3/15/16
City Council Meeting

Handouts received after agenda posted

Traffic Study Report

State Route 41-Bush Street Interchange

February 2016

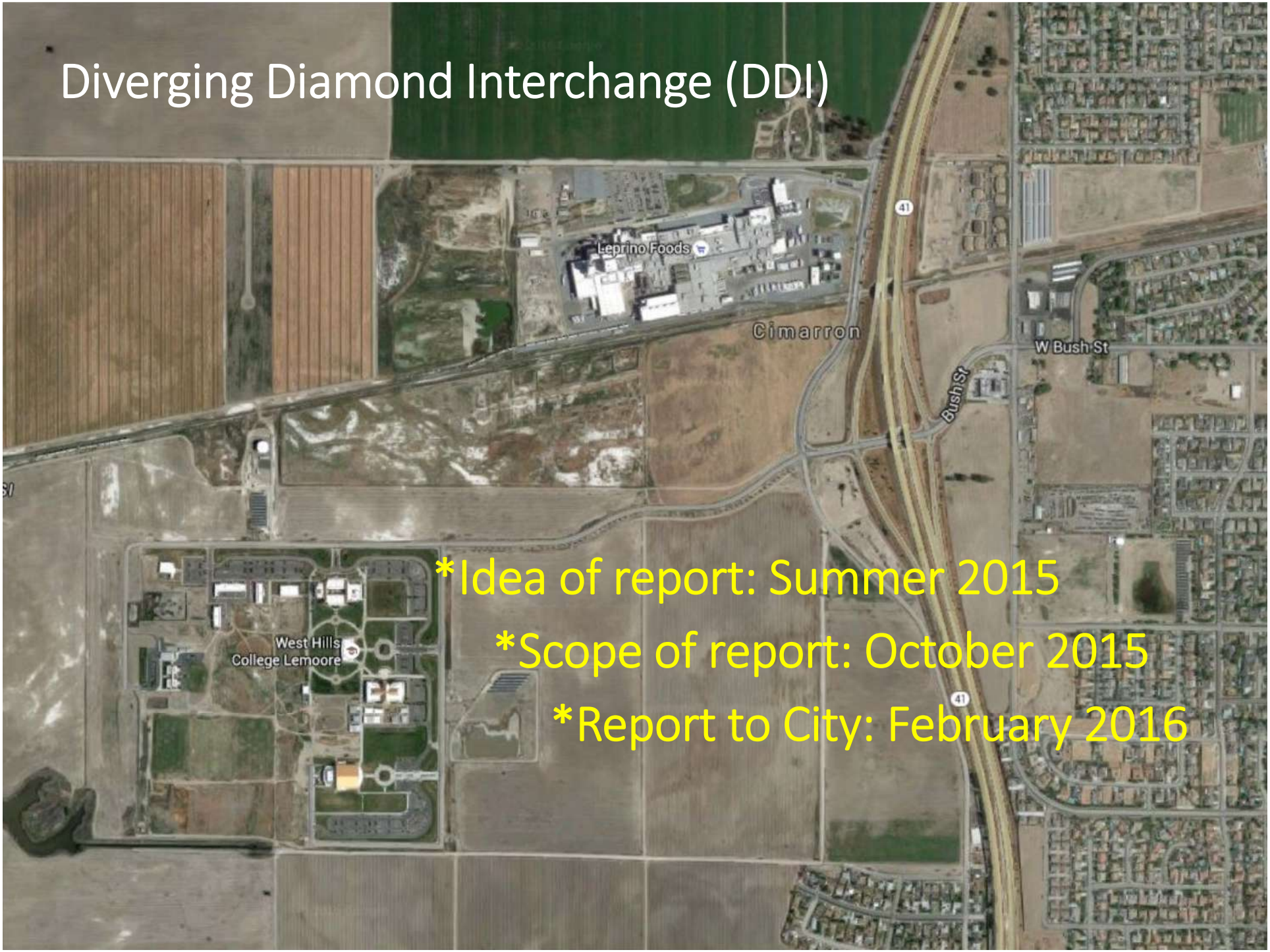
Scott Friesen, Caltrans Project Manager

John Liu, Deputy District Director
Maintenance and Operations

District 6 (Fresno, Madera, Tulare, Kern and Kings Counties)

District 6 Office of Traffic operations

Diverging Diamond Interchange (DDI)



*Idea of report: Summer 2015

*Scope of report: October 2015

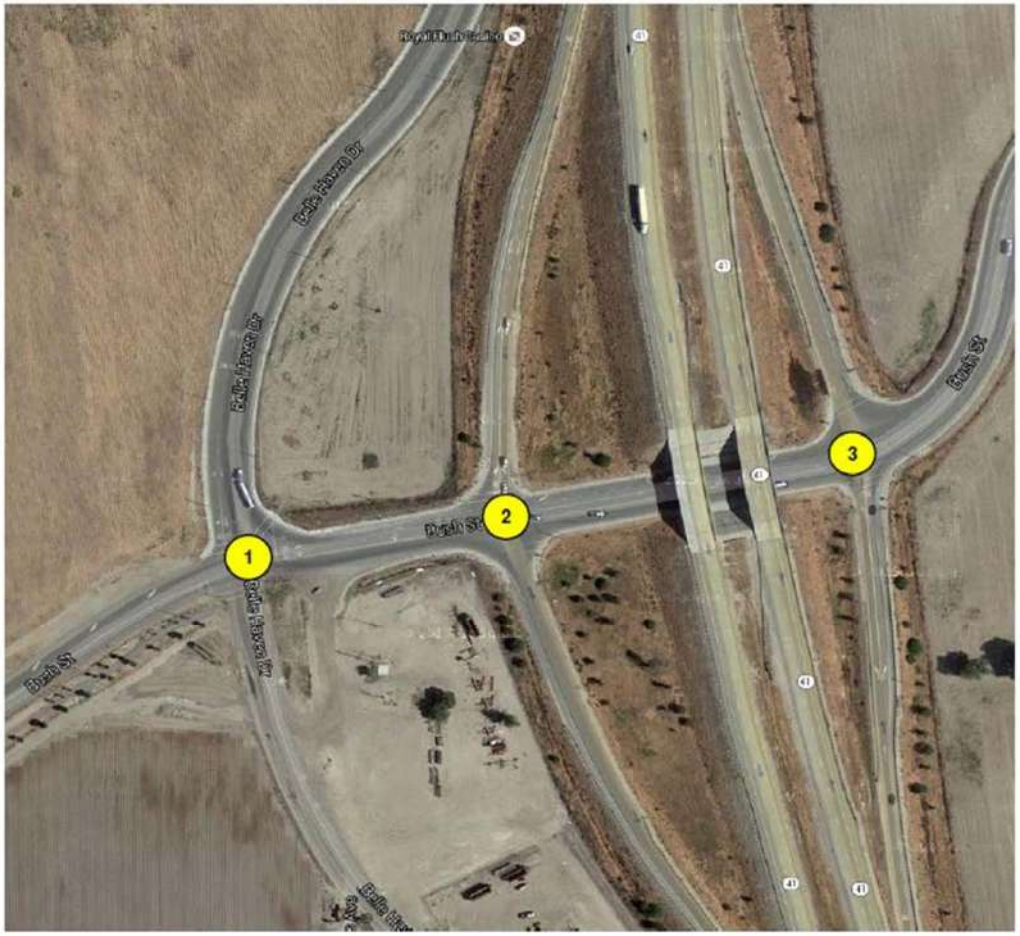
*Report to City: February 2016

SR 41 and Bush Street Interchange, Kings County (PM 40.9/41.0)

Existing (2015) and Forecast (2020, 2030 and 2040) Traffic Intersection Turning Movement Volumes

06-0U850

Caltrans
Technical Planning
November 2015



	1 Belle Haven Dr/ Bush St		2 SR 41 SB Ramps/ Bush St		3 SR 41 NB Ramps/ Bush St	
2015 Existing Volumes	79 (22) ← 2 (1) ← 54 (89)	63 (27) ← 462 (254) ← 14 (27)	74 (50) ← 0 (0) ← 84 (103)	0 (0) ← 465 (258) ← 272 (116)	0 (0) ← 0 (0) ← 0 (0)	131 (81) ← 613 (260) ← 0 (0)
	14 (18) → 177 (359) → 5 (10) →	7 (10) → 2 (1) → 39 (32) →	0 (0) → 190 (331) → 80 (149) →	0 (0) → 0 (0) → 0 (0) →	61 (70) → 193 (364) → 0 (0) →	124 (94) → 0 (0) → 95 (215) →
2020 Forecast Volumes	86 (38) ← 4 (5) ← 69 (106)	80 (59) ← 527 (324) ← 34 (58)	99 (67) ← 0 (0) ← 89 (119)	0 (0) ← 542 (374) ← 295 (137)	0 (0) ← 0 (0) ← 0 (0)	163 (99) ← 693 (388) ← 0 (0)
	16 (26) → 214 (431) → 10 (17) →	16 (16) → 7 (7) → 66 (63) →	0 (0) → 244 (421) → 106 (179) →	0 (0) → 0 (0) → 0 (0) →	92 (86) → 241 (454) → 0 (0) →	144 (123) → 0 (0) → 122 (266) →
2030 Forecast Volumes	99 (69) ← 9 (12) ← 100 (141)	114 (122) ← 657 (464) ← 75 (121)	150 (100) ← 0 (0) ← 99 (150)	0 (0) ← 697 (606) ← 341 (178)	0 (0) ← 0 (0) ← 0 (0)	228 (136) ← 853 (603) ← 0 (0)
	19 (43) → 287 (576) → 19 (31) →	33 (28) → 16 (18) → 121 (124) →	0 (0) → 351 (600) → 157 (240) →	0 (0) → 0 (0) → 0 (0) →	113 (118) → 336 (633) → 0 (0) →	185 (181) → 0 (0) → 177 (368) →
2040 Forecast Volumes	113 (100) ← 14 (20) ← 131 (175)	148 (185) ← 787 (604) ← 116 (183)	200 (134) ← 0 (0) ← 109 (182)	0 (0) ← 851 (838) ← 387 (219)	0 (0) ← 0 (0) ← 0 (0)	292 (173) ← 1013 (818) ← 0 (0)
	23 (60) → 360 (720) → 29 (45) →	50 (40) → 25 (30) → 175 (186) →	0 (0) → 458 (780) → 208 (300) →	0 (0) → 0 (0) → 0 (0) →	135 (150) → 432 (812) → 0 (0) →	225 (239) → 0 (0) → 231 (470) →

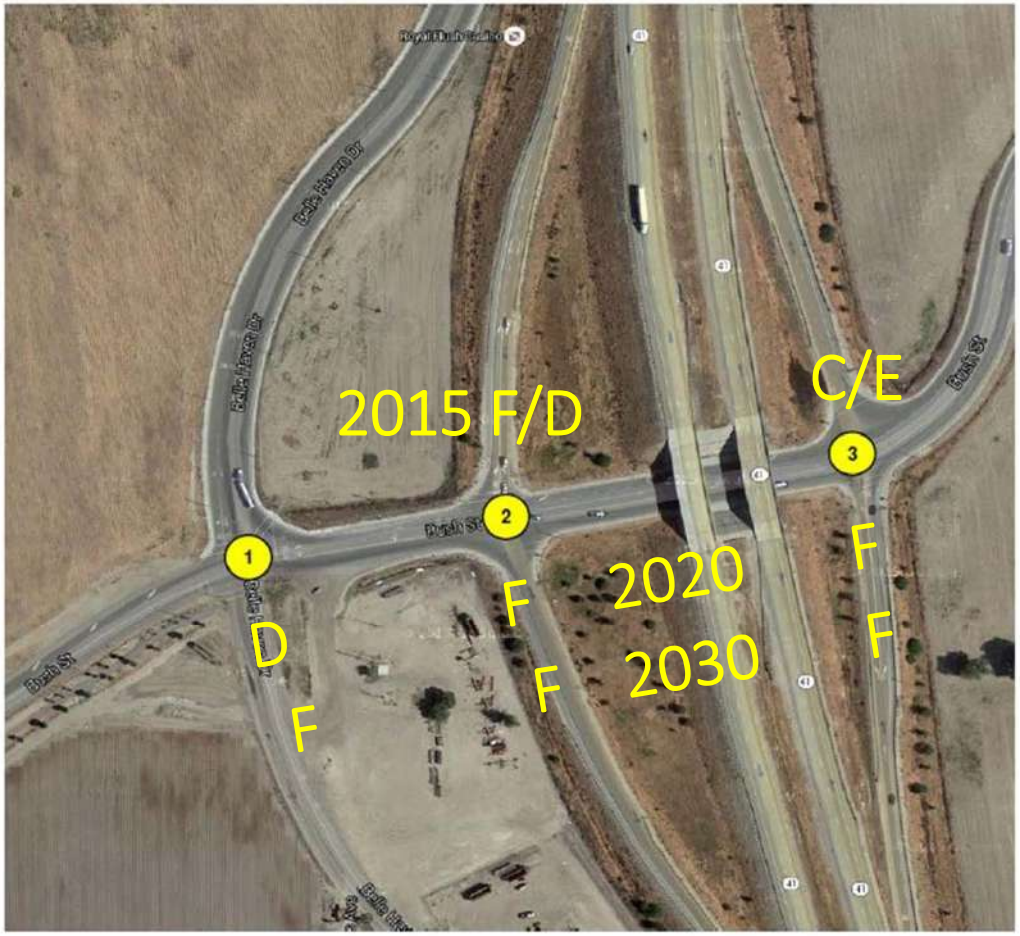

Leprino Foods
Cimarron
W Bush St
Bush St
41
West Hills
College Lemoore
41

SR 41 and Bush Street Interchange, Kings County (PM 40.9/41.0)

Existing (2015) and Forecast (2020, 2030 and 2040) Traffic Intersection Turning Movement Volumes
06-0U850

Caltrans
Technical Planning
November 2015

Level of Service – Graded A thru F



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3 Project Alternatives Studied:

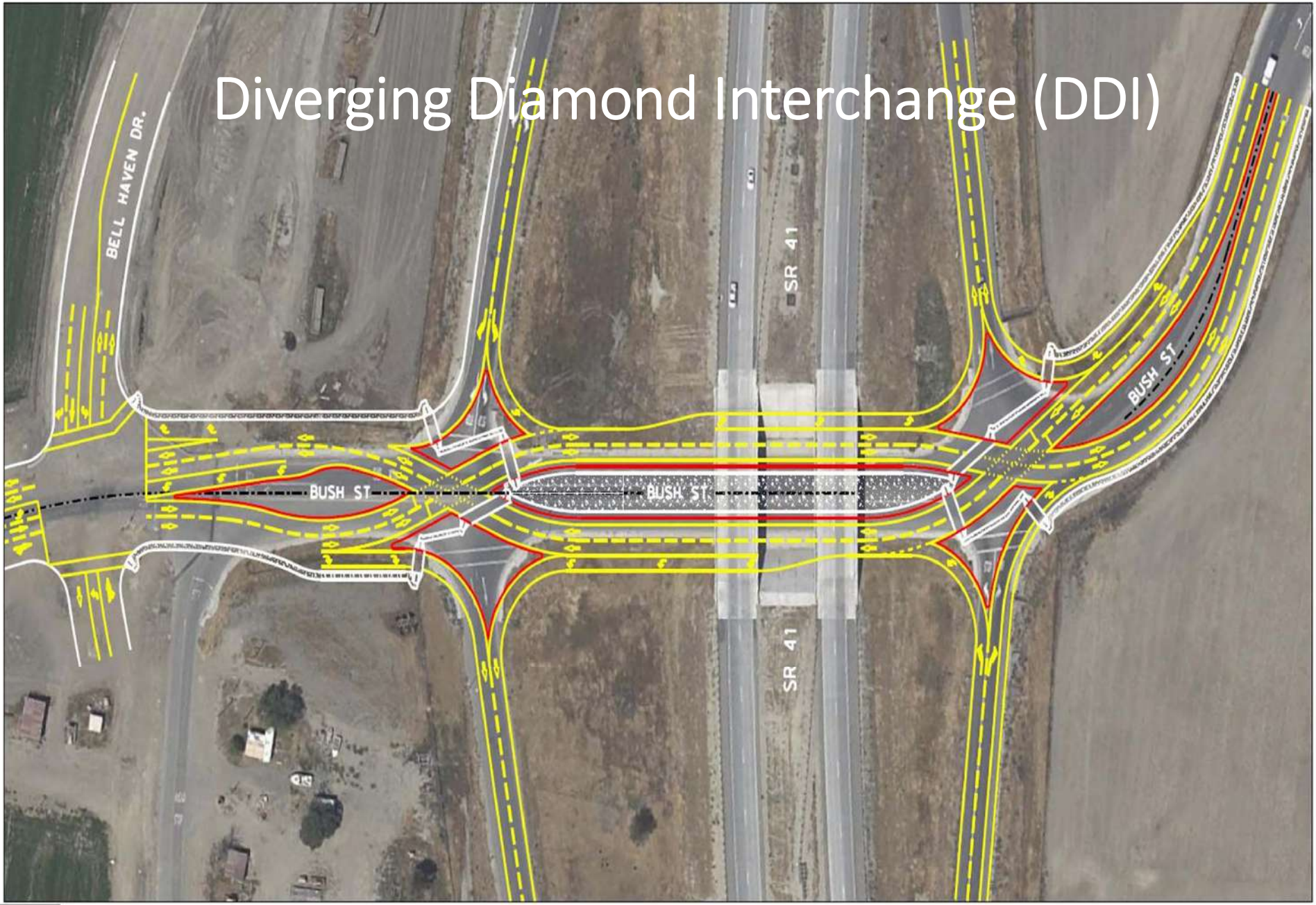
*Diverging Diamond Interchange (DDI)

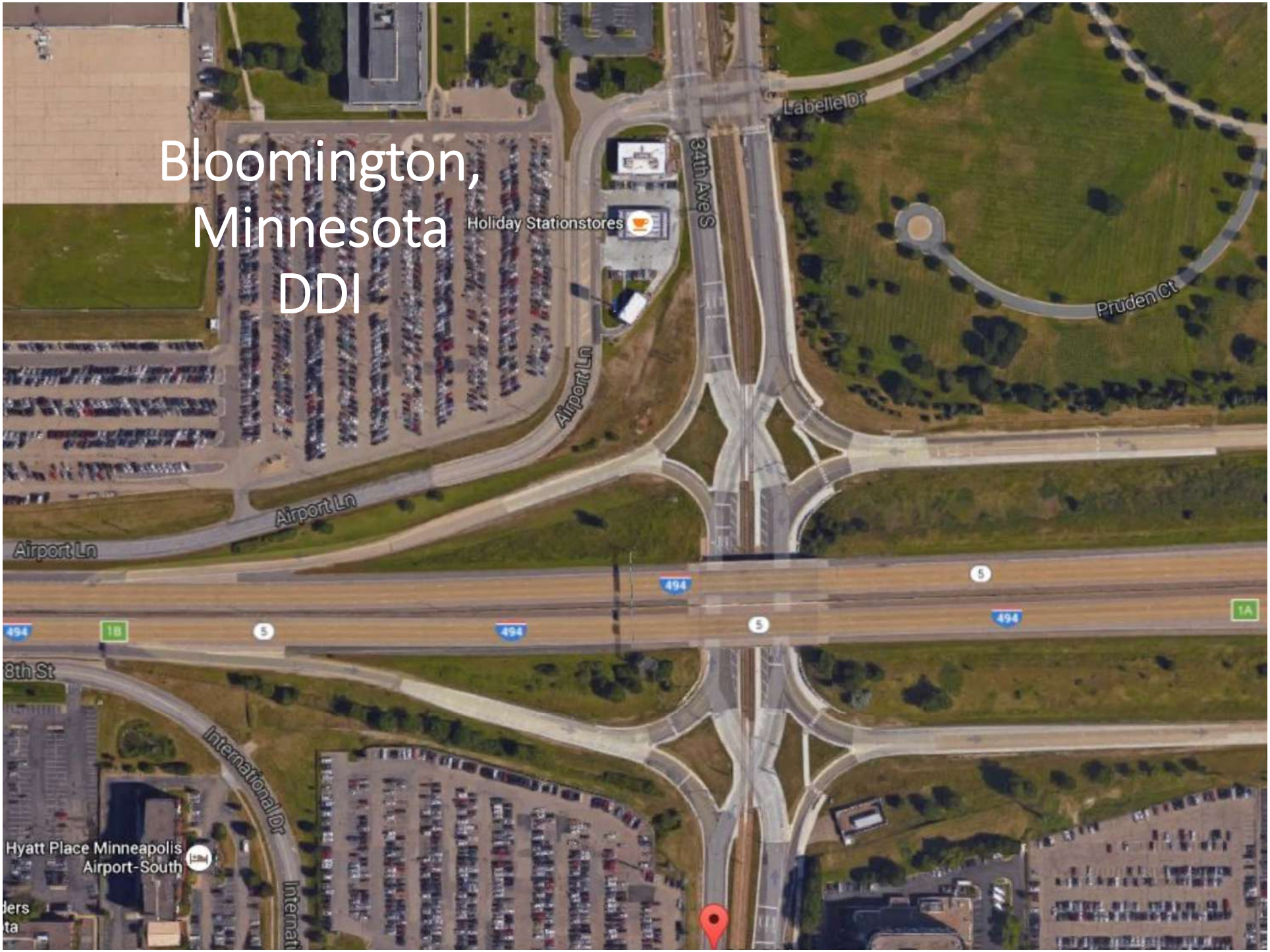
*Roundabouts

*Signalization & Widening

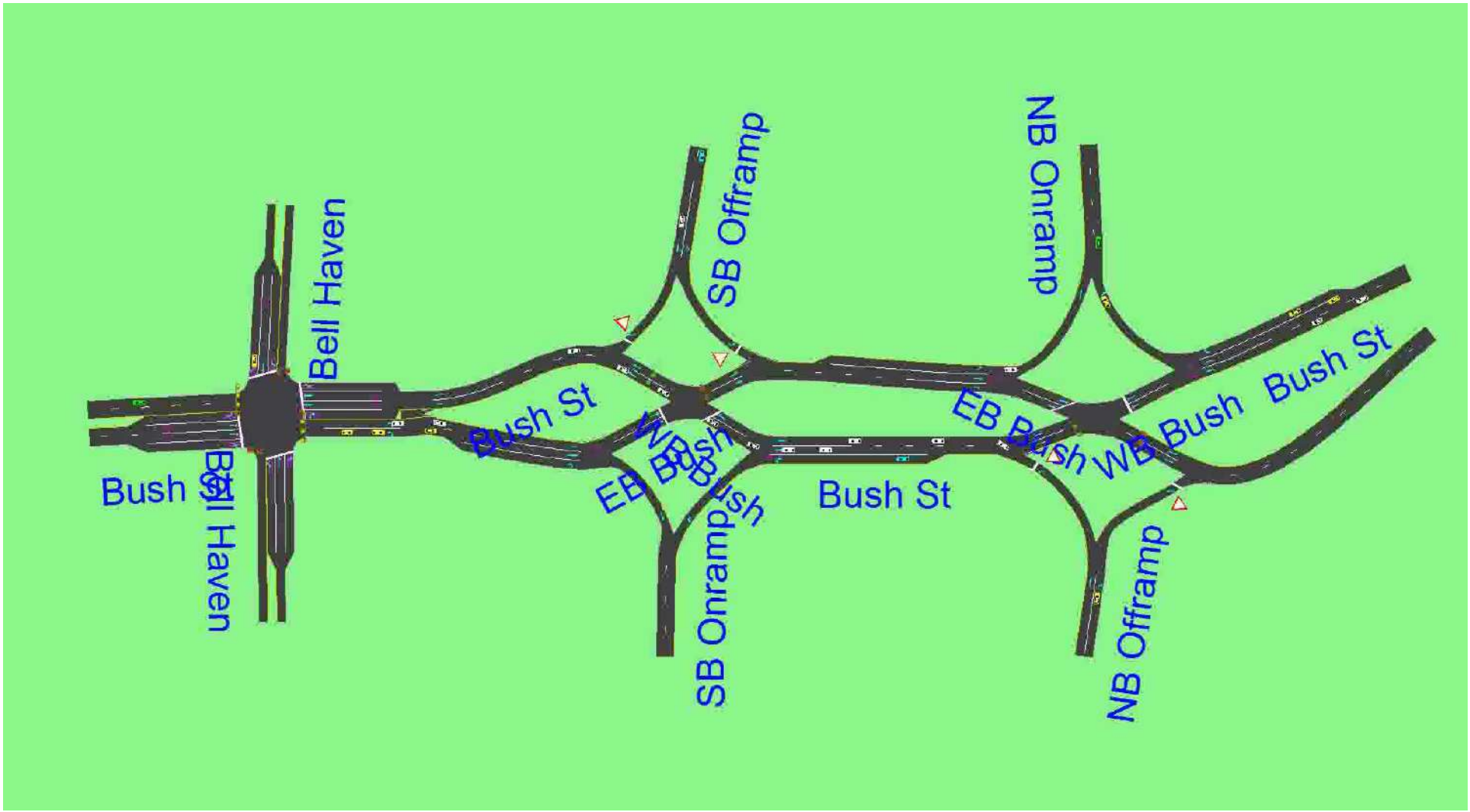
Figure 2

Diverging Diamond Interchange Concept Layout




Bloomington, Minnesota DDI
Holiday Stationstores
34th Ave S
Labelle Dr
Pruden Ct
Airport Ln
Airport Ln
Airport Ln
494
5
494
5
494
494
18
1A
8th St
International Dr
Hyatt Place Minneapolis Airport-South

