Coroner	0	0	0	2	1	0							**3**
Burglaries	**4**	**1**	**2**	**1**	**0**	**4**							**12**
Attempts	**0**	**0**	**0**	**1**	**0**	**1**							**2**
Residential	1	0	0	0	0	1							**2**
Vehicle	2	0	2	0	0	1							**5**
Commercial	1	1	0	1	0	2							**5**
Other	0	0	0	0	0	0							**0**
Felonies	**3**	**5**	**1**	**4**	**3**	**7**							**23**
Murder	0	0	0	0	0	0							**0**
Rape	0	0	0	0	0	0							**0**
Robbery	0	0	1	0	0	0							**1**
Assault	1	1	0	0	1	2							**5**
Grand Theft	1	1	0	0	0	3							**5**
Auto Theft	0	0	0	0	0	1							**1**
Other	1	3	0	4	2	1							**11**
Misd./Thefts	7	1	2	3	3	5							**21**
Arrests	**12**	**7**	**3**	**8**	**16**	**13**							**59**
Misd.	9	3	2	4	13	9							**40**
Felony	3	4	1	4	3	4							**19**
DUI	4	2	1	0	2	1							**10**
Public Intox.	0	0	0	2	4	2							**8**
Narcotic	1	1	1	1	2	1							**7**
Citations	**5**	**8**	**10**	**14**	**23**	**16**							**76**
Moving	1	0	1	5	4	2							**13**
Equipment	4	3	1	2	1	4							**15**
Other	0	4	8	6	16	6							**40**
Parking	0	1	0	1	2	4							**8**
Viborg Rd.	**0**	**1**	**0**	**2**	**0**	**0**							**3**
Skate Park	**0**	**0**	**0**	**0**	**0**	**0**							**0**

CITY COUNCIL
STAFF REPORT/CONSENT AGENDA

TO: SOLVANG CITY COUNCIL MEMBERS

FROM: Brad Vidro, City Manager

MEETING DATE: July 25, 2016

DATE PREPARED: July 19, 2016

SUBJECT: DESIGNATION OF VOTING DELEGATE FOR LEAGUE OF CALIFORNIA CITIES ANNUAL CONFERENCE

I. RECOMMENDATION:

Designate Council Member Skytt as the voting delegate for the annual conference in Long Beach, October 5 – 7, 2016.

II. DISCUSSION:

The League's 2016 Annual Conference is scheduled for October 5 - 7 in Long Beach. The Annual Business Meeting (at the General Assembly) is scheduled for noon on Friday, October 7th.

In order for the City of Solvang to vote at the Annual Business Meeting the City Council must designate a voting delegate. Per the League's bylaws the designation of a voting delegate must be done by City Council action.

At this time, only Councilmember Skytt has scheduled to attend the Annual Conference.

III. ALTERNATIVES:

The City Council could also designate up to two alternate voting delegates.

IV. FISCAL IMPACT:

None with this action.

ATTACHMENTS:

- Correspondence from the League with Voting Delegate Form

1400 K Street
Sacramento, CA 95814
ph: (916) 658-8200
fx: (916) 658-8240

LEAGUE OF CALIFORNIA CITIES

Council Action Advised by July 31, 2016

June 10, 2016

TO: Mayors, City Managers and City Clerks

RE: DESIGNATION OF VOTING DELEGATES AND ALTERNATES
League of California Cities Annual Conference – October 5 – 7, Long Beach

The League's 2016 Annual Conference is scheduled for October 5 – 7 in Long Beach. An important part of the Annual Conference is the Annual Business Meeting (during General Assembly), scheduled for noon on Friday, October 7, at the Long Beach Convention Center. At this meeting, the League membership considers and takes action on resolutions that establish League policy.

In order to vote at the Annual Business Meeting, your city council must designate a voting delegate. Your city may also appoint up to two alternate voting delegates, one of whom may vote in the event that the designated voting delegate is unable to serve in that capacity.

Please complete the attached Voting Delegate form and return it to the League's office no later than Friday, September 23, 2016. This will allow us time to establish voting delegate/alternate records prior to the conference.

Please note the following procedures that are intended to ensure the integrity of the voting process at the Annual Business Meeting.

- **Action by Council Required.** Consistent with League bylaws, a city's voting delegate and up to two alternates must be designated by the city council. When completing the attached Voting Delegate form, please attach either a copy of the council resolution that reflects the council action taken, or have your city clerk or mayor sign the form affirming that the names provided are those selected by the city council. Please note that designating the voting delegate and alternates **must** be done by city council action and cannot be accomplished by individual action of the mayor or city manager alone.

- **Conference Registration Required.** The voting delegate and alternates must be registered to attend the conference. They need not register for the entire conference; they may register for Friday only. To register for the conference, please go to our website: www.cacities.org. In order to cast a vote, at least one voter must be present at the

Business Meeting and in possession of the voting delegate card. Voting delegates and alternates need to pick up their conference badges before signing in and picking up the voting delegate card at the Voting Delegate Desk. This will enable them to receive the special sticker on their name badges that will admit them into the voting area during the Business Meeting.

- **Transferring Voting Card to Non-Designated Individuals Not Allowed.** The voting delegate card may be transferred freely between the voting delegate and alternates, but *only* between the voting delegate and alternates. If the voting delegate and alternates find themselves unable to attend the Business Meeting, they may *not* transfer the voting card to another city official.

- **Seating Protocol during General Assembly.** At the Business Meeting, individuals with the voting card will sit in a separate area. Admission to this area will be limited to those individuals with a special sticker on their name badge identifying them as a voting delegate or alternate. If the voting delegate and alternates wish to sit together, they must sign in at the Voting Delegate Desk and obtain the special sticker on their badges.

The Voting Delegate Desk, located in the conference registration area of the Long Beach Convention Center, will be open at the following times: Wednesday, October 5, 8:00 a.m. – 6:00 p.m.; Thursday, October 6, 7:00 a.m. – 4:00 p.m.; and Friday, October 7, 7:30–10:00 a.m. The Voting Delegate Desk will also be open at the Business Meeting on Friday, but will be closed during roll calls and voting.

The voting procedures that will be used at the conference are attached to this memo. Please share these procedures and this memo with your council and especially with the individuals that your council designates as your city's voting delegate and alternates.

Once again, thank you for completing the voting delegate and alternate form and returning it to the League office by Friday, September 23. If you have questions, please call Kayla Gibson at (916) 658-8247.

Attachments:

- Annual Conference Voting Procedures
- Voting Delegate/Alternate Form

Annual Conference Voting Procedures

1. **One City One Vote.** Each member city has a right to cast one vote on matters pertaining to League policy.

2. **Designating a City Voting Representative.** Prior to the Annual Conference, each city council may designate a voting delegate and up to two alternates; these individuals are identified on the Voting Delegate Form provided to the League Credentials Committee.

3. **Registering with the Credentials Committee.** The voting delegate, or alternates, may pick up the city's voting card at the Voting Delegate Desk in the conference registration area. Voting delegates and alternates must sign in at the Voting Delegate Desk. Here they will receive a special sticker on their name badge and thus be admitted to the voting area at the Business Meeting.

4. **Signing Initiated Resolution Petitions**. Only those individuals who are voting delegates (or alternates), and who have picked up their city's voting card by providing a signature to the Credentials Committee at the Voting Delegate Desk, may sign petitions to initiate a resolution.

5. **Voting.** To cast the city's vote, a city official must have in his or her possession the city's voting card and be registered with the Credentials Committee. The voting card may be transferred freely between the voting delegate and alternates, but may not be transferred to another city official who is neither a voting delegate or alternate.

6. **Voting Area at Business Meeting.** At the Business Meeting, individuals with a voting card will sit in a designated area. Admission will be limited to those individuals with a special sticker on their name badge identifying them as a voting delegate or alternate.

7. **Resolving Disputes**. In case of dispute, the Credentials Committee will determine the validity of signatures on petitioned resolutions and the right of a city official to vote at the Business Meeting.

LEAGUE® OF CALIFORNIA CITIES

CITY: _____

2016 ANNUAL CONFERENCE
VOTING DELEGATE/ALTERNATE FORM

Please complete this form and return it to the League office by Friday, September 23, 2016. Forms not sent by this deadline may be submitted to the Voting Delegate Desk located in the Annual Conference Registration Area. Your city council may designate one voting delegate and up to two alternates.

In order to vote at the Annual Business Meeting (General Assembly), voting delegates and alternates must be designated by your city council. Please attach the council resolution as proof of designation. As an alternative, the Mayor or City Clerk may sign this form, affirming that the designation reflects the action taken by the council.

Please note: Voting delegates and alternates will be seated in a separate area at the Annual Business Meeting. Admission to this designated area will be limited to individuals (voting delegates and alternates) who are identified with a special sticker on their conference badge. This sticker can be obtained only at the Voting Delegate Desk.

1. VOTING DELEGATE

Name: _____

Title: _____

2. VOTING DELEGATE - ALTERNATE

Name: _____

Title: _____

3. VOTING DELEGATE - ALTERNATE

Name: _____

Title: _____

PLEASE ATTACH COUNCIL RESOLUTION DESIGNATING VOTING DELEGATE AND ALTERNATES.

OR

ATTEST: I affirm that the information provided reflects action by the city council to designate the voting delegate and alternate(s).

Name: _____ E-mail _____

Mayor or City Clerk _____ Phone: _____
(circle one) (signature)

Date: _____

Please complete and return by Friday, September 23, 2016

League of California Cities
ATTN: Kayla Gibson
1400 K Street, 4th Floor
Sacramento, CA 95814

FAX: (916) 658-8240
E-mail: kgibson@cacities.org
(916) 658-8247

CITY COUNCIL
STAFF REPORT/CONSENT AGENDA

TO: SOLVANG CITY COUNCIL MEMBERS

FROM: Sandra Featherson, Administrative Services Director

MEETING DATE: July 25, 2016

DATE PREPARED: July 18, 2016

SUBJECT: **ADOPT RESOLUTION APPROVING UNREPRESENTED "CLASSIC" MEMBERS OF CALPERS CONTRIBUTING 6% OF EMPLOYER NORMAL COST**

I. RECOMMENDATION:

1. Adopt Resolution No. 16-_____approving unrepresented "Classic" members of the California Public Employees Retirement System (CalPERS) to contribute 6% of the Employer's Normal Cost (Cost Sharing).

II. DISCUSSION:

The City recently approved the Memorandum of Understanding (MOU) between the City and the Teamsters Union, Local 986, which provides for represented employees to contribute 6% of the employer's normal cost (as determined annually) by CalPERS. In order to amend the City's contract with CalPERS, CalPERS requires a Resolution to be adopted by the City and include signatures of all unrepresented employees, in addition to the adoption of the MOU.

This Resolution covers all unrepresented "Classic" members of CalPERS. Members considered non-"Classic", as defined by the Pension Reform Act, already contribute 50% of the Employer's Normal Cost.

III. ALTERNATIVES:

The City could choose not to adopt the Resolution, however this would be inconsistent with the intent of the previously adopted resolution, 16-993, which granted the same fringe benefits and salary increase to unrepresented employees.

IV. FISCAL IMPACT:

As discussed at the June 27, 2016 regular meeting of the City Council of the City of Solvang, City employees currently contribute 4% towards the City's cost of the PERS Retirement. As of July 1, 2016, City employees received a 4% salary increase. When employees contribute an additional 2% towards the City's cost of the PERS Retirement, the City saves $41,496, resulting in a net increase in City costs of $78,449. The table below shows the increase and savings by fund.

	Cost of 4% Increase	Savings of 2% on PERS	Total Net Increase
General Fund	$ 81,692	$ 29,142	$ 52,550
Water Fund	$ 14,847	$ 3,595	$ 11,252
Wastewater Fund	$ 23,406	$ 8,759	$ 14,647
Total	**$ 119,945**	**$ 41,496**	**$ 78,449**

The cost of the 4% increase is the difference between FY 2015-16 salaries at the current rate and with a 4% increase. The savings of 2% on PERS, is the difference between the City's employer contribution for FY 2016-17 of 17.086%, less the 4% and 6% contributions. This chart factored in participation by all employees, not just those who are represented.

V. ATTACHMENTS:

A. Resolution Authorizing Unrepresented "Classic" Employees to Contribute 6% of the Employer's Normal Cost (Cost Sharing) of their retirement contribution.
B. Document with Signatures of all Unrepresented "Classic" Employees

RESOLUTION NO. 16-_____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SOLVANG PROVIDING FOR UNREPRESENTED EMPLOYEES TO AGREE TO COST SHARING OF EMPLOYER CONTRIBUTIONS TO THE CALIFORNIA PUBLIC EMPLOYEES RETIREMENT SYSTEM (CalPERS)

WHEREAS, the City Council has adopted Resolution No. 16-993, which identifies salary and other fringe benefits to be provided to the represented employees, and to provide those same salary and fringe benefits to unrepresented employees; and

WHEREAS, the City Council desires to ensure that all employees who are "Classic" members according to the Pension Reform Act of 2013, CCR Section 579.1, participate in cost sharing of the employer's contribution to the CalPERS; and

WHEREAS, the unrepresented employees have agreed in writing (as an attachment to this document) to the cost sharing of 6% of the Employer's Normal Cost (as determined annually by CalPERS);

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Solvang approves unrepresented employees who are "Classic" members, to participate in cost sharing of 6% of their salary towards the employer's contribution of the Normal Cost of retirement, as per California Public Employees Retirement Law, Section 20516.

PASSED AND ADOPTED by the City Council of the City of Solvang on this the 25th day of July, 2016, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

_____
Jim Richardson, Mayor

ATTEST:

By:_____
Lisa S. Martin, City Clerk

CITY COUNCIL
STAFF REPORT

TO: **SOLVANG CITY COUNCIL MEMBERS**

FROM: Matt van der Linden, Public Works Director/City Engineer
Bridget Elliott, Associate Engineer

MEETING DATE: July 25, 2016

DATE PREPARED: July 15, 2016

SUBJECT: **MISSION DRIVE IMPROVEMENTS–PRELIMINARY DESIGN UPDATE**

I. RECOMMENDATION:

1. Receive and file attached Mission Drive Improvements Technical Memoranda; and
2. Direct staff to proceed with a cost share agreement with the Santa Barbara County Fire Department for installation of traffic signal preemption devices and authorize the City Manager to execute agreement with the Fire Department, and approve a budget adjustment of $60,000 ($30,000 to be reimbursed by Fire Dept.); and
3. Provide staff with further direction as we move into final design on the Mission Drive Crosswalk Improvements, and Signal Upgrades.

II. BACKGROUND:

Focus on various Mission Drive traffic and safety issues began February 27, 2012 when the Solvang City Council directed staff to conduct a comprehensive study of traffic circulation issues along the Mission Drive corridor through the City Limits of Solvang.

At its February 25, 2013 Regular Meeting, the City Council awarded a contract to Orosz Engineering Group (teamed with Alta Planning & Design) to conduct the Mission Drive Corridor Traffic Circulation Study. Two Community Workshops were held to solicit input from the community on their primary issues, needs and concerns regarding traffic flow on Mission Drive. Input was solicited on bicycle, pedestrian, transit and vehicle issues, needs and concerns. Staff and the design team performed extensive study and had several conversations with Caltrans. The final draft of the Study was provided to Caltrans for their review and comments. Caltrans expressed general concurrence with the proposed improvements and had only minor comments.

At the City Council meeting of June 23, 2014 the final draft Report was presented to City Council by Orosz Engineering Group along with presentation of the projects/improvements recommended by them and staff. Staff had anticipated that City Council would provide minor adjustment to the priorities and approve the Report. However, the City Council agreed on only a few projects and was widely divided on many of the proposed improvements. In addition, City Council members provided lengthy lists of their individual desired projects that went well beyond the available funds. Therefore, staff suggested that they bring this item back at a later date, and present recommended projects based on Council comments and estimated costs so the projects could be prioritized and limited to the available funding.

At the July 28th, 2014 City Council Meeting, the Council reviewed the preferred improvement alternatives from the Mission Drive Study. After careful consideration of the elements of the alternatives, the City Council took action to prioritize the improvements that they wished to move forward with. The complete project list from the "Mission Drive Corridor Traffic Circulation Study" is attached. The next logical step for six of these "Priority Projects" was to complete preliminary design and budget level cost estimating for the associated improvements.

III. DISCUSSION:

At its August 24, 2015 Regular Meeting, City Council directed staff to move forward with preliminary design, cost estimates, and Caltrans coordination for the six "Priority Projects" listed below, and awarded a professional services contract to Rick Engineering to complete this work.

1. Flashing Beacon Crosswalks at 2 locations at the intersections of Mission Drive and Fourth Place, and Mission Drive and First Street
2. Traffic Signal ATCS Upgrades, Pedestrian Equipment Upgrades and Phasing Modifications
3. Crosswalk at Transit Center (Mission Dr)
4. Additional Street Lights & Lighting Upgrades (consistent LED shielded fixtures)
5. Directional Signage Improvements
6. Traffic Signal Preemption Devices (Not a part of the Mission Drive Corridor Study and to be implemented only if other agencies participate in valley-wide project)

Rick Engineering coordinated with Caltrans, and has completed preliminary design and cost estimating for each Project. They have also prepared technical memoranda detailing their results. The technical memoranda are summarized below.

Task 2.1 – Crosswalk Improvements

Rick Engineering recommends moving the crosswalks at Fourth Place (North) to the east side of the intersection directly across from the Landsby Hotel and to replace all three

mid-block crosswalks with high-visibility ladder-style continental markings. Additionally, it is recommended to install solar-powered Rectangular Rapid Flashing Beacons with pedestrian actuated press buttons on both sides of the crosswalks. Rick Engineering concurs with the Mission Drive Corridor Studies recommendation to install curb bulb-outs at these crossing locations to provide better visibility and a safe haven for pedestrians. However, smaller 3-foot curb extensions are recommended and proposed based on the understanding that major curb bulb-outs of 6 to 8 feet had been previously rejected by the City Council.

The preliminary design and construction cost for these improvements are as follows: Fourth Place South (near Paula's Pancake House) $80,000, Fourth Place North (Across from the Landsby Hotel) $95,000, and First Street $85,000.

Task 2.2 – Signal Upgrades and Adaptive Traffic Control Systems

Rick Engineering recommends the following improvements at the Fifth Street, Atterdag Road, and Alisal Road intersections: 1) Replace crosswalks with high-visibility ladder type pavement markings, 2) Replace pedestrian signal equipment with accessible pedestrian Signals (APS) push button and countdown pedestrian signal heads (recently partially completed by Caltrans), 3) Replace all non ADA complaint curb ramps, and 4) Restripe minor street approaches at Fifth Street and Atterdag Road to accommodate dedicated left turn lanes. Rick Engineering also looked at the implementation of an Adaptive Traffic Control System (ATCS), which could adjust, in real time, signal timing plans based on the current traffic conditions, demand, and system capacity. It was determined that the small improvement in traffic flow could not justify the significant capital cost, as well as ongoing expenditures to setup and manage the system.

The consultant also reviewed the addition of a dedicated left turn phase (protected) from minor streets and it was determined that the Level of Service (LOS) would be worsened from LOS C to LOS D at all intersections and the protected-permissive phasing would increase the average delay for all vehicles at all intersections. This condition is made worse as traffic volume increases. Refer to the attached Signal Timing Graphic for a visual representation of the negative impact of adding a dedicated left turn phase. Adding a left turn arrow takes away not only the time for the arrow, but also time for the yellow and all-red phases that go with the arrow. Another component to the traffic signal timing is coordination with the adjacent traffic signals. This coordination must take into account both the departing traffic from this traffic signal and the arriving traffic from adjacent signals. To make the coordination work, all the traffic signals need to be on the same cycle length. These factors would significantly compound the delay in traveling along Mission Drive. As such, it is not recommended that minor street left turns be separately phased with either protected or protected-permissive phasing.

The preliminary design and construction cost for the recommended intersection improvements are as follows: Fifth Street $120,000, Atterdag $180,000, and Alisal Road $120,000.

Task 2.3 – Transit Center Crosswalk
Rick Engineering contacted Caltrans to discuss if they would approve such a mid-block crosswalk. Caltrans indicated that they would allow a mid-block crosswalk under an Encroachment Permit with approval of appropriately engineered drawings. Rick Engineering recommends the design of the new crosswalk at the Transit Center, at a minimum, matching the upgraded features of the Fourth Place and First Street crosswalks which would include: flashing beacons, signage, and high-visibility ladder style crosswalk markings. Minor curb extensions are also strongly recommended at this location to shorten pedestrian crossing time and increase driver visibility of waiting pedestrians. The preliminary design and construction cost for this project is $85,000.

Task 2.4 – Additional Street Lights and Lighting Upgrades
Adequate pedestrian lighting would require the installation of additional lighting fixtures along Mission Drive at a spacing of 100-feet between street lights, and spacing of 150-feet West of Fifth Street and East of Alisal Road. Based on Rick Engineering's lighting study, increasing the wattage of the existing light fixtures and/or raising the height of the light poles did not provide any significant improvement. Rick Engineering did recommend adding additional street lighting however to improvement pedestrian safety and visibility. They suggested two instillation options. Option 1 included replacing all existing fixtures with full cut-off type "American Revolution" fixtures and infill where needed with poles to match the existing. The preliminary design and construction cost for this project option is $250,000. Options 2 includes the replacement of all existing light poles with more decretive Ameron concrete light poles and Holophan Granville LED Fixtures and infill where needed with the same. Buellton utilizes this lighting fixture style along Mission Drive, continuing the style through Solvang would provide continuity. The preliminary design and construction cost for this project option is $580,000.

Task 2.5 – Wayfinding Signage
Rick Engineering recommends that a recognizable, cohesive, and comprehensive way finding system be installed throughout the downtown area of town. And that the designed signage reinforces Solvang's community brand. In-order to realize this goal the project would need to undertake the removal of unnecessary signage clutter both at the vehicular and pedestrian level. Then replace signage at both entrances to the City on Mission Drive and install new vehicular and pedestrian signage throughout the downtown area. They also suggest mounting signage on existing light fixtures to the maximum extent possible. preliminary design and construction cost for this project would be $235,000.

Task 2.6 – Emergency Vehicle Signal Preemption (EVP)
City staff recommends moving forward with a small pilot project. The project would include the purchase and installation of the multimode Opticom Infrared System by DDL Traffic. The four intersections in Solvang would be equipped with Opticom detectors and on-board emitters would be installed on fifteen fire vehicles located in Buellton, Solvang and Santa Ynez. Santa Barbara County Fire Department has agreed to split the

cost of the project with the City of Solvang. The City would need to budget $30,000 to implement the project.

IV. ALTERNATIVES:

The City Council may direct staff to incorporate alternative improvement concepts into the final design of the Mission Drive Crosswalk Improvements, and Signal Upgrades as deemed appropriate. The City Council may also provide staff with further direction the recommended emergency vehicle signal preemption project, or other future projects.

V. FISCAL IMPACT:

Installation of traffic signal preemption devices was not included in the approved FY 2016-17 Budget. Therefore, to proceed with the installation of traffic signal preemption devices will require a budget adjustment to Account No. 200-2600-000-70936 in the amount of $60,000 ($30,000 to be reimbursed by Fire Dept.).

Funding for final design of the Mission Drive Crosswalk Improvements, and Signal Upgrades is approved in the City's Fiscal Year 2016-17 Budget in Account No. 200-2600-000-70936. There would only be a fiscal impact if the City Council directed staff to incorporate significant changes to the planned design of these Projects.

VI. ATTACHMENTS:

1. Project List from Mission Drive Corridor Traffic Circulation Study
2. Tech Memo Task 2.1 - Crosswalk Improvements
3. Tech Memo Task 2.2 – Signal Upgrades and Adaptive Traffic Control Systems
4. Signal Timing Graphic
5. Tech Memo Task 2.3 – Transit Center Crosswalk
6. Tech Memo Task 2.4 – Additional Street Lights & Lighting Upgrades
7. Tech Memo Task 2.5 – Wayfinding Signage
8. Tech Memo Task 2.6 – Emergency Vehicle Signal Preemption
9. Budget Adjustment for traffic signal preemption devices

Priorities Set By City Council July 28, 2014

Table 1 – Priority Projects

Priority	Description	Estimated Cost ($)	Yes to include	No	Abstain
1	Talk to Solvang School about use of their parking lot	$5,000	4	0	1
1	Farmer's Market Crossing Guard at Mission & First St (10 years, $3,000 first year)	$40,000	5	0	0
2	Flashing Beacon Crosswalks at 2 Fourth Pl Locations and First St	$130,000	4	0	1
2	Traffic Signal ATCS Upgrades, Pedestrian Equipment Upgrades, and Phasing Modifications	$200,000	5	0	0
2	Crosswalk at Transit Center (Mission Dr)	$80,000	5	0	0
2	Eliminate On-Street Parking Along Downtown Mission Dr from Parkway to First (south side only)	$15,000	3	1	1
3	Additional Street Lights & Lighting Upgrades (consistent LED shielded fixtures)	$350,000	5	0	0
4	Add Tour Bus Parking to Vet's Hall Parking Lot	$25,000	4	0	1
4	Directional Signage Improvements	$80,000	5	0	0
5	Intersection Improvements at Mission & Skytt Mesa Dr	$1,000,000	4	0	1
6	Traffic Signal Pre-emption Devices (implement only if other agencies participate in valley-wide project)	$130,000	5	0	0
7	Traffic Signal at Mission & Pine St	$500,000	3	1	1
	Total:	**$2,580,000**			

To be performed by City Staff
Projects moving into preliminary design
Not being considered at this time

TECHNICAL MEMORANDUM
TASK 2.1, CROSSWALK IMPROVEMENTS
SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

Date: May 4, 2016

To: Bridget Elliot, P.E.
Department of Public Works
City of Solvang

Phone No.: 805-688-5575

From: Kelly Druse

Phone No.: 805-544-0707

Project No.: 17581

Jurisdiction: City of Solvang

Subject: Summary of the crosswalk improvement options along Mission Drive at two locations on Fourth Place and at one location on First Street. Memorandum includes the following:

1) Introduction
2) Analysis of Existing Conditions
3) Discussion of crosswalk options
4) Crosswalk Recommendations and Approximate Costs

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) has prepared this technical memorandum analyzing the options for and expected costs of installing Rectangular Rapid Flashing Beacon (RRFB) and striping upgrades at three unsignalized crosswalks along Mission Drive. These locations include two Fourth Place locations and one First Street location. This analysis originated from the Mission Drive Corridor Study, completed in October 2014, which recommended further review of installing high visibility crosswalks, possible crosswalk realignment, addition of pedestrian signals/beacons, and minor curb extensions to improve attractiveness and visibility of crossing Mission Drive.