2020 Traffic Model of DDI based on actual projected volumes

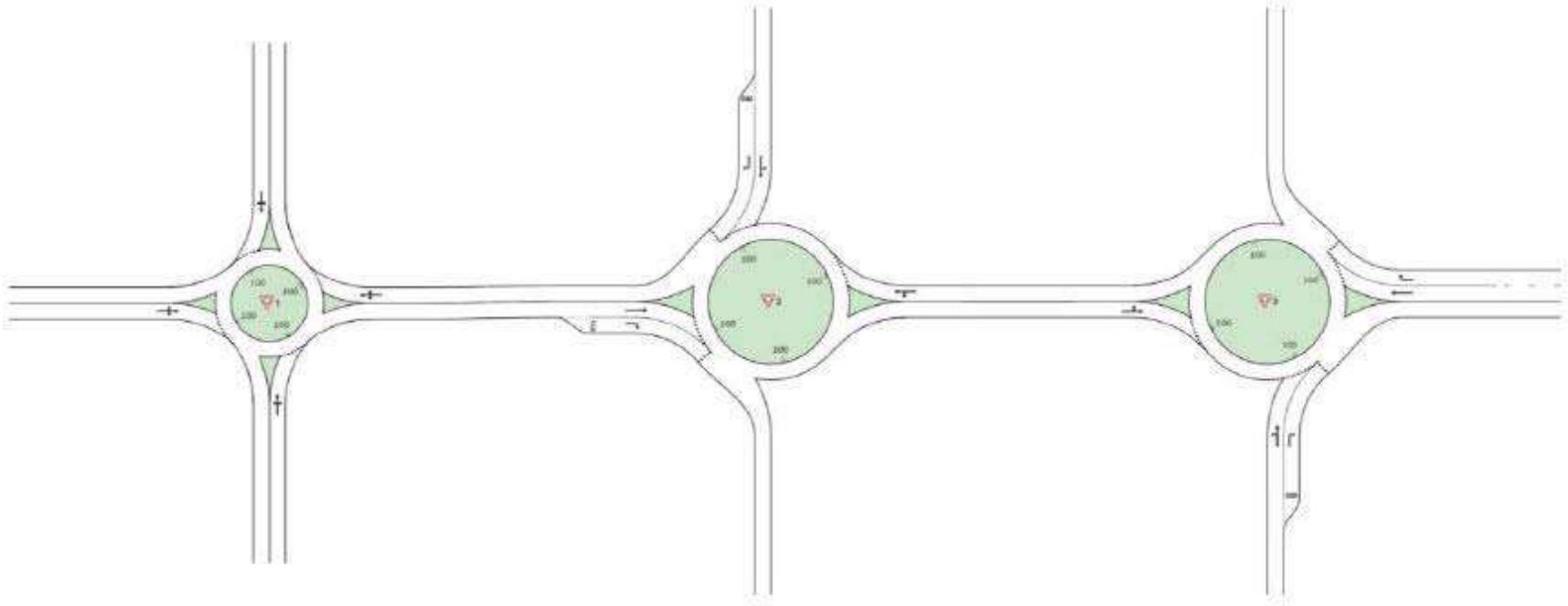


NETWORK LAYOUT

Network: 2020 AM

Figure 3

2020 Roundabout Concept Layout



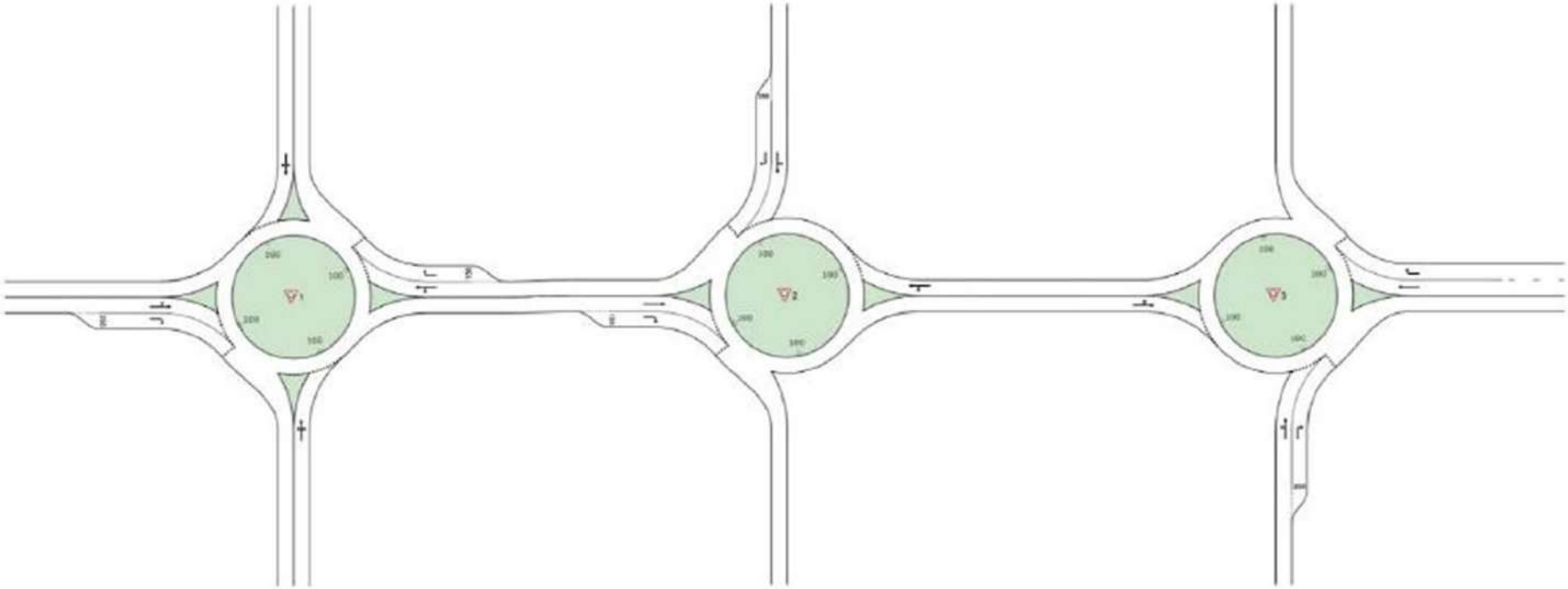
Roundabout Alternative

NETWORK LAYOUT

Network: 2030 AM

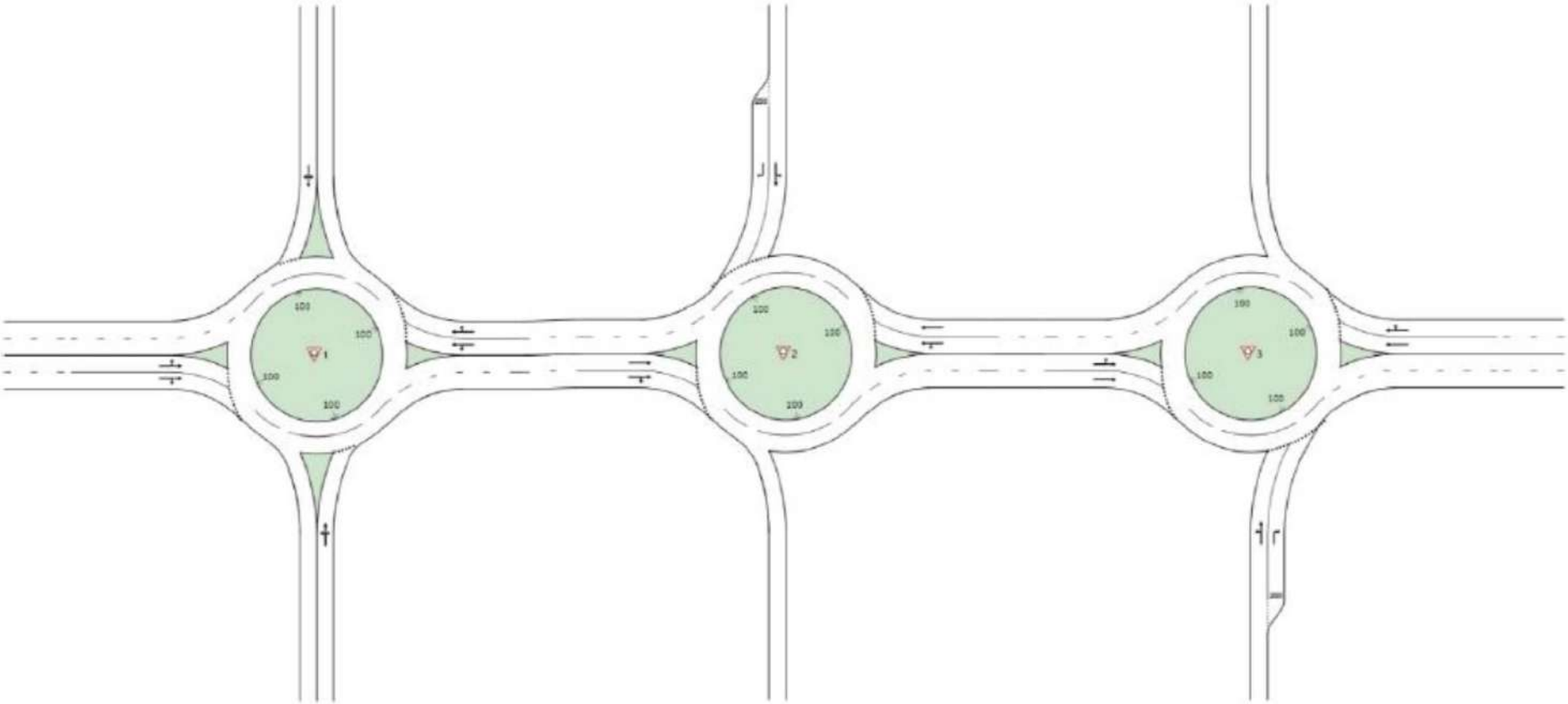
Figure 4

2030 Roundabout Concept Layout



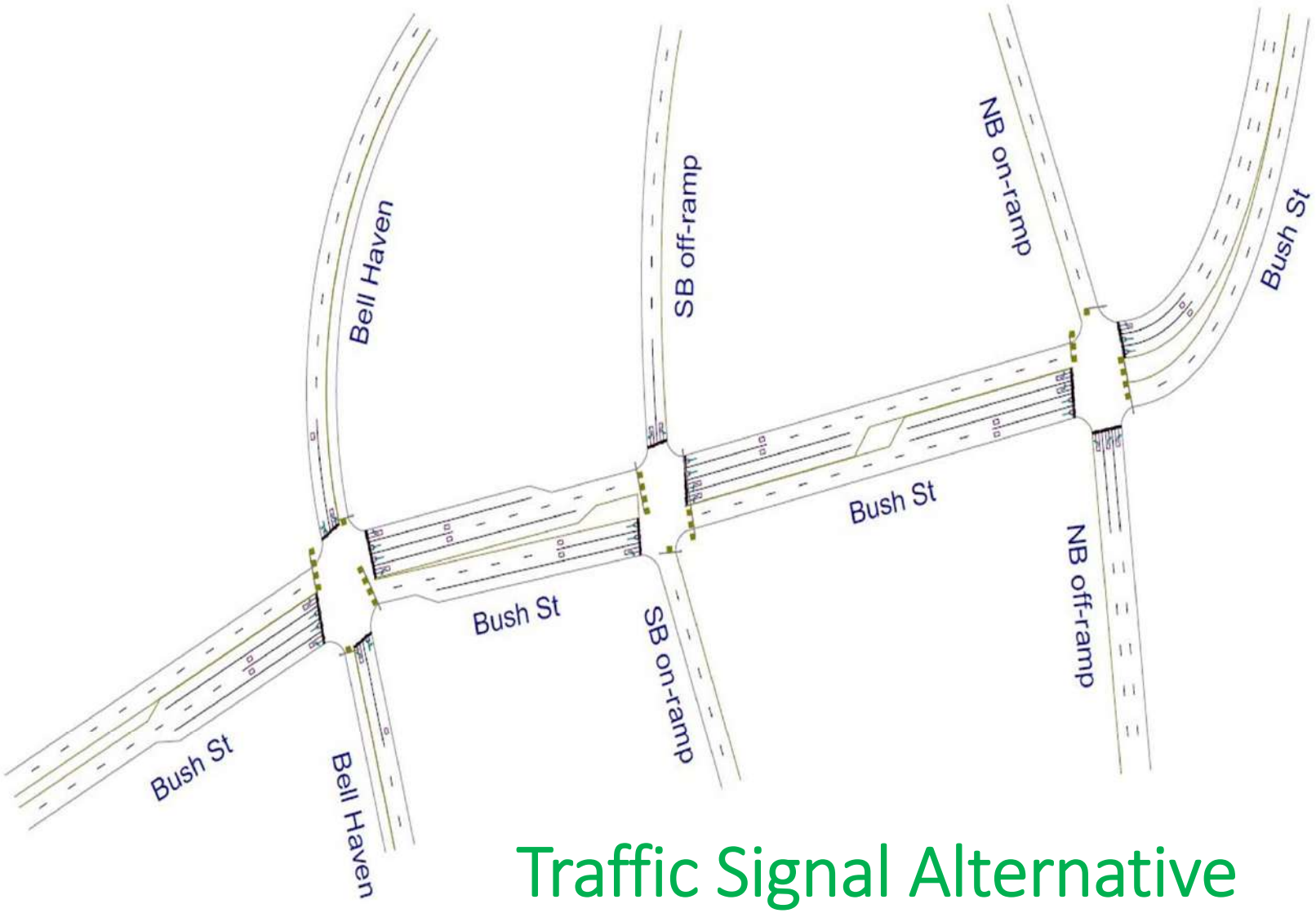
SITES IN NETWORK	
Site ID	Site Name
1	Intersection 1
2	Intersection 2
3	Intersection 3

Figure 5
2040 Roundabout Concept Layout



SITES IN NETWORK	
Site ID	Site Name
1	Intersection 1
2	Intersection 2
3	Intersection 3

Figure 6
Concept Layout - Traffic Signal with Roadway Widening



Projected Performance of Each Alternative

	No Build	DDI	Roundabout	***Signals
2020	D/F/F	B/B/B	A/A/A	B/C/B
2030	F/F/F	B/B/B	*B/B/B	B/C/B
2040	F/F/F	B/B/B	**B/B/B	C/C/C

*Additional right turn lanes added

**Additional lanes added

***Incremental improvements may be needed

Construction + Right of Way Estimates

DDI - $8 million

Roundabouts - $6 *

Traffic Signals - $6*

*Additional costs during project lifespan

Process for Caltrans Project

Project Study Report – analyze alternatives

~1 year / $150,000

Environmental Document – Env. studies

1 – 2 years for studies and alternative chosen

Design Phase – bid package

~2 years

Construction


NORTH
40
123

City of Lemoore Water Enterprise Workshop

Dan Bergmann
IGService
Dan@IGService.com
March 15, 2016

City of Lemoore Water Enterprise Workshop

Dan Bergmann
IGService
Dan@IGService.com
March 15, 2016

Water Enterprise Fund

The Water ***Enterprise Fund*** includes revenue, expenses, assets, water rates, water loans, and the cost of all needed improvements for the water system in Lemoore.

Other enterprise (or proprietary) funds are Wastewater, Solid Waste, and Golf Course.

These are *business operations* within City Operations.

The ***General Fund*** and all other Governmental Funds are separate, funded primarily by tax revenue.

Cost of Service Study (Prop. 218)

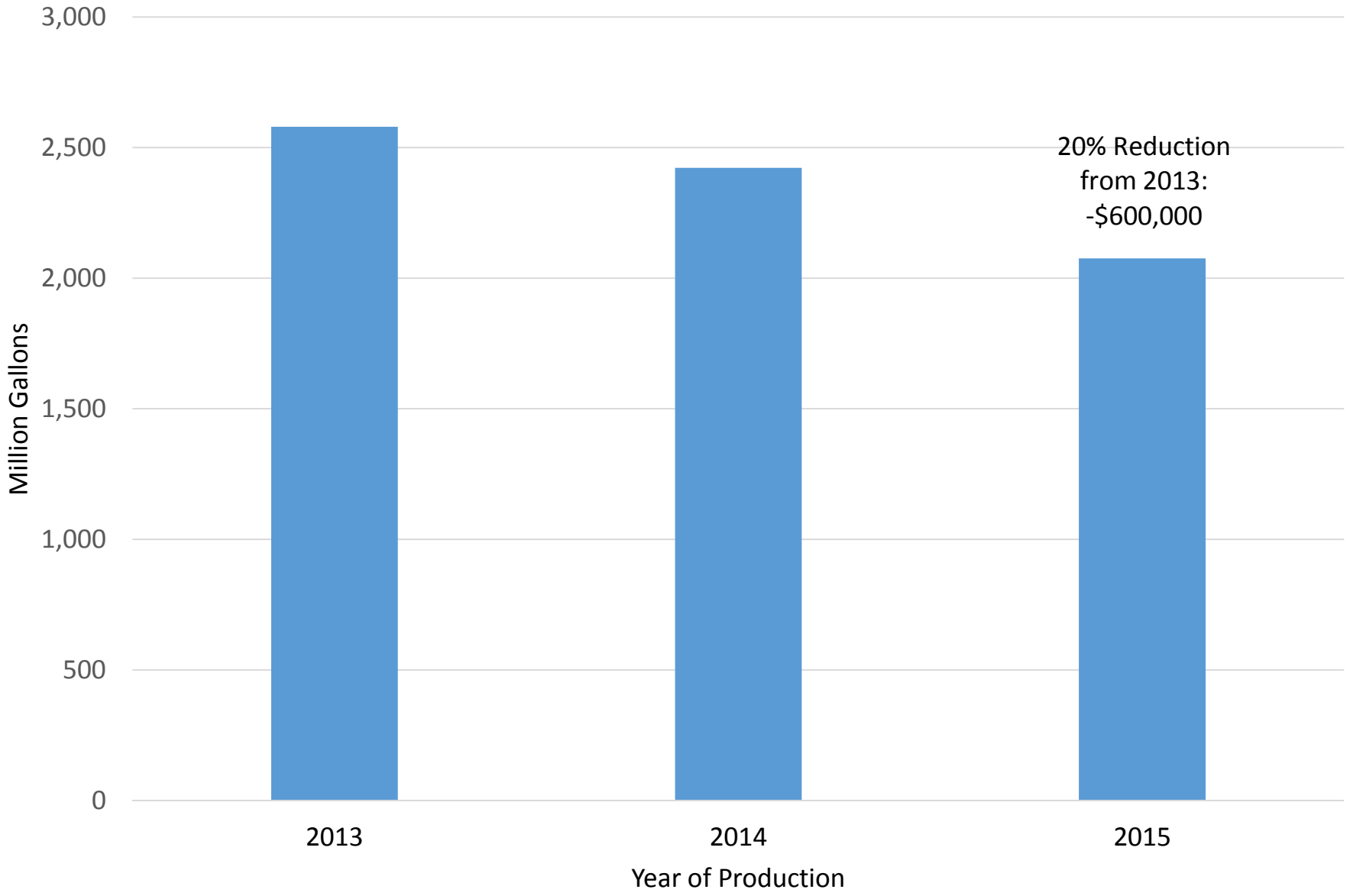
Rules:

1. May not charge a customer class more than it costs to serve them.
2. May not transfer revenue from an enterprise fund to another fund, unless there is a justified benefit to the enterprise fund.
3. May not charge tiered rates, unless you can justify costs associated with the higher tiered rates.

The Work

1. Evaluate existing rates, revenue, expense, and metering efficiency
2. Determine added cost for water system improvements
3. Determine customer classes
4. Community education and involvement
5. *Next Workshop:*
   - *Allocate operating costs to each customer class*
   - *Develop new rates (fixed monthly and volumetric)*

Annual Water Production and the Drought Factor



Less Costs More

The numerous costs to operate the water system are mostly fixed regardless of how much water is sold.

This means when ***less*** water is sold, each unit of water must ***costs more*** in order to cover the fixed costs.

This effect is magnified when fixed costs are increasing at the same time volumes are decreasing.

7.48 gallons = 1 Cubic Foot

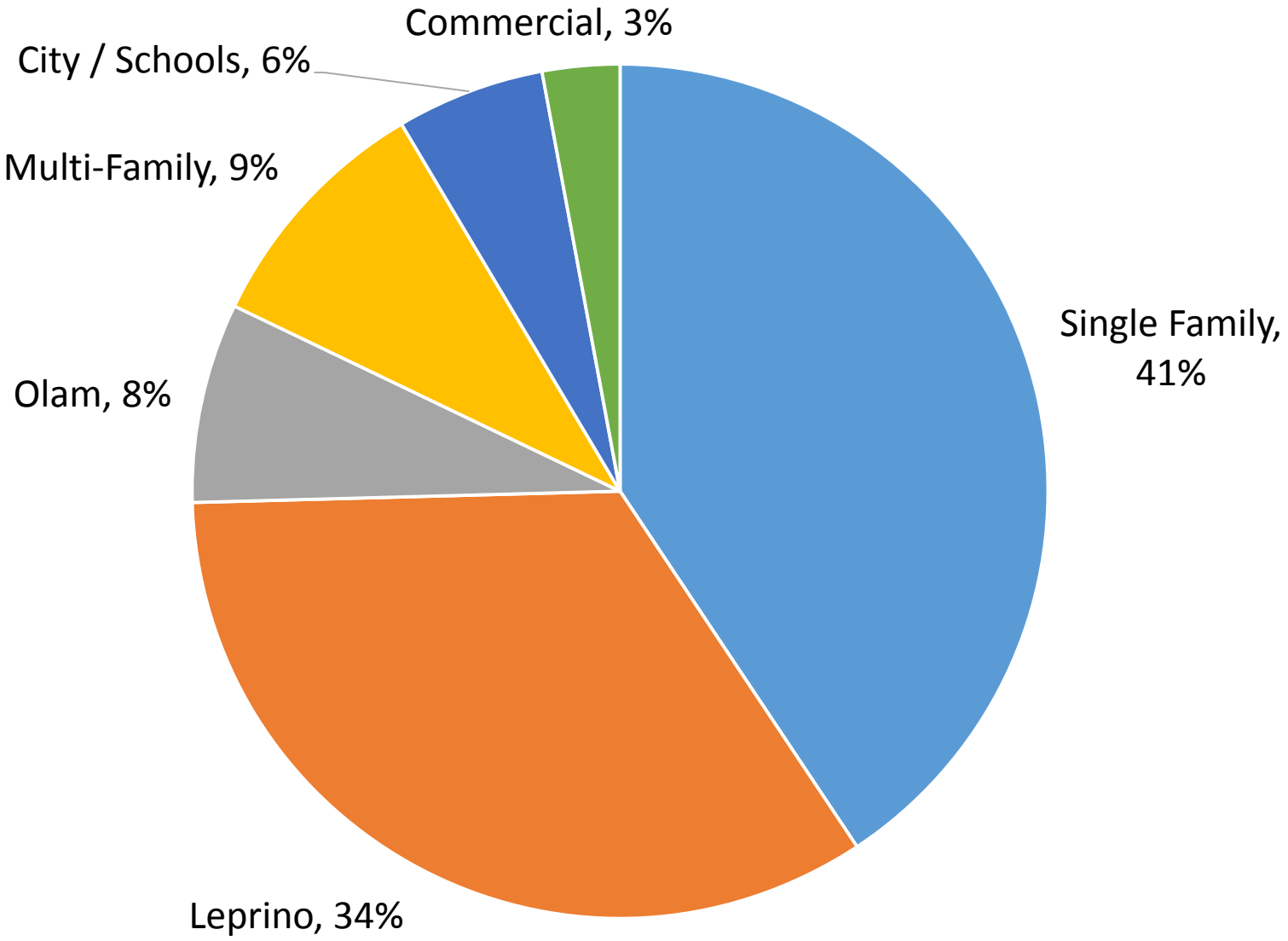
On your bill presently:

1 CCF “centum cubic feet” =

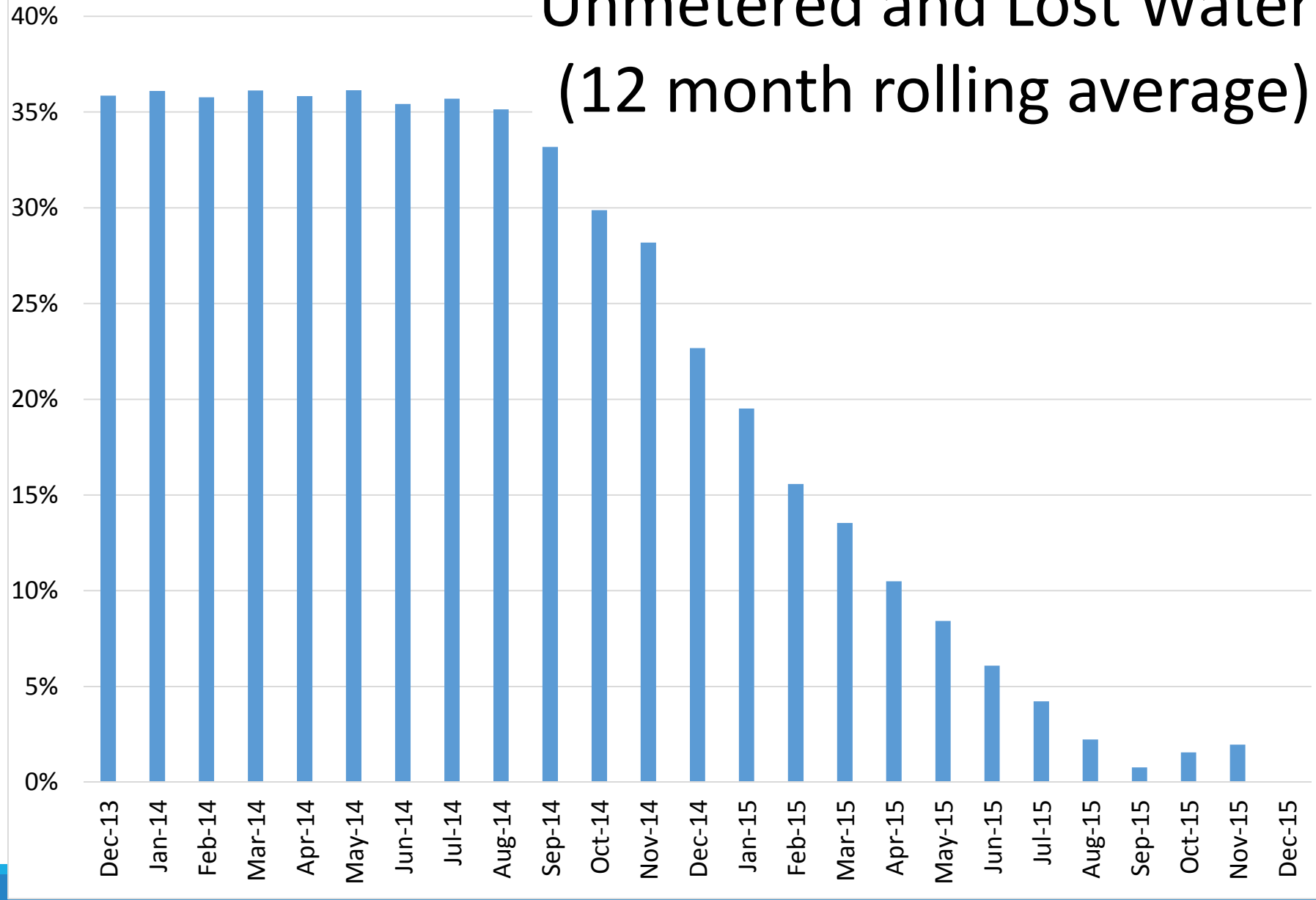
100 cubic feet =

748 gallons

2015 ALLOCATION OF WATER VOLUMES



Unmetered and Lost Water (12 month rolling average)



Existing Rate: Single Family

1. Minimum Charge: $13.20 per month

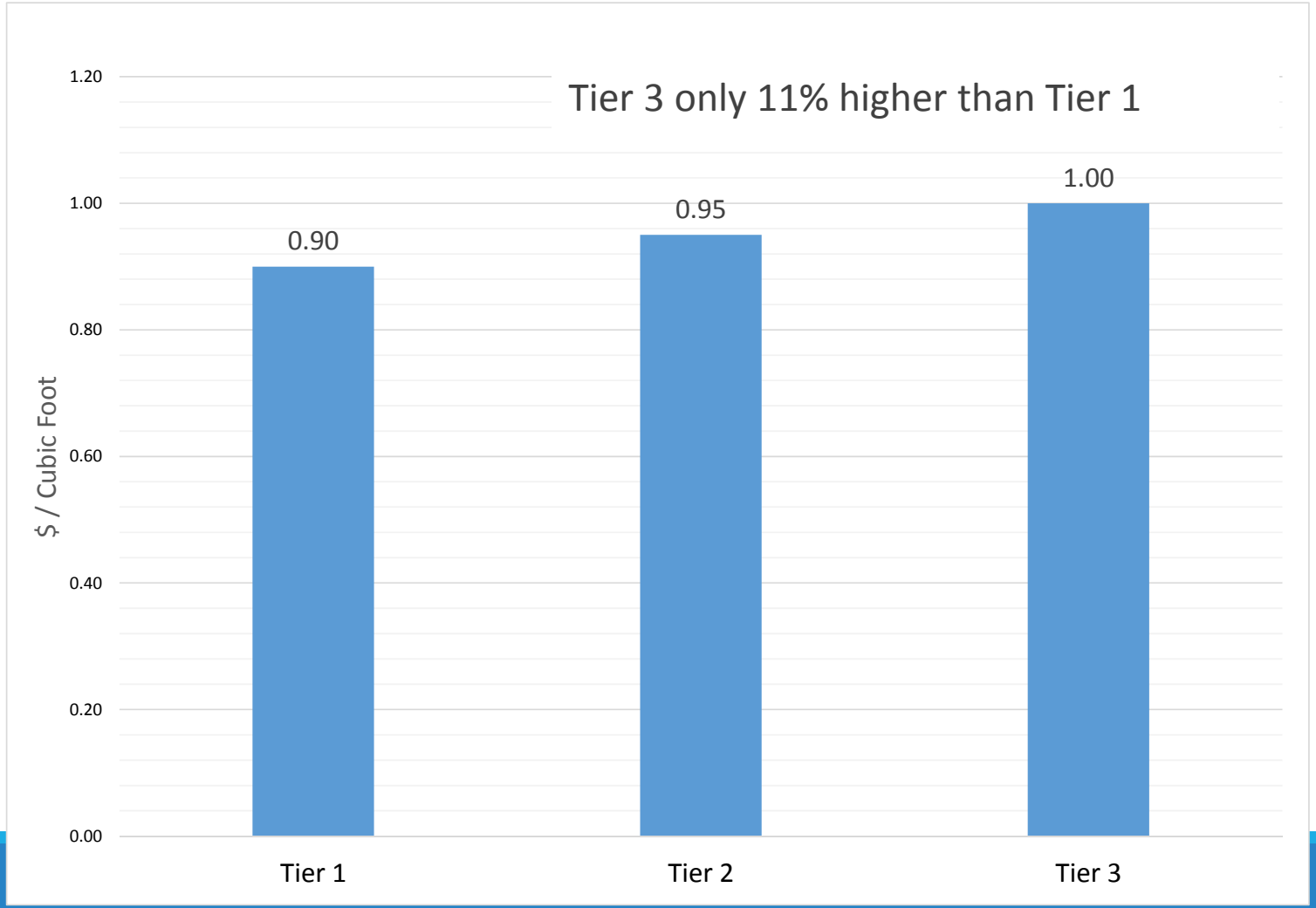
   Includes 700 cubic feet (5,236 gallons)

2. Next 2,800 cu ft (20,944 gal): $0.90 per hundred cu ft
3. Up to 5,600 cu ft (20,944 gal): $0.95 per HCF
4. Above 5,600 cu ft (47,124 gal): $1.00 per HCF

(City of Lemoore Resolution 2007-51)

Lemoore's August 2015 Single Family Average was 16,200 gallons

Existing Price Tiers



Single Family Summer Month: 15,000 gallons (Typical)

Minimum Monthly	$13.20
Usage above 700 cu ft	$11.74
Total	$24.94

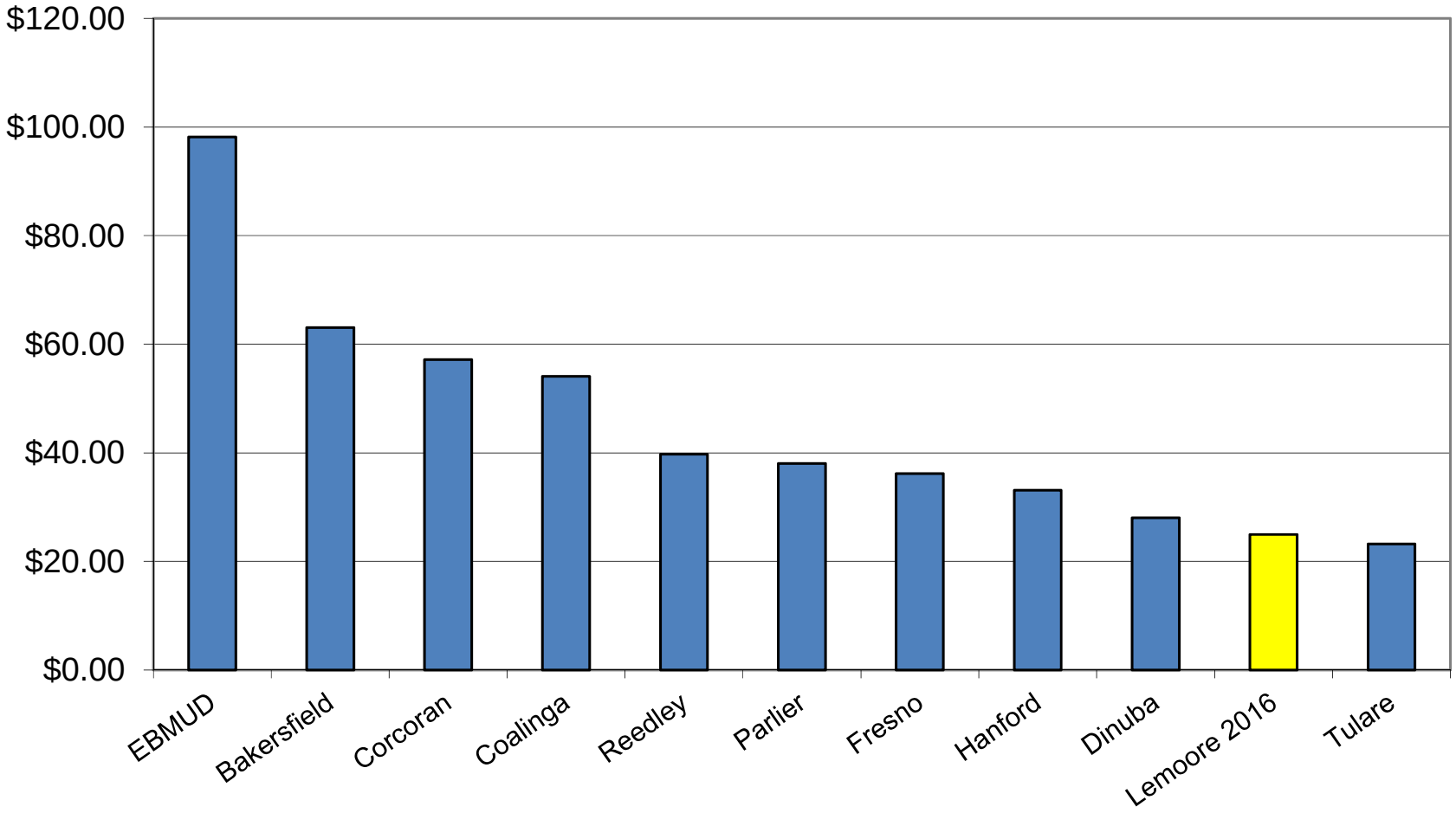
Cost for 15,000 gallons:

15,000 / 7.48 = 2,005 cu ft

2005 – 700 = 1,305 cu ft

13.05 HCF x $0.90 per HCF = $11.74

Single Family Water Cost Comparison
Summer Typical: 15,000 gallons



Lemoore's 2015 August Average was 16,200 gallons

Existing Rates: Apartments and Mobile Home Parks

1. Fixed monthly cost per dwelling unit: $6.55

   Includes 300 cubic feet per unit

2. *Next 1,200 cubic feet per unit: $0.90*
3. *Next 1,200 cubic feet per unit: $0.95*
4. *Above 2,400 cubic feet per unit: $1.00*

Existing Rates: Other Customers

Minimum monthly charge of $13.20 including a fixed quantity of base water

Usage charge associated with three tiered rates

- Tier 1: $0.90
- Tier 2: $0.95
- Tier 3: $1.00

(Approximately 60 customers left on flat rates)

LEMOORE WATER ENTERPRISE FUND

HISTORICAL REVENUE AND EXPENDITURES

	HISTORICAL			IN PROGRESS
	FY2013	FY 2014	FY 2015	FY 2016
Operating Revenues:				
Rate-Based Revenues	$3,952,379	$4,100,305	$3,300,000	$3,300,000
Late Fees, Svc Charges, Collections	$75,197	$75,568	$75,000	$75,000
Installation Charges	$6,962	$6,349	$10,000	$10,000
Interest Income	5,300	11,887	12,000	12,000
Total Revenues	4,039,838	4,194,109	3,397,000	3,397,000
Operation & Maintenance Expenses:				
Electricity - Pumping	$998,000	$958,824	$719,000	$550,000
Personnel	$650,000	$655,957	$694,000	$730,000
Contract Services	$279,177	$227,046	$215,000	$232,000
Chemicals	$361,984	$435,376	$346,000	$400,000
Parts and Supplies	$127,774	$120,132	$277,000	$300,000
Repair and Maint	$162,000	$218,062	$161,000	$164,000
Customer Services and Billing	$269,528	$275,143	$277,000	$283,000
Gen Government Overhead	$742,000	$406,268	$527,000	$530,000
Debt Service Solar Related	$0	$163,339	$573,000	$430,000
Total Adjusted Expenses*	$3,590,463	$3,460,147	$3,789,000	$3,619,000
Net Revenue From Water Operations	$449,375	$733,962	($392,000)	($222,000)

* Excludes depreciation

Existing Debt and Available Cash

- One loan outstanding to Pinnacle Public Finance in the amount of $7,068,000 associated with Solar Power installations
- Water Enterprise owes Sewer Enterprise $1.9 million inter-fund loan
- Payments are $430,000 per year (Water's 75% share), which is offset by electricity savings for water
- Current Assets are about $5 million. Healthy.

Nathan Olson

Public Works Director

City of Lemoore

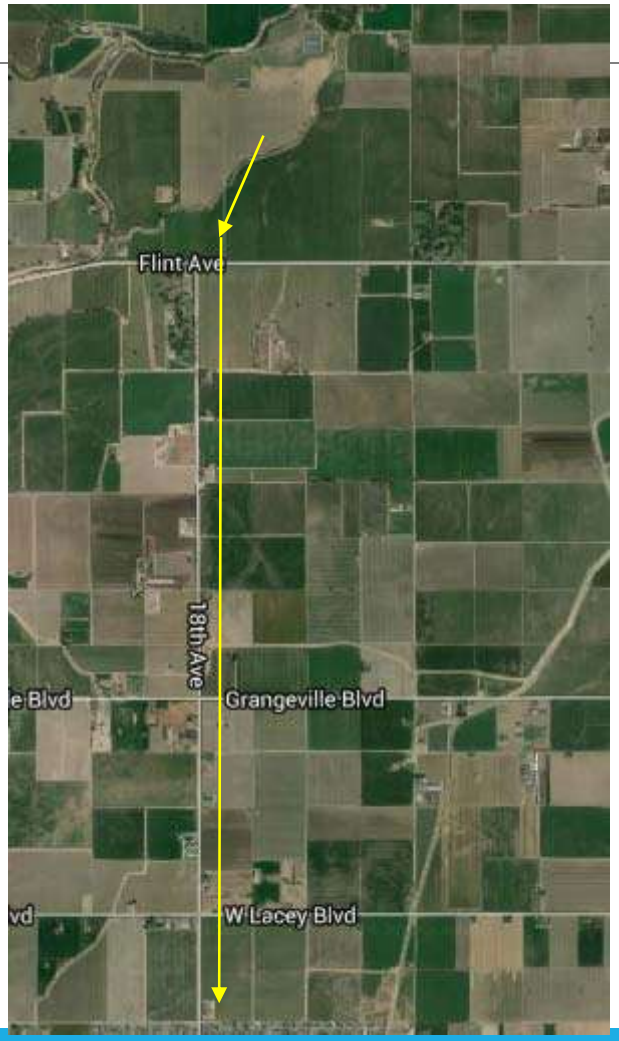
Water Supply Projects
North Well Field

North Well Line Replacement

36-inch PVC pipes installed at treatment plant

North Well Line

$5,950,000 CIP



TTHM Compliance Project

$18,379,500 CIP

TTHM Compliance Project Treatment Areas

Current Locations recommended

- 40 G Street (treats North Well Field)
- Well Site 7 (treats wells 7, 13, and 14)
- Well Site 10
- Well Site 11
- Well Site 12

Future Sites

- New South Well

New South Side Well

- Provides addition water capacity
- Assists in correcting low pressure situation to the south of 198.
- New well will replace Well 8 that collapsed in 2015.

$3,525,000 CIP

New North Side Well

- Additional water capacity and helps support peak demand

$4,056,000 CIP

Additional Tank Well 7

- Provides additional water capacity and helps support peak demand.
- Provides additional 1 million gallon storage needed for continued growth of west side.

$1,100,000 CIP

Summary Water CIP Costs

CIP Project	Cost
North Well Transmission Line	$5,950,000
TTHM Compliance	$18,379,500
New South Side Well	$3,525,000
New North Side Well	$4,056,000
Additional Tank Well 7	$1,100,000
Total	$33,010,500

Misc. projects (20) total additional $3,539,300 to 5 year CIP

Major Projects and Repair

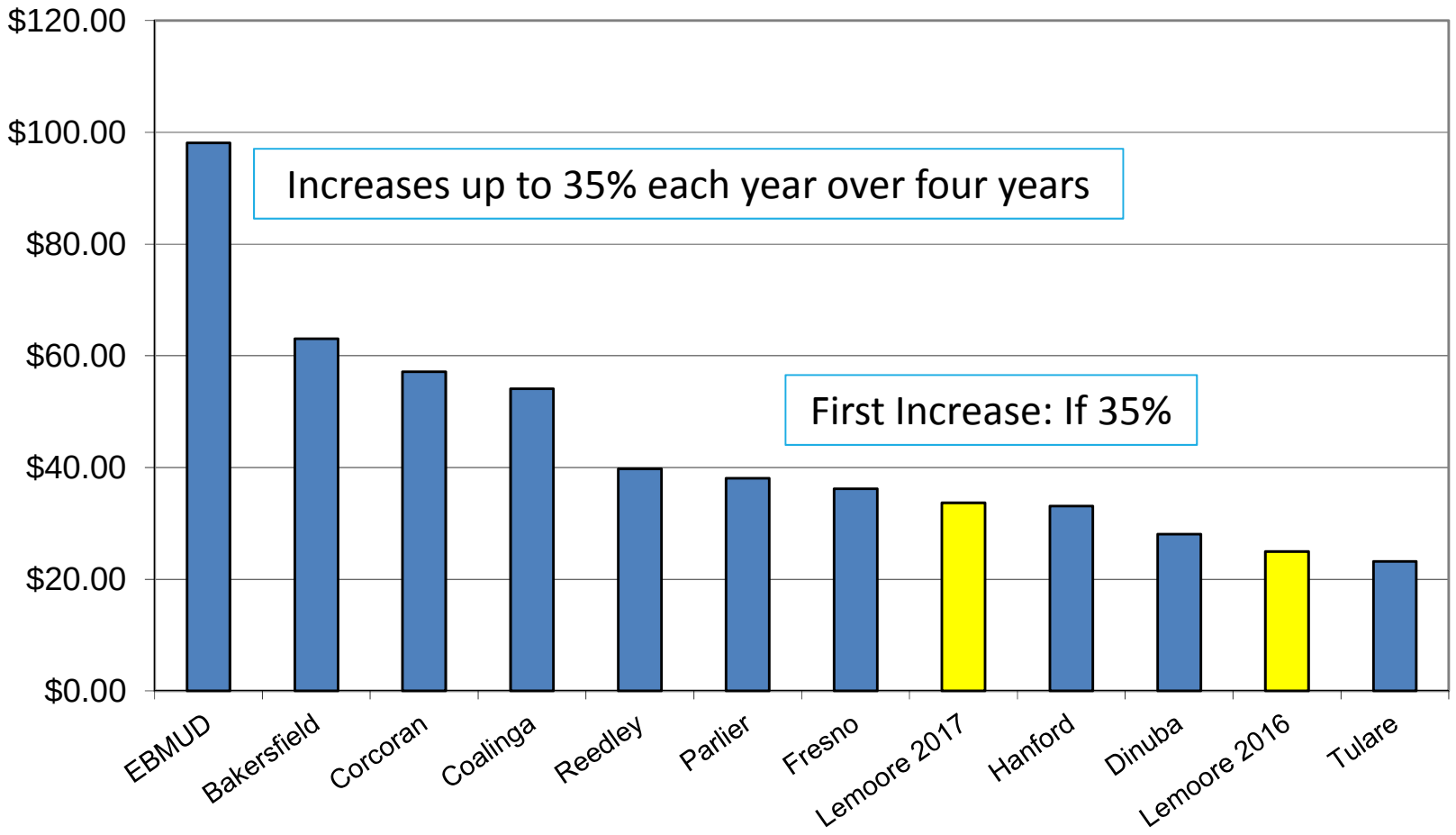
- Most significant cost is filtering of ALL water
- Next is pipeline replacement, well and tank additions
- This level of water system expenditure in Lemoore is unprecedented
- This workshop is the beginning of the formal process

Annualized Cost for Improvements, “Ballpark”?

Annual payments for bond finance:	$1.7 million
Maintenance and operations for filters:	$2.5 million
Total, per year	$4.2 million
Compare to existing total expenses:	$4.0 million

The added costs are nearly equal to the total of existing expenses!

Single Family Water Cost Comparison
Summer Typical: 15,000 gallons



Review

1. Conservation has reduced revenue. Rate increase needed soon just to recover adequate revenue.
2. Metering successful, almost done
3. Existing rates nearly lowest in the valley
4. Water enterprise debt is small and fund balance healthy
5. SIGNIFICANT costs coming for system improvements
6. Recommend gradual rate increases over several years

Proposed Schedule

March 15	Workshop #1: Introduction
April 19	Workshop #2: Present new rates and update
May 3	City Council: Approve issuance of Prop 218 Notice
July 5	City Council: Rate Hearing
Jan 1, 2017	New Rates in effect

Next Steps

- City Council Feedback
- Information and coordination with our customers
- Pilot testing of filtering approach
- Continue to refine economic model
- Present new rates at next workshop
- Beginning steps of funding options

Community Involvement

Those interested in participating in a citizen advisor group or if folks simply have questions:

Janie Venegas
City Clerk
(559) 924-6705
Email: cityclerk@lemoore.com

LEMOORE

CALIFORNIA

JOINT LEMOORE CITY COUNCIL /
★ LEMOORE REDEVELOPMENT
SUCCESSOR AGENCY /
● LEMOORE HOUSING AUTHORITY
COUNCIL CHAMBER
429 C STREET
March 15, 2016

AGENDA

Please silence all electronic devices as a courtesy to those in attendance. Thank you.

5:30 pm STUDY SESSION

PUBLIC COMMENT

This time is reserved for members of the audience to address the City Council/Agency Board on items of interest that are not on the Agenda and are within the subject matter jurisdiction of the Council/Agency Board. It is recommended that speakers limit their comments to between 3 to 5 minutes each and it is requested that no comments be made during this period on items on the Agenda. Members of the public wishing to address the Council/Agency Board on items on the Agenda should notify the Mayor/Chairman when that Agenda item is called. The Council/Agency Board is prohibited by law from taking any action on matters discussed that are not on the Agenda, and no adverse conclusions should be drawn if the Council/Agency Board does not respond to public comment at this time. Speakers are asked to please use the microphone, and provide their name and address. Prior to addressing the Council/Agency Board, any handouts to be provided to City Clerk/Board Clerk who will distribute to Council/Agency Board and appropriate staff.

SS-1 CalTrans Presentation of Traffic Study Report for Bush Street and State Route 41 (Holwell)

SS-2 Water Rate Study Update (Olson)

CLOSED SESSION

This time has been set aside for the City Council to meet in a closed session to discuss matters pursuant to Government Code Section 54956.9(d) (4). Based on the advice of the City Attorney, discussion in open session concerning these matters would prejudice the position of the City in this litigation. The Mayor will give an additional oral report regarding the Closed Session at the beginning of the next regular City Council meeting.

1. **Public Employee Evaluation – City Manager**
   Pursuant to Government Code Section 54957

Please silence all electronic devices as a courtesy to those in attendance. Thank you.

7:30 pm REGULAR SESSION

a. CALL TO ORDER
b. PLEDGE OF ALLEGIANCE
c. INVOCATION
d. CLOSED SESSION REPORT(S)
e. AGENDA APPROVAL, ADDITIONS, AND/OR DELETIONS

PUBLIC COMMENT

This time is reserved for members of the audience to address the City Council/Agency Board on items of interest that are not on the Agenda and are within the subject matter jurisdiction of the Council/Agency Board. It is recommended that speakers limit their comments to between 3 to 5 minutes each and it is requested that no comments be made during this period on items on the Agenda. Members of the public wishing to address the Council/Agency Board on items on the Agenda should notify the Mayor/Chairman when that Agenda item is called. The Council/Agency Board is prohibited by law from taking any action on matters discussed that are not on the Agenda, and no adverse conclusions should be drawn if the Council/Agency Board does not respond to public comment at this time. Speakers are asked to please use the microphone, and provide their name. Prior to addressing the Council/Agency Board, any handouts to be provided to City Clerk/Board Clerk who will distribute to Council/Agency Board and appropriate staff.

DEPARTMENT AND CITY MANAGER REPORTS – Section 1

1-1 Department & City Manager Reports

Items denoted with a ★ are Redevelopment Successor Agency items and will be acted upon by the Redevelopment Successor Agency Board. Items denoted with a ● are Lemoore Housing Authority items and will be acted upon by the Lemoore Housing Authority. Agendas for all City Council/Redevelopment Successor Agency/Lemoore Housing Authority meetings are posted at least 72 hours prior to the meeting at the City Hall, 119 Fox St., Written communications from the public for the agenda must be received by Administrative Services no less than seven (7) days prior to the meeting date. The City of Lemoore complies with the Americans with Disabilities Act (ADA of 1990). The Council Chamber is accessible to the physically disabled. If you need special assistance, please call (559) 924-6705, at least 4 days prior to the meeting.

All items listed under Consent Calendar are considered to be routine and will be enacted by one motion. For discussion of any Consent Item, it will be made a part of the Regular Agenda at the request of any member of the City Council or any person in the audience.

CONSENT CALENDAR – Section 2

Items considered routine in nature are placed on the Consent Calendar. They will all be considered and voted upon in one vote as one item unless a Council member requests individual consideration. A Council member's vote in favor of the Consent Calendar is considered and recorded as a separate affirmative vote in favor of each action listed. Motions in favor of adoption of the Consent Calendar are deemed to include a motion to waive a reading of any ordinance or resolution on the Consent Calendar.

2-1 Approval – Minutes – Regular Meeting – March 1, 2016
2-2 Approval – Second Amendment to Utility Agreement with Caltrans – 19th Avenue/Highway 198 Interchange Ponding Basin
2-3 Approval – Contract with MuniTemps for Temporary Staffing in the Finance Department
2-4 Approval – Amendment to FY 2015-16 Transportation Development Act (TDA) Estimates
★2-5 Approval – Contract with Richards, Watson & Gershon and the Lemoore Redevelopment Successor Agency – Special Legal Services Relating to Former Redevelopment Agency Matters

CEREMONIAL / PRESENTATIONS – Section 3

No Ceremonial / Presentations

PUBLIC HEARINGS – Section 4

- **4-1 Abatement Hearing – Resolution 2016-01 of the Lemoore Housing Authority Declaring Default on the Property Located at 613 Follett Street in Lemoore, CA (Olson)**

NEW BUSINESS – Section 5

5-1 Report and Recommendation – West Side City Joint Powers Association Board Seat (Venegas)

5-2 Report and Recommendation – Nomination of Applicant to the Governing Board of the San Joaquin Valley Air Pollution Control District – Resolution 2016-08

CITY COUNCIL REPORTS AND REQUESTS – Section 6

6-1 City Council Reports / Requests

ADJOURNMENT

NOTICE: Pursuant to Government Code §54954.3(a), public comments may be directed to the legislative body concerning any item contained on the agenda for this meeting before or during consideration of the item. Those wishing to address Council on an item shall be limited to between 3-5 minutes and if a large group, the Mayor may request that individuals provide only new information not presented by another person.

Any writing or documents provided to a majority of the City Council regarding any item on this agenda will be made available for public inspection at the City Clerk's Counter at City Hall located at 119 Fox Street, Lemoore, CA during normal business hours. In addition, most documents will be posted on the City's website at www.lemoore.com.

Tentative Future Agenda Items

April 5th
SS – Water Sales Agreement w/Self Help (Olson)
PH – Zoning Text Amendment ref TUP (Holwell)
CC – Firing Range Short Term Agreement (Smith)

April 19th
SS – Transient Occupancy Tax (Welsh)
SS – Commissions and Boards Policies (Venegas)
CC – Downtown Merchants Advisory Board Term Appointments (Venegas)
NB – Quarterly Financial Review (Herrera)

Date to be Determined
SS – SEMS/NIMS and ICS (Welsh)
SS - Risk Management Authority Presentation (Welsh)
CC – Property Acquisition (Smith)
CC – Emergency Operations Plan Adoption (Smith)
CC – Delinquent Utility Billing Penalties (Herrera)
CC – Wathen Castanos Subdivision Agreement (Olson)
NB – BMX Tract Bid (Olson)
NB – 1st Reading – Purchasing Ordinance (Finance)

PUBLIC NOTIFICATION

I, Mary J. Venegas, City Clerk for the City of Lemoore, declare under penalty of perjury that I posted the above City Council / Redevelopment Successor Agency Agenda for the meeting of March 15, 2016 at City Hall, 119 Fox Street, Lemoore, CA on March 10, 2016.

//s//
Mary J. Venegas
City Clerk

City of
LEMOORE
CALIFORNIA

Public Works
Planning Services
Department

711 W. Cinnamon Drive
Lemoore, CA 93245
Phone (559) 924-6740
Fax (559) 924-6708

Staff Report

ITEM NO. SS-1

To: **Lemoore City Council**

From: **Judy Holwell, Interim Planning Director**

Date: **March 1, 2016** **Meeting Date:** **March 15, 2016**

Subject: **Caltrans Presentation of Traffic Study Report for Bush Street and State Route 41**

Proposed Motion:
Information and direction regarding the Diverging Diamond Concept.

Subject/Discussion:
On October 6, 2015, the City Council approved an expenditure of $20,000 for a traffic study to be performed by Caltrans at the Bush Street and State Route 41 Interchange. The Traffic Study Report is complete, and Caltrans Project Manager, Scott Friesen, will be in attendance during the March 15 Study Session to present the findings. The purpose of the Study was to evaluate the existing interchange and make recommendations for future traffic volume. Three alternatives were studied – 1) No change, 2) Diverging Diamond Interchange (DDI), and 3) Roundabouts. A cost estimate was included as part of the Study.

As mentioned previously, the DDI concept may decrease the cost of street improvements on the Westside of Lemoore (west of State Route 41), because the movement of vehicles through the underpass would take less time, and therefore could accommodate greater traffic volumes with less lanes. Additionally, the movement is considered to be much safer, which is an added benefit.

Financial Consideration(s):
None at this time.

Alternatives or Pros/Cons:
Moving forward with this project will create improved access to the Westside, which will encourage new development.

Commission/Board Recommendation:
Not Applicable.

Staff Recommendation:

Staff recommends that Council consider the information presented by Caltrans and direct staff to proceed with pursuing a project study report. The next step will be brought back to Council at a future Council meeting for approval.

Attachments:	**Review:**	**Date:**
☐ Resolution	☐ Finance	
☐ Ordinance	☒ City Attorney	3/9/16
☐ Map	☒ City Manager	3/9/16
☒ Other Traffic Study for SR41-Bush Interchange & Cost Estimate	☒ City Clerk	3/10/16

Traffic Study Report

State Route 41-Bush Street Interchange

December 2015

District 6 Office of Traffic operations

Traffic Study Report

SR 41-Bush Street Interchange

1. Introduction

The City of Lemoore in cooperation with Caltrans, has initiated this study to evaluate existing and future needs at the State Route (SR) 41-Bush Street interchange. The purpose of this traffic study is to identify and evaluate improvement alternatives for the SR 41-Bush Street interchange in order to accommodate existing and future traffic and development needs. The no-build alternative and two build alternatives, Diverging Diamond Interchange (DDI) and roundabouts were evaluated and compared in this report.

2. Project Area Description

The City of Lemoore is mainly served by 2 highways, SR 198 as an east-west arterial, and SR 41 as a north-south arterial. The SR 41-Bush St Interchange is located about one mile north of the SR 41/198 Junction. The City of Lemoore is situated mostly east of SR 41, and the Lemoore Naval Air Station is about 6 miles to the west. Nearby traffic generators are West Hills College and a charter school to the west, and Leprino Foods to the northwest.