This technical memorandum summarizes the existing conditions, presents options available, and gives final recommendations in these locations of interest.

The following studies and product information are referenced in this memorandum as supporting documents and for background information:

1. Mission Drive Corridor Study, October 2014 (Orosz Engineering Group, Inc.)
2. Manual on Uniform Traffic Control Devices (MUTCD)
3. Caltrans Highway Design Manual (HDM)

The City has undertaken this analysis with the intention to increase safety for all roadway users and improve traffic circulation by channelizing pedestrians to specific crosswalk locations.

2.0 EXISTING CROSSWALK CONDITIONS

The following is a brief description of the three project study locations on Mission Drive.

Mission Drive/Fourth Place South: The current crosswalk traverses north to south on the west side of the intersection crossing Mission Drive. This crosswalk is a white, thermoplastic, transverse marking type that is skewed. The north end of the crosswalk terminates into an at-grade striped asphalt area between two parking spots. The south end of the crosswalk terminates at a non-ADA compliant curb ramp on the southwest corner of Fourth Place and Mission Drive. The speed in this area is posted as 25 miles per hour. Mission Drive and its crosswalks are under the jurisdiction of the State Department of Transportation (Caltrans), but any RRFB will be maintained by the City of Solvang.

Mission Drive/Fourth Place North: The current crosswalk traverses north to south on the west side of the intersection crossing Mission Drive. It is a skewed, transverse, and white thermoplastic striped crosswalk. The north end of the crosswalk terminates at a curb ramp on the northwest corner of Fourth Place and Mission Drive. The south end of the crosswalk terminates at a mid-block curb ramp between two driveways. Additionally, there is an existing storm drain inlet on the north side of the street, immediately west of the crosswalk. The speed in this area is posted as 25 miles per hour. Mission Drive and its crosswalks are under the jurisdiction of the State Department of Transportation (Caltrans), but any RRFB will be maintained by the City of Solvang.

Mission Drive/First Street: The current crosswalk traverses north to south on the west side of the intersection crossing Mission Drive. This crosswalk is a slightly skewed transverse crosswalk and marked with white thermoplastic striping. The north end of the crosswalk terminates at a mid-block curb ramp and the south side terminates at a non-ADA compliant curb ramp on the corner of First Street and Mission Drive. The speed in this area is posted as 25 miles per hour. Mission Drive and its crosswalks are under the jurisdiction of the State Department of Transportation (Caltrans), but any RRFB will be maintained by the City of Solvang.

3.0 DISCUSSION OF CROSSWALK OPTIONS

Rick Engineering analyzed four options to increase the visibility of crosswalks to motorists and improve the pedestrian experience. It is expected that implementing one or all of these options will improve both pedestrian safety and the flow of traffic. These four options include realignment of the crosswalks, adding curb extensions, installing rectangular rapid flashing beacons, and upgrading crosswalk striping to higher-visibility, ladder style striping. The four improvement options are described in detail below:

3.1 Realignment

It is recommended to realign the crosswalks to be as close to perpendicular to Mission Drive as possible in order to shorten the pedestrian path and reduce crossing times. In addition to decreasing crossing time, realignment of the pedestrian crosswalks will increase the flow of traffic since pedestrians will occupy the crosswalk a smaller amount time and will decrease the time they are in conflict with vehicles. At the intersections of Fourth Place South and First Street, existing conditions require that some skewing of the crosswalks remain. To best shorten the crossing time, realignment is recommended in the following manner.

At the Mission Drive and Fourth Place South crosswalk, it is recommended to keep the crosswalk on the west side of Fourth Place South but realign the crosswalk to a new proposed pedestrian ramp at the north side of the intersection. This will allow the crosswalk to be closer to perpendicular, shortening the pedestrian path. The pedestrians will enter and exit the north end of the crosswalk via a standard sidewalk curb ramp.

At the Mission Drive and Fourth Place North crosswalk, it is recommended to move the crosswalk to the east side of the intersection. This will allow pedestrians to enter and exit the crosswalk at the south end at an ADA-compliant location and not be in conflict with vehicles exiting the public parking lot. Placing the crosswalk on the east side of the street will also give better spacing to the two crosswalks on Fourth Place South and Fourth Place North. This crosswalk will be realigned to be perpendicular to the travel way.

At the Mission Drive and First Street crosswalk, the crosswalk cannot be realigned due to existing driveway improvements. It is recommended to maintain the current alignment.

3.2 Minor Curb Extensions

Curb extensions were analyzed as another method to shorten the path of crossing pedestrians, which decreases the opportunity for vehicle/pedestrian conflicts, and improves pedestrian safety and the flow of traffic. Additionally, curb extensions typically result in traffic calming, as the total roadway width is reduced, making drivers less comfortable maintaining a higher speed. Since there is existing on-street parking, curb extensions also make the pedestrians more visible to oncoming cars, increasing pedestrian safety. Curb extensions also offer a refuge for the pedestrians to congregate before crossing the street, keeping the sidewalk unblocked and effectively "platooning" pedestrians, which can result in improved vehicular movement.

3.3 Rectangular Rapid Flashing Beacon (RRFB) with pedestrian actuations

RRFB help highlight the pedestrian crossing for drivers with the use of flashing yellow lights. It also helps entice pedestrians to cross at an appropriate, single location. Because the button needs to be pressed by the pedestrian, the warning lights will give vehicles an instant alert of a pedestrian within the roadway. It gives driver and pedestrian the needed time to check the crossing before continuing. This system can be hard-wired or use solar power. It is anticipated that there is sufficient sunlight in the project area to support a solar-powered option.

3.4 High-Visibility Markings

Transverse crosswalks are shown to have a lower driver visibility detection distance when compared to continental crosswalks. It is recommended to upgrade all crosswalks at these three locations to continental ladder marking type crosswalks. This option alone will not significantly increase the safety of pedestrians, but will help encourage the pedestrians to use the marked crosswalks and increase visibility of the pedestrian crossing. It is highly recommended to use this option in conjunction with RRFB for increased safety.

4.0 RECOMMENDATIONS AND ESTIMATE OF COST

Rick Engineering recommends moving the crosswalks at Fourth Place North to the east side of the intersection and to replace existing crosswalk striping with high-visibility ladder-style continental markings. Additionally, it is recommended to install solar-powered Rectangular Rapid Flashing Beacons with pedestrian actuated press buttons on both sides of the crosswalks.

The Mission Drive Corridor Study recommended major curb extensions of 6' to 8'. The City Council has rejected the design of major curb extensions. We recommend minor curb extensions of 3' instead. Rick Engineering strongly recommends that the City construct minor curb extensions at these three locations because it is expected that the vehicular movement and safety improvements of curb extensions could be significant.

Below is an estimated cost at each crosswalk location to implement the recommendations above. Please reference the attached cost estimates for more detail.

Estimated Construction Costs @ Crosswalk Locations					
Location	Base Bid	Contingencies			Total
		Construction (20%)	Design (15%)	Survey/CM (15%)	
Mission Drive/Fourth Place South	$51,900	$10,400	$9,300	$9,300	**$80,900**
Mission Drive/Fourth Place North	$60,800	$12,200	$11,000	$11,000	**$95,000**
Mission Drive/First Street	$53,500	$10,700	$9,600	$9,600	**$83,400**

RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Improvements Planning
Job No: 17581
Date: 2/2/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

TASK 2.1 - FLASHING BEACON CROSSWALKS @ MISSION DR AND FOURTH PLACE-SOUTH

Opinion of Probable Cost for the City of Solvang

SIDEWALKS, CROSSWALKS AND STREET IMPROVEMENTS					
Fourth Place-South Crosswalk					
ITEM NO.	ITEM DESCRIPTION	UNIT	APPROX. QTY	UNIT PRICE	TOTAL ITEM PRICE
1	**Misc. Construction (Traffic Control, Water Pollution Control, Etc.)**	LS	1	$2,500.00	$2,500
2	**Demolition (Curb, Gutter, Sidewalk, Ramps, Pavement, and Sawcut)**	LS	1	$10,000.00	$10,000
	Striping (Demolition and Placement)				
3	Remove Existing Crosswalk and Street Striping	SF	100	$10.00	$1,000
4	Remove Parking Stripes	LF	72	$1.00	$72
5	Install New Crosswalk Markings (Caltrans Ladder Type,	SF	280	$10.00	$2,800
6	Install "PED" Marking (Caltrans Std. Plan A24D)	SF	40	$15.00	$600
7	Install "XING" Marking (Caltrans Std. Plan A24D)	SF	45	$15.00	$675
8	Install parking stall pavement markings	LF	75	$0.60	$45
9	Install ADA aisle markings	SF	90	$0.60	$54
	Pedestrian Signage Improvements				
10	Install Solar RRFB with Audible Pedestrian Push Button	EA	2	$7,500.00	$15,000
11	Install Advance Pedestrian Signage (W11-2)	EA	2	$1,500.00	$3,000
	Street and Sidewalk Improvements				
12	Construct ADA Ramp	EA	2	$3,000.00	$6,000
13	Construct Curb and Gutter	LF	95	$22.00	$2,090
14	Relocate/Adjust Existing Utility Appurtenance (Stormdrain, Water, Sewer, Sidewalk Underdrain, and Dry Utilities)	LS	1	$5,000.00	$5,000
15	Construct Sidewalk-Concrete	SF	160	$10.00	$1,600
16	Construct Sidewalk-Brick	SF	100	$15.00	$1,500
	FOURTH PLACE-SOUTH CROSSWALK - SUBTOTAL BASE BID PRICE:				$51,900
	20% CONSTRUCTION CONTINGENCY:				$10,400
	CONSTRUCTION SUBTOTAL:				$62,300
	15% PS&E DESIGN:				$9,300
	15% CONSTRUCTION MANAGEMENT AND STAKING:				$9,300
	TOTAL:				$80,900

General Notes:

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2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.
3. Demolition includes removal of concrete curb and gutter, brick paved sidewalk, pavement, and sawcut.
4. The relocation and adjustment of existing utilities include any storm drain, sewer, water, and dry utility appurtenance.
5. Construction of ADA Ramp includes concrete ramp, spandrel, truncated domes, and pavement replacement.

RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Improvements Planning
Job No: 17581
Date: 2/3/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.1 - FLASHING BEACON CROSSWALKS @ MISSION DR AND FOURTH PLACE-NORTH
Opinion of Probable Cost for the City of Solvang

SIDEWALKS, CROSSWALKS AND STREET IMPROVEMENTS					
Fourth Place-North Crosswalk					
ITEM NO.	ITEM DESCRIPTION	UNIT	APPROX. QTY	UNIT PRICE	TOTAL ITEM PRICE
1	**Misc. Construction (Traffic Control, Water Pollution Control, Etc.)**	LS	1	$2,500.00	$2,500
2	**Demolition (Curb, Gutter, Sidewalk, Ramps, Pavement, and Sawcut)**	LS	1	$10,000.00	$10,000
	Striping (Demolition and Placement)				
2	Remove Existing Crosswalk and Street Striping	LF	100	$10.00	$1,000
3	Install New Crosswalk Markings (Caltrans Ladder Type, RSP A24F)	SF	250	$10.00	$2,500
4	Install "PED" Marking (Caltrans Std. Plan A24D)	SF	40	$15.00	$600
5	Install "XING" Marking (Caltrans Std. Plan A24D)	SF	45	$15.00	$675
	Pedestrian Signage Improvements				
6	Install Solar RRFB with Audible Pedestrian Push Button and Pedestrian Signage (W11-2 & W16-7P)	EA	2	$7,500.00	$15,000
7	Install Advance Pedestrian Signage (W11-2)	EA	2	$1,500.00	$3,000
	Street and Sidewalk Improvements				
8	Install ADA Truncated Domes (Existing ADA Ramp to Remain)	SF	20	$50.00	$1,000
9	Construct ADA Ramp	EA	2	$2,500.00	$5,000
10	Curb and Gutter	LF	120	$22.00	$2,640
11	Construct Sidewalk- Concrete	SF	415	$10.00	$4,150
12	Construct Sidewalk- Brick	SF	415	$15.00	$6,225
13	Relocate Street Sign	EA	1	$1,500.00	$1,500
14	Relocate/Adjust Existing Utility Appurtenance (Stormdrain, Water, Sewer, Sidewalk Underdrain, and Dry Utilities)	LS	1	$5,000.00	$5,000
	FOURTH PLACE-NORTH CROSSWALK - SUBTOTAL BASE BID PRICE:				$60,800
	20% CONSTRUCTION CONTINGENCY:				$12,200
	CONSTRUCTION SUBTOTAL:				$73,000
	15% PS&E DESIGN:				$11,000
	15% CONSTRUCTION MANAGEMENT AND STAKING:				$11,000
	TOTAL:				$95,000

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3. Demolition includes removal of concrete curb and gutter, brick paved sidewalk, pavement, and sawcut.
4. The relocation and adjustment of existing utilities include any storm drain, sewer, water, and dry utility appurtenance.
5. Construction of ADA Ramp includes concrete ramp, spandrel, truncated domes, and pavement replacement.

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805-544-2052 Fax

Project: Mission Drive Improvements Planning
Job No: 17581
Date: 2/3/2016
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SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.1 - FLASHING BEACON CROSSWALKS @ MISSION DR AND FIRST STREET
Opinion of Probable Cost for the City of Solvang

SIDEWALKS, CROSSWALKS AND STREET IMPROVEMENTS					
First Street Crosswalk					
ITEM NO.	ITEM DESCRIPTION	UNIT	APPROX. QTY	UNIT PRICE	TOTAL ITEM PRICE
1	**Misc. Construction (Traffic Control, Water Pollution Control, Etc.)**	LS	1	$2,500.00	$2,500
2	**Demolition (Curb, Gutter, Sidewalk, Ramps, Pavement, and Sawcut)**	LS	1	$10,000.00	$10,000
	Striping (Demolition and Placement)				
3	Remove Existing Crosswalk Striping	LF	88	$1.00	$88
4	Install New Crosswalk Markings (Caltrans Ladder Type, RSP A24F)	SF	230	$10.00	$2,300
5	Install "PED" Marking (Caltrans Std. Plan A24D)	SF	40	$15.00	$600
6	Install "XING" Marking (Caltrans Std. Plan A24D)	SF	45	$15.00	$675
	Pedestrian Signage Improvements				
7	Install Solar RRFB with Audible Pedestrian Push Button and Pedestrian Signage (W11-2 & W16-7P)	EA	2	$7,500.00	$15,000
8	Install Advance Pedestrian Signage (W11-2)	EA	2	$1,500.00	$3,000
	Street and Sidewalk Improvements				
9	Construct ADA Ramp	EA	3	$2,500.00	$7,500
10	Construct Curb and Gutter	LF	85	$22.00	$1,870
11	Construct Sidewalk-Brick	SF	130	$15.00	$1,950
12	Relocate Street Sign	EA	1	$750.00	$750
13	Relocate Bench	EA	1	$750.00	$750
14	Relocate Bollards	EA	2	$750.00	$1,500
15	Relocate/Adjust Existing Utility Appurtenance (Stormdrain, Water, Sewer, Sidewalk Underdrain, and Dry Utilities)	LS	1	$5,000.00	$5,000
	FIRST STREET CROSSWALK - SUBTOTAL BASE BID PRICE:				$53,500
	20% CONSTRUCTION CONTINGENCY:				$10,700
	CONSTRUCTION SUBTOTAL:				$64,200
	15% PS&E DESIGN:				$9,600
	15% CONSTRUCTION MANAGEMENT AND STAKING:				$9,600
	TOTAL:				$83,400

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3. Demolition includes removal of concrete curb and gutter, brick paved sidewalk, pavement, and sawcut.
4. The relocation and adjustment of existing utilities include any storm drain, sewer, water, and dry utility appurtenance.
5. Construction of ADA Ramp includes concrete ramp, spandrel, truncated domes, and pavement replacement.

TECHNICAL MEMORANDUM
TASK 2.2- SIGNAL UPGRADES AND ADAPTIVE TRAFFIC CONTROL SYSTEMS
SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

Date: May 4, 2016

To: Bridget Elliot, P.E.
Department of Public Works
City of Solvang

Phone No.: 805-688-5575

From: Kelly Druse

Phone No.: 805-544-0707

Project No.: 17581

Jurisdiction: City of Solvang

Subject: Summary of Signal Upgrade options for the intersections along Mission Drive at Fifth Street, Atterdag Road and Alisal Road. Memorandum includes the following:

1.) Introduction
2.) Analysis of existing intersection striping, phasing and signal equipment
3.) Discussion of striping, phasing and signal improvement alternatives
4.) Signal Upgrade Recommendations and Approximate Costs
5.) Synchro Results

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) has prepared this technical memorandum analyzing the options for signal upgrades along the Mission Drive Corridor at the intersections with Fifth Street, Atterdag Road and Alisal Road. This analysis originated from the Mission Drive Corridor Study, completed in October 2014, which recommended further analysis of signal upgrades, striping and phasing changes in order to improve traffic flow along the Highway 246 (Mission Drive) corridor. Specifically, the Corridor Study recommended further study of the feasibility of implementing an Adaptive Traffic Control System (ATCS) through this corridor.

This technical memorandum summarizes the existing conditions along this corridor, including existing intersection geometric layout, signal equipment, and vehicular operational analysis. Additionally, a comparison of intersection improvements is presented with final recommendations.

The following studies and product information are referenced in this memorandum as supporting documents and for background information:

1. HCM Signalized Intersection Capacity Analysis from Mission Drive Corridor Study, October 2014 (Orosz Engineering Group, Inc.)

2.0 EXISTING INTERSECTION STRIPING, PHASING AND SIGNAL EQUIPMENT.

2.1 Existing Intersection Striping

The following is a brief description of the intersection geometric layouts along Mission Drive within the project study area. See attached Exhibits for additional information.

Mission Drive/Fifth Street: Current westbound and eastbound striping includes dedicated left and right turn lanes, along with a single through lane in each direction. Northbound and southbound striping includes a single left/through/right lane on Fifth Street in each direction.

Mission Drive/Atterdag Road: Current westbound and eastbound striping includes dedicated left turn lane, along with a single through lane in each direction. Northbound and southbound striping includes a single left/through/right lane on Atterdag Road in each direction.

Mission Drive/Alisal Road: Current westbound striping includes a dedicated left turn lane and a single through/right lane. Eastbound striping includes dedicated left and right turn lanes and a single through lane. Southbound striping includes a dedicated left turn lane and a single through/right lane. Northbound striping includes dedicated left and right turn lanes and a single through lane.

2.2 Existing Intersection Phasing and Signal Equipment

The following is a brief description of the existing intersection phasing and signal equipment along Mission Drive within the project study area. See attached Exhibits for additional information.

The three study intersections are interconnected with pre-timing and actuated-coordinated capabilities. Currently, the signals operate in a pre-timed condition only during AM weekdays to facilitate school traffic along Mission Drive. Loop detectors are installed for all approaches at the three intersections, but will likely need replacement if geometric changes are implemented.

Mission Drive/Fifth Street:

Currently there is a six-phase signal setup with protected left turn phasing for eastbound and westbound traffic. Northbound and southbound traffic includes permitted left turns.

Eastbound and westbound signals standards are comprised of Caltrans equipment with 35' and 40' mast arms, and Type 1-A standards on the opposite corners. Northbound and southbound are comprised of Caltrans equipment with type 1-A standards on the opposite corners. One of the Type 1-A standards would need to be upgraded to include a mast arm for protected left turn phasing on both the northbound and southbound approaches.

Pedestrian equipment includes standard pedestrian push buttons and pedestrian signal heads at all approaches. There is one pedestrian push button and one side-mounted pedestrian signal head (without countdown timer) on each signal standard within the intersection.

Mission Drive/Atterdag Road:

Currently there is a four-phase signal setup with permitted left turn phasing for all approaches.

Signal standards at all four approaches are comprised of Caltrans equipment with 20'mast arms.

Pedestrian equipment includes standard pedestrian push buttons and pedestrian signal heads at all approaches. There are two side-mounted pedestrian signal heads (without countdown timer) on each signal standard with mast arm within the intersection. On the southwest corner of the intersection, there are two pedestrian push buttons on the signal standard. On all three other corners of the intersection, one pedestrian push button is located on the signal standard with mast arm and the adjacent push button is located on a separate pedestrian push button post.

Mission Drive/Alisal Road:

Currently there is a six-phase signal setup with protected left turn phasing for eastbound and westbound traffic. Northbound and southbound traffic includes permitted left turns. Additionally, there is a Right-Turn Overlap (RTOL) phase for the northbound approach.

Eastbound and westbound signals standards are comprised of Caltrans equipment with 30' mast arms and Type 1-A standards on the opposite corners. Northbound and southbound signal standards include 20' mast arms, and Type 1-A standards on the opposite corners. The signal poles with 20' mast arms would require upgrades for protected left turn phasing on both the northbound and southbound approaches.

Pedestrian equipment includes standard pedestrian push buttons and pedestrian signal heads at all approaches. There is one pedestrian push button and one side-mounted pedestrian signal head (without countdown timer) on each signal standard within the intersection.

3.0 STRIPING, PHASING AND SIGNAL IMPROVEMENT ALTERNATIVES

3.1 Base Intersection Improvements

This analysis includes a base level of improvements at all three intersections. These improvements include the following:

1. Replacing crosswalks with high-visibility ladder type pavement markings.
2. Replace pedestrian signal equipment with Accessible Pedestrian Signals (APS) push buttons and countdown pedestrian signal heads.
3. Replace non-ADA complaint curb ramps.
4. Replace in-pavement signal detectors with Digital Loop Carrier (DLC) loops.
5. Restripe minor street approaches at Fifth Street and Atterdag Road to accommodate dedicated left turn lanes.

3.2 Additional Intersection Improvements

Additional improvements included in the Mission Drive Corridor Study have been analyzed as part of this engineering study. These include the following:

1. Improvements to allow 8-phase signal operation at the three study intersections. This would include signal equipment replacement at all three minor streets, as well as signal equipment upgrades on Mission Drive at Atterdag Road.
2. Implementation of an Adaptive Traffic Control System (ATCS) along Mission Drive in Solvang.

In order to determine the impacts of implementing 8-phase signal operation, data from the Mission Drive Corridor Study was input into Synchro (version 8). Signals were programmed as actuated-coordinated (actuated refers to signal operation utilizing detection and coordinated refers to a timing relationship between adjacent traffic signals) in order to model the conditions recommended in this technical memorandum. The results of this exercise are included as an appendix to this Technical Memorandum.

4.0 RECOMMENDATIONS AND ESTIMATE OF COST

4.1 Base Intersection Improvements Recommendations

It is recommended that the improvements above be implemented, as they will increase pedestrian visibility and encourage pedestrians to cross at marked crosswalks. Restriping the minor streets with left turn pockets would improve through and right-turn traffic movements on the minor streets as left turns could queue without blocking other movements. Additional DLC loops and left-turn pockets would allow for implementation of an ATCS or similar system in the future if peak hour vehicular traffic significantly increases and frequent congestion is observed. Coordinating the traffic signals and implementing specific signal timing based on peak hour traffic patterns could be easily implemented. These improvements are far more cost effective measures compared to widening the roadway and adding additional travel lanes to improve traffic flow. See the attached cost estimate sheets and the cost outline below.

4.2 Additional Intersection Improvements

When determining the functionality of an intersection, Caltrans utilizes the standard Level of Service (LOS) to determine impacts and operational deficiencies. At signalized intersections, LOS is determined by averaging delays for all vehicles at the intersection. Caltrans has established the LOS C/D threshold as the level of service standard for State Highway intersections. Additional traffic or changes to conditions which cause the LOS to degrade to level of D or worse, or which add additional delay to an intersection already operating below a LOS D, is considered a significant impact. As such, all three intersections have been evaluated using LOS criteria to determine significant impacts.

Phasing Changes:

Under existing traffic volumes, geometric layout and signal control, signal phasing (permissive) all three intersections currently operate at a LOS of C or better. However, with the addition of a dedicated left turn phase (protected) from minor streets, the LOS would be worsened to LOS D at all intersections. Additionally, with the addition of a separate left turn lane from the minor street and protected-permissive phasing, all three intersections would operate at LOS C. However, with protected-permissive phasing, the average delay for all vehicles at the intersections increases.

Similarly, under future traffic volumes overall intersection LOS conditions would be worsened with the addition of separate phased minor street left turns (protected) as well as protected-permissive phasing. Under future traffic volumes, LOS would remain at D or better, but overall delay times would be increased. ***As such, it is not recommended that minor street left turns be separately phased with either protected or protected-permissive phasing.***

ATCS Implementation:

Rick Engineering understands that there are occasional events which result in substantially increased traffic from the minor streets onto Mission Drive, and that the City wishes to determine if an Adaptive Traffic Control System could be utilized to improve traffic conditions at these times.