State Route 41 is designated as a High Emphasis Focus Route of the Interregional Road system from the Kern County line to the SR 99 junction in the City of Fresno. It is classified as a principal arterial, and designated as a State Terminal Access (STA) Route under the Surface Transportation Assistance Act (STAA) of 1982. SR 41 is a 4-lane freeway through the City of Lemoore. It has an Annual Average Daily Traffic (AADT) of up to 17,500 with trucks constituting up to 19 percent of the AADT.

3. Alternatives

Due to the close proximity and potential traffic influence from one another, the following three intersections were analyzed together in this study:

Intersection 1 - Bush Street and Bell Haven Drive

Intersection 2 - Bush Street and Southbound SR 41 Ramps

Intersection 3 - Bush Street and Northbound SR 41 Ramps

Two build alternatives are proposed in this study:

Alternative 1 – Construct a Diverging Diamond Interchange at SR 41 and Bush Street, and install a traffic signal at the intersection of Bush Street and Bell Haven Drive.

Alternative 2 – Construct a series of three roundabouts on Bush Street at Bell Haven Drive and SR 41 ramp termini.

4. Traffic analysis

Turning movement counts were conducted for the AM and PM peak periods in November 2015. Based on existing 2015 traffic volumes, future travel demand forecasts were developed for study years 2020, 2030 and 2040. The turning movement volumes are shown in Figure 1, and the analysis results are summarized in Tables 1, 2 and 3 in this report. The No-Build and two Build alternatives are discussed in the following.

No-Build Alternative

Year 2015 - Existing Condition

The existing condition and operational characteristics of all three intersections are described in the following:

Intersection 1 - Bush Street/Bell Haven Drive is an existing 4-way stop intersection, and currently is operating at level of service (LOS) B in both AM and PM peak periods (Table 1).

Intersection 2 – The existing Bush Street/Southbound SR 41 Ramps intersection has stop control at the southbound off-ramp terminus only, the eastbound and westbound traffic on Bush Street is free flow. The off-ramp is currently operating at LOS F in the AM peak period and D in the PM peak period (Table 2).

Intersection 3 – The Bush Street/Northbound SR 41 Ramps intersection has stop control at the northbound off-ramp terminus only, the eastbound and westbound traffic on Bush Street is free flow. The off-ramp is currently operating at LOS E in the AM peak period and C in the PM peak period (Table 3).

Year 2020

Under the no-build scenario, Intersection 1 is projected to operate at an acceptable level of service of C in the AM peak period and D in the PM peak period (Table 1). However at Intersections 2 and 3, both southbound and northbound ramps are expected to deteriorate to LOS F (Tables 2 & 3).

Year 2030 and 2040

Without improvements, the operation of all three intersections would deteriorate to LOS F by 2030 and beyond (Tables 1, 2 & 3).

Alternative 1 - Diverging Diamond Interchange (DDI)

Year 2020

For the purposes of this study, year 2020 is assumed to be the project opening year for the DDI alternative. Two traffic signal would be installed as part of the proposed DDI alternative. An additional signal at Bush Street and Bell Haven Drive would be installed due to close proximity and potential traffic influence. The operational characteristics for each intersection are discussed in the following:

Intersection 1 – In addition to a new traffic signal at Bush Street and Bell Haven Drive, the intersection would be widened with the following lanes added:

- 1 eastbound left turn
- 1 eastbound shared through/right turn
- 1 westbound left turn
- 1 westbound right turn

The new configuration would yield level of service B for both AM and PM peak periods for year 2020. The 95% queue length is expected to be about 110 feet in the westbound direction (Table 1).

Intersection 2 - With the DDI alternative, Bush Street/Southbound SR 41 Ramps intersection would require only a 2-phase traffic signal. The resulting level of service is A for both AM and PM peak periods. The 95% queue length is expected to be about 100 feet in the westbound direction (Table 2).

Intersection 3 – Similar to Intersection 2, the Bush Street/Northbound SR 41 Ramps intersection would require only a 2-phase traffic signal. The resulting level of service is A for both AM and PM peak periods. The 95% queue length is expected to be less than 100 feet in both directions (Table 3).

Year 2030

All three intersections are projected to operate at level of service B or above. The expected 95% queue length is about 150 feet in the westbound direction at Intersection 2 (Tables 1-3).

Year 2040

All three intersections are projected continue to operate at levels of service B in the project design year 2040. The expected 95% queue length is about 200 feet in the eastbound direction at Intersection 3 (Tables 1-3).

Alternative 2 - Roundabout

Year 2020

For the purposes of this study, year 2020 is assumed to be the project opening year for the roundabout alternative. Two roundabouts in rain drop configuration are proposed at the intersections of Bush Street and the ramp termini (Intersections 2 and 3). In addition, a third roundabout would be built at Bush Street and Bell Haven Drive due to close proximity and potential traffic influence. The operational characteristics for each intersection are discussed in the following:

Intersection 1 – For project opening year, the Bush Street/Bell Haven Drive intersection would only require a one-lane roundabout in all directions. The resulting level of service is A for both the AM and PM peak periods. Queue lengths are expected to be less than 100 feet in all directions (Table 1).

Intersection 2 – In addition to the one-lane roundabout for the Bush Street/Southbound SR 41 Ramps intersection, a right turn lane would be required for the southbound and eastbound directions. This configuration would yield a level of service A in both the AM and PM peak periods. The 95% queue length is expected to be about 110 feet in the westbound direction (Table 2).

Intersection 3 – In addition to the one-lane roundabout for the Bush Street/Northbound SR 41 Ramps intersection, a right turn lane would be required for the northbound and westbound directions. This configuration would yield a level of service A in both the AM and PM peak periods. The 95% queue length is expected to be about 170 feet in the westbound direction (Table 3).

Year 2030

Intersection 1 – By year 2030, an additional right turn lane would be required at the eastbound and westbound direction. The new configuration would yield a level of service A in the AM peak period and B in the PM peak period. The expected queue length is about 150 feet in the eastbound direction (Table 1).

Intersection 2 – With the same configuration as 2020, the intersection would be operating at LOS B in both the AM and PM peak periods. The expected queue length is about 160 feet in the eastbound direction (Table 2).

Intersection 3 – With the same configuration as 2020, the intersection would be operating at LOS B in both the AM and PM peak periods. However, the 95% queue length is expected to be about 450 feet in the westbound direction (Table 3). If queue length becomes an issue at that time, an additional through lane for both eastbound and westbound may be considered for all three roundabouts.

Year 2040

By year 2040, hybrid roundabouts with 2 lane in the east-west direction and 1 lane in the north-south direction would be required for all 3 roundabouts.

Intersection 1 –The hybrid roundabout is expected to operate at LOS A in the AM peak period and B in the PM peak period. Queue lengths are expected to be less than 100 feet in all directions (Table 1).

Intersection 2 –The hybrid roundabout is expected operate at LOS A in the AM peak period and B in the PM peak period. Queue length is anticipated to be about 170 feet in the eastbound direction (Table 2).

Intersection 3 –The hybrid roundabout is expected to operate at LOS B in both AM and PM peak periods. Queue length is expected to be about 250 feet in the westbound direction, within the available length of storage (Table 3).

5. Conclusion

The purpose of this report is to identify and evaluate improvement alternatives for the SR 41-Bush Street interchange. A no-build alternative along with two build alternatives (Diverging Diamond Interchange (DDI) and roundabouts) were evaluated and compared. Both northbound and southbound ramp termini currently operate at LOS F. Traffic analysis based on existing and future traffic demand indicated that both the DDI and the roundabout alternatives would perform satisfactorily. The projected levels of service are A for opening day and B in 20 years for both build alternatives. For the DDI alternative, it is anticipated that the 20-year design configuration would be built on opening day. Whereas the roundabout alternative would be built incrementally with single-lane roundabouts for opening day and 2-lane hybrid roundabouts in 20 years. The project cost estimate as well as benefit-cost analysis for each alternative should be further evaluated during the project initiation and project approval process. This study may serve as a traffic report for future Intersection Control Evaluation (ICE), Project Study Report (PSR), Project Report (PR), or Environmental Documentation (ED).

6. List of Appendices

Appendix A – HCS analysis for stop-control intersections

Appendix B – Synchro analysis for signalized intersections

Appendix C – SIDRA analysis for roundabout intersections

Table 1 - Delay and Level of Service
Intersection 1 - Bush Street / Bell Haven Drive

2015 AM (PM)

Approach	4-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	11.9 (19.3)	B (C)	12.5 (13.4)	37 (71)	B (B)	7.5 (7.9)	25 (62)	A (A)
Westbound	12.8 (10.6)	B (B)	13.2 (12.8)	91 (51)	B (B)	6.9 (7.3)	72 (35)	A (A)
Northbound	9.6 (9.7)	A (A)	6.1 (6.6)	15 (14)	A (A)	8.5 (10.6)	6 (8)	A (B)
Southbound	10.3 (11.3)	B (B)	7.5 (11.6)	31 (47)	A (B)	12.3 (13.1)	26 (17)	B (B)
Intersection	**12.1 (14.6)**	**B (B)**	**11.3 (12.0)**	**91 (71)**	**B (B)**	**7.9 (8.5)**	**72 (62)**	**A (A)**

2020 AM (PM)

Approach	4-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	14.6 (43.7)	B (E)	17.6 (21.3)	52 (104)	B (C)	7.8 (8.6)	34 (92)	A (B)
Westbound	16.8 (14.0)	C (B)	16.5 (14.6)	110 (67)	B (B)	7.3 (7.7)	109 (63)	A (A)
Northbound	10.8 (11.3)	B (B)	5.9 (6.8)	23 (22)	A (A)	9.2 (11.5)	13 (20)	A (B)
Southbound	11.3 (13.0)	B (B)	7.0 (11.0)	45 (64)	A (B)	13.7 (13.6)	38 (27)	B (B)
Intersection	**15.1 (25.9)**	**C (D)**	**13.9 (15.6)**	**110 (104)**	**B (B)**	**8.4 (9.1)**	**109 (92)**	**A (A)**

2030 AM (PM)

Approach	4-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	27.3 (254.2)	D (F)	16.5 (22.1)	61 (142)	B (C)	8.1 (10.1)	43 (153)	A (B)
Westbound	46.8 (36.0)	E (E)	15.3 (13.5)	133 (95)	B (B)	7.7 (8.3)	129 (91)	A (A)
Northbound	14.2 (15.3)	B (C)	5.5 (6.8)	28 (31)	A (A)	10.4 (16.3)	33 (72)	B (C)
Southbound	14.1 (16.8)	B (C)	7.6 (12.5)	55 (83)	A (B)	19.5 (16.5)	85 (66)	C (C)
Intersection	**34.7 (112.8)**	**D (F)**	**13.4 (15.5)**	**133 (142)**	**B (B)**	**9.7 (10.8)**	**129 (153)**	**A (B)**

2040 AM (PM)

Approach	4-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	77.1 (538.2)	F (F)	9.7 (11.3)	56 (120)	A (B)	8.5 (10.4)	30 (91)	A (B)
Westbound	179.8 (162.9)	F (F)	12.2 (20.8)	134 (97)	B (C)	8.0 (8.7)	83 (77)	A (A)
Northbound	19.3 (21.9)	C (C)	5.2 (7.9)	30 (53)	A (A)	10.6 (14.8)	43 (84)	B (B)
Southbound	17.5 (21.6)	C (C)	8.8 (9.9)	63 (82)	A (A)	16.4 (16.6)	71 (82)	C (C)
Intersection	**116.8 (260.7)**	**F (F)**	**10.3 (14.7)**	**134 (120)**	**B (B)**	**9.6 (10.5)**	**83 (91)**	**A (B)**

Table 2 - Delay and Level of Service
Intersection 2 - Bush Street / Southbound SR 41 Ramps

2015 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	-	-	8.1 (8.7)	29 (47)	A (A)	8.7 (8.0)	27 (46)	A (A)
Westbound	8.9 (9.1)	A (A)	9.6 (7.5)	84 (47)	A (A)	8.9 (8.5)	0 (0)	A (A)
Northbound	-	-	-	-	-	-	-	-
Southbound	62.5 (27.2)	F (D)	-	-	-	15.9 (12.5)	20 (13)	C (B)
Intersection	**-**	**-**	**9.2 (8.2)**	**84 (47)**	**A (A)**	**9.8 (8.9)**	**27 (46)**	**A (A)**

2020 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	-	-	8.3 (9.2)	36 (60)	A (A)	9.0 (8.4)	38 (67)	A (A)
Westbound	9.5 (9.9)	A (A)	9.9 (7.4)	99 (41)	A (A)	8.8 (8.3)	0 (0)	A (A)
Northbound	-	-	-	-	-	-	-	-
Southbound	129.9 (76.2)	F (F)	-	-	-	16.7 (13.4)	25 (18)	C (B)
Intersection	**-**	**-**	**9.4 (8.4)**	**99 (60)**	**A (A)**	**9.9 (9.1)**	**38 (67)**	**A (A)**

2030 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	-	-	9.1 (10.4)	54 (88)	A (B)	9.7 (10.7)	65 (161)	B (B)
Westbound	11.1 (12.1)	B (B)	11.7 (7.9)	145 (74)	B (A)	8.6 (8.0)	0 (0)	A (A)
Northbound	-	-	-	-	-	-	-	-
Southbound	442.6 (646.2)	F (F)	-	-	-	23.3 (16.8)	60 (35)	C (C)
Intersection	**-**	**-**	**10.8 (9.1)**	**145 (88)**	**B (A)**	**11.0 (10.2)**	**65 (161)**	**B (B)**

2040 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	-	-	11.3 (14.7)	78 (143)	B (B)	10.7 (12.2)	71 (166)	B (B)
Westbound	13.9 (16.4)	B (C)	9.4 (8.6)	93 (167)	A (A)	8.6 (8.0)	0 (0)	A (A)
Northbound	-	-	-	-	-	-	-	-
Southbound	1235 (2906)	F (F)	-	-	-	13.9 (13.9)	34 (26)	B (B)
Intersection	**-**	**-**	**10.1 (11.6)**	**93 (167)**	**B (B)**	**10.0 (10.6)**	**71 (166)**	**A (B)**

Table 3 - Delay and Level of Service
Intersection 3 - Bush Street / Northbound SR 41 Ramps

2015 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	10.0 (8.3)	A (A)	9.2 (8.3)	39 (66)	A (A)	8.4 (7.6)	0 (0)	A (A)
Westbound	-	-	4.3 (5.7)	59 (36)	A (A)	8.4 (7.6)	112 (35)	A (A)
Northbound	36.5 (17.0)	E (C)	-	-	-	11.5 (11.0)	16 (32)	B (B)
Southbound	-	-	-	-	-	-	-	-
Intersection	**-**	**-**	**5.5 (7.2)**	**59 (66)**	**A (A)**	**8.9 (8.6)**	**112 (35)**	**A (A)**

2020 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	10.7 (8.8)	B (A)	8.9 (8.1)	44 (81)	A (A)	8.3 (7.6)	0 (0)	A (A)
Westbound	-	-	5.4 (6.9)	73 (55)	A (A)	9.6 (8.1)	172 (58)	A (A)
Northbound	90.5 (30.8)	F (D)	-	-	-	11.5 (12.2)	18 (47)	B (B)
Southbound	-	-	-	-	-	-	-	-
Intersection	**-**	**-**	**6.3 (7.6)**	**73 (81)**	**A (A)**	**9.6 (9.0)**	**172 (58)**	**A (A)**

2030 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	12.8 (10.2)	B (B)	12.0 (8.4)	77 (108)	B (A)	8.2 (7.6)	0 (0)	A (A)
Westbound	-	-	6.6 (9.1)	114 (88)	A (A)	15.1 (10.1)	446 (157)	C (B)
Northbound	417.8 (378.1)	F (F)	-	-	-			B (C)
Southbound	-	-	-	-	-	-	-	-
Intersection	**-**	**-**	**8.1 (8.7)**	**114 (108)**	**A (A)**	**12.9 (11.2)**	**446 (157)**	**B (B)**

2040 AM (PM)

Approach	1-way stop (No build)		Alternative 1 DDI Signalized Intersections			Alternative 2 - Roundabout		
	Delay (Sec/veh)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS	Delay (Sec/veh)	95% Queue Length (ft)	LOS
Eastbound	16.1(12.6)	C (B)	12.3 (15.4)	103 (193)	B (B)	8.2 (7.7)	0 (0)	A (A)
Westbound	-	-	9.0 (10.1)	166 (124)	A (B)	13.5 (11.3)	245 (140)	B (B)
Northbound	1203 (1260)	F (F)	-	-	-	11.4 (15.1)	24 (113)	B (C)
Southbound	-	-	-	-	-	-	-	-
Intersection	**-**	**-**	**10.0 (12.8)**	**166 (193)**	**A (B)**	**11.8 (11.0)**	**245 (140)**	**B (B)**

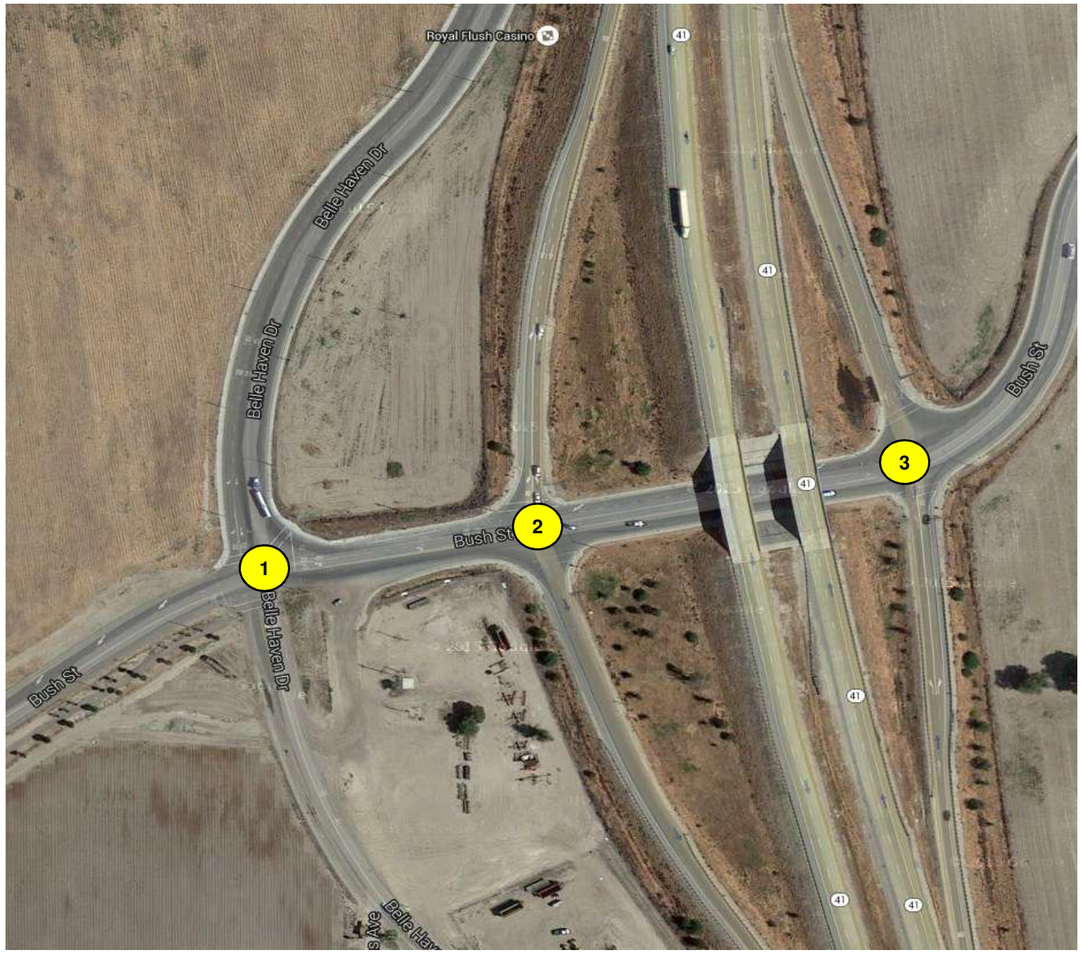
Figure 1

SR 41 and Bush Street Interchange, Kings County (PM 40.9/41.0)

Existing (2015) and Forecast (2020, 2030 and 2040) Traffic Intersection Turning Movement Volumes

06-0U850

Caltrans
Technical Planning
November 2015



	1 Belle Haven Dr/ Bush St	2 SR 41 SB Ramps/ Bush St	3 SR 41 NB Ramps/ Bush St
2015 Existing Volumes	79 (22) 2 (1) 54 (89) 63 (27) 462 (254) 14 (27) 14 (18) 177 (359) 5 (10) 7 (10) 2 (1) 39 (32)	74 (50) 0 (0) 84 (103) 0 (0) 465 (258) 272 (116) 0 (0) 190 (331) 80 (149) 0 (0) 0 (0) 0 (0)	0 (0) 0 (0) 0 (0) 131 (81) 613 (280) 0 (0) 81 (70) 193 (364) 0 (0) 124 (94) 0 (0) 95 (215)
2020 Forecast Volumes	86 (38) 4 (5) 69 (106) 80 (59) 527 (324) 34 (58) 16 (26) 214 (431) 10 (17) 16 (16) 7 (7) 66 (63)	99 (67) 0 (0) 89 (119) 0 (0) 542 (374) 295 (137) 0 (0) 244 (421) 106 (179) 0 (0) 0 (0) 0 (0)	0 (0) 0 (0) 0 (0) 163 (99) 693 (388) 0 (0) 92 (86) 241 (454) 0 (0) 144 (123) 0 (0) 122 (266)
2030 Forecast Volumes	99 (69) 9 (12) 100 (141) 114 (122) 657 (464) 75 (121) 19 (43) 287 (576) 19 (31) 33 (28) 16 (18) 121 (124)	150 (100) 0 (0) 99 (150) 0 (0) 697 (606) 341 (178) 0 (0) 351 (600) 157 (240) 0 (0) 0 (0) 0 (0)	0 (0) 0 (0) 0 (0) 228 (136) 853 (603) 0 (0) 113 (118) 336 (633) 0 (0) 185 (181) 0 (0) 177 (368)
2040 Forecast Volumes	113 (100) 14 (20) 131 (175) 148 (185) 787 (604) 116 (183) 23 (60) 360 (720) 29 (45) 50 (40) 25 (30) 175 (185)	200 (134) 0 (0) 109 (182) 0 (0) 851 (838) 387 (219) 0 (0) 458 (780) 208 (300) 0 (0) 0 (0) 0 (0)	0 (0) 0 (0) 0 (0) 292 (173) 1013 (818) 0 (0) 135 (150) 432 (812) 0 (0) 225 (239) 0 (0) 231 (470)

Figure 2 - Concept Layout
Diverging Diamond Interchange

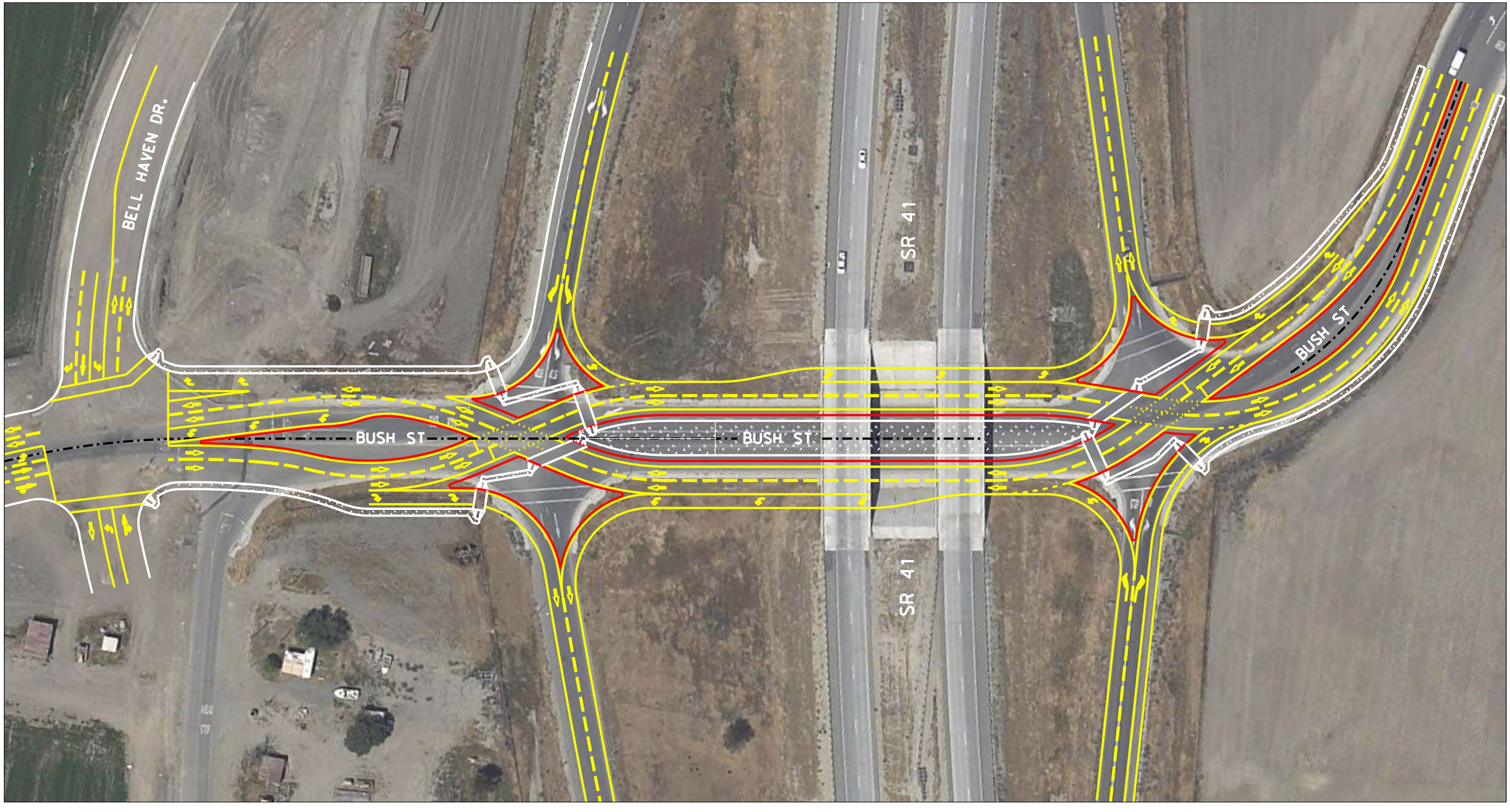
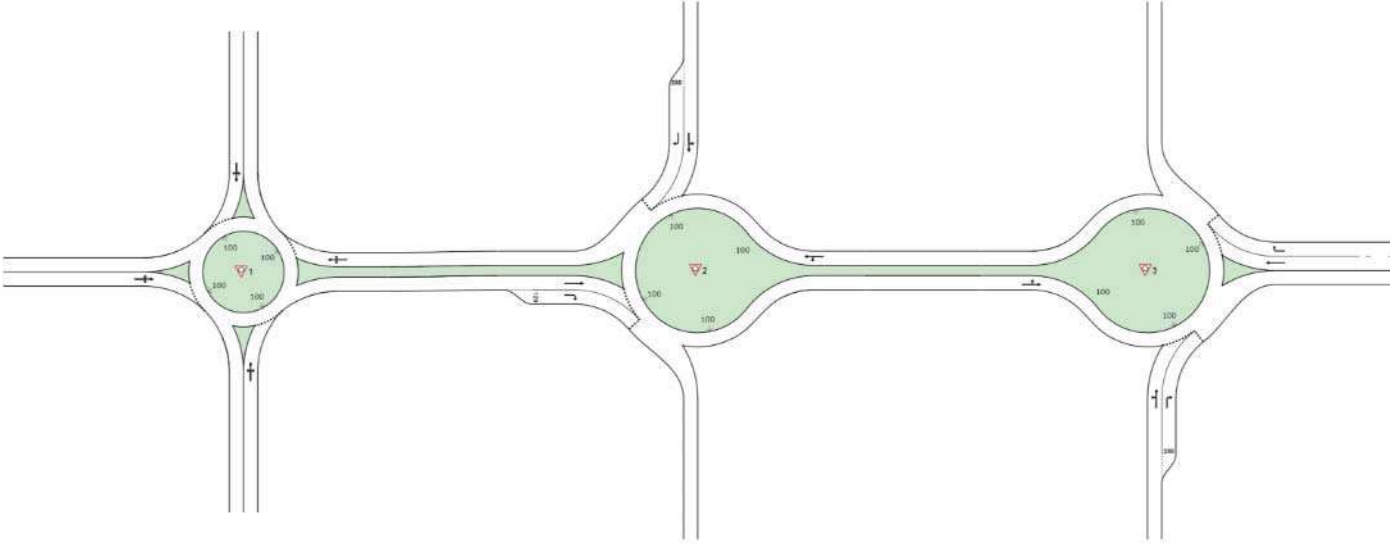


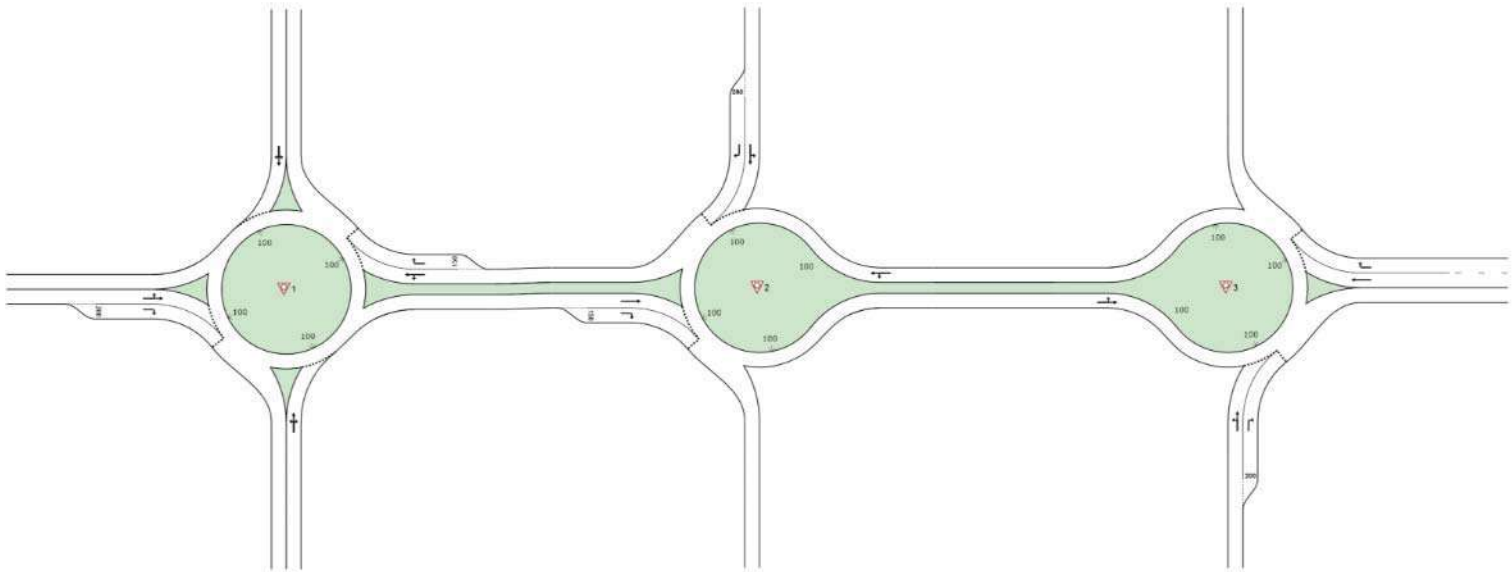
Figure 3 - 2020 Concept Roundabout Layout

Network: 2020 PM



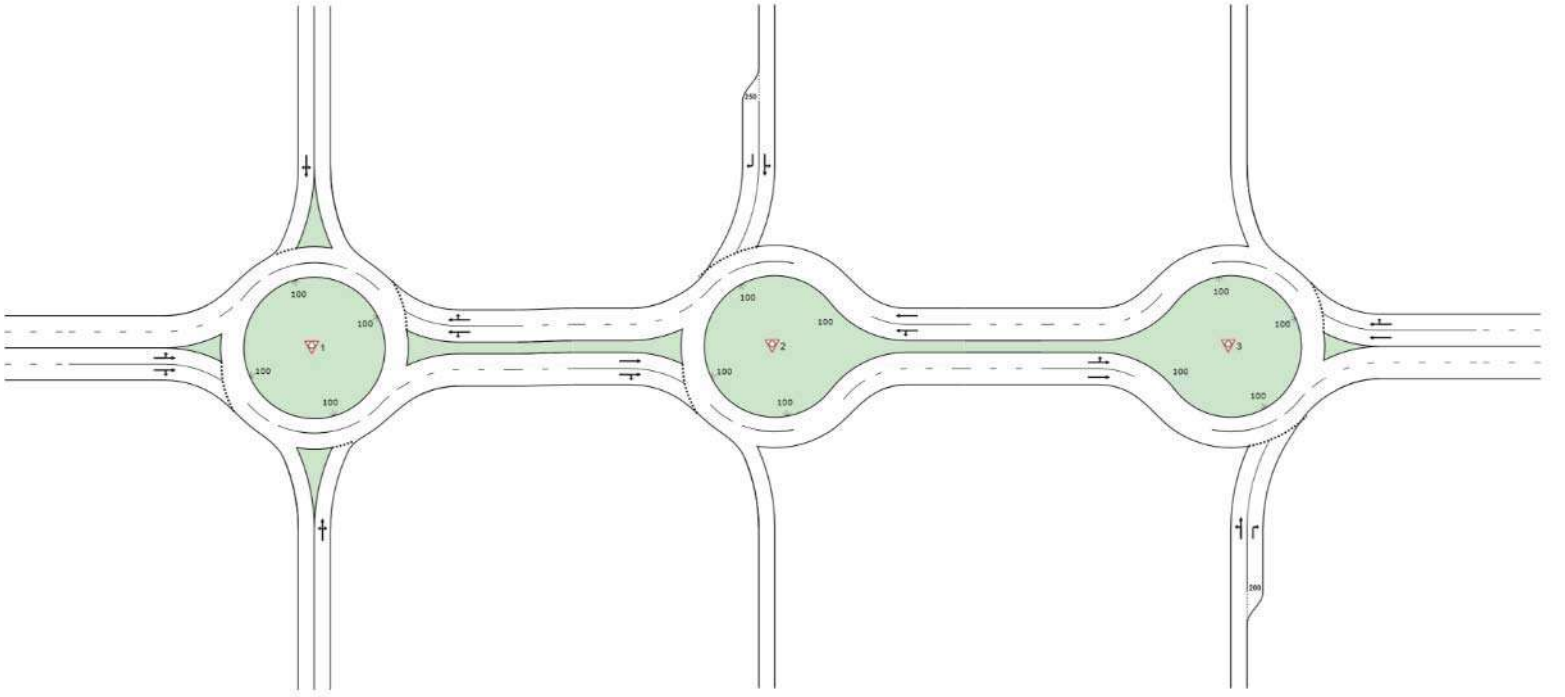
SITES IN NETWORK	
Site ID	**Site Name**
1	Intersection 1
2	Intersection 2
3	Intersection 3

Figure 4 - 2030 Concept Roundabout Layout



SITES IN NETWORK	
Site ID	**Site Name**
1	Intersection 1
2	Intersection 2
3	Intersection 3

Figure 5 - 2040 Concept Roundabout Layout



SITES IN NETWORK	
Site ID	**Site Name**
1	Intersection 1
2	Intersection 2
3	Intersection 3

Appendix A

HCS analysis for stop-control intersections

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2015 AM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*14*	*177*	*5*	*14*	*462*	*63*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*7*	*2*	*39*	*54*	*2*	*79*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*216*		*271*	*326*	*7*	*45*	*62*	*87*
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.1*	*0.0*	*1.0*	*0.0*	*1.0*	*0.0*
Prop. Right-Turns	*0.0*		*0.0*	*0.2*	*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*		*0.2*	*0.0*	*0.7*	*-0.5*	*0.7*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.19*		*0.24*	*0.29*	*0.01*	*0.04*	*0.06*	*0.08*
hd, final value (s)	*5.94*		*5.60*	*5.42*	*7.48*	*6.29*	*7.25*	*6.05*
x, final value	*0.36*		*0.42*	*0.49*	*0.01*	*0.08*	*0.12*	*0.15*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*3.6*		*3.3*	*3.1*	*5.2*	*4.0*	*5.0*	*3.8*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*466*		*521*	*576*	*257*	*295*	*312*	*337*
Delay (s/veh)	*11.89*		*12.32*	*13.23*	*10.29*	*9.53*	*10.98*	*9.79*
LOS	*B*		*B*	*B*	*B*	*A*	*B*	*A*
Approach: Delay (s/veh)	*11.89*		*12.82*		*9.63*		*10.28*	
LOS	*B*		*B*		*A*		*B*	
Intersection Delay (s/veh)	*12.08*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2015 PM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*18*	*359*	*10*	*27*	*254*	*27*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*10*	*1*	*32*	*89*	*1*	*22*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*429*		*171*	*171*	*11*	*36*	*99*	*24*
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.0*		*0.2*	*0.0*	*1.0*	*0.0*	*1.0*	*0.0*
Prop. Right-Turns	*0.0*		*0.0*	*0.2*	*0.0*	*1.0*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*		*0.3*	*0.0*	*0.7*	*-0.5*	*0.7*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.38*		*0.15*	*0.15*	*0.01*	*0.03*	*0.09*	*0.02*
hd, final value (s)	*5.66*		*5.84*	*5.63*	*7.50*	*6.30*	*7.29*	*6.08*
x, final value	*0.67*		*0.28*	*0.27*	*0.02*	*0.06*	*0.20*	*0.04*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*3.4*		*3.5*	*3.3*	*5.2*	*4.0*	*5.0*	*3.8*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*628*		*421*	*421*	*261*	*286*	*349*	*274*
Delay (s/veh)	*19.29*		*10.77*	*10.37*	*10.38*	*9.43*	*11.81*	*9.03*
LOS	*C*		*B*	*B*	*B*	*A*	*B*	*A*
Approach: Delay (s/veh)	*19.29*		*10.57*		*9.65*		*11.27*	
LOS	*C*		*B*		*A*		*B*	
Intersection Delay (s/veh)	*14.59*							
Intersection LOS	*B*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2020 AM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*16*	*214*	*10*	*34*	*527*	*80*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*16*	*7*	*66*	*69*	*4*	*86*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*265*		*329*	*381*	*17*	*80*	*80*	95
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.1*	*0.0*	*1.0*	*0.0*	*0.9*	*0.0*
Prop. Right-Turns	*0.0*		*0.0*	*0.2*	*0.0*	*0.9*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*		*0.2*	*0.0*	*0.7*	*-0.5*	*0.6*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.24*		*0.29*	*0.34*	*0.02*	*0.07*	*0.07*	*0.08*
hd, final value (s)	*6.37*		*6.05*	*5.83*	*8.03*	*6.87*	*7.80*	*6.61*
x, final value	*0.47*		*0.55*	*0.62*	*0.04*	*0.15*	*0.17*	*0.17*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.1*		*3.7*	*3.5*	*5.7*	*4.6*	*5.5*	*4.3*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*515*		*579*	*610*	*267*	*330*	*330*	*345*
Delay (s/veh)	*14.56*		*15.95*	*17.44*	*11.04*	*10.80*	*12.13*	*10.70*
LOS	*B*		*C*	*C*	*B*	*B*	*B*	*B*
Approach: Delay (s/veh)	*14.56*		*16.75*		*10.84*		*11.35*	
LOS	*B*		*C*		*B*		*B*	
Intersection Delay (s/veh)	*15.07*							
Intersection LOS	*C*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2020 PM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*26*	*431*	*17*	*58*	*324*	*59*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*16*	*7*	*63*	*106*	*5*	*38*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*524*		*244*	*245*	*17*	*77*	*122*	*42*
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.3*	*0.0*	*1.0*	*0.0*	*1.0*	*0.0*
Prop. Right-Turns	*0.0*		*0.0*	*0.3*	*0.0*	*0.9*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*		*0.3*	*-0.0*	*0.7*	*-0.5*	*0.6*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.47*		*0.22*	*0.22*	*0.02*	*0.07*	*0.11*	*0.04*
hd, final value (s)	*6.27*		*6.57*	*6.25*	*8.45*	*7.28*	*8.16*	*6.96*
x, final value	*0.91*		*0.45*	*0.43*	*0.04*	*0.16*	*0.28*	*0.08*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.0*		*4.3*	*3.9*	*6.1*	*5.0*	*5.9*	*4.7*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*572*		*494*	*495*	*267*	*327*	*372*	*292*
Delay (s/veh)	*43.69*		*14.44*	*13.50*	*11.50*	*11.32*	*13.95*	*10.27*
LOS	*E*		*B*	*B*	*B*	*B*	*B*	*B*
Approach: Delay (s/veh)	*43.69*		*13.97*		*11.35*		*13.01*	
LOS	*E*		*B*		*B*		*B*	
Intersection Delay (s/veh)	*25.90*							
Intersection LOS	*D*							

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2030 AM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*19*	*287*	*19*	*75*	*657*	*114*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*33*	*16*	*121*	*100*	*9*	*99*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*360*		*447*	*491*	*36*	*151*	*121*	110
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.2*	*0.0*	*1.0*	*0.0*	*0.9*	*0.0*
Prop. Right-Turns	*0.1*		*0.0*	*0.3*	*0.0*	*0.9*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*		*0.3*	*-0.0*	*0.7*	*-0.5*	*0.6*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.32*		*0.40*	*0.44*	*0.03*	*0.13*	*0.11*	*0.10*
hd, final value (s)	*7.30*		*7.12*	*6.84*	*9.10*	*7.94*	*8.91*	*7.72*
x, final value	*0.73*		*0.88*	*0.93*	*0.09*	*0.33*	*0.30*	*0.24*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.0*		*4.8*	*4.5*	*6.8*	*5.6*	*6.6*	*5.4*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*488*		*505*	*526*	*286*	*401*	*371*	*360*
Delay (s/veh)	*27.30*		*42.97*	*50.21*	*12.70*	*14.55*	*15.38*	*12.79*
LOS	*D*		*E*	*F*	*B*	*B*	*C*	*B*
Approach: Delay (s/veh)	*27.30*		*46.76*		*14.19*		*14.14*	
LOS	*D*		*E*		*B*		*B*	
Intersection Delay (s/veh)	*34.74*							
Intersection LOS	*D*							

HCS+™ Version 5.6 Generated: 12/10/2015 2:58 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2030 PM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*43*	*576*	*31*	*121*	*464*	*122*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*28*	*18*	*124*	*141*	*12*	*69*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*721*		*391*	*392*	*31*	*157*	*169*	76
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.3*	*0.0*	*1.0*	*0.0*	*0.9*	*0.0*
Prop. Right-Turns	*0.0*		*0.0*	*0.3*	*0.0*	*0.9*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*		*0.3*	*-0.1*	*0.7*	*-0.4*	*0.6*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.64*		*0.35*	*0.35*	*0.03*	*0.14*	*0.15*	*0.07*
hd, final value (s)	*7.47*		*7.72*	*7.30*	*9.52*	*8.37*	*9.24*	*8.03*
x, final value	*1.50*		*0.84*	*0.80*	*0.08*	*0.36*	*0.43*	*0.17*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.2*		*5.4*	*5.0*	*7.2*	*6.1*	*6.9*	*5.7*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*721*		*465*	*492*	*281*	*407*	*383*	*326*
Delay (s/veh)	*254.18*		*39.20*	*32.76*	*13.07*	*15.79*	*18.82*	*12.37*
LOS	*F*		*E*	*D*	*B*	*C*	*C*	*B*
Approach: Delay (s/veh)	*254.18*		*35.98*		*15.34*		*16.82*	
LOS	*F*		*E*		*C*		*C*	
Intersection Delay (s/veh)	*112.77*							
Intersection LOS	*F*							

HCS+™ Version 5.6 Generated: 12/10/2015 3:00 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2040 AM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*23*	*360*	*29*	*116*	*787*	*148*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*50*	*25*	*175*	*131*	*14*	*113*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*457*		*564*	*601*	*55*	*221*	*160*	125
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.2*	*0.0*	*1.0*	*0.0*	*0.9*	*0.0*
Prop. Right-Turns	*0.1*		*0.0*	*0.3*	*0.0*	*0.9*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.1*		*0.3*	*-0.0*	*0.7*	*-0.4*	*0.6*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.41*		*0.50*	*0.53*	*0.05*	*0.20*	*0.14*	*0.11*
hd, final value (s)	*8.06*		*8.27*	*7.96*	*9.78*	*8.61*	*9.71*	*8.51*
x, final value	*1.02*		*1.30*	*1.33*	*0.15*	*0.53*	*0.43*	*0.30*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*5.8*		*6.0*	*5.7*	*7.5*	*6.3*	*7.4*	*6.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*457*		*564*	*601*	*305*	*414*	*367*	*375*
Delay (s/veh)	*77.05*		*173.56*	*185.63*	*14.19*	*20.58*	*19.59*	*14.74*
LOS	*F*		*F*	*F*	*B*	*C*	*C*	*B*
Approach: Delay (s/veh)	*77.05*		*179.79*		*19.30*		*17.46*	
LOS	*F*		*F*		*C*		*C*	
Intersection Delay (s/veh)	*116.80*							
Intersection LOS	*F*							

HCS+™ Version 5.6 Generated: 12/10/2015 3:07 PM

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2040 PM*

Site Information

Intersection	*Bush-Bell Haven*
Jurisdiction	
Analysis Year	

Project ID *Intersection 1*

East/West Street: *Bush Street* North/South Street: *Bell Haven*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*60*	*720*	*45*	*183*	*604*	*185*
%Thrus Left Lane				*50*		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*40*	*30*	*185*	*175*	*20*	*113*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*LTR*		*LT*	*TR*	*L*	*TR*	*LT*	*R*
PHF	*0.90*		*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Flow Rate (veh/h)	*916*		*538*	*540*	*44*	*238*	*216*	125
% Heavy Vehicles	*10*		*10*	*10*	*10*	*10*	*10*	*10*
No. Lanes	*1*		*2*		*2*		*2*	
Geometry Group	*4b*		*5*		*5*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*0.1*		*0.4*	*0.0*	*1.0*	*0.0*	*0.9*	*0.0*
Prop. Right-Turns	*0.1*		*0.0*	*0.4*	*0.0*	*0.9*	*0.0*	*1.0*
Prop. Heavy Vehicle	*0.1*		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
hLT-adj	*0.2*	*0.2*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*
hRT-adj	*-0.6*	*-0.6*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.2*		*0.4*	*-0.1*	*0.7*	*-0.4*	*0.6*	*-0.5*

Departure Headway and Service Time

hd, initial value (s)	*3.20*		*3.20*	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*
x, initial	*0.81*		*0.48*	*0.48*	*0.04*	*0.21*	*0.19*	*0.11*
hd, final value (s)	*8.40*		*8.69*	*8.23*	*10.02*	*8.86*	*9.78*	*8.58*
x, final value	*2.14*		*1.30*	*1.23*	*0.12*	*0.59*	*0.59*	*0.30*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*6.1*		*6.4*	*5.9*	*7.7*	*6.6*	*7.5*	*6.3*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*916*		*538*	*540*	*294*	*403*	*365*	*375*
Delay (s/veh)	*538.24*		*176.67*	*149.21*	*14.11*	*23.35*	*25.47*	*14.88*
LOS	*F*		*F*	*F*	*B*	*C*	*D*	*B*
Approach: Delay (s/veh)	*538.24*		*162.91*		*21.91*		*21.59*	
LOS	*F*		*F*		*C*		*C*	
Intersection Delay (s/veh)	*260.68*							
Intersection LOS	*F*							

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2015 AM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*190*	*80*	*272*	*465*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*211*	*88*	*302*	*516*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*84*		*74*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*93*	*0*	*82*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*302*				*93*		*82*
C (m) (veh/h)		*1218*				*116*		*543*
v/c		*0.25*				*0.80*		*0.15*
95% queue length		*0.98*				*4.64*		*0.53*
Control Delay (s/veh)		*8.9*				*106.3*		*12.8*
LOS		*A*				*F*		*B*
Approach Delay (s/veh)	--	--				*62.5*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 1:33 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2015 PM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*331*	*149*	*116*	*258*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*367*	*165*	*128*	*286*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*103*		*50*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*114*	*0*	*55*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*128*				*114*		*55*
C (m) (veh/h)		*996*				*229*		*734*
v/c		*0.13*				*0.50*		*0.07*
95% queue length		*0.44*				*2.53*		*0.24*
Control Delay (s/veh)		*9.1*				*35.4*		*10.3*
LOS		*A*				*E*		*B*
Approach Delay (s/veh)	--	--				*27.2*		
Approach LOS	--	--				*D*		

HCS+™ Version 5.5 Generated: 12/9/2015 1:39 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2020 AM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*244*	*106*	*295*	*542*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*271*	*117*	*327*	*602*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*89*		*99*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*98*	*0*	*110*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*327*				*98*		*110*
C (m) (veh/h)		*1128*				*81*		*485*
v/c		*0.29*				*1.21*		*0.23*
95% queue length		*1.21*				*7.22*		*0.86*
Control Delay (s/veh)		*9.5*				*259.2*		*14.6*
LOS		*A*				*F*		*B*
Approach Delay (s/veh)	--	--				*129.9*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 1:50 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2020 PM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*421*	*179*	*137*	*374*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*467*	*198*	*152*	*415*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*119*		*67*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*132*	*0*	*74*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*152*				*132*		*74*
C (m) (veh/h)		*887*				*145*		*621*
v/c		*0.17*				*0.91*		*0.12*
95% queue length		*0.62*				*6.27*		*0.40*
Control Delay (s/veh)		*9.9*				*112.5*		*11.6*
LOS		*A*				*F*		*B*
Approach Delay (s/veh)	--	--				*76.2*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 1:52 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2030 AM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*351*	*157*	*341*	*697*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*390*	*174*	*378*	*774*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*99*		*150*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*110*	*0*	*166*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*378*				*110*		*166*
C (m) (veh/h)		*969*				*38*		*386*
v/c		*0.39*				*2.89*		*0.43*
95% queue length		*1.87*				*12.34*		*2.10*
Control Delay (s/veh)		*11.1*				*1078*		*21.2*
LOS		*B*				*F*		*C*
Approach Delay (s/veh)	--	--				*442.6*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 1:55 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2030 PM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*600*	*240*	*178*	*606*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*666*	*266*	*197*	*673*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*150*		*100*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*166*	*0*	*111*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*197*				*166*		*111*
C (m) (veh/h)		*702*				*55*		*442*
v/c		*0.28*				*3.02*		*0.25*
95% queue length		*1.15*				*17.44*		*0.98*
Control Delay (s/veh)		*12.1*				*1068*		*15.9*
LOS		*B*				*F*		*C*
Approach Delay (s/veh)	--	--				*646.2*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 1:58 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2040 AM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*458*	*208*	*387*	*851*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*508*	*231*	*430*	*945*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*109*		*200*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*121*	*0*	*222*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*430*				*121*		*222*
C (m) (veh/h)		*832*				*16*		*307*
v/c		*0.52*				*7.56*		*0.72*
95% queue length		*3.03*				*15.97*		*5.25*
Control Delay (s/veh)		*13.9*				*3423*		*42.2*
LOS		*B*				*F*		*E*
Approach Delay (s/veh)	--	--				*1235*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 2:00 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2040 PM*

Site Information

Intersection	*Bush Street at SB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 2*

East/West Street: *Bush Street* | North/South Street: *SB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*780*	*300*	*219*	*838*	
Peak-Hour Factor, PHF	*1.00*	*0.90*	*0.90*	*0.90*	*0.90*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*866*	*333*	*243*	*931*	*0*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*1*	*1*	*0*
Configuration			*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*182*		*134*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*202*	*0*	*148*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*				*L*		*R*
v (veh/h)		*243*				*202*		*148*
C (m) (veh/h)		*555*				*18*		*313*
v/c		*0.44*				*11.22*		*0.47*
95% queue length		*2.21*				*25.92*		*2.41*
Control Delay (s/veh)		*16.4*				*5015*		*26.4*
LOS		*C*				*F*		*D*
Approach Delay (s/veh)	--	--				*2906*		
Approach LOS	--	--				*F*		

HCS+™ Version 5.5 Generated: 12/9/2015 2:02 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2015 AM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*81*	*193*			*613*	*131*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*90*	*214*	*0*	*0*	*681*	*145*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*124*		*95*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*137*	*0*	*105*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)	*0*			*0*		
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*90*		*137*		*105*			
C (m) (veh/h)	*813*		*197*		*831*			
v/c	*0.11*		*0.70*		*0.13*			
95% queue length	*0.37*		*4.34*		*0.43*			
Control Delay (s/veh)	*10.0*		*56.8*		*10.0*			
LOS	*A*		*F*		*A*			
Approach Delay (s/veh)	--	--	*36.5*					
Approach LOS	--	--	*E*					

HCS+™ Version 5.6

Generated: 12/9/2015 4:29 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2015 PM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*70*	*364*			*280*	*81*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*77*	*404*	*0*	*0*	*311*	*90*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*94*		*215*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*104*	*0*	*238*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*77*		*104*		*238*			
C (m) (veh/h)	*1169*		*286*		*651*			
v/c	*0.07*		*0.36*		*0.37*			
95% queue length	*0.21*		*1.60*		*1.67*			
Control Delay (s/veh)	*8.3*		*24.6*		*13.7*			
LOS	*A*		*C*		*B*			
Approach Delay (s/veh)	--	--	*17.0*					
Approach LOS	--	--	*C*					

HCS+™ Version 5.6

Generated: 12/9/2015 4:31 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2020 AM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*92*	*241*			*693*	*163*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*102*	*267*	*0*	*0*	*770*	*181*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*144*		*122*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*160*	*0*	*135*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*102*		*160*		*135*			
C (m) (veh/h)	*730*		*148*		*777*			
v/c	*0.14*		*1.08*		*0.17*			
95% queue length	*0.48*		*8.53*		*0.63*			
Control Delay (s/veh)	*10.7*		*157.9*		*10.6*			
LOS	*B*		*F*		*B*			
Approach Delay (s/veh)	--	--	*90.5*					
Approach LOS	--	--	*F*					

HCS+™ Version 5.6

Generated: 12/9/2015 4:35 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/9/2015*
Analysis Time Period	*2020 PM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*86*	*454*			*388*	*99*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*95*	*504*	*0*	*0*	*431*	*110*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*123*		*266*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*136*	*0*	*295*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*95*		*136*		*295*			
C (m) (veh/h)	*1038*		*193*		*572*			
v/c	*0.09*		*0.70*		*0.52*			
95% queue length	*0.30*		*4.42*		*2.94*			
Control Delay (s/veh)	*8.8*		*58.8*		*17.8*			
LOS	*A*		*F*		*C*			
Approach Delay (s/veh)	--	--	*30.8*					
Approach LOS	--	--	*D*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2030 AM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*113*	*336*			*853*	*228*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*125*	*373*	*0*	*0*	*947*	*253*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*185*		*177*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*205*	*0*	*196*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*125*		*205*		*196*			
C (m) (veh/h)	*589*		*81*		*678*			
v/c	*0.21*		*2.53*		*0.29*			
95% queue length	*0.80*		*19.45*		*1.20*			
Control Delay (s/veh)	*12.8*		*805.3*		*12.5*			
LOS	*B*		*F*		*B*			
Approach Delay (s/veh)	--	--	*417.8*					
Approach LOS	--	--	*F*					