Adaptive Traffic Control Systems (ATCS) was originally developed by the Los Angeles Department of Transportation (LADOT) to optimize a networked system of signalized intersections. Within the City of Los Angeles, a network of 4,400 signals are centrally controlled as part of the Automated Traffic Surveillance and Control (ATSAC) system. The City of Los Angeles estimates that this system reduces travel times by approximately 12% and increases speeds by 16%.

An ATCS system adjusts, in real time, signal timing plans based on the current traffic conditions, demand, and system capacity. An ATCS generally includes algorithms that adjust a signal's split, offset, cycle length, and phase sequences to minimize delays and reduce the number of stops. The system requires extensive vehicle detection and a communications infrastructure that allows for communication with the central and/or local controllers, as well as a visual display in the ATCS Center. It is not required to continuously monitor the system; however, additional maintenance is required with these systems.

Implementation of an ATCS system within the City of Solvang would require considerable original capital costs, as well as ongoing expenditures to setup and manage the system. An ATCS system requires additional equipment at each signal controller, as well as a dedicated ATCS Center with Communication Hubs and Data Servers. It is estimated that original capital costs are in the order of $25,000 per intersection, with maintenance and operation costs of approximately $50,000 per year. While the City would likely see some improvements to vehicular traffic flow on Mission Drive with ATCS implementation, other intersection and pedestrian recommendations included as part of this engineering analysis would provide equivalent levels of improvement at a portion of the cost. ***Rick Engineering does not recommend that ATCS improvements be implemented.***

BASE INTERSECTION IMPROVEMENTS (PER 3.1 AND 4.1)					
Intersection	Const. Cost	Construction Contingency (20%)	Design (15%)	Survey/CM (15%)	Total
Mission Dr./Fifth Street	$77,600	$15,520	$14,000	$14,000	**$121,100**
Mission Dr./Atterdag Road	$112,800	$22,560	$20,300	$20,300	**$176,000**
Mission Dr./Alisal Road	$76,200	$15,240	$13,700	$13,700	**$118,800**
MINOR STREET PROTECTED PHASING IMPROVEMENTS*					
Intersection	Constr. Cost	Construction Contingency (20%)	Design (15%)	Survey/CM (15%)	Total
Mission Dr./Fifth Street	$58,000	$11,600	$10,400	$10,400	**$90,400**
Mission Dr./Atterdag Road	$54,500	$10,900	$9,800	$9,800	**$85,000**
Mission Dr./Alisal Road	$55,000	$11,000	$9,900	$9,900	**$85,800**

Rick Engineering does not recommend these upgrades and costs have been included for informational purposes only.

RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Priority Planning
Job No: 17581
Date: 1/29/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.2 - FIFTH STREET SIGNAL UPGRADES (BASE IMPROVEMENTS)
Opinion of Probable Cost for the City of Solvang

MISSION DRIVE/FIFTH STREET IMPROVEMENTS					
BASE IMPROVEMENTS - STRIPING, PEDESTRIAN EQUIPMENT AND ADA COMPLIANCE					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$5,000.00	$5,000
	Striping (Demolition and Placement)				
2	Remove Existing Striping (Crosswalk and Centerline)	LF	710	$5.00	$3,550
3	Install New Crosswalk Markings (Caltrans Ladder Type, RSP A24F)	SF	1050	$10.00	$10,500
4	Install Type IV Left Arrow Marking (Caltrans Std. Plan A24A)	SF	45	$15.00	$675
5	Install Dbl Yellow Centerline Striping (Caltrans Std. Plan A24A, Det 21)	LF	500	$2.00	$1,000
6	Install 8" White Channelizing Line (Caltrans Std. Plan A20D, Det 38A)	LF	100	$5.00	$500
	Traffic Signals (Demolition and Placement)				
7	Remove existing signal detectors	EA	10	$250.00	$2,500
8	Install new DLC signal loop detectors (includes connection to pull boxes)	EA	26	$600.00	$15,600
9	Replace existing signal cables in conduit with new cables to controller	LS	1	$2,500.00	$2,500
10	Remove and replace ped push buttons with APS equipment	EA	8	$350.00	$2,800
11	Remove and replace ped signal heads with Countdown heads	EA	8	$1,000.00	$8,000
	Street and Sidewalk Improvements				
12	Remove and Reconstruct ADA Ramp**	EA	3	$7,500.00	$22,500
13	Misc. Concrete Sidewalk Replacement	LS	1	$2,500.00	$2,500
				FIFTH STREET LOCATION - SUBTOTAL BASE BID PRICE:	$77,600
				20% CONSTRUCTION CONTINGENCY	$15,520
				CONSTRUCTION SUBTOTAL:	$93,120
				15% PS&E DESIGN:	$14,000
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$14,000
				TOTAL:	$121,100

* Caltrans HDM requires two ADA ramps per corner. It is assumed that due to space constraints a design exception will be processed to allow single ADA ramps.
** Quanitity of ramps to be replaced is based on a preliminary field visit and not design-level survey of existing ramps. Quantity to be replaced and extents of work may vary based upon final design.

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805-544-2052 Fax

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By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.2 - ATTERDAG ROAD SIGNAL UPGRADES (BASE IMPROVEMENTS)
Opinion of Probable Cost for the City of Solvang

MISSION DRIVE/ATTERDAG ROAD IMPROVEMENTS					
BASE IMPROVEMENTS - STRIPING, PEDESTRIAN EQUIPMENT AND ADA COMPLIANCE					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$5,000.00	$5,000
	Striping (Demolition and Placement)				
2	Remove Existing Striping (Crosswalk and Centerline)	LF	550	$5.00	$2,750
3	Install New Crosswalk Markings (Caltrans Ladder Type, RSP A24F)	SF	800	$10.00	$8,000
4	Install Type IV Left Arrow Marking (Caltrans Std. Plan A24A)	SF	60	$15.00	$900
5	Install Dbl Yellow Centerline Striping (Caltrans Std. Plan A24A, Det 21)	LF	200	$2.00	$400
6	Install 8" White Channelizing Line (Caltrans Std. Plan A20D, Det 38A)	LF	150	$5.00	$750
	Traffic Signals (Demolition and Placement)				
7	Remove existing signal detectors	EA	8	$250.00	$2,000
8	Install new DLC signal loop detectors (includes connection to pull boxes)	EA	19	$600.00	$11,400
9	Replace existing signal cables in conduit with new cables to controller	LS	1	$2,500.00	$2,500
10	Upgrade to controller for phase changes	LS	1	$2,500.00	$2,500
11	Remove existing Signal Standard, Mast Arm, Traffic and Ped. Heads	EA	2	$2,500.00	$5,000
12	Install new Signal Standard (Type 19 w/ Luminaire) and 25' mast arm	EA	1	$15,000.00	$15,000
13	Install new Signal Standard (Type 19 w/ Luminaire) and 30' mast arm	EA	1	$15,000.00	$15,000
14	Install new Signal heads	EA	8	$1,500.00	$12,000
15	Install new pedestrian APS push button and Countdown Head	EA	4	$800.00	$3,200
16	Remove and replace signal head	EA	2	$1,750.00	$3,500
17	Remove and replace ped push buttons with APS equipment	EA	4	$350.00	$1,400
18	Remove and replace ped signal heads with Countdown heads	EA	4	$1,000.00	$4,000
	Street and Sidewalk Improvements				
19	Remove and Reconstruct ADA Ramp**	EA	2	$7,500.00	$15,000
20	Misc. Concrete Sidewalk Replacement	LS	1	$2,500.00	$2,500
				ATTERDAG ROAD LOCATION - SUBTOTAL BASE BID PRICE:	$112,800
				20% CONSTRUCTION CONTINGENCY	$22,560
				CONSTRUCTION SUBTOTAL:	$135,360
				15% PS&E DESIGN:	$20,300
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$20,300
				TOTAL:	$176,000

* Caltrans HDM requires two ADA ramps per corner. It is assumed that due to space constraints a design exception will be processed to allow single ADA ramps.
** Quanitity of ramps to be replaced is based on a preliminary field visit and not design-level survey of existing ramps. Quantity to be replaced and extents of work may vary based upon final design.

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By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.2 - ALISAL ROAD SIGNAL UPGRADES (BASE IMPROVEMENTS)
Opinion of Probable Cost for the City of Solvang

MISSION DRIVE/ALISAL ROAD IMPROVEMENTS					
BASE IMPROVEMENTS - STRIPING, PEDESTRIAN EQUIPMENT AND ADA COMPLIANCE					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$5,000.00	$5,000
	Striping (Demolition and Placement)				
2	Remove Existing Striping (Crosswalk and Centerline)	LF	500	$5.00	$2,500
3	Install New Crosswalk Markings (Caltrans Ladder Type, RSP A24F)	SF	1050	$10.00	$10,500
	Traffic Signals (Demolition and Placement)				
4	Remove existing signal detectors	EA	8	$10.00	$80
5	Install new DLC signal loop detectors (includes connection to pull boxes)	EA	33	$600.00	$19,800
6	Replace existing signal cables in conduit with new cables to controller	LS	1	$2,500.00	$2,500
7	Remove and replace ped push buttons with APS equipment	EA	8	$350.00	$2,800
8	Remove and replace ped signal heads with Countdown heads	EA	8	$1,000.00	$8,000
	Street and Sidewalk Improvements				
9	Remove and Reconstruct ADA Ramp**	EA	3	$7,500.00	$22,500
10	Misc. Concrete Sidewalk Replacement	LS	1	$2,500.00	$2,500
				ALISAL ROAD LOCATION - SUBTOTAL BASE BID PRICE:	$76,200
				20% CONSTRUCTION CONTINGENCY	$15,240
				CONSTRUCTION SUBTOTAL:	$91,440
				15% PS&E DESIGN:	$13,700
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$13,700
				TOTAL:	$118,800

* Caltrans HDM requires two ADA ramps per corner. It is assumed that due to space constraints a design exception will be processed to allow single ADA ramps.
** Quanitity of ramps to be replaced is based on a preliminary field visit and not design-level survey of existing ramps. Quantity to be replaced and extents of work may vary based upon final design.

General Notes:
1. This cost estimate is preliminary only. Rick Engineering Company makes no warranty, either expressed or implied, that actual costs will not vary from the amounts indicated and assumes no liability for such variances.
2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.

RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Priority Planning
Job No: 17581
Date: 1/29/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.2 - FIFTH STREET SIGNAL UPGRADES (PHASING IMPROVEMENTS)
Opinion of Probable Cost for the City of Solvang

MISSION DRIVE/FIFTH STREET IMPROVEMENTS					
MINOR STREET PROTECTED PHASING IMPROVEMENTS					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$5,000.00	$5,000
	Traffic Signals (Demolition and Placement)				
2	Upgrade to controller for phase changes	LS	1	$2,500.00	$2,500
3	Remove existing Signal Standard (Type 1-A) and Traffic Heads	EA	2	$2,500.00	$5,000
4	Install new Signal Standard (Type 19 w/ Luminaire) and 30' mast arm	EA	2	$15,000.00	$30,000
5	Install new Signal heads	EA	8	$1,500.00	$12,000
6	Remove and replace signal head	EA	2	$1,750.00	$3,500
				FIFTH STREET LOCATION - SUBTOTAL BASE BID PRICE:	$58,000
				20% CONSTRUCTION CONTINGENCY	$11,600
				CONSTRUCTION SUBTOTAL:	$69,600
				15% PS&E DESIGN:	$10,400
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$10,400
				TOTAL:	$90,400

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3. Estimate assumes that Base Intersections have been implemented, including all ADA and pedestrian upgrades

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SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

TASK 2.2 - ATTERDAG ROAD SIGNAL UPGRADES (PHASING IMPROVEMENTS)

Opinion of Probable Cost for the City of Solvang

MISSION DRIVE/ATTERDAG ROAD IMPROVEMENTS PHASING IMPROVEMENTS					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$5,000.00	$5,000
	Traffic Signals (Demolition and Placement)				
2	Upgrade to controller for phase changes	LS	1	$2,500.00	$2,500
3	Remove existing Signal Standard, Mast Arm and Traffic Heads	EA	2	$2,500.00	$5,000
4	Install new Signal Standard (Type 19 w/ Luminaire) and 25' mast arm	EA	2	$15,000.00	$30,000
5	Install new Signal heads	EA	8	$1,500.00	$12,000
				ATTERDAG ROAD LOCATION - SUBTOTAL BASE BID PRICE:	$54,500
				20% CONSTRUCTION CONTINGENCY	$10,900
				CONSTRUCTION SUBTOTAL:	$65,400
				15% PS&E DESIGN:	$9,800
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$9,800
				TOTAL:	$85,000

General Notes:

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2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.
3. Estimate assumes that Base Intersections have been implemented, including all ADA and pedestrian upgrades

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San Luis Obispo, CA 93405
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805-544-2052 Fax

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SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.2 - ALISAL ROAD SIGNAL UPGRADES (PHASING IMPROVEMENTS)
Opinion of Probable Cost for the City of Solvang

MISSION DRIVE/ALISAL ROAD IMPROVEMENTS					
PHASING IMPROVEMENTS					
ITEM NO.	ITEM DESCRIPTION	UNIT	APPROX. QTY	UNIT PRICE	TOTAL ITEM PRICE
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$5,000.00	$5,000
	Traffic Signals (Demolition and Placement)				
2	Upgrade to controller for phase changes	LS	1	$2,500.00	$2,500
3	Remove existing Signal Standard (Type 1-A), Traffic and Ped. Heads	EA	2	$2,500.00	$5,000
4	Install new Signal Standard (Type 19 w/ Luminaire) and 25' mast arm	EA	1	$15,000.00	$15,000
5	Install new Signal Standard (Type 19 w/ Luminaire) and 30' mast arm	EA	1	$15,000.00	$15,000
6	Install new Signal heads	EA	6	$1,500.00	$9,000
7	Remove and replace signal head	EA	2	$1,750.00	$3,500
				ALISAL ROAD LOCATION - SUBTOTAL BASE BID PRICE:	$55,000
				20% CONSTRUCTION CONTINGENCY	$11,000
				CONSTRUCTION SUBTOTAL:	$66,000
				15% PS&E DESIGN:	$9,900
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$9,900
				TOTAL:	$85,800

General Notes:
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2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.
3. Estimate assumes that Base Intersections have been implemented, including all ADA and pedestrian upgrades

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	762	96	60	821	15	100	18	35	11	14	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1748			1678	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.80			0.96	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1439			1618	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	828	104	65	892	16	109	20	38	12	15	60
RTOR Reduction (vph)	0	0	49	0	0	7	0	15	0	0	45	0
Lane Group Flow (vph)	54	828	55	65	892	9	0	152	0	0	42	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Actuated Green, G (s)	2.4	37.1	37.1	3.2	37.9	37.9		17.7			17.7	
Effective Green, g (s)	2.4	37.1	37.1	3.2	37.9	37.9		17.7			17.7	
Actuated g/C Ratio	0.03	0.53	0.53	0.05	0.54	0.54		0.25			0.25	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	60	987	838	80	1008	857		363			409	
v/s Ratio Prot	0.03	0.44		c0.04	c0.48							
v/s Ratio Perm			0.03			0.01		c0.11			0.03	
v/c Ratio	0.90	0.84	0.07	0.81	0.88	0.01		0.42			0.10	
Uniform Delay, d1	33.7	13.9	8.0	33.1	14.1	7.4		21.9			20.1	
Progression Factor	1.00	1.00	1.00	0.89	1.03	1.00		1.00			1.00	
Incremental Delay, d2	81.0	6.4	0.0	37.5	7.7	0.0		3.5			0.5	
Delay (s)	114.7	20.3	8.0	67.1	22.3	7.4		25.4			20.6	
Level of Service	F	C	A	E	C	A		C			C	
Approach Delay (s)		24.2			25.0			25.4			20.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	614	34	20	717	93	67	28	17	85	39	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.94		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1848		1770	1831		1770	1758		1770	1718	
Flt Permitted	0.15	1.00		0.26	1.00		0.70	1.00		0.73	1.00	
Satd. Flow (perm)	283	1848		490	1831		1305	1758		1352	1718	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	667	37	22	779	101	73	30	18	92	42	45
RTOR Reduction (vph)	0	3	0	0	8	0	0	13	0	0	32	0
Lane Group Flow (vph)	64	701	0	22	872	0	73	35	0	92	55	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.8	41.8		41.8	41.8		20.2	20.2		20.2	20.2	
Effective Green, g (s)	41.8	41.8		41.8	41.8		20.2	20.2		20.2	20.2	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.29	0.29		0.29	0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	1103		292	1093		376	507		390	495	
v/s Ratio Prot		0.38			c0.48			0.02			0.03	
v/s Ratio Perm	0.23			0.04			0.06			c0.07		
v/c Ratio	0.38	0.64		0.08	0.80		0.19	0.07		0.24	0.11	
Uniform Delay, d1	7.4	9.2		5.9	10.9		18.8	18.1		19.0	18.3	
Progression Factor	1.78	1.68		1.46	1.27		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.7		0.1	3.4		1.1	0.3		1.4	0.5	
Delay (s)	13.9	16.1		8.8	17.2		19.9	18.3		20.4	18.8	
Level of Service	B	B		A	B		B	B		C	B	
Approach Delay (s)		15.9			17.0			19.3			19.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	466	53	227	639	23	66	59	256	82	72	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1593	1676	1425	1593	1668		1593	1676	1425	1593	1636	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.70	1.00	1.00	0.72	1.00	
Satd. Flow (perm)	1593	1676	1425	1593	1668		1168	1676	1425	1199	1636	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	507	58	247	695	25	72	64	278	89	78	15
RTOR Reduction (vph)	0	0	35	0	2	0	0	0	211	0	10	0
Lane Group Flow (vph)	18	507	23	247	718	0	72	64	67	89	83	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	0.8	27.9	27.9	13.3	40.4		16.8	16.8	16.8	16.8	16.8	
Effective Green, g (s)	0.8	27.9	27.9	13.3	40.4		16.8	16.8	16.8	16.8	16.8	
Actuated g/C Ratio	0.01	0.40	0.40	0.19	0.58		0.24	0.24	0.24	0.24	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	18	668	567	302	962		280	402	342	287	392	
v/s Ratio Prot	0.01	0.30		c0.16	c0.43			0.04			0.05	
v/s Ratio Perm			0.02				0.06		0.05	c0.07		
v/c Ratio	1.00	0.76	0.04	0.82	0.75		0.26	0.16	0.20	0.31	0.21	
Uniform Delay, d1	34.6	18.2	12.9	27.2	11.0		21.5	21.0	21.2	21.8	21.3	
Progression Factor	0.95	0.73	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	196.8	4.3	0.0	15.6	3.2		2.2	0.8	1.3	2.8	1.2	
Delay (s)	229.7	17.5	12.9	42.8	14.2		23.8	21.9	22.5	24.6	22.5	
Level of Service	F	B	B	D	B		C	C	C	C	C	
Approach Delay (s)		23.6			21.5			22.6			23.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1005	125	80	1085	20	130	25	45	15	20	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.97			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.99	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1749			1680	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.65			0.95	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1179			1614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1092	136	87	1179	22	141	27	49	16	22	82
RTOR Reduction (vph)	0	0	37	0	0	8	0	10	0	0	66	0
Lane Group Flow (vph)	71	1092	99	87	1179	14	0	207	0	0	54	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2			6		
Actuated Green, G (s)	5.0	70.0	70.0	6.0	71.0	71.0		22.0			22.0	
Effective Green, g (s)	5.0	70.0	70.0	6.0	71.0	71.0		22.0			22.0	
Actuated g/C Ratio	0.05	0.64	0.64	0.05	0.65	0.65		0.20			0.20	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	80	1185	1007	96	1202	1021		235			322	
v/s Ratio Prot	0.04	0.59		c0.05	c0.63							
v/s Ratio Perm			0.06			0.01		c0.18			0.03	
v/c Ratio	0.89	0.92	0.10	0.91	0.98	0.01		0.88			0.17	
Uniform Delay, d1	52.2	17.6	7.8	51.7	18.8	7.0		42.7			36.4	
Progression Factor	1.00	1.00	1.00	0.95	0.79	1.63		1.00			1.00	
Incremental Delay, d2	63.6	11.7	0.0	47.9	16.9	0.0		34.7			1.1	
Delay (s)	115.8	29.3	7.8	97.1	31.7	11.4		77.5			37.6	
Level of Service	F	C	A	F	C	B		E			D	
Approach Delay (s)		31.8			35.8			77.5			37.6	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

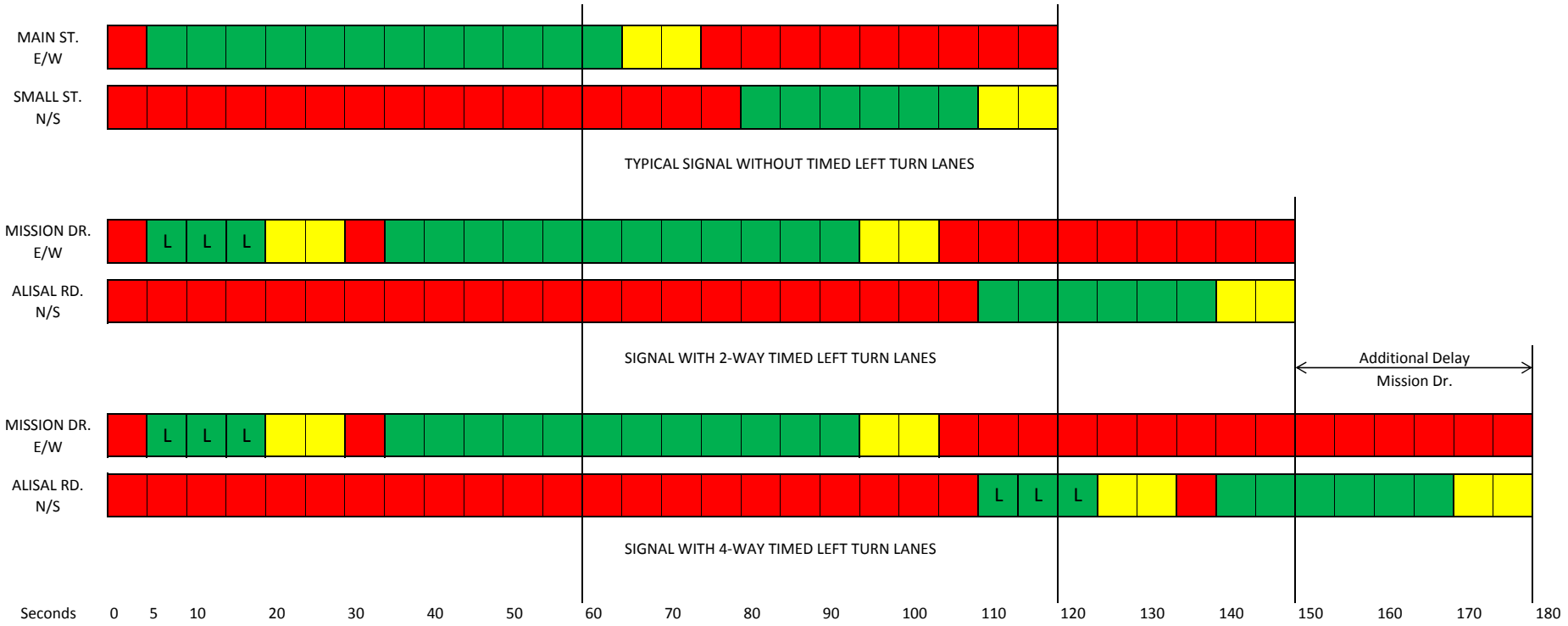
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	810	45	25	945	120	90	35	25	115	50	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.94		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1848		1770	1831		1770	1747		1770	1716	
Flt Permitted	0.11	1.00		0.22	1.00		0.61	1.00		0.71	1.00	
Satd. Flow (perm)	206	1848		408	1831		1144	1747		1331	1716	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	880	49	27	1027	130	98	38	27	125	54	60
RTOR Reduction (vph)	0	2	0	0	4	0	0	22	0	0	36	0
Lane Group Flow (vph)	87	927	0	27	1153	0	98	43	0	125	78	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	81.7	81.7		81.7	81.7		20.3	20.3		20.3	20.3	
Effective Green, g (s)	81.7	81.7		81.7	81.7		20.3	20.3		20.3	20.3	
Actuated g/C Ratio	0.74	0.74		0.74	0.74		0.18	0.18		0.18	0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	153	1372		303	1359		211	322		245	316	
v/s Ratio Prot		0.50			c0.63			0.02			0.05	
v/s Ratio Perm	0.42			0.07			0.09			c0.09		
v/c Ratio	0.57	0.68		0.09	0.85		0.46	0.13		0.51	0.25	
Uniform Delay, d1	6.3	7.3		3.9	9.8		40.0	37.5		40.4	38.3	
Progression Factor	1.09	0.94		1.19	0.70		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.9	0.5		0.1	3.6		7.2	0.9		7.4	1.9	
Delay (s)	8.8	7.4		4.7	10.5		47.2	38.4		47.8	40.2	
Level of Service	A	A		A	B		D	D		D	D	
Approach Delay (s)		7.5			10.4			43.7			44.2	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	650	60	275	885	25	70	60	300	80	75	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1593	1676	1425	1593	1670		1593	1676	1425	1593	1635	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.66	1.00	1.00	0.71	1.00	
Satd. Flow (perm)	1593	1676	1425	1593	1670		1100	1676	1425	1198	1635	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	707	65	299	962	27	76	65	326	87	82	16
RTOR Reduction (vph)	0	0	34	0	1	0	0	0	264	0	6	0
Lane Group Flow (vph)	22	707	31	299	988	0	76	65	62	87	92	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		
Actuated Green, G (s)	1.6	53.3	53.3	23.8	75.5		20.9	20.9	20.9	20.9	20.9	
Effective Green, g (s)	1.6	53.3	53.3	23.8	75.5		20.9	20.9	20.9	20.9	20.9	
Actuated g/C Ratio	0.01	0.48	0.48	0.22	0.69		0.19	0.19	0.19	0.19	0.19	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	23	812	690	344	1146		209	318	270	227	310	
v/s Ratio Prot	0.01	0.42		c0.19	c0.59			0.04			0.06	
v/s Ratio Perm			0.02				0.07		0.04	c0.07		
v/c Ratio	0.96	0.87	0.05	0.87	0.86		0.36	0.20	0.23	0.38	0.30	
Uniform Delay, d1	54.2	25.3	14.9	41.6	13.3		38.8	37.5	37.7	38.9	38.2	
Progression Factor	0.97	1.19	1.70	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	144.4	7.9	0.0	20.1	6.9		4.8	1.4	2.0	4.8	2.4	
Delay (s)	196.8	38.0	25.4	61.7	20.1		43.6	39.0	39.7	43.8	40.6	
Level of Service	F	D	C	E	C		D	D	D	D	D	
Approach Delay (s)		41.4			29.8			40.2			42.1	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

MISSION & ALISAL SIGNAL TIMING GRAPHIC



TECHNICAL MEMORANDUM
TASK 2.3 - TRANSIT CENTER CROSSWALK
SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

Date: May 4, 2016

To: Bridget Elliot, P.E.
Department of Public Works
City of Solvang

Phone No.: 805-688-5575

From: Kelly Druse

Phone No.: 805-544-0707

Project No.: 17581

Jurisdiction: City of Solvang

Subject: Summary of the midblock crosswalk design at the Transit Center on Mission Drive. Memorandum includes the following:

1) Introduction
2) Analysis of Existing Conditions
3) Crosswalk Design Recommendations and Approximate Costs

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) has prepared this technical memorandum to determine the feasibility, Caltrans conditions for installation, and estimated costs to add a midblock crosswalk at the Transit Center on Mission Drive. The addition of this crosswalk originated in the Mission Drive Corridor Study, completed in October 2014, as part of the 2nd Priority Projects set by the City Council.

This technical memorandum summarizes the existing conditions, presents recommended and required design features, and provides an estimate of costs.

The following studies and product information are referenced in this memorandum as supporting documents and for background information:

1. Mission Drive Corridor Study, October 2014 (Orosz Engineering Group, Inc.)
2. Manual on Uniform Traffic Control Devices (MUTCD)
3. Caltrans Highway Design Manual (HDM)

2.0 EXISTING CONDITIONS

The following is a brief description of Mission Drive at the Transit Center in between Park Way and First Street.

Mission Drive at the Transit Center

Marked crosswalks currently exist along Mission Drive both at First Street and Atterdag Road. The Transit Center is located along the south edge of Mission Drive immediately east of the intersection of Mission Drive and Park Way. Approximately 40 feet to the east of the Transit Center is a public restroom and public park. The northern side of Mission Drive, across from the Transit Center, is comprised of retail business buildings. Pedestrians tend to cross at the Transit Center based on convenience of the location in regards to the businesses. This creates a safety concern due to the lack of marked crosswalks in the immediate area. The speed in this area is posted as 25 miles per hour and Mission Drive is under the jurisdiction of the State Department of Transportation (Caltrans).

3.0 RECOMMENDATIONS, CALTRANS CONDITIONS, AND ESTIMATE OF COST

3.1 Design Recommendations:

It is recommended that, at a minimum, the design of a new crosswalk at the Transit Center shall match that of the upgraded crosswalks at Fourth Place and First Street. (See Technical Memorandum for Task 2.1) These design recommendations include, Flashing Beacons, signage meeting MUTCD requirements, and high-visibility ladder style crosswalk markings. In addition, Rick Engineering strongly recommends the construction of curb extensions at this location to shorten pedestrian crossing time and increase driver visibility of waiting pedestrians.

One additional thing that was considered at this location was the decreased visibility of a pedestrian waiting at the southern entrance of the crosswalk. When a bus pulls into the Transit Center, an eastbound driver's visibility of that pedestrian is diminished. According to the HDM, adequate stopping sight distance is 150 feet in a 25 MPH zone. Therefore, when the vehicle passing the bus spots the pedestrian and has time to stop, the crosswalk will need to be placed approximately 100 feet east of the Transit Center. This will push the crosswalk closer to First Street.

As recommended, minor curb extensions visually and physically narrow the roadway creating a shorter crossing path and increase safety for the pedestrian. If a 3-foot curb extension is constructed, then that will allow the approaching eastbound vehicle to see a pedestrian at the crosswalk sooner, which shortens the distance the crosswalk is from the Transit Center, to about 75 feet. Placing the crosswalk closer to the bus stop will improve the expectancy that a pedestrian will actually use the crosswalk. Unfortunately, at this location, existing trees, lampposts, and walkways would have to be relocated, which will raise the cost of this option considerably.

3.2 Caltrans Conditions of Approval:

In preliminary discussions with Caltrans staff, midblock crosswalks are acceptable on urban roadways provided that they meet the requirements of the HDM and MUTCD.

3.3 Estimate of Cost

Below is a preliminary estimate of construction cost to install a new midblock crosswalk, signage, and hardscape improvements at the Transit Center location.

Please reference the attached cost estimate for a breakdown of cost items.

Estimated Construction Costs @ Crosswalk Location

Location	Base Bid	Contingencies			Total
		Construction (20%)	Design (15%)	Survey/CM (15%)	
Midblock Crosswalk Location	$53,400	$10,700	$9,600	$9,600	**$83,300**

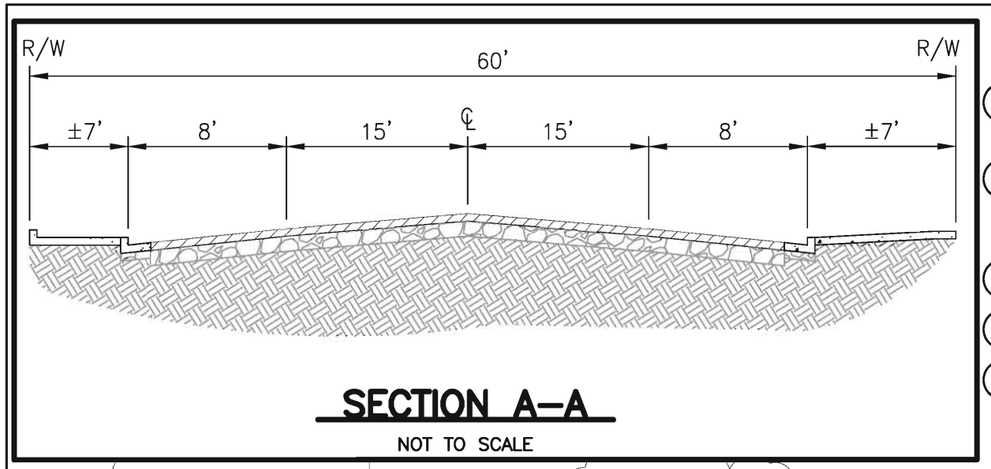
RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Priority Planning
Job No: 17581
Date: 2/2/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.3 - FLASHING BEACON CROSSWALK MIDBLOCK MISSION DR EAST OF TRANSIT CENTER
Opinion of Probable Cost for the City of Solvang

SIDEWALKS, CROSSWALKS AND STREET IMPROVEMENTS MID BLOCK LOCATION					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Water Pollution Control, Etc.)**	LS	1	$2,500.00	$2,500
2	**Demolition (Curb, Gutter, Sidewalk, Ramps, Pavement, and Sawcut)**	LS	1	$5,000.00	$5,000
	Striping (Demolition and Placement)				
3	Install New Crosswalk Markings (Caltrans Ladder Type, RSP A24F)	SF	270	$10.00	$2,700
4	Install "PED" Marking (Caltrans Std. Plan A24D)	SF	40	$15.00	$600
5	Install "XING" Marking (Caltrans Std. Plan A24D)	SF	45	$15.00	$675
6	Install Isoceles Triangle Yield Marking (Caltrans Std. Plan A24E)	SF	45	$15.00	$675
	Pedestrian Signage Improvements				
7	Install Solar RRFB with Audible Pedestrian Push Button and Pedestrian Signage (W11-2 & W16-7P)	EA	2	$7,500.00	$15,000
8	Install Advance Pedestrian Signage (W11-2)	EA	2	$1,500.00	$3,000
9	Install Advance Pedestrian Signage (R1-5)	EA	2	$1,500.00	$3,000
	Street and Sidewalk Improvements				
10	Construct ADA Ramp	EA	2	$2,500.00	$5,000
11	Construct Curb and Gutter	LF	80	$22.00	$1,760
12	Construct Sidewalk-Brick	SF	600	$15.00	$9,000
13	Relocate/Adjust Existing Utility Appurtenance (Storm drain, Water, Sewer, Sidewalk Underdrain, and Dry Utilities)	LS	1	$3,000.00	$3,000
14	Relocate Street Sign	EA	1	$1,500.00	$1,500
				1ST STREET LOCATION - SUBTOTAL BASE BID PRICE:	$53,400
				20% CONSTRUCTION CONTINGENCY:	$10,700
				CONSTRUCTION SUBTOTAL:	$64,100
				15% PS&E DESIGN:	$9,600
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$9,600
				TOTAL:	$83,300

General Notes:
1. This cost estimate is preliminary only. Rick Engineering Company makes no warranty, either expressed or implied, that actual costs will not vary from the amounts indicated and assumes no liability for such variances.
2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.
3. Demolition includes removal of concrete curb and gutter, brick paved sidewalk, pavement, and sawcut.
4. The relocation and adjustment of existing utilities include any storm drain, sewer, water, and dry utility appurtenance.
5. Construction of ADA Ramp includes concrete ramp, spandrel, truncated domes, and pavement replacement.

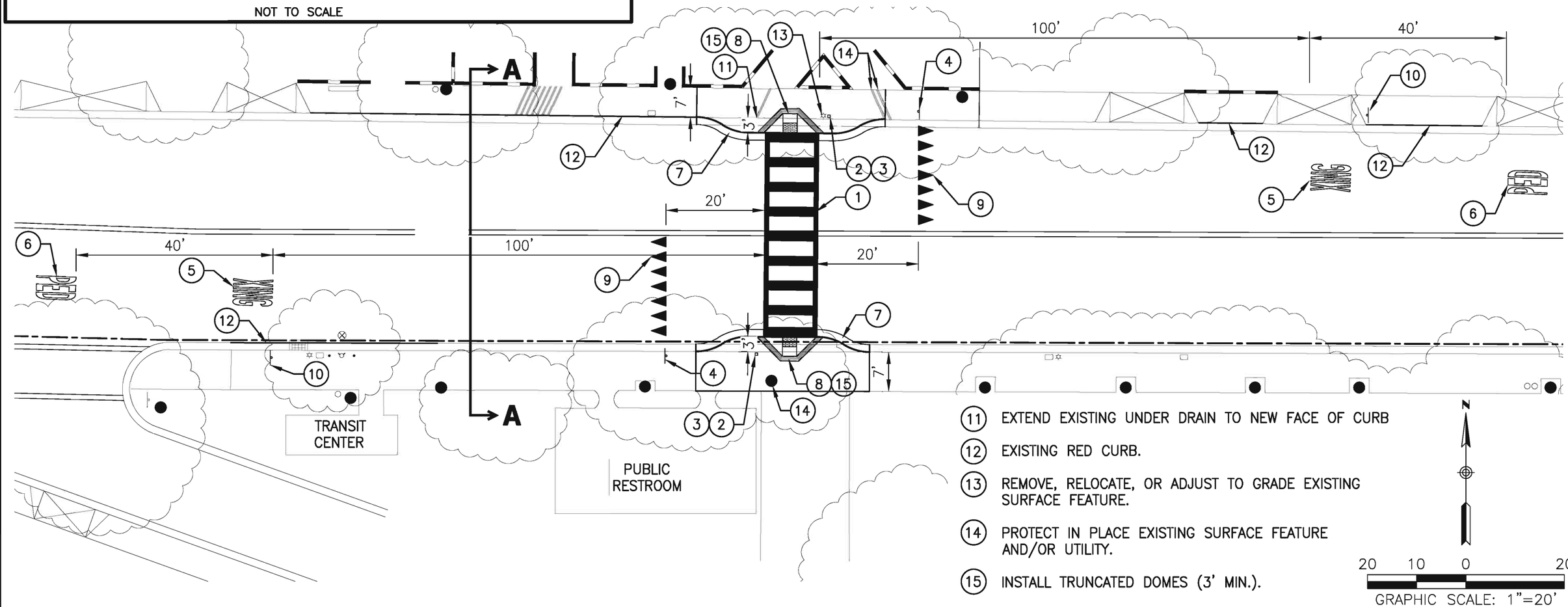


SECTION A–A

NOT TO SCALE

CONSTRUCTION NOTES

1. STRIPE WITH HIGH VISIBILITY LADDER CROSSWALK PER CALTRANS STANDARD PLAN A24F.
2. INSTALL TAPCO RECTANGULAR RAPID FLASH BEACON LED SOLAR CROSSWALK WARNING SYSTEM WITH W11–2 AND W16–7P SIGNS PER MUTCD.
3. INSTALL AUDIBLE PEDESTRIAN PUSH BUTTON
4. INSTALL TYPE R1–5 SIGN.
5. INSTALL "XING" PAVEMENT MARKING PER CALTRANS STANDARD PLAN A24D.
6. INSTALL "PED" PAVEMENT MARKING PER CALTRANS STANDARD PLAN A24D.
7. CONSTRUCT 3' CURB EXTENSION, INCLUDE CURB, GUTTER, AND ADDITIONAL SIDEWALK.
8. INSTALL CASE A CURB RAMP PER CALTRANS STANDARD PLAN A88A
9. INSTALL ISOCELES TRIANGLE YIELD LINE PER CALTRANS STANDARD PLAN A24E
10. INSTALL TYPE W11–2 SIGN



11. EXTEND EXISTING UNDER DRAIN TO NEW FACE OF CURB
12. EXISTING RED CURB.
13. REMOVE, RELOCATE, OR ADJUST TO GRADE EXISTING SURFACE FEATURE.
14. PROTECT IN PLACE EXISTING SURFACE FEATURE AND/OR UTILITY.
15. INSTALL TRUNCATED DOMES (3' MIN.).

N

20 10 0 20

GRAPHIC SCALE: 1"=20'

PROJECT NO. 17581

RICK ENGINEERING COMPANY
711 TANK FARM ROAD - SUITE 110
SAN LUIS OBISPO, CA 93401
805.544.0707
(FAX)805.544.2052

SOLVANG MISSION DRIVE
MID-BLOCK CROSSWALK IMPROVEMENTS

EAST OF TRANSIT CENTER

DATE:	2/3/2016
DRAWN BY:	SR
CHECKED BY:	KLD
SCALE:	1"=20'
SHEET	1 OF 1

TECHNICAL MEMORANDUM
TASK 2.4, ADDITIONAL STREET LIGHTS & LIGHTING UPGRADES
SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

Date: May 4, 2016

To: Bridget Elliot, P.E.
Department of Public Works
City of Solvang

Phone No.: 805-688-5575

From: Kelly Druse

Phone No.: 805-544-0707

Project No.: 17581

Jurisdiction: City of Solvang

Subject: Summary of existing pedestrian lighting conditions and proposed lighting improvements. Memorandum includes the following:

1) Introduction
2) Analysis of Existing Conditions
3) Recommendations for Lighting Improvements
4) Lighting Improvement Alternatives and Approximate Costs
5) Attachments:
   - Detailed Cost Estimates.
   - Proposed Lighting Drawings.
   - AEL Luminaire Specification Sheet.
   - Holophane Luminaire Specifications Sheets.
   - Ameron Light Pole Specification Sheets.

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) has prepared this technical memorandum to examine the existing roadway/pedestrian lighting conditions and recommend alternatives for upgrading or replacing the current system. The proposed project of improvement of lighting facilities originated from the Mission Drive Corridor Study, completed in October 2014.

This technical memorandum summarizes the existing conditions, presents options and recommendations to improve and/or replace existing lighting fixtures, and provides estimates of costs for two possible options.

The following studies, technical memorandums and product information are referenced in this memorandum as supporting documents and for background information:

1. Mission Drive Corridor Study, October 2014 (Orosz Engineering Group, Inc.)
2. PG&E Approved Decorative Street Lighting Memorandum (Document #029690)
3. PG&E Approved LED Decorative Street Lighting (Utility Bulletin TD-029690B-001)
4. Ameron Light Pole Specification Sheets (Washington, Victorian V, Victorian IX)
5. AEL Luminaire Specification Sheet (American Revolution)
6. Holophane Luminaire Specification Sheets (Granville and Granville LED)

2.0 EXISTING CONDITIONS

The following is a brief description of the existing lighting conditions on the Mission Drive corridor between the western limits at Nykobing Street to the eastern limits at Pine Street.

Currently there are 32 pedestrian-level street lights through the study corridor. The street lights are American Electric Lighting (AEL), Model Type “American Revolution” lighting fixtures, mounted on a mixture of 12’ height fiberglass and steel cylindrical tapered poles. One fixture is a full cutoff (shielded) type, the remainder are standard 70 Watt High Pressure Sodium (HPS) luminaires. No pedestrian lighting currently exists between Nykobing Street and Fifth Street. Light spacing is inconsistent from Fifth Street to Alisal Road, and spacing is a relatively consistent 125-150’ between Alisal Road and Pine Street. In addition to the pedestrian-level lighting, each signalized intersection is lit with four (4) 30’ tall LED overhead lights per Caltrans standards.

Section 2.7, “Street Lighting Evaluation”, of the Mission Drive Corridor Study documents the existing lighting levels at multiple crossing locations on Mission Drive, and determined that the existing roadway lighting levels are significantly below AASHTO recommended design levels. The photometrics analysis completed as part of this analysis agrees with the original assessment. See attached drawings.

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) has prepared this technical memorandum to examine the existing roadway/pedestrian lighting conditions and recommend alternatives for upgrading or replacing the current system. The proposed project of improvement of lighting facilities originated from the Mission Drive Corridor Study, completed in October 2014.

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Section 2.7, "Street Lighting Evaluation", of the Mission Drive Corridor Study documents the existing lighting levels at multiple crossing locations on Mission Drive, and determined that the existing roadway lighting levels are significantly below AASHTO recommended design levels. The photometrics analysis completed as part of this analysis agrees with the original assessment. See attached drawings.

3.0 RECOMMENDATIONS FOR LIGHTING IMPROVEMENTS

3.1 Design Recommendations

This analysis agrees with the recommendations outlined in the Mission Drive Corridor Study that in order to provide adequate pedestrian lighting, additional lighting fixtures should be added to infill the portion of Mission Drive between Fifth Street and Alisal Road. Based on the photometric analysis of proposed lighting infill with upgraded 70W LED lighting, a spacing of approximately 100' between street lights will provide sufficient lighting for improved pedestrian safety and visibility. West of Fifth Street and East of Alisal Road, a spacing of 125'-150' is considered appropriate due to the decreased pedestrian traffic and vehicular conflicts. See attached drawings.

Rick Engineering analyzed several additional options for improving lighting through the project study area, as detailed below:

1. Increased wattage of streetlights – Photometric analysis was completed with the replacement of 70 watt High Pressure Sodium (HPS) lighting fixtures with 100 watt standard HPS fixtures. It was determined that the increase in street light wattage (from 70 watt HPS to 100 watt HPS) would not noticeably increase visibility for pedestrians, and would result in increased light pollution and is therefore not a recommended improvement.

2. Increased pole height – Increasing the height of the light poles was determined to significantly improve the pedestrian light coverage. However, improvements were only measureable significant for light poles between 18'-20'. At any height over 12'-14' the existing tree canopy through the downtown area would negate any gains from the taller light poles. Subsequently, increasing the height of the light poles was not deemed to be a feasible improvement.

3.0 LIGHTING IMPROVEMENT ALTERNATIVES AND APPROXIMATE COSTS

4.1 Background

The City has outlined the following priorities regarding street lighting improvements:

1. Poles and Fixtures shall be acceptable to PG&E.
2. Luminaires shall implement light pollution reduction technologies – controls, timers, sensors, shields and low-power (LED).
3. Poles shall allow for banner attachments.
4. Poles and Fixtures shall comply with City of Solvang's Architecture.
5. Fixtures shall be energy efficient and meet Dark Sky requirements.

The City of Solvang intends to continue the current arrangement, whereupon PG&E owns and maintains the street lights through this corridor. Since PG&E will own the light poles and fixtures, they are required to be selected from the pre-approved lists noted above in Section 1.0. Currently, PG&E does not offer any fixtures which meet Dark Sky requirements, but they do have a full-cutoff light option, and may allow other approved

fixtures to include the cutoff option. Additionally, in conversations with PG&E staff, it was mentioned that they are currently revisiting the approved lighting lists, and over the next several years it is expected that additional Dark Sky compliant and LED options will be approved.

4.2 Lighting Options

Option 1:
Existing light poles are 12' height Ameron steel or fiberglass and cylindrical tapered. Foundation type is embedded. Light fixtures are 70W HPS "American Revolution" by AEL. Existing fixtures would be replaced with full cutoff type "American Revolution" fixtures. There is a single full cutoff fixture currently installed within this corridor. *It is recommended that the City review the option to add street lights if additional lighting coverage is desired. Maintaining a distance of 100' between street lights will provide sufficient lighting for pedestrian safety and visibility.*

Option 2:
Replace existing light poles with decorative 12' embedded Ameron concrete light poles (Washington, Victorian V, Victorian IX), and infill with the same. Lighting fixtures would be replaced with decorative Holophane Granville LED luminaires.
The City of Buellton utilizes this lighting fixture along Mission Drive, and continuing a similar style through Solvang is preferable to provide continuity through the Santa Ynez Valley. Additionally, at this time the Holophane Granville is the only LED lighting option approved by PG&E. Although the shielded option for this fixture is not pre-approved, it is expected that the City may be able to gain approval through PG&E.


Holophane LED


Ameron Concrete

4.3 Estimates of Cost

The cost estimates below provide approximate materials and installation costs for each of the light pole and fixture options presented above. Attached detailed cost estimates are summarized in the following table.

Estimated Costs per Lighting Option					
Option Number	Construction	Contingencies			Total
		Construction (20%)	Design (15%)	Survey/CM (15%)	
Option 1	$158,500	$31,700	$28,500	$28,500	**$247,200**
Option 2	$372,000	$74,400	$67,000	$67,000	**$580,400**

RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Priority Planning
Job No: 17581
Date: 1/29/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.4 - STREET LIGHTING UPGRADES (OPTION 1)
Opinion of Probable Cost for the City of Solvang

ELECTRICAL LIGHTING IMPROVEMENTS					
OPTION 1 - INFILL WITH EXISTING LIGHTING TYPE					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$1,500.00	$1,500
	Lighting (Demolition and Placement)				
2	Remove and replace existing 70 Watt HPS Luminaire	EA	32	$500.00	$16,000
3	Install new 70 Watt HPS full-cutoff Luminaires	EA	26	$500.00	$13,000
4	Install new light standards (12' Valmont Embedded Steel Pole)	EA	26	$3,000.00	$78,000
5	Electrical Service Upgrades (Additional conduit, pull boxes, trenching)	LF	2000	$25.00	$50,000
				LIGHTING OPTION 1 - SUBTOTAL BASE BID PRICE:	$158,500
				20% CONSTRUCTION CONTINGENCY:	$31,700
				CONSTRUCTION SUBTOTAL:	$190,200
				15% PS&E DESIGN:	$28,500
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$28,500
				TOTAL:	$247,200

General Notes:
1. This cost estimate is preliminary only. Rick Engineering Company makes no warranty, either expressed or implied, that actual costs will not vary from the amounts indicated and assumes no liability for such variances.
2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.

RICK ENGINEERING COMPANY
711 Tank Farm Road, Suite 110
San Luis Obispo, CA 93405
805-544-0707 Phone
805-544-2052 Fax

Project: Mission Drive Priority Planning
Job No: 17581
Date: 1/29/2016
By: K. Druse

SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING
TASK 2.4 - STREET LIGHTING UPGRADES (OPTION 2)
Opinion of Probable Cost for the City of Solvang

ELECTRICAL LIGHTING IMPROVEMENTS					
OPTION 2 - HOLOPHANE DECORATIVE LIGHTING/DECORATIVE POLE STYLE					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**APPROX. QTY**	**UNIT PRICE**	**TOTAL ITEM PRICE**
1	**Misc. Construction (Traffic Control, Pedestrian Plan, etc.)**	LS	1	$1,500.00	$1,500
	Lighting (Demolition and Placement)				
2	Remove existing 70 Watt HPS Luminaires and light standards	EA	32	$500.00	$16,000
3	Install new 100 Watt Holophane LED or HPS Luminaires	EA	58	$750.00	$43,500
4	Install new light standards (Decorative Ameron Concrete)	EA	58	$4,500.00	$261,000
5	Electrical Service Upgrades (Additional conduit, pull boxes, trenching)	LF	2000	$25.00	$50,000
				LIGHTING OPTION 1 - SUBTOTAL BASE BID PRICE:	$372,000
				20% CONSTRUCTION CONTINGENCY:	$74,400
				CONSTRUCTION SUBTOTAL:	$446,400
				15% PS&E DESIGN:	$67,000
				15% CONSTRUCTION MANAGEMENT AND STAKING:	$67,000
				TOTAL:	$580,400

General Notes:
1. This cost estimate is preliminary only. Rick Engineering Company makes no warranty, either expressed or implied, that actual costs will not vary from the amounts indicated and assumes no liability for such variances.
2. Unit Costs are based largely on recently bid local projects, and therefore, may not reflect actual market unit costs.