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Generated: 12/10/2015 1:26 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2030 PM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*118*	*633*			*603*	*136*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*131*	*703*	*0*	*0*	*670*	*151*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*181*		*177*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*201*	*0*	*196*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*131*		*201*		*196*			
C (m) (veh/h)	*817*		*85*		*441*			
v/c	*0.16*		*2.36*		*0.44*			
95% queue length	*0.57*		*18.56*		*2.24*			
Control Delay (s/veh)	*10.2*		*727.7*		*19.5*			
LOS	*B*		*F*		*C*			
Approach Delay (s/veh)	--	--	*378.1*					
Approach LOS	--	--	*F*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2040 AM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*135*	*432*			*1013*	*292*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*150*	*480*	*0*	*0*	*1125*	*324*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*225*		*231*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*250*	*0*	*256*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*150*		*250*		*256*			
C (m) (veh/h)	*474*		*42*		*590*			
v/c	*0.32*		*5.95*		*0.43*			
95% queue length	*1.34*		*29.21*		*2.19*			
Control Delay (s/veh)	*16.1*		*2418*		*15.7*			
LOS	*C*		*F*		*C*			
Approach Delay (s/veh)	--	--	*1203*					
Approach LOS	--	--	*F*					

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Generated: 12/10/2015 1:32 PM

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*W Lum*
Agency/Co.	*Caltrans*
Date Performed	*12/10/2015*
Analysis Time Period	*2040 PM*

Site Information

Intersection	*Bush Street at NB 41 Ramps*
Jurisdiction	
Analysis Year	

Project Description *Intersection 3*

East/West Street: *Bush Street* | North/South Street: *NB 41 Ramps*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*150*	*812*			*818*	*173*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*166*	*902*	*0*	*0*	*908*	*192*
Percent Heavy Vehicles	*0*	--	--	*10*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*0*	*1*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*239*		*470*			
Peak-Hour Factor, PHF	*0.90*	*1.00*	*0.90*	*0.90*	*1.00*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*265*	*0*	*522*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*10*	*0*	*10*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*		*L*		*R*			
v (veh/h)	*166*		*265*		*522*			
C (m) (veh/h)	*642*		*35*		*339*			
v/c	*0.26*		*7.57*		*1.54*			
95% queue length	*1.03*		*31.87*		*29.51*			
Control Delay (s/veh)	*12.6*		*3179*		*285.8*			
LOS	*B*		*F*		*F*			
Approach Delay (s/veh)	--	--	*1260*					
Approach LOS	--	--	*F*					

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Appendix B

Synchro analysis for signalized intersections

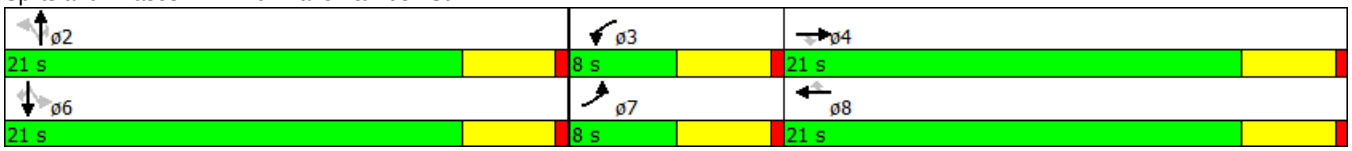
Queues
1: Bell Haven & Bush St

12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	177	5	14	462	63	7	2	39	54	2	79
Satd. Flow (prot)	1641	3282	1468	1641	3282	1468	1641	1727	1468	1641	1727	1468
Flt Permitted	0.950			0.950			0.757			0.757		
Satd. Flow (perm)	1641	3282	1468	1641	3282	1468	1308	1727	1468	1308	1727	1468
Satd. Flow (RTOR)			109			109			109			109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	197	6	16	513	70	8	2	43	60	2	88
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Total Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	4.1	11.7	11.7	4.1	11.7	11.7	17.4	17.4	17.4	17.4	17.4	17.4
Actuated g/C Ratio	0.11	0.30	0.30	0.11	0.30	0.30	0.45	0.45	0.45	0.45	0.45	0.45
v/c Ratio	0.09	0.20	0.01	0.09	0.51	0.13	0.01	0.00	0.06	0.10	0.00	0.12
Control Delay	20.0	10.6	0.0	20.0	13.2	2.2	9.0	9.0	0.4	9.1	9.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	10.6	0.0	20.0	13.2	2.2	9.0	9.0	0.4	9.1	9.0	2.8
LOS	B	B	A	B	B	A	A	A	A	A	A	A
Approach Delay		11.0			12.1			2.0			5.4	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	3	14	0	3	42	0	1	0	0	6	0	0
Queue Length 95th (ft)	19	38	0	19	95	12	8	4	2	32	4	18
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	174	1479	721	174	1479	721	589	778	721	589	778	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.13	0.01	0.09	0.35	0.10	0.01	0.00	0.06	0.10	0.00	0.12

Intersection Summary		
Cycle Length: 50		
Actuated Cycle Length: 38.5		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.51		
Intersection Signal Delay: 10.4	Intersection LOS: B	
Intersection Capacity Utilization 31.0%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

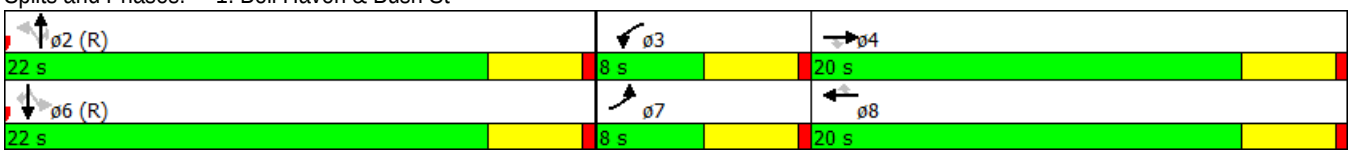
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	359	10	27	254	27	10	1	32	89	1	22
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.950			0.950			0.757			0.757		
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1370	1810	1538	1370	1810	1538
Satd. Flow (RTOR)			109			109			109			109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	399	11	30	282	30	11	1	36	99	1	24
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Total Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	4.0	11.5	11.5	4.0	13.1	13.1	27.3	27.3	27.3	27.3	27.3	27.3
Actuated g/C Ratio	0.08	0.23	0.23	0.08	0.26	0.26	0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.15	0.51	0.03	0.22	0.31	0.06	0.01	0.00	0.04	0.13	0.00	0.03
Control Delay	24.1	18.6	0.1	33.2	16.0	0.7	8.9	9.0	0.1	9.0	9.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	18.6	0.1	33.2	16.0	0.7	8.9	9.0	0.1	9.0	9.0	0.0
LOS	C	B	A	C	B	A	A	A	A	A	A	A
Approach Delay		18.3			16.2			2.3			7.2	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	6	54	0	10	49	0	1	0	0	10	0	0
Queue Length 95th (ft)	21	77	0	32	15	0	9	3	0	45	3	0
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	137	1100	566	137	1170	595	748	988	889	748	988	889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.36	0.02	0.22	0.24	0.05	0.01	0.00	0.04	0.13	0.00	0.03

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 15.3 — Intersection LOS: B
Intersection Capacity Utilization 34.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

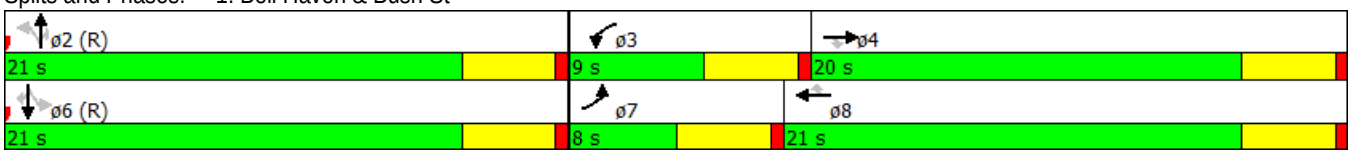
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	214	10	34	527	80	16	7	66	69	4	86
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.950			0.950			0.755			0.752		
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1366	1810	1538	1361	1810	1538
Satd. Flow (RTOR)			109			109			109			109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	238	11	38	586	89	18	8	73	77	4	96
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Total Split (s)	8.0	20.0	20.0	9.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	4.0	12.4	12.4	5.0	14.4	14.4	26.0	26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.08	0.25	0.25	0.10	0.29	0.29	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio	0.13	0.28	0.02	0.22	0.59	0.17	0.03	0.01	0.09	0.11	0.00	0.11
Control Delay	23.8	15.7	0.1	24.2	17.4	3.3	9.2	9.1	1.9	9.3	9.2	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	15.7	0.1	24.2	17.4	3.3	9.2	9.1	1.9	9.3	9.2	3.0
LOS	C	B	A	C	B	A	A	A	A	A	A	A
Approach Delay		15.6			16.0			3.8			5.8	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	5	27	0	11	76	0	2	1	0	9	1	0
Queue Length 95th (ft)	20	47	0	32	108	18	14	8	13	39	6	20
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	137	1100	566	171	1191	604	709	939	850	706	939	850
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.22	0.02	0.22	0.49	0.15	0.03	0.01	0.09	0.11	0.00	0.11

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 13.5 — Intersection LOS: B
Intersection Capacity Utilization 38.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

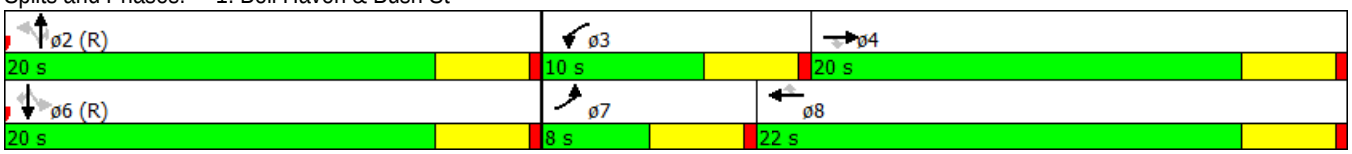
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	431	17	58	324	59	16	7	63	106	5	38
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.950			0.950			0.754			0.752		
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1364	1810	1538	1361	1810	1538
Satd. Flow (RTOR)			109			109			109			109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	479	19	64	360	66	18	8	70	118	6	42
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Total Split (s)	8.0	20.0	20.0	10.0	22.0	22.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	4.0	12.4	12.4	5.9	16.8	16.8	23.6	23.6	23.6	23.6	23.6	23.6
Actuated g/C Ratio	0.08	0.25	0.25	0.12	0.34	0.34	0.47	0.47	0.47	0.47	0.47	0.47
v/c Ratio	0.21	0.56	0.04	0.32	0.31	0.11	0.03	0.01	0.09	0.18	0.01	0.05
Control Delay	25.5	18.7	0.2	24.7	12.3	1.7	11.3	11.1	1.9	12.0	11.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	18.7	0.2	24.7	12.3	1.7	11.3	11.1	1.9	12.0	11.2	0.3
LOS	C	B	A	C	B	A	B	B	A	B	B	A
Approach Delay		18.4			12.5			4.4			9.0	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	8	64	0	18	32	0	3	1	0	22	1	0
Queue Length 95th (ft)	28	91	0	46	63	10	14	8	12	57	7	2
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	137	1100	566	206	1379	682	644	855	783	642	855	783
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.44	0.03	0.31	0.26	0.10	0.03	0.01	0.09	0.18	0.01	0.05

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 13.9 — Intersection LOS: B
Intersection Capacity Utilization 37.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

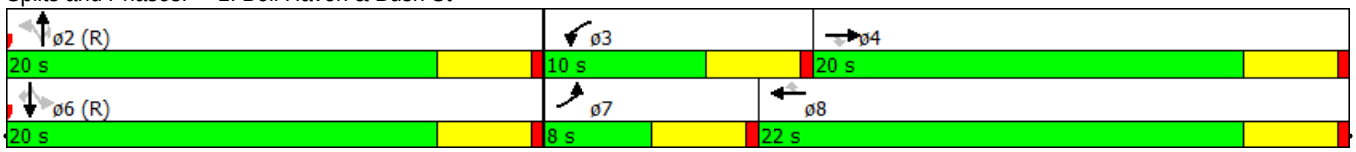
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	287	19	75	657	114	33	16	121	100	9	99
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.950			0.950			0.751			0.746		
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1359	1810	1538	1350	1810	1538
Satd. Flow (RTOR)			109			127			134			110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	319	21	83	730	127	37	18	134	111	10	110
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Total Split (s)	8.0	20.0	20.0	10.0	22.0	22.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	4.0	12.6	12.6	5.9	17.0	17.0	23.4	23.4	23.4	23.4	23.4	23.4
Actuated g/C Ratio	0.08	0.25	0.25	0.12	0.34	0.34	0.47	0.47	0.47	0.47	0.47	0.47
v/c Ratio	0.15	0.37	0.04	0.41	0.62	0.21	0.06	0.02	0.17	0.18	0.01	0.14
Control Delay	24.2	16.6	0.2	33.7	21.0	6.6	10.4	10.3	3.5	11.2	10.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	16.6	0.2	33.7	21.0	6.6	10.4	10.3	3.5	11.2	10.3	3.7
LOS	C	B	A	C	C	A	B	B	A	B	B	A
Approach Delay		16.1			20.2			5.5			7.6	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)	6	43	0	28	81	13	6	3	0	18	2	0
Queue Length 95th (ft)	22	61	0	m57	69	m0	23	14	28	55	10	25
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	137	1100	566	206	1303	661	635	846	790	631	846	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.29	0.04	0.40	0.56	0.19	0.06	0.02	0.17	0.18	0.01	0.14

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 43.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

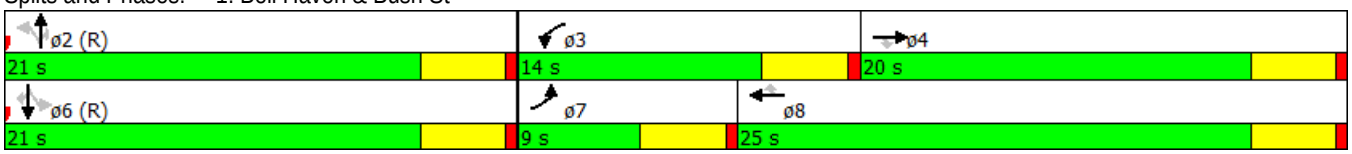
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	576	31	121	464	122	28	18	124	141	12	69
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.950			0.950			0.749			0.744		
Satd. Flow (perm)	1719	3438	1538	1719	3438	1538	1355	1810	1538	1346	1810	1538
Satd. Flow (RTOR)			179			136			179			179
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	640	34	134	516	136	31	20	138	157	13	77
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4			8	2		2	6		6
Total Split (s)	9.0	20.0	20.0	14.0	25.0	25.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	5.0	14.7	14.7	8.7	21.8	21.8	21.6	21.6	21.6	21.6	21.6	21.6
Actuated g/C Ratio	0.09	0.27	0.27	0.16	0.40	0.40	0.39	0.39	0.39	0.39	0.39	0.39
v/c Ratio	0.31	0.70	0.06	0.49	0.38	0.20	0.06	0.03	0.19	0.30	0.02	0.11
Control Delay	29.0	22.4	0.2	27.4	12.6	3.5	13.9	13.5	2.4	16.2	13.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	22.4	0.2	27.4	12.6	3.5	13.9	13.5	2.4	16.2	13.4	0.3
LOS	C	C	A	C	B	A	B	B	A	B	B	A
Approach Delay		21.8			13.5			5.5			11.1	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	15	95	0	40	43	0	7	4	0	39	3	0
Queue Length 95th (ft)	42	142	0	83	95	27	23	17	20	83	13	0
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	156	1000	574	312	1486	742	531	710	712	528	710	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.64	0.06	0.43	0.35	0.18	0.06	0.03	0.19	0.30	0.02	0.11

Intersection Summary

Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.5 — Intersection LOS: B
Intersection Capacity Utilization 47.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

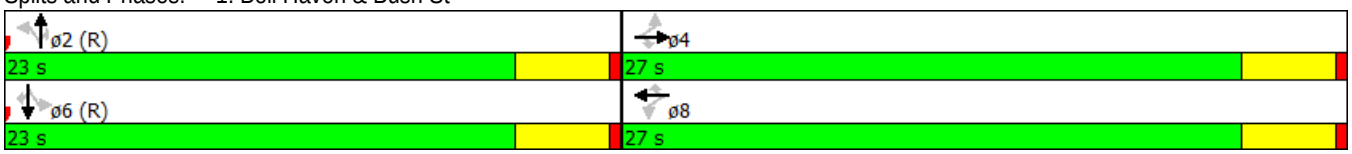
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	360	29	116	787	148	50	25	175	131	14	113
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.222			0.516			0.747			0.739		
Satd. Flow (perm)	402	3438	1538	934	3438	1538	1352	1810	1538	1337	1810	1538
Satd. Flow (RTOR)			32			164			194			87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	400	32	129	874	164	56	28	194	146	16	126
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	22.0	22.0	22.0	22.0	22.0	22.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.16	0.29	0.05	0.35	0.64	0.23	0.09	0.04	0.25	0.25	0.02	0.17
Control Delay	11.0	10.2	3.6	12.3	14.0	2.7	10.3	9.8	3.1	11.7	9.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	10.2	3.6	12.3	14.0	2.7	10.3	9.8	3.1	11.7	9.7	5.3
LOS	B	B	A	B	B	A	B	A	A	B	A	A
Approach Delay		9.7			12.2			5.2			8.8	
Approach LOS		A			B			A			A	
Queue Length 50th (ft)	4	37	0	24	96	0	10	5	0	27	3	7
Queue Length 95th (ft)	16	56	10	52	134	23	28	17	30	63	12	33
Internal Link Dist (ft)		158			119			193			195	
Turn Bay Length (ft)	120		120	195		195	120		120	120		120
Base Capacity (vph)	184	1581	724	429	1581	796	595	796	785	588	796	725
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.25	0.04	0.30	0.55	0.21	0.09	0.04	0.25	0.25	0.02	0.17

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 10.3 — Intersection LOS: B
Intersection Capacity Utilization 49.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Bell Haven & Bush St



Queues
1: Bell Haven & Bush St

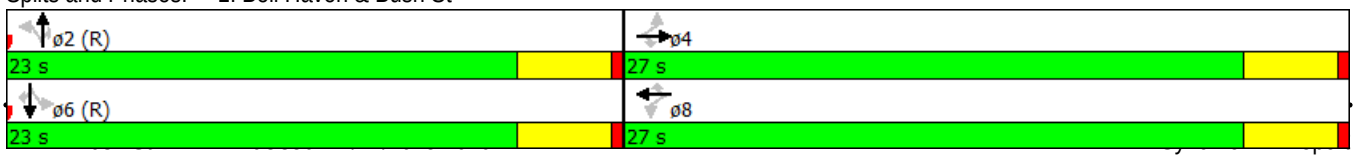
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	720	45	183	604	185	40	30	185	175	20	100
Satd. Flow (prot)	1719	3438	1538	1719	3438	1538	1719	1810	1538	1719	1810	1538
Flt Permitted	0.342			0.273			0.743			0.736		
Satd. Flow (perm)	619	3438	1538	494	3438	1538	1344	1810	1538	1332	1810	1538
Satd. Flow (RTOR)			50			206			109			111
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	800	50	203	671	206	44	33	206	194	22	111
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	21.5	21.5	21.5	21.5	21.5	21.5	20.5	20.5	20.5	20.5	20.5	20.5
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.41	0.41	0.41	0.41	0.41	0.41
v/c Ratio	0.25	0.54	0.07	0.96	0.45	0.26	0.08	0.04	0.30	0.36	0.03	0.16
Control Delay	11.2	11.8	3.2	72.0	10.9	2.6	10.6	10.1	6.9	13.5	10.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	11.8	3.2	72.0	10.9	2.6	10.6	10.1	6.9	13.5	10.0	3.5
LOS	B	B	A	E	B	A	B	B	A	B	A	A
Approach Delay		11.3			20.8			7.9			9.9	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)	11	80	0	50	64	0	8	6	18	39	4	0
Queue Length 95th (ft)	32	120	13	#159	97	26	24	19	53	82	14	23
Internal Link Dist (ft)		158			119			193			236	
Turn Bay Length (ft)	120		120	195		195	150		120	200		120
Base Capacity (vph)	284	1581	734	227	1581	818	550	741	695	546	741	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.51	0.07	0.89	0.42	0.25	0.08	0.04	0.30	0.36	0.03	0.16

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 56.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Bell Haven & Bush St



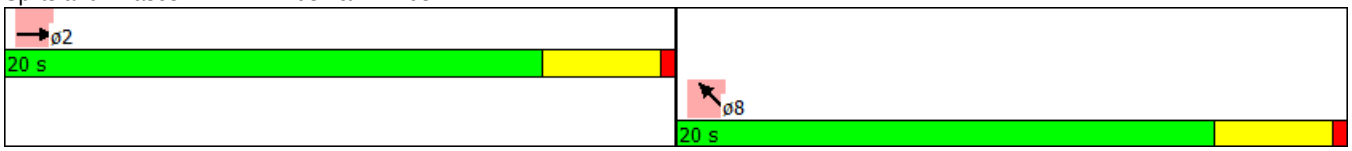
Queues
2: WB Bush & EB Bush

12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	190	0	0	0	0	0	0	0	0	465	0
Satd. Flow (prot)	0	3282	0	0	0	0	0	0	0	0	3282	0
Flt Permitted												
Satd. Flow (perm)	0	3282	0	0	0	0	0	0	0	0	3282	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	0	0	0	0	0	0	0	517	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		20.0									20.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		7.5									21.0	
Actuated g/C Ratio		0.22									0.62	
v/c Ratio		0.29									0.25	
Control Delay		11.4									4.7	
Queue Delay		0.0									0.0	
Total Delay		11.4									4.7	
LOS		B									A	
Approach Delay		11.4									4.7	
Approach LOS		B									A	
Queue Length 50th (ft)		15									21	
Queue Length 95th (ft)		29									41	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1558									2037	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.14									0.25	

Intersection Summary			
Cycle Length: 40			
Actuated Cycle Length: 33.8			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 24.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: WB Bush & EB Bush



Queues
2: WB Bush & EB Bush

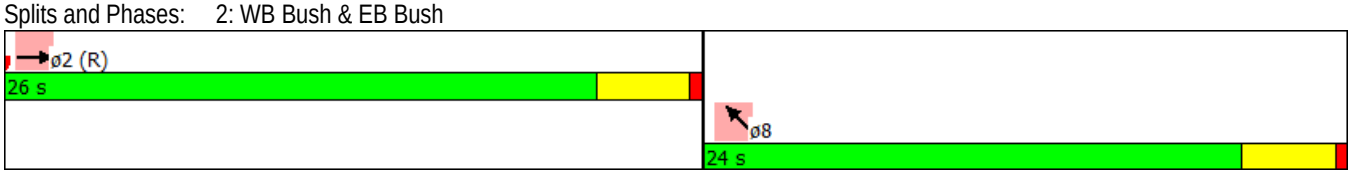
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	331	0	0	0	0	0	0	0	0	258	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	368	0	0	0	0	0	0	0	0	287	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		26.0									24.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		22.0									20.0	
Actuated g/C Ratio		0.44									0.40	
v/c Ratio		0.24									0.21	
Control Delay		9.5									13.0	
Queue Delay		0.0									0.0	
Total Delay		9.5									13.0	
LOS		A									B	
Approach Delay		9.5									13.0	
Approach LOS		A									B	
Queue Length 50th (ft)		54									36	
Queue Length 95th (ft)		72									64	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1512									1375	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.24									0.21	

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.24
Intersection Signal Delay: 11.1 — Intersection LOS: B
Intersection Capacity Utilization 22.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: WB Bush & EB Bush



Queues
2: WB Bush/EB Bush

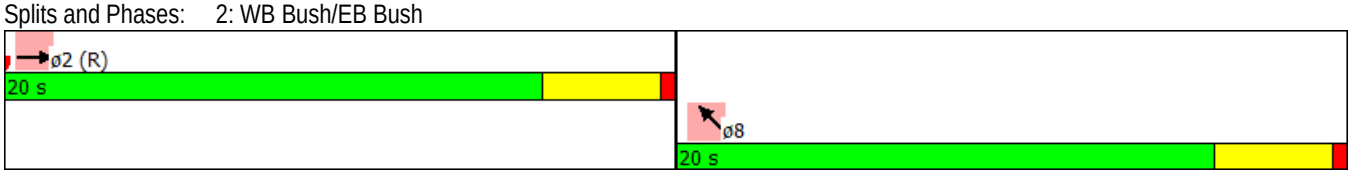
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	244	0	0	0	0	0	0	0	0	542	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	0	0	0	0	0	0	602	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		20.0									20.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		16.0									16.0	
Actuated g/C Ratio		0.40									0.40	
v/c Ratio		0.20									0.44	
Control Delay		8.3									9.9	
Queue Delay		0.0									0.0	
Total Delay		8.3									9.9	
LOS		A									A	
Approach Delay		8.3									9.9	
Approach LOS		A									A	
Queue Length 50th (ft)		19									61	
Queue Length 95th (ft)		36									99	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1375									1375	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.20									0.44	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 9.4 — Intersection LOS: A
Intersection Capacity Utilization 28.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: WB Bush/EB Bush



Queues
2: WB Bush & EB Bush

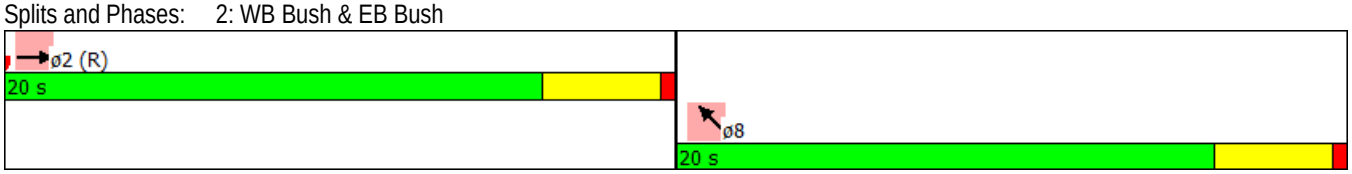
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	421	0	0	0	0	0	0	0	0	374	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	468	0	0	0	0	0	0	0	0	416	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		20.0									20.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		16.0									16.0	
Actuated g/C Ratio		0.40									0.40	
v/c Ratio		0.34									0.30	
Control Delay		9.2									7.4	
Queue Delay		0.0									0.0	
Total Delay		9.2									7.4	
LOS		A									A	
Approach Delay		9.2									7.4	
Approach LOS		A									A	
Queue Length 50th (ft)		35									38	
Queue Length 95th (ft)		60									40	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1375									1375	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.34									0.30	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.34
Intersection Signal Delay: 8.4 — Intersection LOS: A
Intersection Capacity Utilization 28.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: WB Bush & EB Bush