STREET LIGHTING LEGEND:

(P) EXISTING PG&E OWNED PEDESTRIAN STREET LIGHT LOCATION. 12' MOUNTING HEIGHT WITH 70W HPS LIGHTING. (AMERICAN ELECTRIC LIGHTING – SERIES 247 "VALIANT") RECOMMENDED SPACING OF 50'–75' PER MISSION DRIVE CORRIDOR STUDY.

(S) EXISTING PRIVATE STREET LIGHT LOCATION (TYPE VARIES)

(C) EXISTING CALTRANS TRAFFIC SIGNAL STREET LIGHT (COBRA HEAD STYLE, LED, 30' MOUNT)

(N) PROPOSED PG&E STREET LIGHT LOCATION (CITY PROVIDED)

EXISTING ELECTRICAL SERVICE (UNDERGROUND)

—E— EXISTING ELECTRICAL MAIN (UNDERGROUND)

—OHE— EXISTING ELECTRICAL MAIN (OVERHEAD)

PROPOSED ELECTRICAL SERVICES (UNDERGROUND)

GRAPHIC SCALE: 1"=40'

40 20 0 40 80 120

DIGALERT
DIAL BEFORE YOU DIG TOLL FREE
TWO WORKING DAYS BEFORE YOU DIG
1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

MISSION DRIVE PRIORITY PROJECTS

PROPOSED LIGHTING IMPROVEMENTS

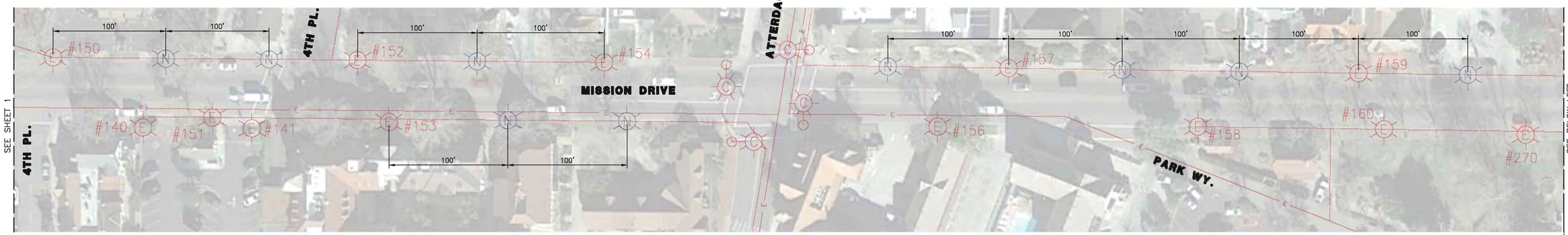
DEPARTMENT OF PUBLIC WORKS
CITY OF SOLVANG

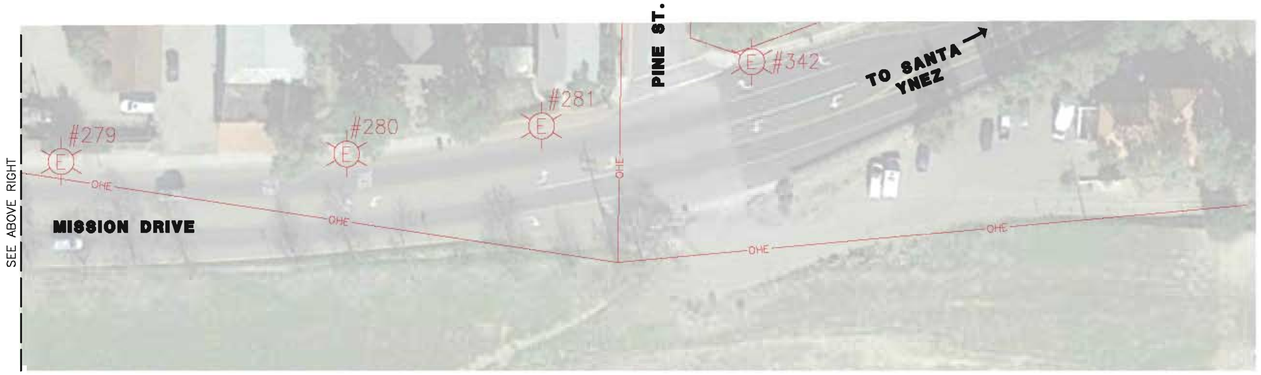
SCALE: 1"=40'	REVIEWED FOR COMPLIANCE BY:	SHEET NO.	1
DATE: 3/09/2016		OF	4 SHEETS
DRAWN BY: KCS	SIGNATURE DATE	DRAWING NO.	17581
CHECKED BY: KLD			
JOB NO: 17581	SIGNATURE DATE		

L:\17581 Solvang Mission Drive\Civil\Plans\Task 2.4 - Street Lighting Upgrades\17581-03b-STREET LIGHTING UPGRADES.dwg 2016-03-10 - 10:01AM - kevin

STREET LIGHTING LEGEND:

- EXISTING PG&E OWNED PEDESTRIAN STREET LIGHT LOCATION. 12' MOUNTING HEIGHT WITH 70W HPS LIGHTING. (AMERICAN ELECTRIC LIGHTING – SERIES 247 "VALIANT") RECOMMENDED SPACING OF 50'–75' PER MISSION DRIVE CORRIDOR STUDY.
- EXISTING PRIVATE STREET LIGHT LOCATION (TYPE VARIES)
- EXISTING CALTRANS TRAFFIC SIGNAL STREET LIGHT (COBRA HEAD STYLE, LED, 30' MOUNT)
- PROPOSED PG&E STREET LIGHT LOCATION (CITY PROVIDED)
- EXISTING ELECTRICAL SERVICE (UNDERGROUND)
- E — EXISTING ELECTRICAL MAIN (UNDERGROUND)
- OHE — EXISTING ELECTRICAL MAIN (OVERHEAD)





40 20 0 40 80 120

GRAPHIC SCALE: 1"=40'

DIGALERT

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MISSION DRIVE PRIORITY PROJECTS

PROPOSED LIGHTING IMPROVEMENTS

DEPARTMENT OF PUBLIC WORKS
CITY OF SOLVANG

SCALE:	1"=40'
DATE:	3/09/2016
DRAWN BY:	KCS
CHECKED BY:	KLD
JOB NO:	17581

REVIEWED FOR COMPLIANCE BY:

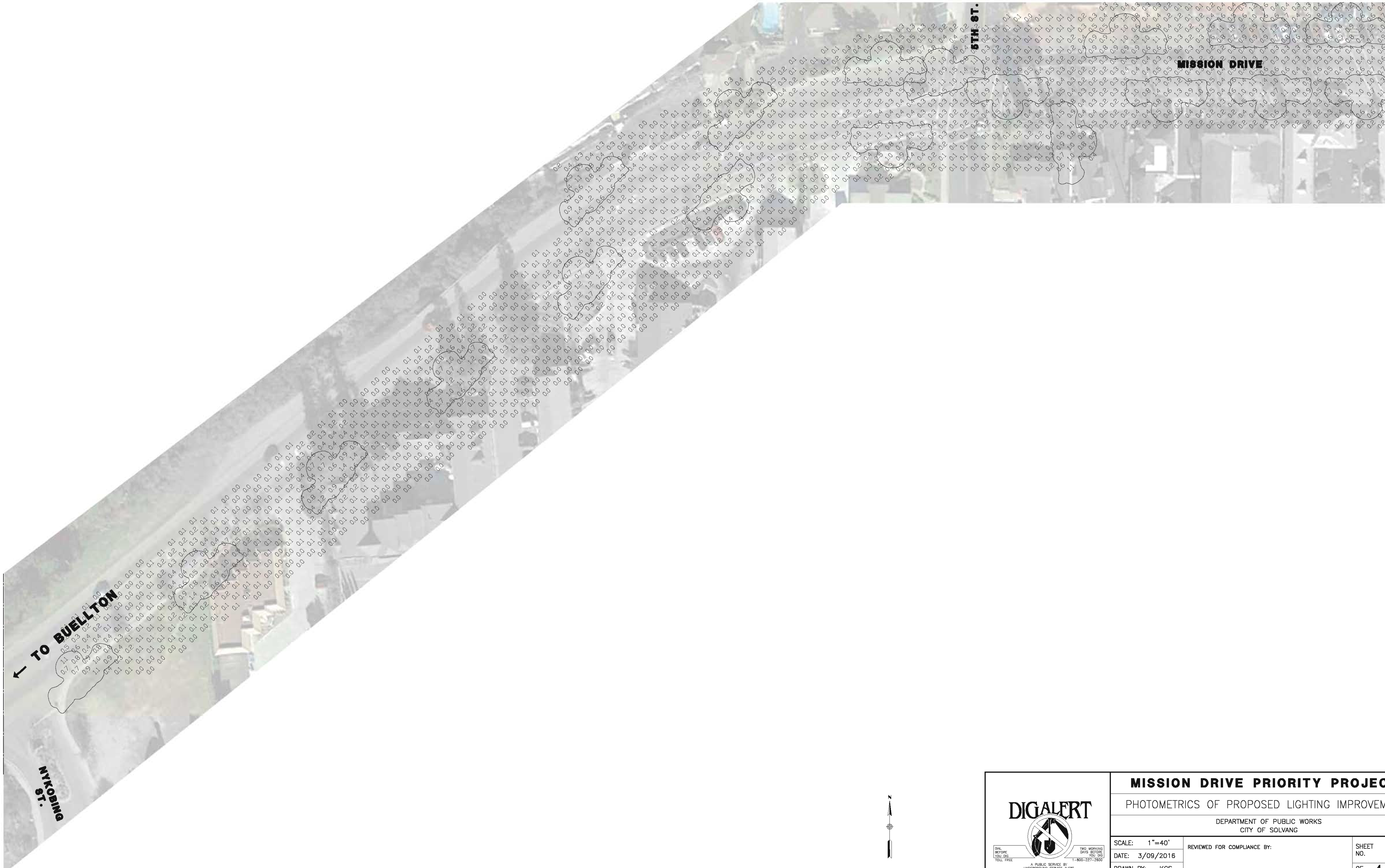
SIGNATURE DATE

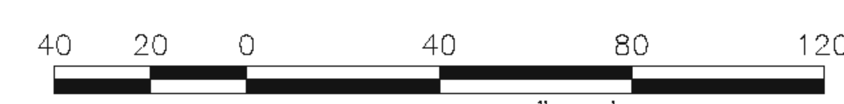
SIGNATURE DATE

SHEET NO. 2

OF 4 SHEETS

DRAWING NO. 17581





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MISSION DRIVE PRIORITY PROJECTS

PHOTOMETRICS OF PROPOSED LIGHTING IMPROVEMENTS

DEPARTMENT OF PUBLIC WORKS
CITY OF SOLVANG

SCALE: 1"=40'	REVIEWED FOR COMPLIANCE BY:	SHEET NO. 3
DATE: 3/09/2016		OF 4 SHEETS
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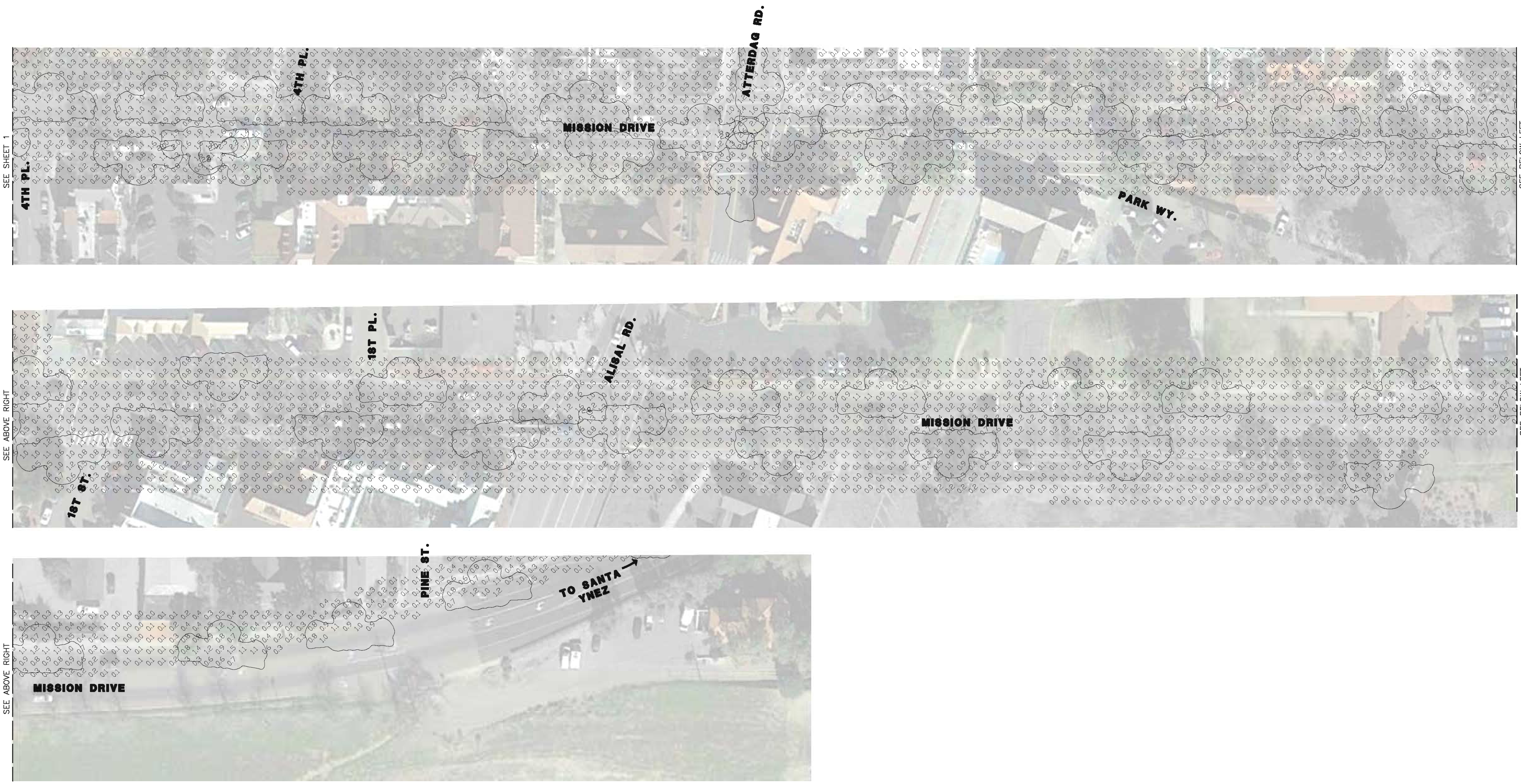
CHECKED BY: KLD		
JOB NO: 17581	SIGNATURE DATE	



40 20 0 40 80 120

GRAPHIC SCALE: 1"=40'

DIGALERT

DIAL BEFORE YOU DIG TOLL FREE — TWO WORKING DAYS BEFORE YOU DIG 1-800-227-2600

A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

MISSION DRIVE PRIORITY PROJECTS

PHOTOMETRICS OF PROPOSED LIGHTING IMPROVEMENTS

DEPARTMENT OF PUBLIC WORKS
CITY OF SOLVANG

SCALE: 1"=40'	REVIEWED FOR COMPLIANCE BY:	SHEET NO. 4
DATE: 3/09/2016		OF 4 SHEETS
DRAWN BY: KCS	SIGNATURE DATE	DRAWING NO. 17581
CHECKED BY: KLD		
JOB NO: 17581	SIGNATURE DATE	

NIGHTTIME FRIENDLY™

Consistent with LEED® goals
& Green Globes™ criteria
for light pollution reduction

American Revolution

Series 247 and 247 Cutoff

50-150W HPS, 100-175W MH

PRODUCT OVERVIEW

PREFERRED SELECTION CATALOG NUMBERS

Series 247

247 10S RN 120 R3 AY
247 15S RN 120 R3 AY
247 10S RN 120 R5 AY
247 15S RN 120 R5 AY

Series 247 Cutoff

247 10S RN 120 R2 FC TL
247 10M XN MT1 R2 FC TL

Features:

Die-cast aluminum housing and hood for long-life performance

Die-cast trigger latch (TL) option available for easy access to internal components

Optical assembly designed for maximum performance

Hinged hood and captive screw provision afford quick, easy access to electrical and optical area for relamping or servicing

Slipfitter with three set screws allows secure installation to pole sizes 2-3/8" or 3" O.D.

E39 mogul base socket standard

All electrical components warranted by American Electric Lighting's 6-year guarantee

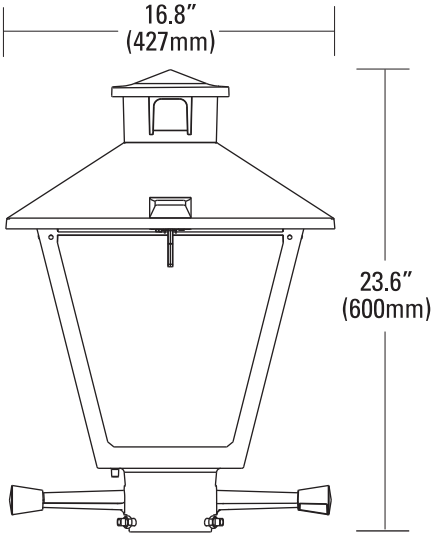
Complies with ANSI: C136.2, C136.10, C136.15, C136.31 (regular only), C136.16 (FC only)

Suitable for -30°C MH & / -40°C HPS

Applications:

Streetscapes
Walkways
Pathways
Parks

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the American Revolution Series 247 is 1.6 sq. ft.
Approx. Wt. = 36 lbs.

American Revolution

Series 247 and 247 Cutoff

50-150W HPS, 100-175W MH

ORDERING INFORMATION

Example: 247 15S RN 120 R5 AY EC

Series

247 American Revolution Post Top

Wattage / Source

05	50W
07	70W
10	100W
15	150W
17	175W [1]
S	HPS
M	MH [2]

Ⓔ See ballast matrix for EISA compliant options

Ballast

RN	Reactor Normal Power Factor
RH	Reactor High Power Factor
XN	High Reactance / Lag Normal Power Factor
XH	High Reactance / Lag High Power Factor
CA	CWA [2]
CT	CWI
SC	SCWA

Voltage

120	120V
208	208V
240	240V
277	277V
347	347V
480	480V
MT1	Multi-tap Wired 120V
MT2	Multi-tap Wired 240V
MT7	Multi-tap Wired 277V
TT3	Tri-tap Wired 347V
DT2	Dual Tap 120/240 Wired 240V

Distribution

R2	Type II
R3	Type III
R5	Type V [3]
RV	Type V [4]

Optics

AY	Acrylic
PY	Polycarbonate
FC	Full Cutoff [5]

Options

Paint [6]

(blank)	Black (standard)
BZ	Bronze
DDB	Dark Bronze
GY	Gray
WH	White

Terminal Block

(blank)	Terminal Block (standard)
T2	Wired to L1 & L2 Position
T3	3 Wire Operation (L1, N, L2 Position) [7]

Listing

UL	UL Listed
CS	CSA Certified

Fusing [8]

SF	Single Fuse (120, 277, 347V)
DF	Double Fuse (208, 240, 480V)

Photocontrol Receptacle

(blank)	NEMA Photocontrol Receptacle (standard)
NR	No Photocontrol Receptacle [9]

Lamp

LC	Lamp Included, Clear
LD	Lamp Included, Deluxe/Coated

Starter [10]

(blank)	Open Board (standard)
EC	Encapsulated Plug-in
OP	Open Plug-in

Misc.

PC	Photocontrol Included per Voltage Specified [9]
SH	Shorting Cap [9]
SS	Stainless Steel Hardware
NL	NEMA Label (2x2)
HS	House Side Shield [11]
TL	Tool-less Entry
LDR	Ladder Rest [12]

Notes:

1. When ordered with metal halide, these wattages do not comply with California Title 20 regulations.
2. CA ballast is not available with 175W - 400W metal halide in the U.S.; must use SC
3. Four white panels
4. Four clear panels
5. Nighttime Friendly™ optic; consult factory for distribution availability
6. Other colors available, please contact your local American Electric Lighting representative
7. T3 option only available with 240, 480, DT2, DT4, MT2
8. Not available in MT, TT, DT voltages; voids UL listing
9. PC and SH not available with NR option
10. HPS only
11. Acrylic only, Not available with FC version
12. Ships with unit, field installed

American Electric Lighting
An AcuityBrands Company

American Electric Lighting
Acuity Brands Lighting, Inc.
3825 Columbus Rd. S.W., Granville, OH 43023
Phone: 800-537-5710 Fax: 740-587-6114
www.americanelectriclighting.com

American Revolution

Series 247 and 247 Cutoff

50-150W HPS, 100-175W MH

BALLAST MATRIX

Series 247

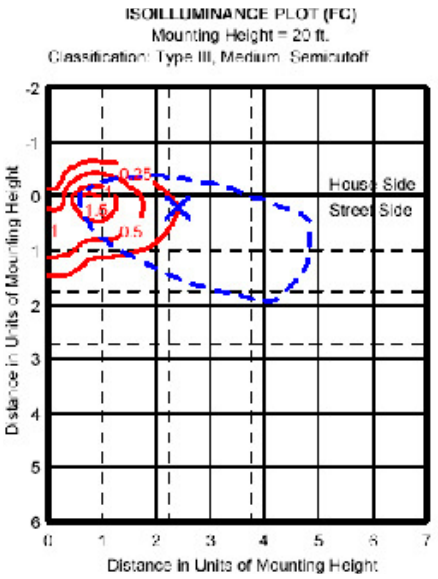
Watts	120	208	240	277	347	480	DT2
05S	RH, RN	-	-	-	-	-	-
07S	CA, MR, RH, RN, XH, XN	CA, XH, XN	CA, MR, XH, XN	CA, XH, XN	-	XH, XN	CA, MR, XH, XN
07M	XH,XN	XH, XN	XH, XN	XH, XN	-	-	-
10S	CA, CT, MR, RH, RN, XH, XN	CA, CT, XH, XN	CA, CT, MR, XH, XN	CA, CT, XH, XN	-	CA	MR, XH, XN
10M	CA, XH, XN	XH, XN	XH, XN	CA, XH, XN	XH, XN	XH, XN	CA, XH, XN
13S	RN	-	-	-	-	-	-
14S	RN	-	-	-	-	-	-
15S	CA, CT, RH, RN, XH, XN	CA, CT, XH, XN	CA, CT, XH, XN	CA, CT, XH, XN	XH, XN	CA	CA, CT, XH, XN
15M	XH, XN	XH, XN	XH, XN	XH, XN	-	-	-
(E) 17M	SC	SC	SC	SC	-	-	SC

Series 247 continued

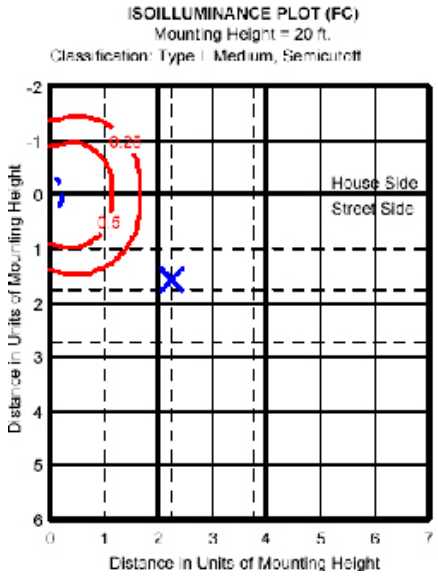
Watts	MT1	MT2	MT7	TT3
05S	-	-	-	-
07S	CA, XH, XN	CA, XH, XN	CA, XH, XN	-
07M	XH,XN	XH, XN	XH, XN	-
10S	CA, CT, XH, XN	CA, CT, XH, XN	CA, CT, XH, XN	-
10M	XH, XN	XH, XN	XH, XN	XH, XN
13S	-	-	-	-
14S	-	-	-	-
15S	CA, CT, XH, XN	CA, CT, XH, XN	CA, CT, XH, XN	XH, XN
15M	XH,XN	XH,XN	XH,XN	-
(E) 17M	SC	SC	SC	-

PHOTOMETRICS

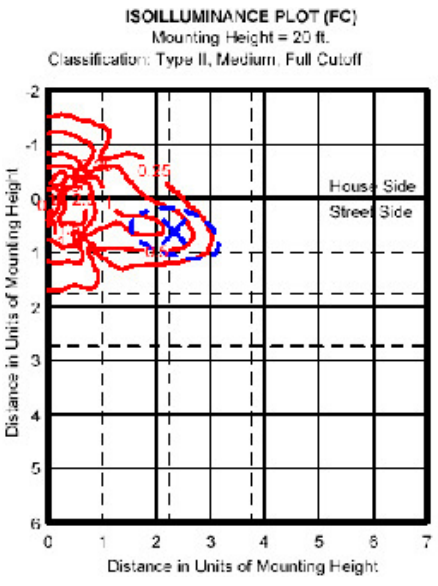
247 07S R3 AY

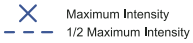


247 15S R5 AY



247 10S R2 FC





GranVille® Classic

Typical Applications

- City Streets
- Parks
- Residential Areas
- Campuses
- Walkways
- Parking Lots

Features

- Distinctive styling
- Superior performance
- Ease of maintenance
- Permanent, durable materials
- Reliability

Approvals

- UL/CUL

Lamp Types

- 35-150 watt high pressure sodium
- 70-175 watt metal halide
- 200 watt incandescent
- 55-85 watt induction (QL)

GranVille® Classic

The cornerstone of the GranVille Classic luminaires' superior performance is an advanced borosilicate glass optical refractor, which provides precise light control through finely molded prisms. The prismatic light refractor helps direct the light beam to the desired pattern, allows for great spacings with excellent uniformity, and creates an appealing sparkle that distinguishes the GranVille luminaire from conventional plastic acorn globes.

Although the efficient light control is the cornerstone of the GranVille Classic's prismatic glass refractor, the prismatic glass optical assembly creates the sparkle that provides the visual appeal in any daytime setting.

The GranVille Classic luminaire is widely used for municipal streets, residential streets, college campuses, and commercial area applications. The GranVille Classic luminaire is available with decorative covers, six distinct ballast modules, trim options, finials, all designed to accent any project theme. The new modern fluted ballast module (M) incorporates tool less entry, the modular "Utility" ballast module, integral terminal block, and an optional internal relamp module designed to simplify installation and maintenance.

The luminaire will scale with a range of decorative post styles from eight to fourteen feet in height. In addition, the luminaire can be mated with a variety of decorative wall mount brackets to complement the post top assemblies further enhancing the site architecture.

GranVille
(Fluted housing, standard finial)

GranVille
(Ribs, bands and medallions, with leaf housing, and standard finial)

GranVille
(Decorative cover with leaf housing, and standard finial)

Syracuse
(Spun cover, ribs, bands and medallions, with leaf housing, and standard finial)

Applications

The GranVille luminaire has appeal for many types of applications. Although efficient light control is the cornerstone of the GranVille's prismatic glass refractor, the prismatic glass optical assembly creates a sparkle that provides visual appeal in any daytime setting.

The GranVille luminaire is widely used for municipal streets, residential streets, college campuses, and commercial area applications. The luminaire will scale with a range of decorative post styles ranging from eight to fourteen feet in height. In addition, the luminaire can be mated with a variety of decorative wall brackets to complement the post top assemblies further enhancing the site architecture.

Product Features

GranVille/Syracuse

The heat resistant borosilicate glass refractors available are designed to provide IESNA Type II, III, IV, and V lighting distributions. In addition, Lunar Optics® is available as a standard optical option in applications where IESNA cutoff is desired. This allows for a choice of distribution which will most effectively illuminate a particular area. Low wattage HPS, metal halide, and induction lamps are available.

The GranVille luminaires are available with a tool-less entry hinged top for easy lamp replacement. Also, a variety of decorative trim options such as covers, finials, ribs, and bands allow the GranVille luminaire to blend with any streetscape or site architecture.

The luminaires are available with five distinct housings ensuring the appropriate transition between pole and luminaire in any installation. In retrofit applications, a variety of traditional castings allow GranVille luminaires to adapt to virtually any existing pole.

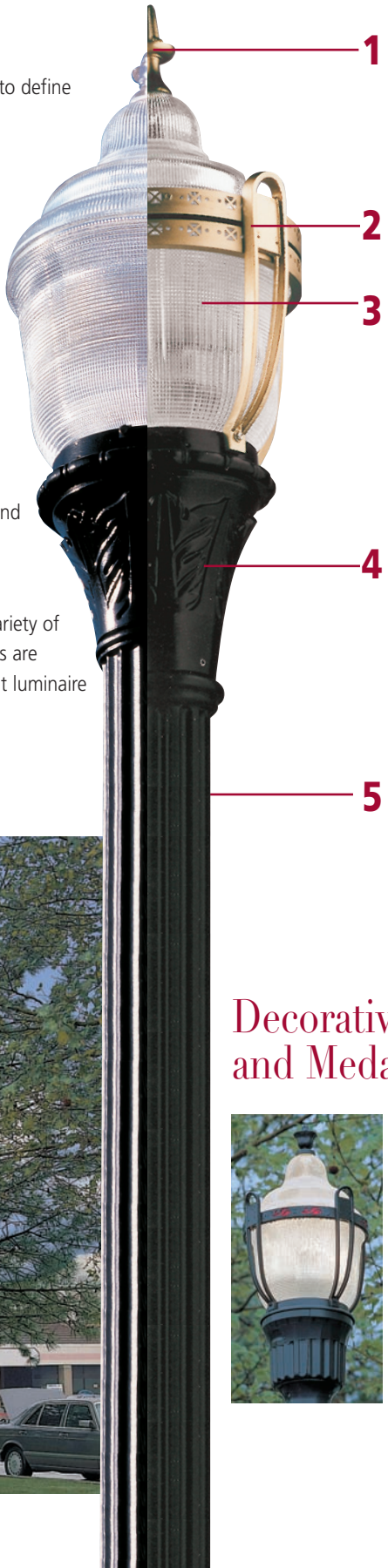
1 Finial: Is designed to define luminaire shape

2 Decorative trim: An optional design element

3 Anodized hydro-formed reflector: Restricts the intensity at the critical vertical angles

4 Ballast housing: Holds and protects electrical components and defines luminaire shape and size

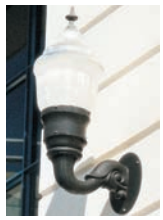
5 Pole options: A variety of pole materials and styles are available to complement luminaire and site architecture

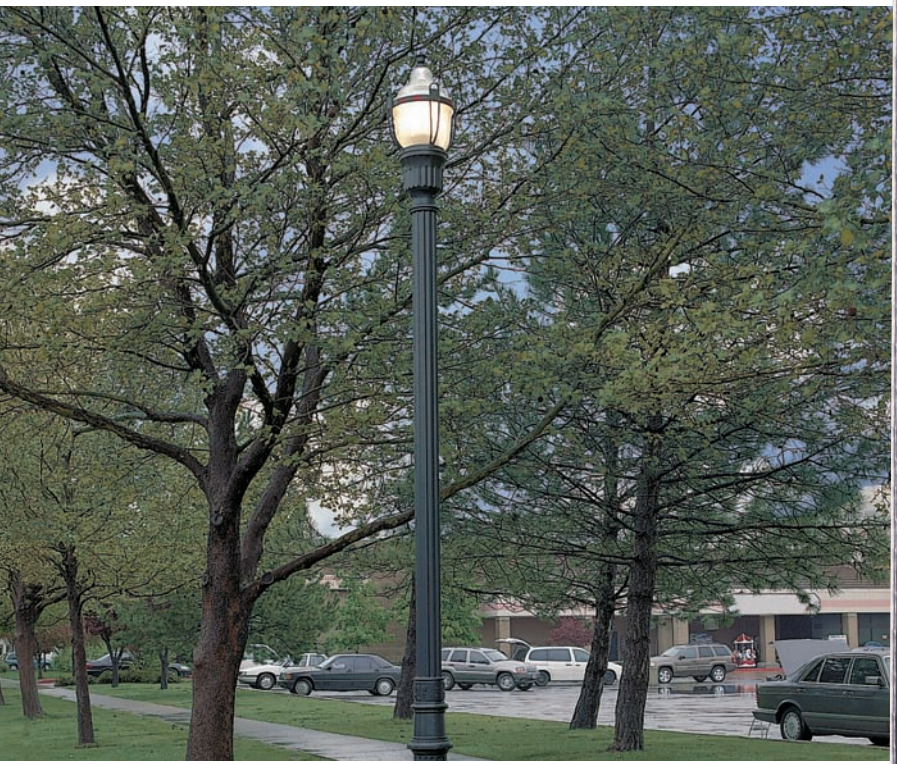


GranVille

GranVille

Syracuse





Decorative Trim and Medallions

The GranVille® Series, featuring decorative ribs and banding with a custom rose medallion.

Lunar Optics

Lunar Optics has been designed to address environmental lighting issues such as urban sky glow (light pollution), light trespass, and glare, in addition to maintaining classic style and appearance.

The GranVille Series with Lunar Optics boasts an exquisite daytime appearance, yet has been engineered with purposeful optical performance. Specifically, the luminaire restricts the intensity (candela) at the critical vertical angles to achieve an IESNA cutoff classification.

Furthermore, a small amount of light illuminates the top acorn refractor to allow for a fully luminous nighttime appearance. As an overall result, the percentage of upward light is significantly reduced, yet the traditional lighted appearance is retained. The Lunar Optics version is ideal for applications where communities want to celebrate tradition, however are sensitive to light pollution and trespass.

1 Finial: Is designed to define luminaire shape

2 Decorative top cover: (optional) Designed to define luminaire shape and control uplight

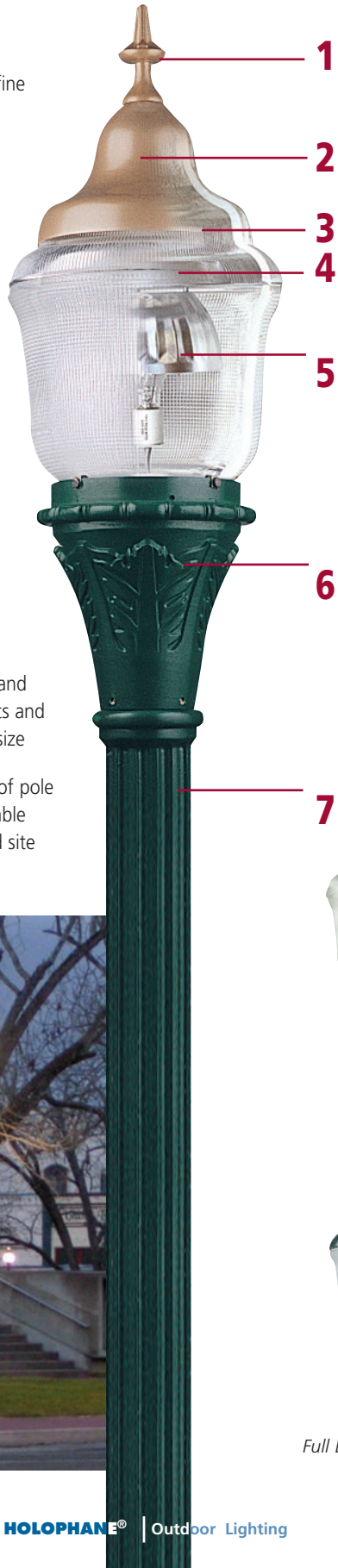
3 Prismatic top reflector: Defines shape and efficiently controls light

4 Reflector mounting plate: Is designed to support Lunar Optics reflector and reduce uplight

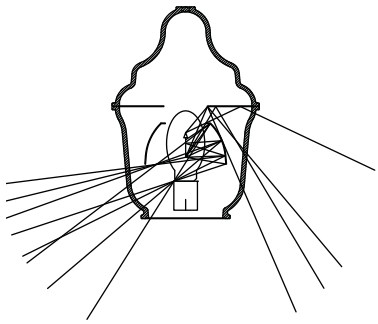
5 Anodized hydro-formed reflector: Restricts the intensity at the critical vertical angles

6 Ballast housing: Holds and protects electrical components and defines luminaire shape and size

7 Pole options: A variety of pole materials and styles are available to complement luminaire and site architecture



Lunar Optics®



Lunar Optics has been designed to reduce the lighting intensity at the critical vertical angles to achieve IESNA Cutoff.

GranVille

Syracuse

Full Decorative Cover

Mayfield Decorative Cover

Ordering Information

How to Construct a Catalog Number

Example:

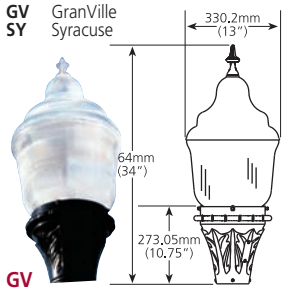
GV	050HP	12	S	B	3	N	C	B	F1
1	2	3	4	5	6	7	8	9	10
Luminaire	Wattage	Voltage	Housing	Color	Optics	Trim	Finial	Trim Finish	Options/Accessories
GV SY	050HP 055QL 085QL 35DHP 50DHP 070HP 70DHP 70DMH 100HP 10DHP 10DMH 15AHP 15DHP 15DMH 175MH 17DMH 20DIN	12 20 24 27 34 48 MT	A C F L M S	A B N Z	3 4 5 6 7 8	N R	B C E F N P R S	A B G N U Z	DTLPR12X DTLPR20/24/27X DTLPR34X FCVRX F1 F2 GV1A73X GVBANDX MCVRX P WHS090 WHS120 WHS180 WHSL090 WHSL120 WHSL180

Catalog Number Information

c UL us LISTED

STEP 1: Luminaire

GV GranVille
SY Syracuse



STEP 2: Source and Wattage

Mogul Base

050HP	50W HPS
070HP	70W HPS
100HP	100W HPS
15AHP	150W/55V HPS
175MH	175W MH

Medium Base

35DHP[1]	35W HPS
50DHP	50W HPS
70DHP	70W HPS
10DHP	100W HPS
15DHP	150W/55V HPS
70DMH[2]	70W MH
10DMH[2]	100W MH
15DMH[2]	150W MH
17DMH	175W MH
20DIN	200W Inc

INDUCTION

055QL[1]	55W Ind.
085QL[1]	85W Ind.

1 120V only
2 "MT" only

STEP 3: Voltage

12	120V
20	208V
24	240V
27	277V
34	347V
48	480V
MT	Multi-tap

STEP 4: Housing

A[2]	Arcadian
C[2]	Convex Octagonal
F[2]	Fluted
L[1]	Leaf
M	Modern Fluted Swing Open Design
S[1]	Simple

1 Casting for 3" tenon
2 Casting for 7" crown

STEP 5: Color

B	Black
Z	Bronze
N	Green
A	As specified

STEP 6: Optics

Asymmetric

3	Type III
4	Type IV
6	Type II – Lunar Optics
7	Type III – Lunar Optics

Symmetric

5	Type V
8	Type V – Lunar Optics

STEP 7: Trim

GV
R Hinged Top with Ribs and Bands
N No Ribs or Bands
SY
R Ribs, Bands and Spun Cover

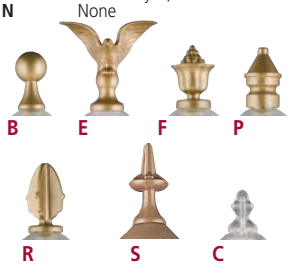
STEP 8: Finial

Painted Cast Aluminum

B	Ball
E	Eagle
F	Flower
P	Pawn
R	Cross
S	Standard

Other

C	Clear Acrylic, 3"
N	None



STEP 9: Trim Finish

B	Black
G	Gold
N	Green
Z	Bronze
U	No Trim Necessary
A	As Specified

STEP 10: Options/Accessories

FCVRX[1]	Full Decorative Aluminum Cover for "GV" (Finial required)
MCVRX[1]	Mayfield Decorative Aluminum Cover for "GV" (Covers 2/3 of the reflector and requires a finial)
P	Protected Starter for HPS Units
F1[2]	Single Fusing for 120, 240 and 277V Units. Ships Separate
F2[2]	Double Fusing for 208 and 240V Units. Ships Separate
GV1A73X[3]	3" to 7" Post Capital. Converts 3" Post Top Tenon to Flared 7" Post Capital. Use Only with "A", "F", or "C" Housings
GVBANDX[3]	Optional Decorative Band Kit Added to Glass Assembly for "GV" (Field installed)

Photocontrol Kit for "L" and "S" Housing Style only

DTLPR12X[3]	120V, GV1A73 Post Capital
DTLPR20/24/27X[3]	208, 240 or 277V, GV1A73 Post Capital
DTLPR34X[3]	347V, GV1A73 Post Capital

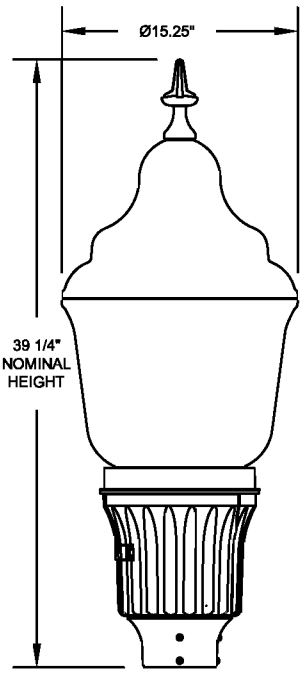
Internal House Side Shield

WHS090[4]	90°
WHS120[4]	120°
WHS180[4]	180°
WHSL090[4]	With Lunar Optics, 90°
WHSL120[4]	With Lunar Optics, 120°
WHSL180[4]	With Lunar Optics, 180°

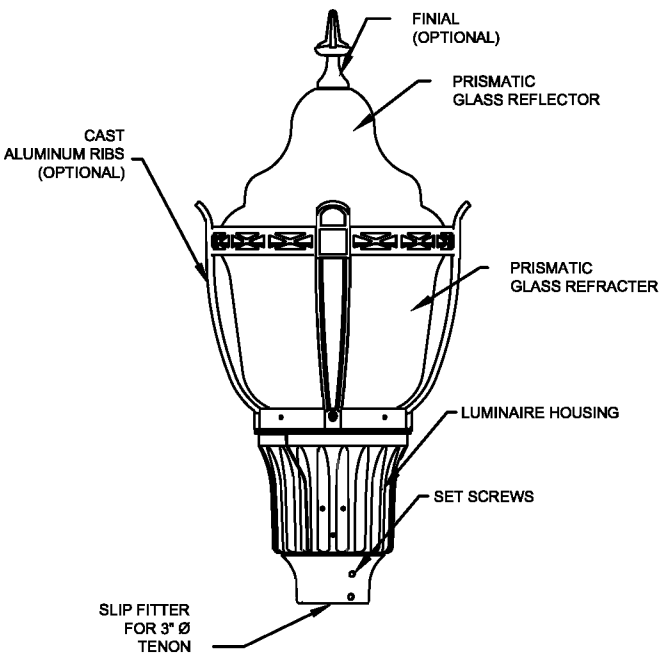
1 For color insert "B", "G", "N", "Z" or "A" for "X"
2 Fusing not available for 480V and 200W Incandescent
3 For color insert "B", "Z", "N" or "A" for "X"
4 Mogul Base Only

GranVille® II LED
Premier Utility

DECORATIVE OUTDOOR



Maximum weight - 64 lbs
Maximum effective projected area - 1.38 sq. ft.



ORDERING INFORMATION:

GPD	100	5K	AS	M	B	3	N	S	G

GPD — HOUSING
GPD = GRANVILLE PREMIER UTILITY

100 — SOURCE & WATTAGE BALLAST (LED DRIVER)
100 = 100 W (525mA)
80 = 80 W (420mA)
60 = 60 W (315mA)
40 = 40 W (215mA)

5K — COLOR TEMPERATURE
3K = 3000 K CCT
4K = 4000 K CCT
5K = 5000 K CCT

AS — VOLTAGE
AS = AUTO-SENSING VOLTAGE (120 THRU 277 V)
AH = AUTO-SENSING VOLTAGE (347 THRU 480 V)
D1 = 120, 208V DLC APPROVED
D2 = 240, 277V DLC APPROVED

M — HOUSING
M = MODERN STYLE SWING OPEN DESIGN
T = LEAF STYLE SWING OPEN DESIGN

B — HOUSING COLOR
A = AS SPECIFIED
B = BLACK
N = GREEN
Z = BRONZE

3 — OPTICS
3 = IES TYPE III DISTRIBUTION
5 = IES TYPE V DISTRIBUTION
6 = ASYMMETRIC LUNAR OPTIC (AVAILABLE IN 80W, 60W, 40W ONLY)
8 = SYMMETRIC LUNAR OPTIC (AVAILABLE IN 80W, 60W, 40W ONLY)

N — TRIM
R = RIBS & BAND
N = NO TRIM

S — FINIAL
B = BALL
C = CLEAR
E = EAGLE
F = FLOWER
N = NONE
P = PAWN
R = CROSS
S = STANDARD
T = ROM CROSS

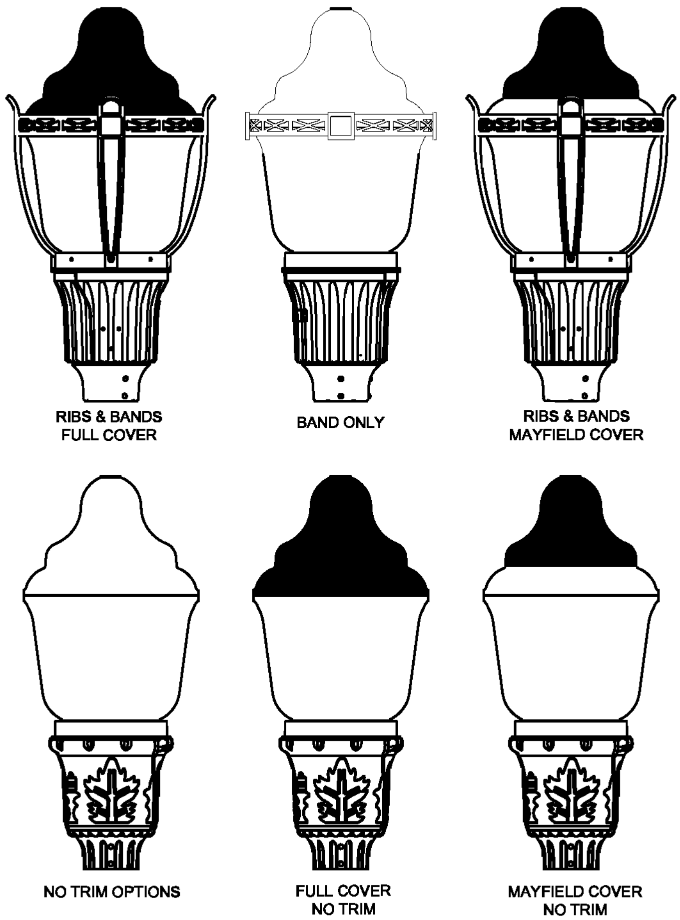
G — COLOR
A = AS SPECIFIED
B = BLACK
G = GOLD
N = GREEN
Z = BRONZE
U = NO TRIM AND CLEAR OR NO FINIAL

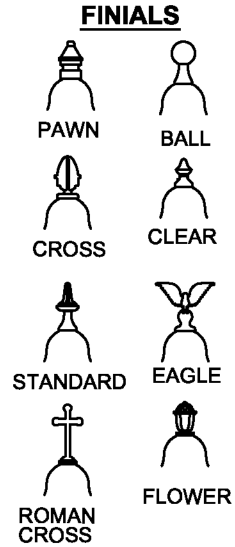
OPTIONS
F = FULL COVER
DM = DIMMING DRIVER (100W AS, AH VOLTAGE 40, 60, 80W AS VOLTAGE ONLY)
M = MAYFIELD 1/2 OPTIONAL COVER
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE
PND = BLC2 CONTROL PROVIDED FOR PART-NIGHT DIMMING (40W, 60W, AND 80W 120-277V ONLY)
PCS = DTL TWISTLOCK PHOTOCONTROL FOR SOLID STATE
PSC = SHORTING CAP
L1H = 1.5 FEET OF PREWIRED LEADS
L03 = 3 FEET OF PREWIRED LEADS
L10 = 10 FEET OF PREWIRED LEADS
L20 = 20 FEET OF PREWIRED LEADS
L25 = 25 FEET OF PREWIRED LEADS
L30 = 30 FEET OF PREWIRED LEADS
DE = ROAM CONCIERGE DIMMING CONTROL
VE = ROAMVIEW DIMMING CONTROL

ACCESSORIES
GVBANDX = DECORATIVE BAND (INSERT TRIM FINISH FOR X)
GVDHSS90 = HOUSE SIDE SHIELD SOLID 90 DEGREE
GVDHSS12 = HOUSE SIDE SHIELD SOLID 120 DEGREE
GVDHSS18 = HOUSE SIDE SHIELD SOLID 180 DEGREE

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An AcuityBrandsCompany

ORDER #:
TYPE:
DRAWN: JCH
DATE: 6-25-14
DWG #: LUM_GPD





GranVille® II LED Premier Utility

DECORATIVE OUTDOOR

HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An Acuity Brands Company

ORDER #:
TYPE:
DRAWN: KRW
DATE: 10/18/12
DWG #: LUM_GPD

Specifications

GENERAL DESCRIPTION

The GranVille II LED Utility is designed for ease of maintenance with the plug-in electrical module common to each of the luminaires in Holophane's Utility Luminaire Series. The traditional acorn shaped luminaire, while reminiscent of the 1920's, contains a precision optical system that maximizes post spacings while maintaining uniform illumination.

OPTICAL SYSTEM

The optical system consists of a precisely molded thermal resistant borosilicate glass refractor and top reflector mounted within the decorative aluminum housing. The glass top reflector redirects over 50% of the upward light into the controlling refractor while allowing a soft uplight component to define the traditional acorn shape of the luminaire. Two decorative aluminum covers are available. The lower refractor uses precisely molded prisms to maximize pole spacings while maintaining uniform illuminance. Two refractors are available, designed for I.E.S. type III and V distributions. Lunar optics shielding is available for asymmetric and symmetric distributions.

LUMINAIRE HOUSING

The luminaire housing, cast of aluminum, provides an enclosure for the plug-in electrical module. Four uniquely designed stainless steel spring clips enclosed in a clear polyvinyl chloride sleeve and adjusted by hex head 1/4-20 bolts securely cradle the prismatic glass refractor. The same 1/4-20 bolts support the decorative rib and banding assembly. The slipfitter will accept a 3" by 2-7/8" to 3-1/8" O.D. tenon.