Queues
2: WB Bush & EB Bush

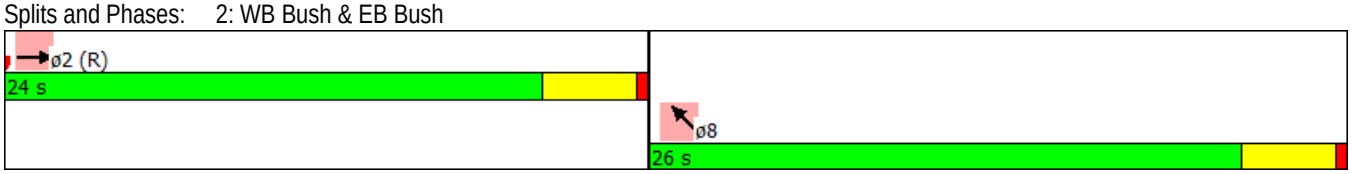
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	351	0	0	0	0	0	0	0	0	697	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	390	0	0	0	0	0	0	0	0	774	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		24.0									26.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		20.0									22.0	
Actuated g/C Ratio		0.40									0.44	
v/c Ratio		0.28									0.51	
Control Delay		8.9									11.6	
Queue Delay		0.0									0.0	
Total Delay		8.9									11.6	
LOS		A									B	
Approach Delay		8.9									11.6	
Approach LOS		A									B	
Queue Length 50th (ft)		48									100	
Queue Length 95th (ft)		64									151	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1375									1512	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.28									0.51	

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 10.7 — Intersection LOS: B
Intersection Capacity Utilization 35.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: WB Bush & EB Bush



Queues
2: WB Bush & EB Bush

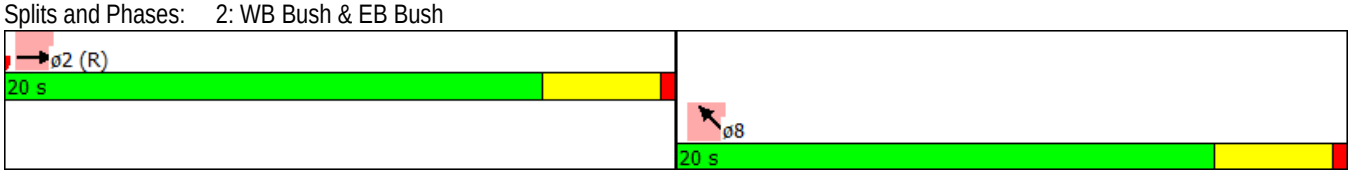
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	600	0	0	0	0	0	0	0	0	606	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	667	0	0	0	0	0	0	0	0	673	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		20.0									20.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		16.0									16.0	
Actuated g/C Ratio		0.40									0.40	
v/c Ratio		0.49									0.49	
Control Delay		10.4									7.9	
Queue Delay		0.0									0.0	
Total Delay		10.4									7.9	
LOS		B									A	
Approach Delay		10.4									7.9	
Approach LOS		B									A	
Queue Length 50th (ft)		54									68	
Queue Length 95th (ft)		88									74	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1375									1375	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.49									0.49	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 9.1 — Intersection LOS: A
Intersection Capacity Utilization 40.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: WB Bush & EB Bush



Queues
2: WB Bush & EB Bush

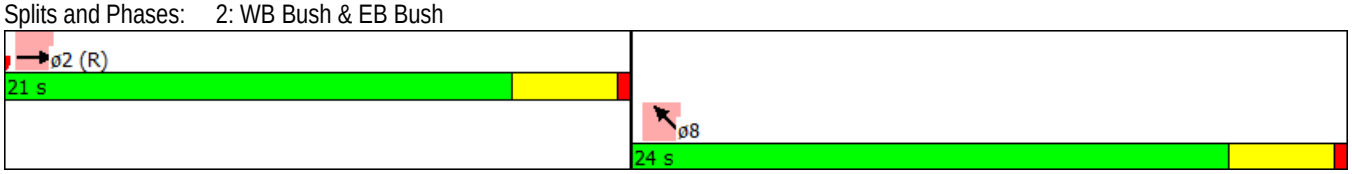
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	458	0	0	0	0	0	0	0	0	851	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	509	0	0	0	0	0	0	0	0	946	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		21.0									24.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		17.0									20.0	
Actuated g/C Ratio		0.38									0.44	
v/c Ratio		0.39									0.62	
Control Delay		11.3									9.4	
Queue Delay		0.0									0.0	
Total Delay		11.3									9.4	
LOS		B									A	
Approach Delay		11.3									9.4	
Approach LOS		B									A	
Queue Length 50th (ft)		47									113	
Queue Length 95th (ft)		78									93	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1298									1528	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.39									0.62	

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 10.1 — Intersection LOS: B
Intersection Capacity Utilization 42.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: WB Bush & EB Bush



Queues
2: WB Bush & EB Bush

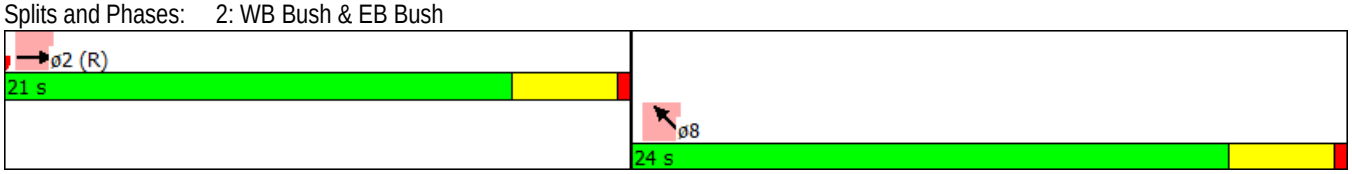
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations		↑↑									↑↑	
Volume (vph)	0	780	0	0	0	0	0	0	0	0	838	0
Satd. Flow (prot)	0	3438	0	0	0	0	0	0	0	0	3438	0
Flt Permitted												
Satd. Flow (perm)	0	3438	0	0	0	0	0	0	0	0	3438	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	867	0	0	0	0	0	0	0	0	931	0
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Total Split (s)		21.0									24.0	
Total Lost Time (s)		4.0									4.0	
Act Effct Green (s)		17.0									20.0	
Actuated g/C Ratio		0.38									0.44	
v/c Ratio		0.67									0.61	
Control Delay		14.8									8.6	
Queue Delay		0.0									0.0	
Total Delay		14.8									8.6	
LOS		B									A	
Approach Delay		14.8									8.6	
Approach LOS		B									A	
Queue Length 50th (ft)		93									109	
Queue Length 95th (ft)		143									167	
Internal Link Dist (ft)		35			40			20			55	
Turn Bay Length (ft)												
Base Capacity (vph)		1298									1528	
Starvation Cap Reductn		0									0	
Spillback Cap Reductn		0									0	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.67									0.61	

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Green, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.6 — Intersection LOS: B
Intersection Capacity Utilization 51.4% — ICU Level of Service A
Analysis Period (min) 15

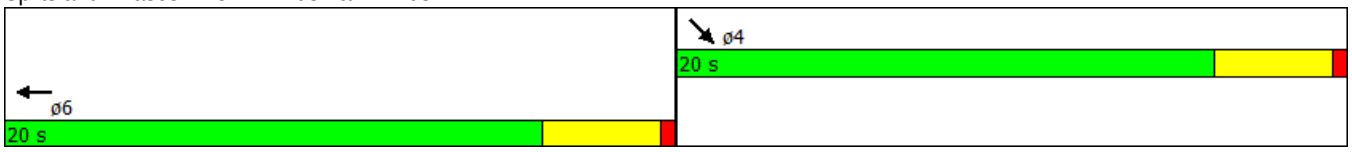
Splits and Phases: 2: WB Bush & EB Bush



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	613	0	0	193	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3282	0	0	3282	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3282	0	0	3282	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	681	0	0	214	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					20.0			20.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					21.0			7.5				
Actuated g/C Ratio					0.62			0.22				
v/c Ratio					0.33			0.30				
Control Delay					5.1			11.4				
Queue Delay					0.0			0.0				
Total Delay					5.1			11.4				
LOS					A			B				
Approach Delay					5.1			11.4				
Approach LOS					A			B				
Queue Length 50th (ft)					29			15				
Queue Length 95th (ft)					56			30				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					2035			1561				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.33			0.14				

Intersection Summary	
Cycle Length: 40	
Actuated Cycle Length: 33.8	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 6.6	Intersection LOS: A
Intersection Capacity Utilization 28.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: WB Bush & EB Bush



Queues
3: WB Bush & EB Bush

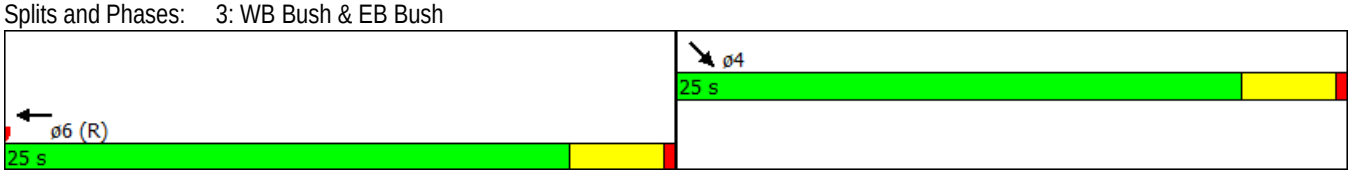
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations					↑↑			↑↑				
Volume (vph)	0	0	0	0	280	0	0	364	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	311	0	0	404	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					25.0			25.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					30.5			11.5				
Actuated g/C Ratio					0.61			0.23				
v/c Ratio					0.15			0.51				
Control Delay					5.0			14.0				
Queue Delay					0.0			0.0				
Total Delay					5.0			14.0				
LOS					A			B				
Approach Delay					5.0			14.0				
Approach LOS					A			B				
Queue Length 50th (ft)					16			66				
Queue Length 95th (ft)					36			92				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					2097			1443				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.15			0.28				

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 10.1 — Intersection LOS: B
Intersection Capacity Utilization 24.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: WB Bush & EB Bush



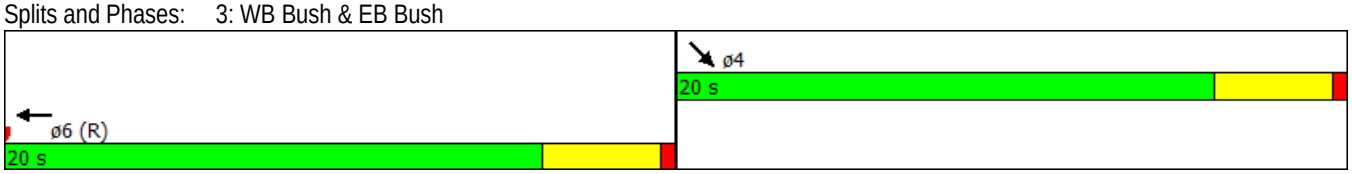
Queues
3: WB Bush & EB Bush

12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	693	0	0	241	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	770	0	0	268	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					20.0			20.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					23.6			8.4				
Actuated g/C Ratio					0.59			0.21				
v/c Ratio					0.38			0.37				
Control Delay					5.4			8.9				
Queue Delay					0.0			0.0				
Total Delay					5.4			8.9				
LOS					A			A				
Approach Delay					5.4			8.9				
Approach LOS					A			A				
Queue Length 50th (ft)					37			27				
Queue Length 95th (ft)					73			44				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					2028			1375				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.38			0.19				

Intersection Summary	
Cycle Length: 40	
Actuated Cycle Length: 40	
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay: 6.3	Intersection LOS: A
Intersection Capacity Utilization 32.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: WB Bush & EB Bush



Queues
3: WB Bush & EB Bush

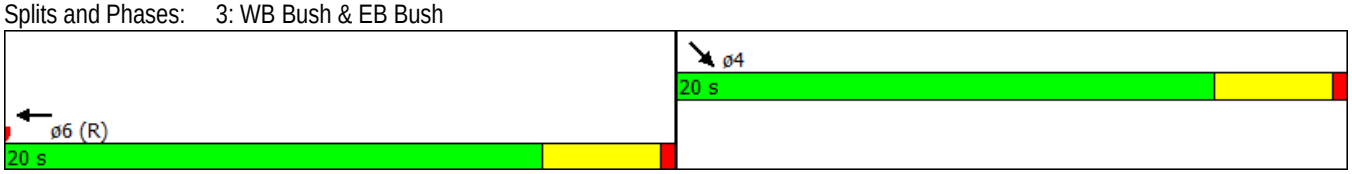
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	388	0	0	454	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	431	0	0	504	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					20.0			20.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					20.2			11.8				
Actuated g/C Ratio					0.50			0.30				
v/c Ratio					0.25			0.50				
Control Delay					6.9			8.1				
Queue Delay					0.0			0.0				
Total Delay					6.9			8.1				
LOS					A			A				
Approach Delay					6.9			8.1				
Approach LOS					A			A				
Queue Length 50th (ft)					25			50				
Queue Length 95th (ft)					55			81				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					1739			1375				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.25			0.37				

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 7.6 — Intersection LOS: A
Intersection Capacity Utilization 29.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: WB Bush & EB Bush



Queues
3: EB Bush & Wb Bush

12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	853	0	0	336	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	948	0	0	373	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					29.0			21.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					31.2			10.8				
Actuated g/C Ratio					0.62			0.22				
v/c Ratio					0.44			0.50				
Control Delay					6.2			16.4				
Queue Delay					0.0			0.0				
Total Delay					6.2			16.4				
LOS					A			B				
Approach Delay					6.2			16.4				
Approach LOS					A			B				
Queue Length 50th (ft)					60			62				
Queue Length 95th (ft)					116			92				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					2145			1168				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.44			0.32				

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 9.1 — Intersection LOS: A
Intersection Capacity Utilization 39.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: EB Bush & Wb Bush

Queues
3: WB Bush & EB Bush

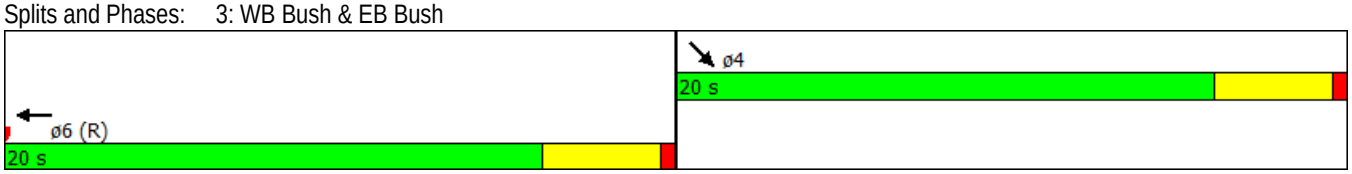
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	603	0	0	633	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	670	0	0	703	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					20.0			20.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					18.2			13.8				
Actuated g/C Ratio					0.46			0.34				
v/c Ratio					0.43			0.59				
Control Delay					9.1			8.4				
Queue Delay					0.0			0.0				
Total Delay					9.1			8.4				
LOS					A			A				
Approach Delay					9.1			8.4				
Approach LOS					A			A				
Queue Length 50th (ft)					51			74				
Queue Length 95th (ft)					88			108				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					1564			1375				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.43			0.51				

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 8.7 — Intersection LOS: A
Intersection Capacity Utilization 40.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: WB Bush & EB Bush



Queues
3: WB Bush & EB Bush

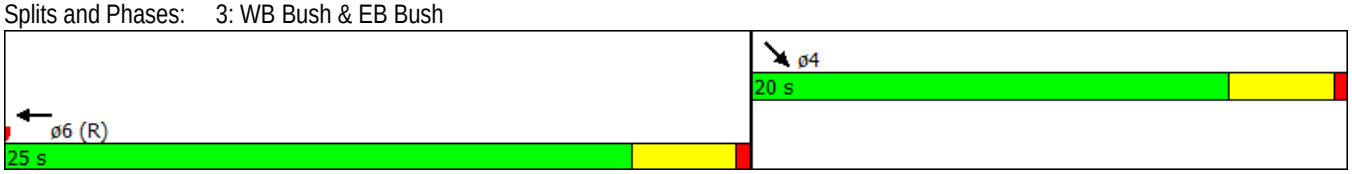
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	1013	0	0	432	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1126	0	0	480	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					25.0			20.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					24.9			12.1				
Actuated g/C Ratio					0.55			0.27				
v/c Ratio					0.59			0.52				
Control Delay					9.0			12.3				
Queue Delay					0.0			0.0				
Total Delay					9.0			12.3				
LOS					A			B				
Approach Delay					9.0			12.3				
Approach LOS					A			B				
Queue Length 50th (ft)					87			64				
Queue Length 95th (ft)					166			103				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					1905			1222				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.59			0.39				

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 10.0 — Intersection LOS: A
Intersection Capacity Utilization 46.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: WB Bush & EB Bush



Queues
3: WB Bush & EB Bush

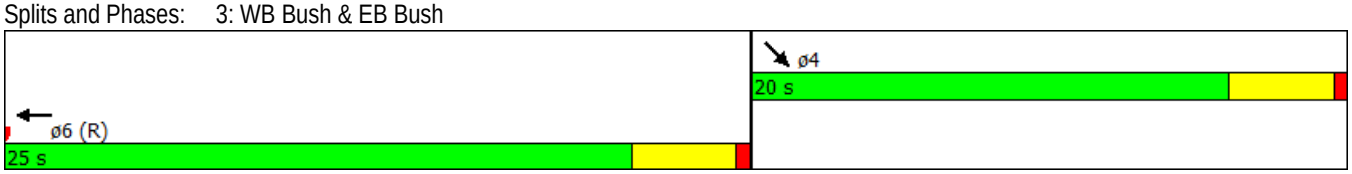
12/21/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	0	0	0	818	0	0	812	0	0	0	0
Satd. Flow (prot)	0	0	0	0	3438	0	0	3438	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3438	0	0	3438	0	0	0	0
Satd. Flow (RTOR)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	909	0	0	902	0	0	0	0
Turn Type					NA			NA				
Protected Phases					6			4				
Permitted Phases												
Total Split (s)					25.0			20.0				
Total Lost Time (s)					4.0			4.0				
Act Effct Green (s)					21.5			15.5				
Actuated g/C Ratio					0.48			0.34				
v/c Ratio					0.55			0.76				
Control Delay					10.1			15.4				
Queue Delay					0.0			0.0				
Total Delay					10.1			15.4				
LOS					B			B				
Approach Delay					10.1			15.4				
Approach LOS					B			B				
Queue Length 50th (ft)					81			138				
Queue Length 95th (ft)					124			193				
Internal Link Dist (ft)		57			29			77			42	
Turn Bay Length (ft)												
Base Capacity (vph)					1645			1222				
Starvation Cap Reductn					0			0				
Spillback Cap Reductn					0			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.55			0.74				

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2: and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 12.8 — Intersection LOS: B
Intersection Capacity Utilization 51.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: WB Bush & EB Bush



Appendix C

SIDRA analysis for roundabout intersections

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2015 AM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	8	10.0	8	10.0	0.061	14.0	LOS B	0.2	6.4	0.38	0.63	42.2
8	T1	2	10.0	2	10.0	0.061	8.1	LOS A	0.2	6.4	0.38	0.63	42.7
18	R2	43	10.0	43	10.0	0.061	7.6	LOS A	0.2	6.4	0.38	0.63	38.9
Approach		53	10.0	53	10.0	0.061	8.5	LOS A	0.2	6.4	0.38	0.63	39.9
East: Bush St													
1	L2	16	10.0	16	10.0	0.447	12.7	LOS B	2.6	71.5	0.15	0.49	43.2
6	T1	513	10.0	513	10.0	0.447	6.9	LOS A	2.6	71.5	0.15	0.49	43.7
16	R2	70	10.0	70	10.0	0.447	6.3	LOS A	2.6	71.5	0.15	0.49	42.2
Approach		599	10.0	599	10.0	0.447	6.9	LOS A	2.6	71.5	0.15	0.49	43.5
North: Bell Haven													
7	L2	60	10.0	60	10.0	0.210	16.1	LOS C	1.0	26.0	0.58	0.80	35.1
4	T1	2	10.0	2	10.0	0.210	10.3	LOS B	1.0	26.0	0.58	0.80	40.2
14	R2	88	10.0	88	10.0	0.210	9.7	LOS A	1.0	26.0	0.58	0.80	38.9
Approach		150	10.0	150	10.0	0.210	12.3	LOS B	1.0	26.0	0.58	0.80	37.9
West: Bush St													
5	L2	16	10.0	16	10.0	0.199	13.0	LOS B	0.9	25.2	0.24	0.52	42.6
2	T1	197	10.0	197	10.0	0.199	7.1	LOS A	0.9	25.2	0.24	0.52	39.6
12	R2	6	10.0	6	10.0	0.199	6.6	LOS A	0.9	25.2	0.24	0.52	41.6
Approach		218	10.0	218	10.0	0.199	7.5	LOS A	0.9	25.2	0.24	0.52	40.0
All Vehicles		1020	10.0	1020	10.0	0.447	7.9	LOS A	2.6	71.5	0.24	0.55	42.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2015 PM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	11	10.0	11	10.0	0.069	15.5	LOS C	0.3	8.1	0.55	0.72	40.8
8	T1	2	10.0	2	10.0	0.069	9.7	LOS A	0.3	8.1	0.55	0.72	41.3
18	R2	36	10.0	36	10.0	0.069	9.2	LOS A	0.3	8.1	0.55	0.72	36.7
Approach		49	10.0	49	10.0	0.069	10.6	LOS B	0.3	8.1	0.55	0.72	38.4
East: Bush St													
1	L2	30	10.0	30	10.0	0.273	12.7	LOS B	1.3	35.3	0.14	0.51	43.0
6	T1	282	10.0	282	10.0	0.273	6.9	LOS A	1.3	35.3	0.14	0.51	43.5
16	R2	30	10.0	30	10.0	0.273	6.3	LOS A	1.3	35.3	0.14	0.51	42.0
Approach		342	10.0	342	10.0	0.273	7.3	LOS A	1.3	35.3	0.14	0.51	43.3
North: Bell Haven													
7	L2	99	10.0	99	10.0	0.147	14.4	LOS B	0.6	16.5	0.44	0.73	34.7
4	T1	1	10.0	1	10.0	0.147	8.6	LOS A	0.6	16.5	0.44	0.73	39.8
14	R2	24	10.0	24	10.0	0.147	8.0	LOS A	0.6	16.5	0.44	0.73	38.6
Approach		124	10.0	124	10.0	0.147	13.1	LOS B	0.6	16.5	0.44	0.73	35.9
West: Bush St													
5	L2	20	10.0	20	10.0	0.406	13.5	LOS B	2.3	61.7	0.37	0.56	42.0
2	T1	399	10.0	399	10.0	0.406	7.6	LOS A	2.3	61.7	0.37	0.56	38.7
12	R2	11	10.0	11	10.0	0.406	7.1	LOS A	2.3	61.7	0.37	0.56	41.1
Approach		430	10.0	430	10.0	0.406	7.9	LOS A	2.3	61.7	0.37	0.56	39.0
All Vehicles		946	10.0	946	10.0	0.406	8.5	LOS A	2.3	61.7	0.31	0.57	40.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2020 AM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	18	10.0	18	10.0	0.119	14.4	LOS B	0.5	13.4	0.44	0.67	41.8
8	T1	8	10.0	8	10.0	0.119	8.6	LOS A	0.5	13.4	0.44	0.67	42.2
18	R2	73	10.0	73	10.0	0.119	8.0	LOS A	0.5	13.4	0.44	0.67	38.2
Approach		99	10.0	99	10.0	0.119	9.2	LOS A	0.5	13.4	0.44	0.67	39.6
East: Bush St													
1	L2	38	10.0	38	10.0	0.554	12.9	LOS B	4.0	109.0	0.24	0.50	42.7
6	T1	586	10.0	586	10.0	0.554	7.0	LOS A	4.0	109.0	0.24	0.50	43.1
16	R2	89	10.0	89	10.0	0.554	6.5	LOS A	4.0	109.0	0.24	0.50	41.7
Approach		712	10.0	712	10.0	0.554	7.3	LOS A	4.0	109.0	0.24	0.50	42.9
North: Bell Haven													
7	L2	77	10.0	77	10.0	0.276	17.3	LOS C	1.4	37.5	0.67	0.86	33.8
4	T1	4	10.0	4	10.0	0.276	11.4	LOS B	1.4	37.5	0.67	0.86	39.2
14	R2	96	10.0	96	10.0	0.276	10.9	LOS B	1.4	37.5	0.67	0.86	38.0
Approach		177	10.0	177	10.0	0.276	13.7	LOS B	1.4	37.5	0.67	0.86	36.7
West: Bush St													
5	L2	18	10.0	18	10.0	0.258	13.3	LOS B	1.3	34.1	0.31	0.55	42.2
2	T1	238	10.0	238	10.0	0.258	7.4	LOS A	1.3	34.1	0.31	0.55	39.0
12	R2	11	10.0	11	10.0	0.258	6.9	LOS A	1.3	34.1	0.31	0.55	41.3
Approach		267	10.0	267	10.0	0.258	7.8	LOS A	1.3	34.1	0.31	0.55	39.5
All Vehicles		1254	10.0	1254	10.0	0.554	8.4	LOS A	4.0	109.0	0.33	0.57	41.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2020 PM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	18	10.0	18	10.0	0.154	16.7	LOS C	0.7	20.2	0.65	0.80	40.2
8	T1	8	10.0	8	10.0	0.154	10.9	LOS B	0.7	20.2	0.65	0.80	40.6
18	R2	70	10.0	70	10.0	0.154	10.3	LOS B	0.7	20.2	0.65	0.80	35.7
Approach		96	10.0	96	10.0	0.154	11.5	LOS B	0.7	20.2	0.65	0.80	37.5
East: Bush St													
1	L2	64	10.0	64	10.0	0.402	12.9	LOS B	2.3	62.6	0.23	0.53	42.5
6	T1	360	10.0	360	10.0	0.402	7.0	LOS A	2.3	62.6	0.23	0.53	42.9
16	R2	66	10.0	66	10.0	0.402	6.5	LOS A	2.3	62.6	0.23	0.53	41.5
Approach		490	10.0	490	10.0	0.402	7.7	LOS A	2.3	62.6	0.23	0.53	42.7
North: Bell Haven													
7	L2	118	10.0	118	10.0	0.217	15.4	LOS C	1.0	26.8	0.54	0.79	34.3
4	T1	6	10.0	6	10.0	0.217	9.5	LOS A	1.0	26.8	0.54	0.79	39.5
14	R2	42	10.0	42	10.0	0.217	9.0	LOS A	1.0	26.8	0.54	0.79	38.3
Approach		166	10.0	166	10.0	0.217	13.6	LOS B	1.0	26.8	0.54	0.79	36.0
West: Bush St													
5	L2	29	10.0	29	10.0	0.530	14.1	LOS B	3.4	92.2	0.51	0.63	41.3
2	T1	479	10.0	479	10.0	0.530	8.3	LOS A	3.4	92.2	0.51	0.63	37.6
12	R2	19	10.0	19	10.0	0.530	7.7	LOS A	3.4	92.2	0.51	0.63	40.4
Approach		527	10.0	527	10.0	0.530	8.6	LOS A	3.4	92.2	0.51	0.63	38.1
All Vehicles		1278	10.0	1278	10.0	0.530	9.1	LOS A	3.4	92.2	0.42	0.62	40.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2030 AM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	37	10.0	37	10.0	0.254	15.5	LOS C	1.2	33.2	0.58	0.77	41.0
8	T1	18	10.0	18	10.0	0.254	9.7	LOS A	1.2	33.2	0.58	0.77	41.4
18	R2	134	10.0	134	10.0	0.254	9.1	LOS A	1.2	33.2	0.58	0.77	36.9
Approach		189	10.0	189	10.0	0.254	10.4	LOS B	1.2	33.2	0.58	0.77	38.6
East: Bush St													
1	L2	83	10.0	83	10.0	0.594	13.1	LOS B	4.8	129.0	0.35	0.52	41.9
6	T1	730	10.0	730	10.0	0.594	7.2	LOS A	4.8	129.0	0.35	0.52	42.4
16	R2	127	10.0	127	10.0	0.156	7.1	LOS A	0.7	17.9	0.25	0.57	41.9
Approach		940	10.0	940	10.0	0.594	7.7	LOS A	4.8	129.0	0.34	0.53	42.3
North: Bell Haven													
7	L2	111	10.0	111	10.0	0.467	22.8	LOS C	3.1	84.9	0.84	1.00	29.0
4	T1	10	10.0	10	10.0	0.467	17.0	LOS C	3.1	84.9	0.84	1.00	35.7
14	R2	110	10.0	110	10.0	0.467	16.4	LOS C	3.1	84.9	0.84	1.00	34.7
Approach		231	10.0	231	10.0	0.467	19.5	LOS C	3.1	84.9	0.84	1.00	32.7
West: Bush St													
5	L2	21	10.0	21	10.0	0.385	14.0	LOS B	2.1	57.5	0.47	0.62	41.5
2	T1	319	10.0	319	10.0	0.385	8.2	LOS A	2.1	57.5	0.47	0.62	37.9
12	R2	21	10.0	21	10.0	0.385	7.6	LOS A	2.1	57.5	0.47	0.62	40.6
Approach		361	10.0	361	10.0	0.385	8.5	LOS A	2.1	57.5	0.47	0.62	38.5
All Vehicles		1721	10.0	1721	10.0	0.594	9.8	LOS A	4.8	129.0	0.46	0.64	40.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2030 PM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	31	10.0	31	10.0	0.448	22.1	LOS C	3.1	82.4	0.89	1.00	36.7
8	T1	20	10.0	20	10.0	0.448	16.3	LOS C	3.1	82.4	0.89	1.00	37.1
18	R2	138	10.0	138	10.0	0.448	15.7	LOS C	3.1	82.4	0.89	1.00	30.7
Approach		189	10.0	189	10.0	0.448	16.9	LOS C	3.1	82.4	0.89	1.00	33.0
East: Bush St													
1	L2	134	10.0	134	10.0	0.496	13.1	LOS B	3.4	91.6	0.35	0.56	41.6
6	T1	516	10.0	516	10.0	0.496	7.3	LOS A	3.4	91.6	0.35	0.56	42.0
16	R2	136	10.0	136	10.0	0.174	7.3	LOS A	0.8	20.4	0.30	0.58	41.8
Approach		786	10.0	786	10.0	0.496	8.3	LOS A	3.4	91.6	0.34	0.56	41.9
North: Bell Haven													
7	L2	157	10.0	157	10.0	0.412	18.8	LOS C	2.5	66.3	0.75	0.94	31.6
4	T1	13	10.0	13	10.0	0.412	13.0	LOS B	2.5	66.3	0.75	0.94	37.6
14	R2	77	10.0	77	10.0	0.412	12.4	LOS B	2.5	66.3	0.75	0.94	36.4
Approach		247	10.0	247	10.0	0.412	16.5	LOS C	2.5	66.3	0.75	0.94	34.0
West: Bush St													
5	L2	48	10.0	48	10.0	0.817	20.3	LOS C	11.0	298.3	0.89	0.96	38.1
2	T1	640	10.0	640	10.0	0.817	14.4	LOS B	11.0	298.3	0.89	0.96	32.8
12	R2	34	10.0	34	10.0	0.817	13.9	LOS B	11.0	298.3	0.89	0.96	37.4
Approach		722	10.0	722	10.0	0.817	14.8	LOS B	11.0	298.3	0.89	0.96	33.7
All Vehicles		1943	10.0	1943	10.0	0.817	12.6	LOS B	11.0	298.3	0.65	0.80	37.5