LUMINAIRE HOUSING / DOOR

Cast of aluminum, the housing opens with minimum use of tools and is retained on a hinge. For units with an E.E.I.-N.E.M.A. twist lock photocell receptacle, the housing contains a "window" to allow light to reach the cell.

ELECTRICAL MODULE

The electrical components are mounted on a aluminum plate that is removable with minimum use of tools. A matching five conductor plug connects to the receptacle in the luminaire housing to complete the wiring. For photoelectric operation, the electrical module is provided with an E.E.I.-N.E.M.A. twist lock photocell receptacle.

FINISH

The luminaire is finished with polyester powder paint to insure maximum durability.

WARRANTY

Limited warranty located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE

Actual performance may differ as a result of end-user environment and application.
Actual wattage may differ by +10% / -10% at operating temperature.
60W 347-480V version wattage may differ by +14%/ -14% at operating temperature.
Specification subject to change without notice.

Traditional Series

Victorian IX

AMERON
POLE PRODUCTS

Style IX

This Victorian pole features turn of the century design reminiscent of the gaslight era that complements traditional and contemporary styles. The slightly tapered shaft incorporates aesthetic and architectural essence to this refined Victorian IX pole.

Ameron's Traditional Series spun-cast, prestressed concrete lighting poles combine the charm of yesterday with today's technology. Available in a variety of configurations, colors and finishes, these poles provide architects and designers many creative options. All Ameron spun-cast concrete poles have our exclusive ten-year warranty. Durability with a classic touch.

General Information

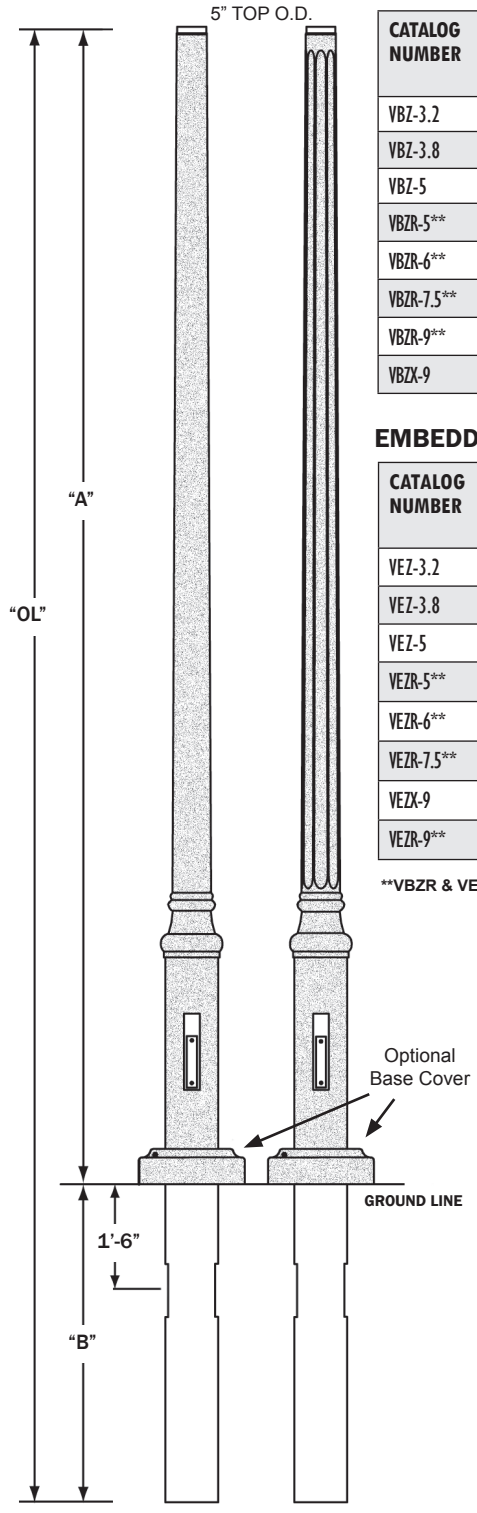
Ameron's Traditional Series poles are available in a variety of standard and custom configurations. Constructed with the highest quality prestressed concrete, these centrifugally cast, low-maintenance poles are strong, durable, and vibration resistant. Ameron poles conform to applicable sections of ACI, AASHTO, ASTM and UBC standards.

Surface Treatment

The concrete shafts are lightly blasted to expose the texture and beauty of the natural aggregates while maintaining sharp definition of details and patterns.

Colors and Finishes

Standard, pre-formulated and custom aggregate colors are available. See separate aggregate sheet for details. Ameron offers Amershield™, a premium graffiti-resistant coating, plus an assortment of durable sealers and protectants that further enhance colors, protect the concrete surface and aid in the removal of graffiti.



BASE PLATE STYLE - INFORMATION

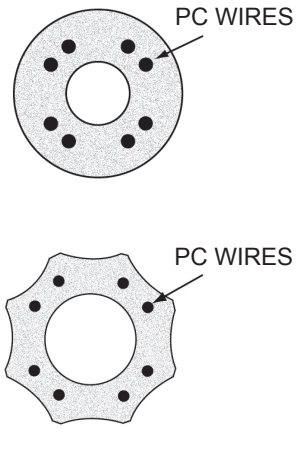
CATALOG NUMBER	POLE HEIGHT "A"	BASE O.D.	ANCHOR BOLT	BOLT CIRCLE (IN)	BASE PLATE (SQ)	ULTIMATE G.L. MOMENT (FT. LBS.)	POLE WEIGHT (LBS.)	MAXIMUM EPA/MPH (SQ FT)* 80	90	100
VBZ-3.2	10'-7"	9"	3/4" x 24" x 4"	11" - 12"	11- /2"	15,000	300	12.0	9.0	6.0
VBZ-3.8	12'-7"	9"	3/4" x 24" x 4"	11" - 12"	11-1/2"	15,000	330	12.0	9.0	6.0
VBZ-5	16'-7"	9"	3/4" x 24" x 4"	11" - 12"	11-1/2"	15,000	450	11.0	8.0	5.0
VBZR-5**	16'-7"	9"	3/4" x 24" x 4"	11" - 12"	11-1/2"	15,000	410	12.0	11.0	10.0
VBZR-6**	19'-7"	9"	1" x 36" x 4"	11" - 12"	11-1/2"	22,500	650	12.0	11.0	10.0
VBZR-7.5**	24'-7"	9"	1" x 36" x 4"	11" - 12"	11-1/2"	22,500	850	12.0	9.0	6.0
VBZR-9**	29'-6"	9"	1" x 36" x 4"	11" - 12"	11-1/2"	22,500	1,050	10.0	7.0	5.0
VBZX-9	29'-6"	9"	1" x 36" x 4"	11" - 12"	11-1/2"	28,000	1,100	12.0	9.0	6.0

*EPA based on post top mounting. Consult your representative for other attachment methods and increased load capacity requirements.

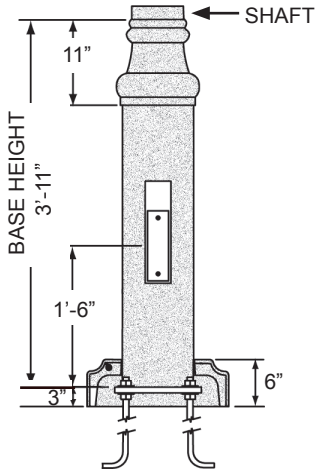
EMBEDDED STYLE - INFORMATION

CATALOG NUMBER	POLE HEIGHT "A"	BASE O.D.	SHAFT O.D.	EMBEDDED DEPTH "B"	OVERALL LENGTH "OL"	ULTIMATE G.L. MOMENT (FT. LBS.)	WEIGHT (LBS.)	MAXIMUM EPA/MPH (SQ FT)* 80	90	100
VEZ-3.2	10'-4"	9"	6.5"	4'-6"	14'-10"	15,000	490	12.0	9.0	6.0
VEZ-3.8	12'-4"	9"	6.5"	4'-6"	16'-10"	15,000	520	12.0	9.0	6.0
VEZ-5	16'-4"	9"	6.5"	4'-6"	20'-10"	15,000	700	11.0	8.0	5.0
VEZR-5**	16'-4"	9"	6.5"	4'-6"	20'-10"	15,000	725	12.0	11.0	10.0
VEZR-6**	19'-7"	9"	8"	5'-3"	24'-10"	22,500	800	12.0	11.0	10.0
VEZR-7.5**	24'-7"	9"	8"	5'-3"	29'-10"	22,500	1,000	12.0	9.0	6.0
VEZX-9	29'-6"	9"	6"	5'-3"	34'-9"	22,500	1,300	10.0	7.0	5.0
VEZR-9**	29'-6"	9"	8"	5'-3"	34'-9"	28,000	1,400	12.0	9.0	6.0

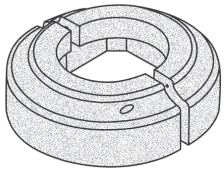
**VBZR & VEZR POLES- UPPER SHAFT ROUND TAPERED



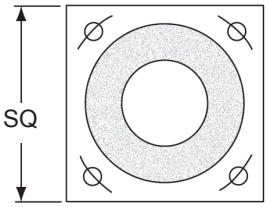
SHAFT CROSS SECTION DETAIL (Eight Flutes)



BASE ELEVATION
See recommended "capping detail"



OPTIONAL BASE COVER
BCC918R



BASE PLATE

Notes

SPECIFICATIONS
Use Centrecon Specifications.

LUMINAIRE MOUNTING
See Technical-Mounting Options Section for more information.

COLORS & FINISHES
See Color Selection Guide.

ANTI-GRAFFITI & SEALER
Optional Coatings available for added protection.

Traditional Series

Victorian V

AMERON
POLE PRODUCTS

Style V

Capturing the ambiance of a bygone era, this octagonal Victorian pole features a tapered shaft, sturdy cone-shaped base and flared top that accentuates a variety of luminaire designs. The pole is equally suited for period architectural styles and contemporary environments.

Ameron's Traditional Series spun-cast, prestressed concrete lighting poles combine the charm of yesterday with today's technology. Available in a variety of configurations, colors and finishes, these poles provide architects and designers many creative options. All Ameron spun-cast concrete poles have our exclusive ten-year warranty. Durability with a classic touch.

General Information

Ameron's Traditional Series poles are available in a variety of standard and custom configurations. Constructed with the highest quality prestressed concrete, these centrifugally cast, low-maintenance poles are strong, durable, and vibration resistant. Ameron poles conform to applicable sections of ACI, AASHTO, ASTM and UBC standards.

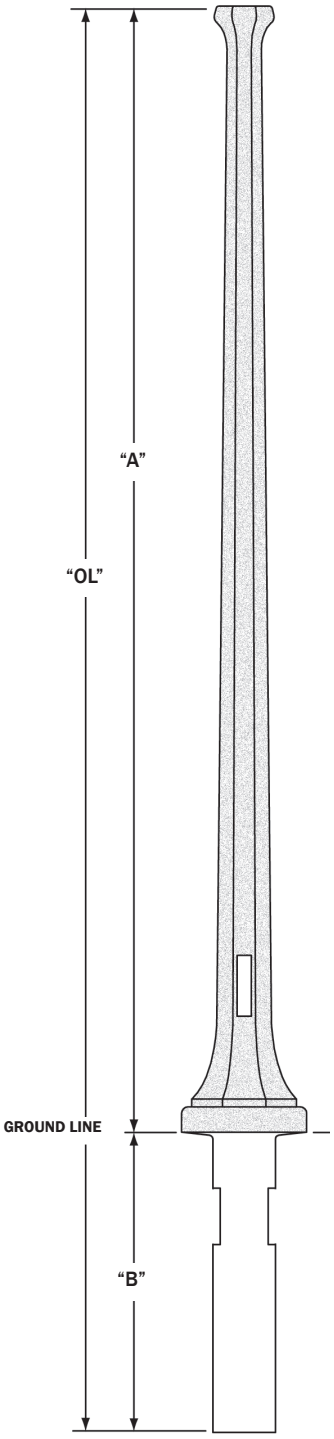
Surface Treatment

The concrete shafts are lightly blasted to expose the texture and beauty of the natural aggregates while maintaining sharp definition of details and patterns.

Colors and Finishes

Standard, pre-formulated and custom aggregate colors are available. See separate aggregate sheet for details. Ameron offers Amershield™, a premium graffiti-resistant coating, plus an assortment of durable sealers and protectants that further enhance colors, protect the concrete surface and aid in the removal of graffiti.

9" TOP O.D. - VEM-3.0
9-1/2" TOP O.D. - VBM/VEM-4.0-4.6



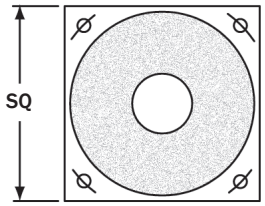
BASE PLATE STYLE - INFORMATION

CATALOG NUMBER	POLE HEIGHT "A"	BASE O.D.	ANCHOR BOLT	BOLT CIRCLE	BASE PLATE (SQ)	ULTIMATE G.L. MOMENT (FT. LBS.)	WEIGHT (LBS.)	MAXIMUM EPA/MPH (SQ FT)* 80	90	100
VBM-3.0	10'-0"	18"	3/4" x 24" x 4"	24"	20"	12,000	600	12.0	10.0	7.0
VBM-4.0	13'-0"	18"	3/4" x 24" x 4"	24"	20"	12,000	875	12.0	10.0	7.0
VBM-4.6	15'-0"	20"	3/4" x 24" x 4"	24"	20"	15,000	975	13.0	10.0	7.0

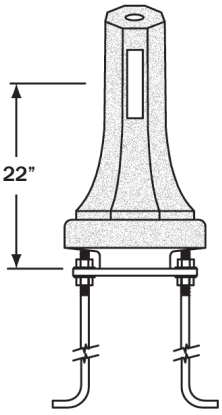
EMBEDDED STYLE - INFORMATION

CATALOG NUMBER	POLE HEIGHT "A"	BASE O.D	EMBEDDED DEPTH "B"	OVERALL LENGTH "OL"	ULTIMATE G.L. MOMENT (FT. LBS.)	WEIGHT (LBS.)	MAXIMUM EPA/MPH (SQ FT)* 80	90	100
VEM-3.0	10'-0"	18"	4'-6"	14'-6"	12,000	750	12.0	10.0	7.0
VEM-4.0	13'-0"	18"	4'-0"	17'-0"	12,000	1,000	12.0	10.0	7.0
VEM-4.6	15'-0"	20"	4'-0"	19'-0"	15,000	1,200	13.0	10.0	7.0

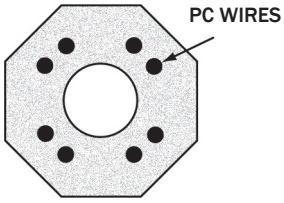
*EPA based on post top mounting. Consult your representative for other attachment methods and increased load capacity requirements.



SLOTTED BASE PLATE



ELEVATION
See recommended
"capping detail"



SHAFT CROSS SECTION DETAIL

Notes

SPECIFICATIONS
Use Centrecon Specifications.

LUMINAIRE MOUNTING
See Technical-Mounting Options Section for more information.

COLORS & FINISHES
See Color Selection Guide.

ANTI-GRAFFITI & SEALER
Optional Coatings available for added protection.

Traditional Series

Washington Embedded

AMERON
POLE PRODUCTS

In 1910 the Commission of Fine Arts in Washington D.C. designed the simple, classically fluted lighting standard on which Ameron's Washington pole is based. Ameron's version of the classic design is available in durable, low-maintenance, prestressed and spun- cast concrete that retains its beauty for many years even in the most severe weather conditions.

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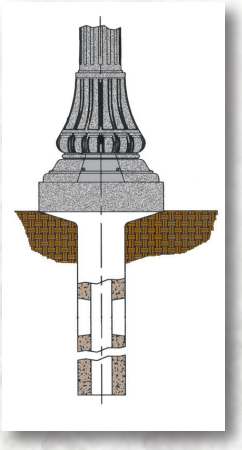
General Information

Ameron's Traditional Series poles are available in a variety of standard and custom configurations. Constructed with the highest quality prestressed concrete, these centrifugally cast, low-maintenance poles are strong, durable, and vibration resistant. Ameron poles conform to applicable sections of ACI, AASHTO, ASTM and UBC standards.

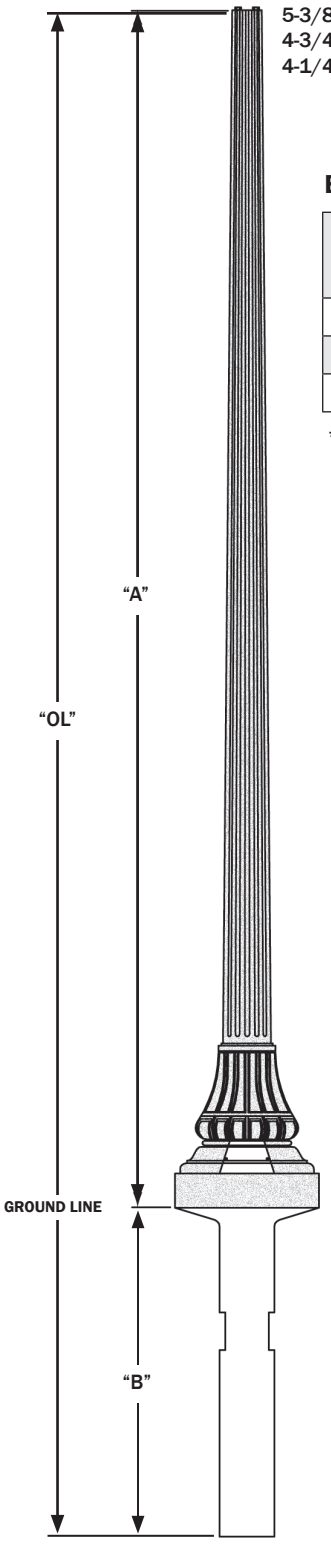


Surface Treatment

The concrete shafts are lightly blasted to expose the texture and beauty of the natural aggregates while maintaining sharp definition of details and patterns.

Colors and Finishes

Standard, pre-formulated and custom aggregate colors are available. See separate aggregate sheet for details. Ameron offers Amershield™, a premium graffiti-resistant coating, plus an assortment of durable sealers and protectants that further enhance colors, protect the concrete surface and aid in the removal of graffiti.

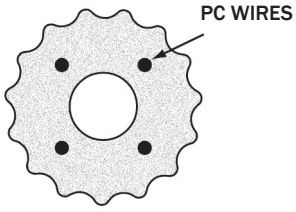


5-3/8" TOP O.D. - 26ET10
4-3/4" TOP O.D. - 26ET12
4-1/4" TOP O.D. - 26ET14

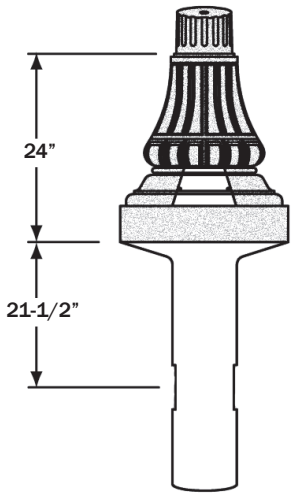
EMBEDDED STYLE - INFORMATION

CATALOG NUMBER	POLE HEIGHT "A"	BASE O.D.	EMBEDDED DEPTH "B"	OVERALL LENGTH "OL"	ULTIMATE G.L. MOMENT (FT. LBS.)	WEIGHT (LBS.)	MAXIMUM EPA/MPH (SQ FT)* 80	90	100
26ET10	9'-6"	21"	4'-0"	13'-6"	12,000	710	12.0	10.0	8.0
26ET12	12'-0"	21"	4'-0"	16'-0"	12,000	740	12.0	10.0	8.0
26ET14	14'-6"	21"	4'-0"	18'-6"	12,000	770	7.0	6.0	5.0

*EPA based on post top mounting. Consult your representative for other attachment methods and increased load capacity requirements.



SHAFT CROSS SECTION DETAIL



ELEVATION

NOTES

SPECIFICATIONS
Use Contemporary Specifications.

LUMINAIRE MOUNTING
See Technical-Mounting Options Section for more information.

COLORS & FINISHES
See Color Selection Guide.

ANTI-GRAFFITI & SEALER
Optional Coatings available for added protection.

TECHNICAL MEMORANDUM
TASK 2.5- WAYFINDING SIGNAGE
SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

Date: May 5, 2016

To: Bridget Elliot, P.E.
Department of Public Works
City of Solvang

Phone No.: 805-688-5575

From: Kelly Druse

Phone No.: 805-544-0707

Project No.: 17581

Jurisdiction: City of Solvang

Subject: Summary of existing wayfinding signage and signage improvements. Memorandum includes the following:

1) Introduction
2) Summary of Existing Wayfinding Signage
3) Recommendations for Wayfinding Routing and Signage
4) Signage Options and Approximate Costs

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) has prepared this technical memorandum to catalogue the existing wayfinding signage conditions and recommend alternatives for improving vehicular and pedestrian routing, create wayfinding signage uniformity, and increase vehicular usage of public parking lots. This wayfinding analysis originated from recommendations in the Mission Drive Corridor Study, completed in October 2014.

This technical memorandum summarizes the existing conditions, presents options to upgrade wayfinding signage, and provides an estimate of costs.

The following studies, technical memorandums and product information are referenced in this memorandum as supporting documents and for background information:

1. Mission Drive Corridor Study, October 2014 (Orosz Engineering Group, Inc.)

2.0 SUMMARY OF EXISTING WAYFINDING SIGNAGE

The following is a brief description of the existing wayfinding signage along the Mission Drive corridor and on the minor streets in Solvang. For a detailed map of existing signage, see the attached exhibit.

Currently there are approximately 25 individual vehicular wayfinding signs within the downtown area. These signs notify the public of public parking locations, RV parking, Police and Tourist Information, and specific destinations such as museums and the Solvang Festival Theatre. Sign styles vary with no obvious consistency, and result in confusion for drivers entering the City attempting to reach specific destinations.

Additionally, there are approximately 17 pedestrian-level wayfinding signs, consisting of canvas banners mounted on light poles, and small direction signs set in decorative urns. While these pedestrian signs contain valuable wayfinding information, the lack of uniformity and potential to be set incorrectly limits their function.

Finally, existing public parking lots are occasionally marked with large wooden "Public Parking" monuments. However, these monuments are not at all public parking locations and are not uniform with other public parking signage. One of the primary goals of the Mission Drive Improvements Planning project is to direct tourist vehicles off Mission Drive and into public parking lots. As such, an emphasis has been placed on public parking route finding and signage within these recommendations.

3.0 RECOMMENDATIONS FOR WAYFINDING ROUTING AND SIGNAGE

3.1 Recommendations for existing signage:

The City of Solvang understands that the reality of today's economy and the high level of competition for the public's attention demand a clear and distinctive identity. The proposed wayfinding program will make it much easier for visitors to find parking and

important destinations to enhance the visitor's experience. The best wayfinding system features consistent standards that can be adapted and altered, as required, to locate existing destinations plus adapt to feature future development. In many cases a confusing mix of unrelated signs have been installed over decades with the emphasis on individual needs rather than the development of a comprehensive system with a consistent theme or message.

Rick Engineering recommends that a recognizable, cohesive and comprehensive wayfinding system be installed. This uniformity will be achieved through the removal of existing signage (except regulatory signage) both at the vehicular and pedestrian level. One of the primary results of a comprehensive program is that it naturally reduces clutter by presenting a consistent design with well-organized information. The City's existing signage, depicted in **Figure 1**, is a variety of inconsistent sizes, shapes, typeface, which lessens the effectiveness of the signage and the user's ability to find their way. After installation of a uniform wayfinding system the City should continue to discourage private signage within public rights-of-way.

3.2 Recommendations for wayfinding routing:

There are typically three stages when traveling into a city to reach a destination: 1) Entering the City, 2) Finding a place to park and 3) Arriving at your destination. Enhancing the parking and walking experience heightens the appeal and, in many cases, increases repeat visits by as much as 30% to primary and secondary destinations. One of the primary goals of the City is to direct visiting vehicular traffic to the Downtown and public parking areas (including underutilized public lots) as soon as possible. **Figure 2** shows the current Public parking lots as well as feature destinations.

All public parking lots should provide some level of informational kiosk in a safe, visible place so that the visitor can immediately begin to orient themselves to their surroundings. The kiosks would provide maps, directions and possible advertising.

Pedestrian directional signage should be located at active intersections and generally hold up to 6-8 listings. The scale should be appropriate to a pedestrian with the lettering not easily read from a car, which would cause confusion. Pedestrian directional signage may point to and identify nearby destinations within the target area. Other destinations may be provided as long as there is a clear pedestrian route to that destination. A comprehensive field investigation and design exercise should be conducted to establish the policies, criteria and graphic standards for the signage.

Vehicular directional signage should establish clear primary paths to each destination and utilize secondary paths to direct visitors to individual destinations and parking areas, as applicable.

In order to realize this goal, Rick Engineering recommends replacing signage at both entrances to the City on Mission Drive which would emphasize the direction and distance to the Downtown. Existing signage, which is meant to serve this function, is neither large enough nor standardized. **Figure 3** depicts proposed locations of entry wayfinding signage. Additionally, pedestrian signage should be added to enforce and compliment the vehicular signage system once visitors get out of their cars to explore the City.

With regard to the installation of the proposed signage, it is recommended that existing light fixtures be utilized to the maximum extent possible. Where decorative light fixtures do not exist, the City should consider additional poles of the same design on which to mount signage. For ground-mounted signs, locations should be selected which do not obstruct pedestrians but are visible to passing vehicles.

The recommended design of sign types should reinforce Solvang's community brand and commitment to tourism, history, creativity and innovation. The development of an organized hierarchy of options of the sign menu establishes the information a visitor receives and the sequence and priority that it will present. **Figures 4 and 5** represent two recommended sign menus for consideration.

4.0 SIGNAGE OPTIONS AND APPROXIMATE COSTS

4.1 Estimates of Cost

Shown below are the approximate costs for materials and installation of each sign for options A and B as shown in **Figures 4 and 5** of the proposed wayfinding signage menus.

Option A and B:

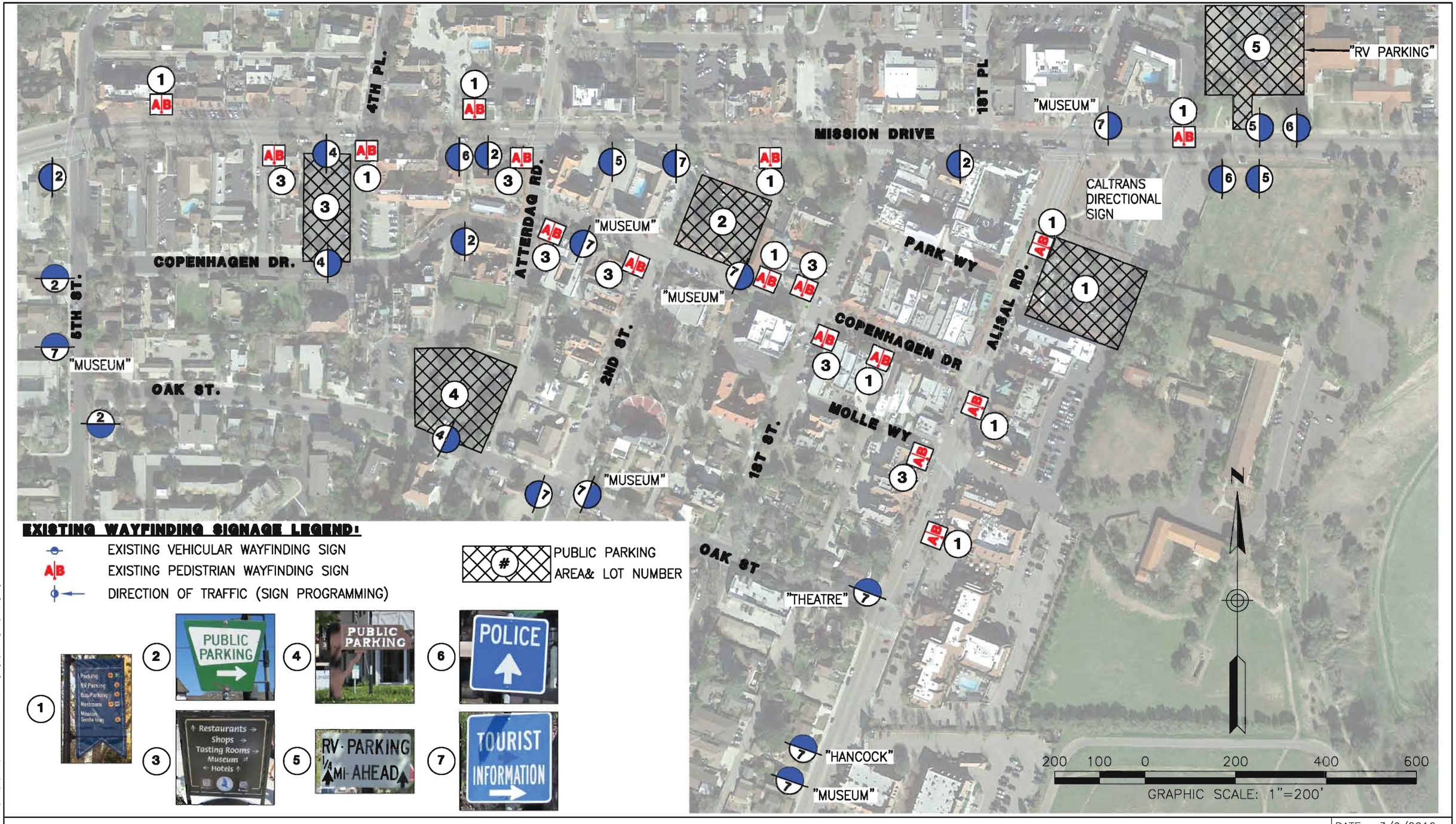
Vehicular Directional
VDIR.1$6,000
VDIR.2 $8,000
VDIR.3 $3,000

Park Identification
PARK 1 $4,500

Pedestrian Directional
PED.1 $1,800
PED.2 $3,500

Estimated Costs For Option A and B			
Base Bid Material/ Construction	Contingencies		Total
	Design (20%)	Survey/CM (15%)	
$173,000	$34,600	$25,950	**$233,550**

Rick Engineering recommends a complete signage inventory as a part of the next phase of work in order to determine the exact number and placement of signage that will comprise the City's comprehensive wayfinding system.



EXISTING WAYFINDING SIGNAGE LEGEND:

- EXISTING VEHICULAR WAYFINDING SIGN
- A/B EXISTING PEDISTRIAN WAYFINDING SIGN
- DIRECTION OF TRAFFIC (SIGN PROGRAMMING)
- (#) PUBLIC PARKING AREA& LOT NUMBER

PROJECT NO. 17581

RICK ENGINEERING COMPANY
711 TANK FARM ROAD - SUITE 110
SAN LUIS OBISPO, CA 93401
805.544.0707
(FAX)805.544.2052

SOLVANG MISSION DRIVE
EXISTING WAYFINDING SIGNAGE INVENTORY
FIGURE # 1

DATE:	3/9/2016
DRAWN BY:	KCS
CHECKED BY:	KLD
SCALE:	1"=200'
SHEET	1 OF 3

WAYFINDING LEGEND:

- (#) PUBLIC PARKING AREA & LOT NUMBER
- (5) VETERANS HALL & CITY LIBRARY
- (6) MISSION SANTA INES
- (7) VISITOR CENTER
- (8) SOLVANG PARK
- (9) HANS CHRISTIAN ANDERSEN PARK
- (10) ELVERHOJ MUSEUM OF HISTORY & ART
- (11) HANS CHRISTIAN ANDERSEN MUSEUM
- (12) SOLVANG VINTAGE MOTORCYCLE MUSEUM
- (13) WILDLING MUSEUM OF ART & NATURE
- (14) PUBLIC RESTOOMS
- (15) SOLVANG FESTIVAL THEATER
- (16) SUNNYFIELD PARK

PROJECT NO. 17581

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711 TANK FARM ROAD - SUITE 110
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805.544.0707
(FAX)805.544.2052

SOLVANG MISSION DRIVE POINTS OF INTEREST FIGURE # 2

DATE:	3/9/2016
DRAWN BY:	KCS
CHECKED BY:	KLD
SCALE:	1"=200'
SHEET	2 OF 3

SITE MAP LEGEND:

1 SOLVANG VILLAGE CENTER 4 MILES ↑

2 SOLVANG VILLAGE CENTER 0.5 MILES ↑

3 SOLVANG VILLAGE CENTER 0.5 MILES ↑

4 SUNNY FIELD PARK 0.4 MILES ←

5 SOLVANG VILLAGE CENTER 0.5 MILES →

PROJECT NO. 17581

RICK ENGINEERING COMPANY

711 TANK FARM ROAD - SUITE 110
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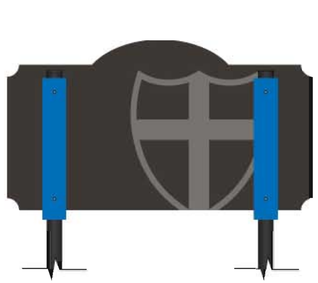
805.544.0707
(FAX)805.544.2052

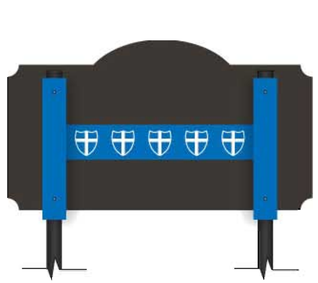
SOLVANG SITE MAP
PROPOSED DOWNTOWN ENTRY WAYFINDING SIGN LOCATIONS
FIGURE # 3

DATE:	3/9/2016
DRAWN BY:	KCS
CHECKED BY:	KLD
SCALE:	NTS
SHEET	3 OF 3



VDIR.1
Back View

OR



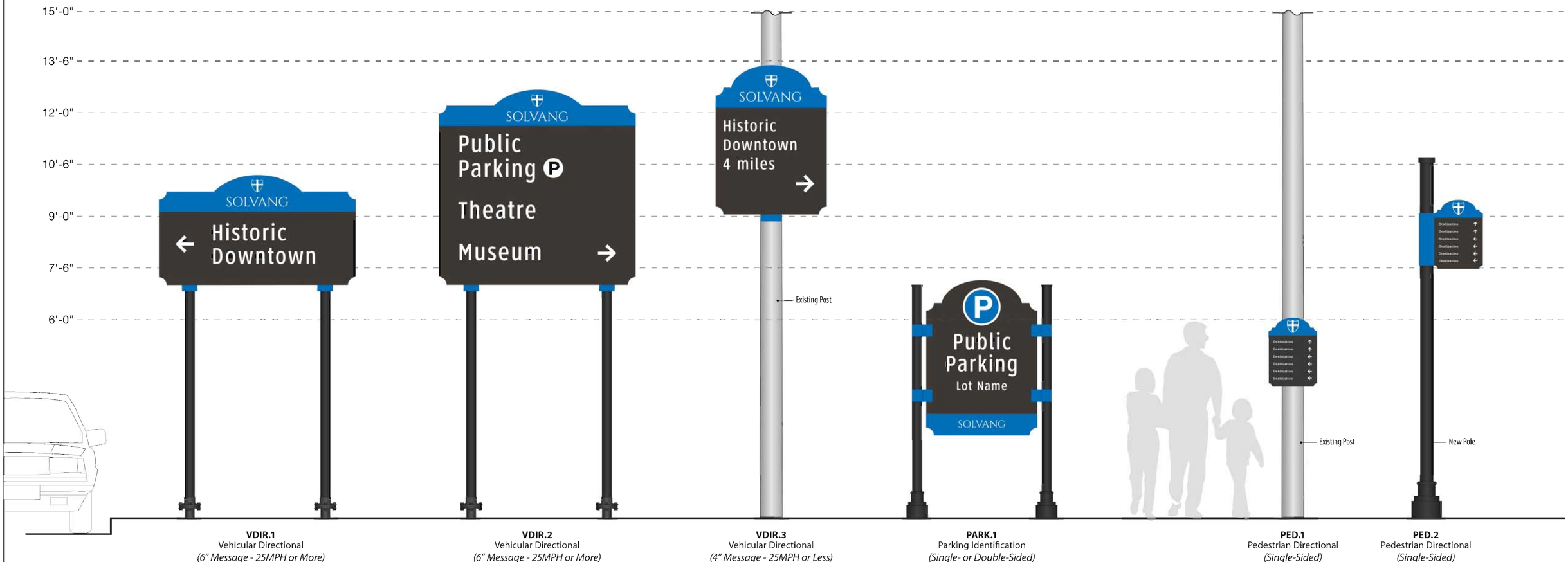
VDIR.1
Back View

PARK.1
Back View

PED.1
Back View

SOLVANG
SANTA YNEZ VALLEY, CALIFORNIA

Inspriation Images



VDIR.1
Vehicular Directional
(6" Message - 25MPH or More)

VDIR.2
Vehicular Directional
(6" Message - 25MPH or More)

VDIR.3
Vehicular Directional
(4" Message - 25MPH or Less)

PARK.1
Parking Identification
(Single- or Double-Sided)

PED.1
Pedestrian Directional
(Single-Sided)

PED.2
Pedestrian Directional
(Single-Sided)

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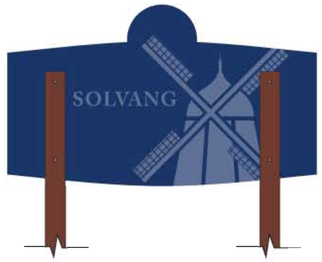
Proposed Wayfinding Sign Menu Option A

Figure # 4

SOLVANG, CA
October 1, 2015 | Schematic Design

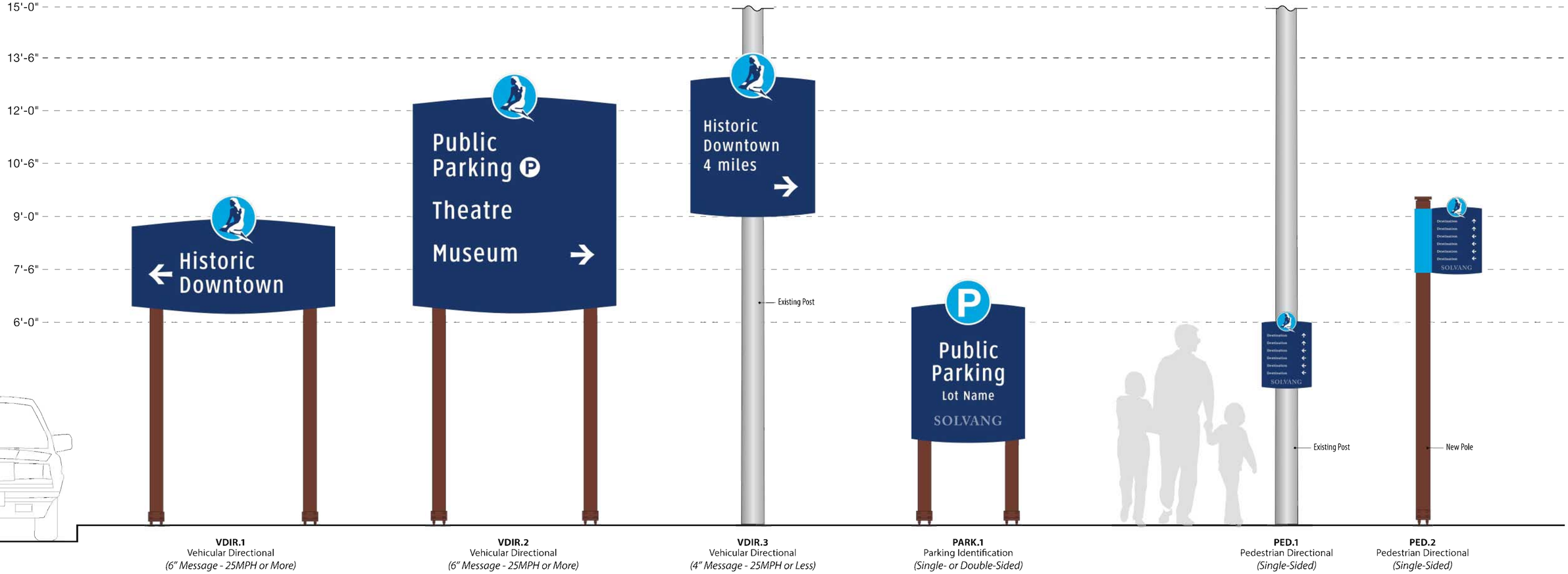


VDIR.1
Back View

PARK.1
Back View

PED.1
Back View

Inspriation Images



VDIR.1
Vehicular Directional
(6" Message - 25MPH or More)

VDIR.2
Vehicular Directional
(6" Message - 25MPH or More)

VDIR.3
Vehicular Directional
(4" Message - 25MPH or Less)

PARK.1
Parking Identification
(Single- or Double-Sided)

PED.1
Pedestrian Directional
(Single-Sided)

PED.2
Pedestrian Directional
(Single-Sided)

merje RICK ENGINEERING COMPANY

Proposed Wayfinding Sign Menu Option B

Figure # 5

SOLVANG, CA
October 1, 2015 | Schematic Design

TECHNICAL MEMORANDUM
TASK 2.6 - EMERGENCY VEHICLE SIGNAL PREEMPTION
SOLVANG MISSION DRIVE IMPROVEMENTS PLANNING

Date: July 14, 2016

To: Matt van der Linden, P.E.
Department of Public Works
City of Solvang
Phone No.: 805-688-5575

From: Bridget Elliott / Kelly Druse (RICK)
Phone No.: 805-544-0707

Project No.: 17581

Jurisdiction: City of Solvang

Subject: Summary of Emergency Vehicle Signal Preemption (EVP) Valley-Wide Outreach and Recommendations for the Mission Drive Corridor in Solvang. Memorandum includes the following:

1.) Introduction
2.) Discussion of EVP Valley-Wide Outreach and Responses
3.) EVP Recommendations and Costs
4.) Valley-Wide EVP Outreach Letter (sample)

1.0 INTRODUCTION

As requested by the City of Solvang, Rick Engineering Company (RICK) prepared a formal letter that the City sent out to other agencies to determine stakeholder interest in the installation of a valley-wide Emergency Vehicle Preemption (EVP) system along the Mission Drive Corridor in the Santa Ynez Valley. The letter originated from the Mission Drive Corridor Study, completed in October 2014. The City Council requested that staff conduct further analysis of an EVP system in order to improve vehicle response and move first responders through the Highway 246 (Mission Drive) corridor more efficiently. At that time, the City Council indicated they would only proceed with such a project with participation from multiple agencies within the valley. The letter outlined the existing conditions along this corridor, included the known EVP equipment currently in use at the vehicular and intersection level, compared EVP options, and estimated project costs. The letter also solicited participation from all stake holders and requested a written response.

This technical memorandum summarizes the responses received from the stake holders after the initial EVP Outreach Letter was sent in November of 2015. The City has undertaken this analysis with the intention of determining a system that could be implemented throughout the Santa Ynez Valley and provide a scalable solution capable of future expansion.

2.0 DISCUSSION OF EVP RESPONSES

The City of Solvang initiated a valley-wide due diligence process, where all stake holders in the emergency response community were contacted. The Outreach Letter was sent to the following agency in November of 2015:

1. American Medical Response (AMR)
2. California Department of Transportation (Caltrans)
3. California Highway Patrol
4. City of Buellton
5. City of Solvang
6. County of Santa Barbara Fire Department (SB County Fire)
7. County of Santa Barbara Public Works Department
8. County of Santa Barbara Sheriff Department
9. Santa Ynez Band of Chumash Indians (Chumash Casino)

Responses were received from all agencies with exception of the Santa Ynez Band of Chumash Indians and the Santa Barbara County Sheriff Office. Conversations in previous years with the Sherriff's office did indicate that they were interested in the project moving forward; however no response to the project was received.

The general response received from the municipal agencies was that the public works departments would be willing to install EVP systems at their respective intersections if there was an approved and budgeted request from their respective emergency response providers such as the Santa Barbara County Fire Department. AMR expressed interest in the project but was unable to share in the implementation cost. AMR would have to equip all ambulances in their Santa Barbara County fleet with the emitters because they rotate vehicles. They also expressed

future compatibility concerns. The CHP was not interested in participating in the project. They indicated that while there were first responder benefits to installing the EVP system on patrol cars, the logistical and financial issues related to the endeavor outweighed the benefits at this time.

The Santa Barbara County Fire Department has showed overwhelming support for the project and committed to sharing in the cost of the emitters for all fire engines in the Santa Ynez Valley. Since the initial response from Fire Chief Eric Peterson in December 2015, the Solvang Public Works Department has coordinated with Battalion Chief, Matt Farris and Station 30 Captain, Gordon O'Neil. A meeting was held on July 1, 2016, with Matt van der Linden, Bridget Elliott, Matt Farris, Gordon O'Neil, and Opticom authorized representative, Kimberly Raub. At the meeting it was determined that there was not enough support at this time to pursue a valley-wide installation of the EVP system. However, the City of Solvang and SB County Fire could move forward with a pilot project. The project would include the installation of on-board EVP emitters for the fire vehicles at all initial dispatch stations that could respond to an emergency in our area and the installation of the EVP Detector Systems at Solvang's four main intersections along Mission Drive (Hwy 246): Fifth Street, Atterdag Road, Alisal Road and Alamo Pintado Road.

3.0 EVP RECOMMENDATIONS AND COSTS

Originally Public Works Staff was interested in pursuing the GPS-based EVP system valley-wide. After looking into the existing infrastructure and speaking with SB County Fire we recommend moving forward with a smaller pilot project which would include the installation of the multimode Opticom Infrared System, with the capability to upgrade to a GIS-based system in the future. DDL Traffic, Inc. is the local authorized vendor for the Opticom EVP System. Below are additional reasons the Staff recommends proceeding specifically with the Opticom EVP system:

- The Opticom Model 764 Multimode Phase provides system flexibility, because it can detect either the optical-based or the GPS-based emitters.
- The SB County Fire already has 21 engines equipped with Opticom infrared emitters.
- Opticom is the preferred system by the SB County Fire because it is easy to use and they are familiar with operating and maintaining the system.
- The Opticom EVP System is currently being used by the City of Santa Maria Fire Department with great success.
- DDL Traffic supplies and installs the equipment which would save on construction markup cost and streamline the project delivery.
- All new Caltrans traffic light systems are required to be Opticom EVP unit ready.
- Opticom has over 40 years of experience in more than 3,000 cities.

The EVP system pilot project will cost approximately $60,000. The project would include the purchase and installation of the Opticom Model 764 Multimode Phase Selectors by DDL Traffic. The four intersections in Solvang would be equipped with Opticom detectors and on-board emitters would be installed on fifteen fire vehicles located in Buellton, Solvang and Santa Ynez. Santa Barbara County Fire Department has agreed to split the cost of the project with the City of Solvang. The City would need to budget $30,000 to implement the project.

City of Solvang
Budget Adjustment Request

Agenda Item	MO/YR	Number

Dept: PW - Engnieering Division

Revenue Adjustments

Decrease/ Increase	Account/ Project Name	Fund	Dept	Prog.	Object	Reason for Transaction	Current Budget	AMOUNT Decrease	AMOUNT Increase	Revised Budget
										0
										0
										0
										0
							$ -	$ -	$ -	$ -

Total Revenues Increase (Decrease) $ -

Expense Adjustments

Decrease/ Increase	Account/ Project Name	Fund	Dept	Prog.	Object	Reason for Transaction	Current Budget	AMOUNT Decrease	AMOUNT Increase	Revised Budget
										0
Increase	Mission Drive Improvements	200	2600	00	70936	Add traffic signal preemption devices	60,000		60,000	120,000
										0
										0
							$ 60,000	$ -	$ 60,000	$ 120,000

Total Expense Increase (Decrease) $ 60,000

EXPLANATION:

As approved by City Council, add traffic signal preemption devices at 4 signals along Mission Drive.

Prepared By: Matt van der Linden	Date 7/18/16
Admin. Services Director Approval:	Date
City Manager Approval:	Date
City Council Approval:	Date
Posted by:	Date

July 19, 2016

ADVANCE CALENDAR

Below is an Advance Calendar of anticipated agenda items. The dates are tentative but reflect an overview of items to come. Items on this advance calendar are subject to change. Final agendas will be available on-line and at City Hall at least 72 hours prior to the meeting date.

MEETING DATE	AGENDA ITEM	ACTION
AUGUST 8, 2016	Review and Adopt the Investment Policy	Adopt
	Notice of Completion, Vets Hall Lead Abatement & Windows	Approve
	Live Streaming of Council Meetings Proposal	
	Sphere of Influence/Annexation Study Update	
	2nd Reading of Massage Ordinance Amendment	Adopt
AUGUST 22, 2016	Direction to Voting Delegate on LOCC Resolutions	Review
	WWTP Capacity & Brine Discharge Prohibition	Adopt
*Public Notice Required	10-Year Capital Improvement Program	Approve
SEPTEMBER 12, 2016	Tajiguas Resource Recovery Project Status Report	
SEPTEMBER 26, 2016	Mayor for a Day- Art Kaslow	N/A
	Extension of Vacation Rentals Urgency Ordinance	Approve
OCTOBER 2016	Fiscal Year 2015-16 Financial Review	Review
NOVEMBER 2016	Annual Water and Sewer Rate Increases	Consider
	Halloween Haunted House Donation Acceptance	Accept
DECEMBER 2016	Results of Election and Installation of New Mayor/Councilmembers	Accept
	Appointment to Boards and Commissions	Approve
JANUARY 2017		
FEBRUARY 2017	2015-16 Comprehensive Annual Financial Report (CAFR)	
MARCH 2017		
*Public Notice Required	Measure A 5-Year Local Program of Projects (2nd Mtg in March 2017)	
	Solvang Mesa LLMD Resolution of Intent (1st Mtg in March 2017)	
APRIL 2017		
*Public Notice Required	Solvang Mesa LLMD Resolution of Assessment (1st Mtg in Apr 2017)	
MAY 2017		

**Public Notice Required*	Amend Appropriation Limit for FY 2016-17 (2nd Mtg in May)	Approve
Unscheduled		
	Resolution of Intent re: Installment Sale Water Revenue Bonds	
	Ordinance Amendment-Water Softeners & Snowbird Meter Fees	
	Model Water Efficient Landscape Ordinance	
	Storm Water Resource Plan	
	Sphere of Influence/Annexation Study	
	Marijuana Cultivation & Delivery Ordinance First Reading	
**Public Notice Required*	Building Code/Fee revisions, California Code Check Agreement	
	Wireless Telecommunication Facilities Regulations	
	Findings of SYCSD Recycled Water Planning Study	
	Resolution of Support for SBCAG Regional Bike & Ped Plan	
	NPDES Permit Trash Amendment Summary	
	Conflict of Interest Code Review (June 2018)	Discuss
	Warrant Register (1st meeting of each month)	*Approve*
	Sheriff's Department Report (2nd meeting of each month)	*Receive*
	SCVB Report (2nd meeting of each month & biennial report)	*Receive*
	Fire Department Report (Quarterly)	*Receive*
	VisitSYV Report (Quarterly)	*Receive*