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2040 AM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	56	10.0	56	10.0	0.406	15.7	LOS C	1.6	43.1	0.54	0.83	40.9
8	T1	28	10.0	28	10.0	0.406	9.8	LOS A	1.6	43.1	0.54	0.83	41.4
18	R2	194	10.0	194	10.0	0.406	9.2	LOS A	1.6	43.1	0.54	0.83	36.8
Approach		278	10.0	278	10.0	0.406	10.6	LOS B	1.6	43.1	0.54	0.83	38.6
East: Bush St													
1	L2	129	10.0	129	10.0	0.472	13.3	LOS B	3.0	81.5	0.36	0.58	41.4
6	T1	874	10.0	874	10.0	0.472	7.5	LOS A	3.1	82.7	0.36	0.56	42.4
16	R2	164	10.0	164	10.0	0.472	7.0	LOS A	3.1	82.7	0.35	0.54	41.2
Approach		1168	10.0	1168	10.0	0.472	8.0	LOS A	3.1	82.7	0.36	0.56	42.1
North: Bell Haven													
7	L2	146	10.0	146	10.0	0.555	19.5	LOS C	2.7	71.7	0.73	0.96	31.5
4	T1	16	10.0	16	10.0	0.555	13.7	LOS B	2.7	71.7	0.73	0.96	37.6
14	R2	126	10.0	126	10.0	0.555	13.1	LOS B	2.7	71.7	0.73	0.96	36.5
Approach		287	10.0	287	10.0	0.555	16.4	LOS C	2.7	71.7	0.73	0.96	34.7
West: Bush St													
5	L2	26	10.0	26	10.0	0.226	14.1	LOS B	1.1	29.4	0.45	0.63	41.3
2	T1	400	10.0	400	10.0	0.226	8.2	LOS A	1.1	29.9	0.45	0.62	37.9
12	R2	32	10.0	32	10.0	0.226	7.8	LOS A	1.1	29.9	0.45	0.61	40.6
Approach		458	10.0	458	10.0	0.226	8.5	LOS A	1.1	29.9	0.45	0.62	38.5
All Vehicles		2190	10.0	2190	10.0	0.555	9.6	LOS A	3.1	82.7	0.45	0.66	40.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 1

Network: 2040 PM

Bush St - Bell Haven
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Bell Haven													
3	L2	44	10.0	44	10.0	0.603	20.2	LOS C	3.1	84.0	0.78	0.97	38.0
8	T1	33	10.0	33	10.0	0.603	14.3	LOS B	3.1	84.0	0.78	0.97	38.4
18	R2	206	10.0	206	10.0	0.603	13.7	LOS B	3.1	84.0	0.78	0.97	32.4
Approach		283	10.0	283	10.0	0.603	14.8	LOS B	3.1	84.0	0.78	0.97	34.6
East: Bush St													
1	L2	203	10.0	203	10.0	0.456	13.5	LOS B	2.8	75.9	0.41	0.63	40.7
6	T1	671	10.0	671	10.0	0.456	7.7	LOS A	2.9	77.1	0.40	0.59	42.0
16	R2	206	10.0	206	10.0	0.456	7.2	LOS A	2.9	77.1	0.40	0.57	41.0
Approach		1080	10.0	1080	10.0	0.456	8.7	LOS A	2.9	77.1	0.40	0.60	41.5
North: Bell Haven													
7	L2	194	10.0	194	10.0	0.593	19.1	LOS C	3.0	81.5	0.72	0.96	31.5
4	T1	22	10.0	22	10.0	0.593	13.3	LOS B	3.0	81.5	0.72	0.96	37.6
14	R2	111	10.0	111	10.0	0.593	12.7	LOS B	3.0	81.5	0.72	0.96	36.5
Approach		328	10.0	328	10.0	0.593	16.6	LOS C	3.0	81.5	0.72	0.96	34.2
West: Bush St													
5	L2	67	10.0	67	10.0	0.503	16.1	LOS C	3.3	90.0	0.67	0.80	40.1
2	T1	800	10.0	800	10.0	0.503	10.0	LOS B	3.4	91.4	0.66	0.77	36.2
12	R2	50	10.0	50	10.0	0.503	9.5	LOS A	3.4	91.4	0.66	0.75	39.7
Approach		917	10.0	917	10.0	0.503	10.4	LOS B	3.4	91.4	0.66	0.77	37.0
All Vehicles		2608	10.0	2608	10.0	0.603	11.0	LOS B	3.4	91.4	0.57	0.75	38.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2015 AM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	302	10.0	302	10.0	0.545	12.6	LOS B	0.0	0.0	0.00	0.61	42.4
6	T1	517	10.0	517	10.0	0.545	6.7	LOS A	0.0	0.0	0.00	0.61	39.4
Approach		819	10.0	819	10.0	0.545	8.9	LOS A	0.0	0.0	0.00	0.61	41.0
North: SB41 Offramp													
7	L2	93	10.0	93	10.0	0.134	18.4	LOS C	0.7	19.6	0.70	0.83	30.6
4	T1	1	10.0	1	10.0	0.134	12.5	LOS B	0.7	19.6	0.70	0.83	36.7
14	R2	82	10.0	82	10.0	0.137	13.1	LOS B	0.7	19.0	0.70	0.82	33.8
Approach		177	10.0	177	10.0	0.137	15.9	LOS C	0.7	19.6	0.70	0.83	32.0
West: Bush St													
2	T1	211	10.0	211	10.0	0.212	8.6	LOS A	1.0	27.0	0.49	0.64	37.9
12	R2	89	10.0	89	10.0	0.119	8.9	LOS A	0.5	13.3	0.48	0.69	40.9
Approach		300	10.0	300	10.0	0.212	8.7	LOS A	1.0	27.0	0.49	0.66	39.2
All Vehicles		1296	10.0	1296	10.0	0.545	9.8	LOS A	1.0	27.0	0.21	0.65	39.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2015 PM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	129	10.0	129	10.0	0.276	12.6	LOS B	0.0	0.0	0.00	0.60	42.7
6	T1	287	10.0	287	10.0	0.276	6.7	LOS A	0.0	0.0	0.00	0.60	39.8
Approach		416	10.0	416	10.0	0.276	8.5	LOS A	0.0	0.0	0.00	0.60	41.1
North: SB41 Offramp													
7	L2	114	10.0	114	10.0	0.115	14.4	LOS B	0.5	13.2	0.45	0.73	33.6
4	T1	1	10.0	1	10.0	0.115	8.5	LOS A	0.5	13.2	0.45	0.73	38.9
14	R2	56	10.0	56	10.0	0.071	8.8	LOS A	0.3	7.5	0.46	0.67	38.8
Approach		171	10.0	171	10.0	0.115	12.5	LOS B	0.5	13.2	0.45	0.71	35.1
West: Bush St													
2	T1	368	10.0	368	10.0	0.331	8.0	LOS A	1.7	45.5	0.43	0.60	38.4
12	R2	166	10.0	166	10.0	0.193	8.0	LOS A	0.8	22.3	0.41	0.65	41.4
Approach		533	10.0	533	10.0	0.331	8.0	LOS A	1.7	45.5	0.42	0.61	39.7
All Vehicles		1120	10.0	1120	10.0	0.331	8.9	LOS A	1.7	45.5	0.27	0.62	39.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2020 AM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	328	10.0	328	10.0	0.619	12.6	LOS B	0.0	0.0	0.00	0.61	42.5
6	T1	602	10.0	602	10.0	0.619	6.7	LOS A	0.0	0.0	0.00	0.61	39.5
Approach		930	10.0	930	10.0	0.619	8.8	LOS A	0.0	0.0	0.00	0.61	41.0
North: SB41 Offramp													
7	L2	99	10.0	99	10.0	0.177	20.5	LOS C	0.9	24.7	0.74	0.90	29.1
4	T1	1	10.0	1	10.0	0.177	14.6	LOS B	0.9	24.7	0.74	0.90	35.5
14	R2	110	10.0	110	10.0	0.164	13.4	LOS B	0.9	24.5	0.74	0.83	33.5
Approach		210	10.0	210	10.0	0.177	16.7	LOS C	0.9	24.7	0.74	0.86	31.2
West: Bush St													
2	T1	271	10.0	271	10.0	0.278	8.9	LOS A	1.4	37.6	0.53	0.67	37.6
12	R2	118	10.0	118	10.0	0.160	9.2	LOS A	0.7	18.5	0.51	0.72	40.7
Approach		389	10.0	389	10.0	0.278	9.0	LOS A	1.4	37.6	0.53	0.69	38.9
All Vehicles		1529	10.0	1529	10.0	0.619	9.9	LOS A	1.4	37.6	0.23	0.66	39.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2020 PM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	152	10.0	152	10.0	0.378	12.6	LOS B	0.0	0.0	0.00	0.58	42.9
6	T1	416	10.0	416	10.0	0.378	6.7	LOS A	0.0	0.0	0.00	0.58	40.1
Approach		568	10.0	568	10.0	0.378	8.3	LOS A	0.0	0.0	0.00	0.58	41.2
North: SB41 Offramp													
7	L2	132	10.0	132	10.0	0.147	15.4	LOS C	0.7	18.2	0.54	0.78	33.0
4	T1	1	10.0	1	10.0	0.147	9.5	LOS A	0.7	18.2	0.54	0.78	38.5
14	R2	74	10.0	74	10.0	0.102	9.8	LOS A	0.4	11.6	0.54	0.73	37.4
Approach		208	10.0	208	10.0	0.147	13.4	LOS B	0.7	18.2	0.54	0.76	34.4
West: Bush St													
2	T1	468	10.0	468	10.0	0.433	8.4	LOS A	2.5	66.7	0.51	0.63	37.7
12	R2	199	10.0	199	10.0	0.245	8.4	LOS A	1.1	29.8	0.46	0.68	41.2
Approach		667	10.0	667	10.0	0.433	8.4	LOS A	2.5	66.7	0.50	0.64	39.2
All Vehicles		1442	10.0	1442	10.0	0.433	9.1	LOS A	2.5	66.7	0.31	0.64	39.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2030 AM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	379	10.0	379	10.0	0.767	12.6	LOS B	0.0	0.0	0.00	0.60	42.6
6	T1	774	10.0	774	10.0	0.767	6.7	LOS A	0.0	0.0	0.00	0.60	39.7
Approach		1153	10.0	1153	10.0	0.767	8.6	LOS A	0.0	0.0	0.00	0.60	41.1
North: SB41 Offramp													
7	L2	110	10.0	110	10.0	0.286	28.1	LOS D	1.6	44.4	0.87	0.96	24.7
4	T1	1	10.0	1	10.0	0.286	22.3	LOS C	1.6	44.4	0.87	0.96	31.8
14	R2	167	10.0	167	10.0	0.337	20.2	LOS C	2.2	59.5	0.91	0.96	27.9
Approach		278	10.0	278	10.0	0.337	23.3	LOS C	2.2	59.5	0.89	0.96	26.5
West: Bush St													
2	T1	390	10.0	390	10.0	0.420	9.7	LOS A	2.4	64.7	0.63	0.73	36.8
12	R2	174	10.0	174	10.0	0.247	9.8	LOS A	1.1	31.0	0.58	0.77	40.2
Approach		564	10.0	564	10.0	0.420	9.7	LOS A	2.4	64.7	0.62	0.74	38.3
All Vehicles		1996	10.0	1996	10.0	0.767	11.0	LOS B	2.4	64.7	0.30	0.69	38.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2030 PM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	198	10.0	198	10.0	0.579	12.6	LOS B	0.0	0.0	0.00	0.57	43.1
6	T1	673	10.0	673	10.0	0.579	6.7	LOS A	0.0	0.0	0.00	0.57	40.4
Approach		871	10.0	871	10.0	0.579	8.0	LOS A	0.0	0.0	0.00	0.57	41.3
North: SB41 Offramp													
7	L2	167	10.0	167	10.0	0.236	18.9	LOS C	1.3	35.3	0.73	0.88	30.2
4	T1	1	10.0	1	10.0	0.236	13.0	LOS B	1.3	35.3	0.73	0.88	36.4
14	R2	111	10.0	111	10.0	0.193	13.6	LOS B	1.0	26.1	0.71	0.86	33.2
Approach		279	10.0	279	10.0	0.236	16.8	LOS C	1.3	35.3	0.72	0.87	31.3
West: Bush St													
2	T1	667	10.0	667	10.0	0.655	10.7	LOS B	5.9	160.6	0.72	0.81	36.2
12	R2	267	10.0	267	10.0	0.361	9.3	LOS A	1.8	49.1	0.57	0.76	40.6
Approach		933	10.0	933	10.0	0.655	10.3	LOS B	5.9	160.6	0.68	0.80	37.9
All Vehicles		2083	10.0	2083	10.0	0.655	10.2	LOS B	5.9	160.6	0.40	0.71	38.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2040 AM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	430	10.0	430	10.0	0.457	12.6	LOS B	0.0	0.0	0.00	0.67	41.2
6	T1	946	10.0	946	10.0	0.457	6.8	LOS A	0.0	0.0	0.00	0.54	40.9
Approach		1376	10.0	1376	10.0	0.457	8.6	LOS A	0.0	0.0	0.00	0.58	41.1
North: SB41 Offramp													
7	L2	121	10.0	121	10.0	0.237	18.4	LOS C	0.8	20.8	0.64	0.90	30.7
4	T1	1	10.0	1	10.0	0.237	12.5	LOS B	0.8	20.8	0.64	0.90	36.8
14	R2	222	10.0	222	10.0	0.334	11.5	LOS B	1.3	34.3	0.63	0.86	35.5
Approach		344	10.0	344	10.0	0.334	13.9	LOS B	1.3	34.3	0.63	0.87	33.5
West: Bush St													
2	T1	509	10.0	509	10.0	0.437	10.9	LOS B	2.6	71.4	0.67	0.82	36.5
12	R2	231	10.0	231	10.0	0.437	10.2	LOS B	2.6	71.4	0.67	0.81	39.8
Approach		740	10.0	740	10.0	0.437	10.7	LOS B	2.6	71.4	0.67	0.81	38.0
All Vehicles		2460	10.0	2460	10.0	0.457	10.0	LOS A	2.6	71.4	0.29	0.69	39.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 2

Network: 2040 PM

Bush-SB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
East: Bush St													
1	L2	243	10.0	243	10.0	0.390	12.6	LOS B	0.0	0.0	0.00	0.63	42.1
6	T1	931	10.0	931	10.0	0.390	6.8	LOS A	0.0	0.0	0.00	0.54	41.0
Approach		1174	10.0	1174	10.0	0.390	8.0	LOS A	0.0	0.0	0.00	0.56	41.3
North: SB41 Offramp													
7	L2	202	10.0	202	10.0	0.282	16.4	LOS C	1.0	25.7	0.57	0.88	32.2
4	T1	1	10.0	1	10.0	0.282	10.5	LOS B	1.0	25.7	0.57	0.88	37.9
14	R2	149	10.0	149	10.0	0.239	10.7	LOS B	0.8	20.6	0.57	0.82	36.4
Approach		352	10.0	352	10.0	0.282	13.9	LOS B	1.0	25.7	0.57	0.85	33.8
West: Bush St													
2	T1	867	10.0	867	10.0	0.661	12.4	LOS B	6.1	165.6	0.77	0.90	35.1
12	R2	333	10.0	333	10.0	0.661	11.6	LOS B	6.1	165.6	0.76	0.89	39.0
Approach		1200	10.0	1200	10.0	0.661	12.2	LOS B	6.1	165.6	0.77	0.90	36.6
All Vehicles		2727	10.0	2727	10.0	0.661	10.6	LOS B	6.1	165.6	0.41	0.75	38.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2015 AM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	138	10.0	138	10.0	0.133	14.1	LOS B	0.6	16.3	0.42	0.71	33.7
8	T1	1	10.0	1	10.0	0.133	8.2	LOS A	0.6	16.3	0.42	0.71	39.0
18	R2	106	10.0	106	10.0	0.114	8.1	LOS A	0.5	13.5	0.43	0.64	41.4
Approach		244	10.0	244	10.0	0.133	11.5	LOS B	0.6	16.3	0.42	0.68	37.7
East: Bush St													
6	T1	681	10.0	681	10.0	0.589	8.3	LOS A	4.1	111.7	0.55	0.63	37.4
16	R2	146	10.0	146	10.0	0.213	8.5	LOS A	0.9	24.4	0.43	0.67	41.2
Approach		827	10.0	827	10.0	0.589	8.4	LOS A	4.1	111.7	0.53	0.64	38.4
West: Bush St													
5	L2	90	10.0	90	10.0	0.203	12.6	LOS B	0.0	0.0	0.00	0.59	42.8
2	T1	214	10.0	214	10.0	0.203	6.7	LOS A	0.0	0.0	0.00	0.59	43.2
Approach		304	10.0	304	10.0	0.203	8.4	LOS A	0.0	0.0	0.00	0.59	43.1
All Vehicles		1376	10.0	1376	10.0	0.589	8.9	LOS A	4.1	111.7	0.39	0.63	39.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2015 PM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	104	10.0	104	10.0	0.145	15.7	LOS C	0.6	16.2	0.52	0.79	32.8
8	T1	1	10.0	1	10.0	0.145	9.8	LOS A	0.6	16.2	0.52	0.79	38.3
18	R2	239	10.0	239	10.0	0.248	8.9	LOS A	1.2	31.9	0.53	0.72	40.9
Approach		344	10.0	344	10.0	0.248	11.0	LOS B	1.2	31.9	0.52	0.74	39.0
East: Bush St													
6	T1	311	10.0	311	10.0	0.268	7.6	LOS A	1.3	35.3	0.36	0.55	39.0
16	R2	90	10.0	90	10.0	0.118	7.8	LOS A	0.5	12.7	0.36	0.62	41.6
Approach		401	10.0	401	10.0	0.268	7.6	LOS A	1.3	35.3	0.36	0.57	39.8
West: Bush St													
5	L2	78	10.0	78	10.0	0.321	12.6	LOS B	0.0	0.0	0.00	0.55	43.3
2	T1	404	10.0	404	10.0	0.321	6.7	LOS A	0.0	0.0	0.00	0.55	43.8
Approach		482	10.0	482	10.0	0.321	7.6	LOS A	0.0	0.0	0.00	0.55	43.8
All Vehicles		1228	10.0	1228	10.0	0.321	8.6	LOS A	1.3	35.3	0.26	0.61	41.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2020 AM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	160	10.0	160	10.0	0.156	14.2	LOS B	0.7	18.0	0.43	0.73	33.7
8	T1	1	10.0	1	10.0	0.156	8.4	LOS A	0.7	18.0	0.43	0.73	39.0
18	R2	136	10.0	136	10.0	0.146	8.3	LOS A	0.6	16.4	0.44	0.66	41.3
Approach		297	10.0	297	10.0	0.156	11.5	LOS B	0.7	18.0	0.43	0.70	37.9
East: Bush St													
6	T1	770	10.0	770	10.0	0.684	9.7	LOS A	6.4	171.6	0.66	0.72	36.6
16	R2	181	10.0	181	10.0	0.273	9.0	LOS A	1.2	32.8	0.48	0.71	40.8
Approach		951	10.0	951	10.0	0.684	9.6	LOS A	6.4	171.6	0.63	0.72	37.8
West: Bush St													
5	L2	102	10.0	102	10.0	0.246	12.6	LOS B	0.0	0.0	0.00	0.59	42.8
2	T1	268	10.0	268	10.0	0.246	6.7	LOS A	0.0	0.0	0.00	0.59	43.3
Approach		370	10.0	370	10.0	0.246	8.3	LOS A	0.0	0.0	0.00	0.59	43.2
All Vehicles		1618	10.0	1618	10.0	0.684	9.6	LOS A	6.4	171.6	0.45	0.68	39.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2020 PM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	137	10.0	137	10.0	0.203	16.8	LOS C	0.9	24.5	0.59	0.84	31.8
8	T1	1	10.0	1	10.0	0.203	11.0	LOS B	0.9	24.5	0.59	0.84	37.6
18	R2	296	10.0	296	10.0	0.332	10.0	LOS B	1.7	47.1	0.62	0.79	40.1
Approach		433	10.0	433	10.0	0.332	12.2	LOS B	1.7	47.1	0.61	0.80	38.0
East: Bush St													
6	T1	431	10.0	431	10.0	0.385	8.0	LOS A	2.1	57.8	0.45	0.60	38.2
16	R2	110	10.0	110	10.0	0.161	8.4	LOS A	0.7	18.0	0.43	0.66	41.3
Approach		541	10.0	541	10.0	0.385	8.1	LOS A	2.1	57.8	0.45	0.61	39.1
West: Bush St													
5	L2	96	10.0	96	10.0	0.399	12.6	LOS B	0.0	0.0	0.00	0.55	43.4
2	T1	504	10.0	504	10.0	0.399	6.7	LOS A	0.0	0.0	0.00	0.55	43.8
Approach		600	10.0	600	10.0	0.399	7.6	LOS A	0.0	0.0	0.00	0.55	43.8
All Vehicles		1574	10.0	1574	10.0	0.399	9.0	LOS A	2.1	57.8	0.32	0.64	40.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2030 AM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	206	10.0	206	10.0	0.217	15.1	LOS C	1.0	27.5	0.53	0.78	33.2
8	T1	1	10.0	1	10.0	0.217	9.2	LOS A	1.0	27.5	0.53	0.78	38.7
18	R2	197	10.0	197	10.0	0.228	9.3	LOS A	1.0	28.3	0.54	0.73	40.6
Approach		403	10.0	403	10.0	0.228	12.2	LOS B	1.0	28.3	0.53	0.76	37.5
East: Bush St													
6	T1	948	10.0	948	10.0	0.890	16.5	LOS C	16.5	445.5	0.99	1.04	31.3
16	R2	253	10.0	253	10.0	0.394	9.8	LOS A	2.0	53.0	0.58	0.78	40.2
Approach		1201	10.0	1201	10.0	0.890	15.1	LOS C	16.5	445.5	0.90	0.98	33.8
West: Bush St													
5	L2	126	10.0	126	10.0	0.332	12.6	LOS B	0.0	0.0	0.00	0.58	42.9
2	T1	373	10.0	373	10.0	0.332	6.7	LOS A	0.0	0.0	0.00	0.58	43.4
Approach		499	10.0	499	10.0	0.332	8.2	LOS A	0.0	0.0	0.00	0.58	43.3
All Vehicles		2103	10.0	2103	10.0	0.890	12.9	LOS B	16.5	445.5	0.62	0.84	37.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2030 PM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	201	10.0	201	10.0	0.360	20.7	LOS C	2.0	52.8	0.75	0.94	28.9
8	T1	1	10.0	1	10.0	0.360	14.9	LOS B	2.0	52.8	0.75	0.94	35.4
18	R2	409	10.0	409	10.0	0.554	16.3	LOS C	4.6	125.3	0.83	1.02	36.0
Approach		611	10.0	611	10.0	0.554	17.8	LOS C	4.6	125.3	0.80	0.99	34.2
East: Bush St													
6	T1	670	10.0	670	10.0	0.647	10.2	LOS B	5.8	156.9	0.71	0.78	36.2
16	R2	151	10.0	151	10.0	0.246	9.5	LOS A	1.1	29.9	0.54	0.74	40.4
Approach		821	10.0	821	10.0	0.647	10.1	LOS B	5.8	156.9	0.68	0.77	37.4
West: Bush St													
5	L2	131	10.0	131	10.0	0.555	12.6	LOS B	0.0	0.0	0.00	0.55	43.4
2	T1	703	10.0	703	10.0	0.555	6.7	LOS A	0.0	0.0	0.00	0.55	43.9
Approach		834	10.0	834	10.0	0.555	7.6	LOS A	0.0	0.0	0.00	0.55	43.8
All Vehicles		2267	10.0	2267	10.0	0.647	11.2	LOS B	5.8	156.9	0.46	0.75	39.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2040 AM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	250	10.0	250	10.0	0.288	14.6	LOS B	0.9	23.5	0.43	0.83	33.6
8	T1	1	10.0	1	10.0	0.288	8.7	LOS A	0.9	23.5	0.43	0.83	39.0
18	R2	257	10.0	257	10.0	0.292	8.4	LOS A	0.9	23.9	0.43	0.75	41.3
Approach		508	10.0	508	10.0	0.292	11.4	LOS B	0.9	23.9	0.43	0.79	38.2
East: Bush St													
6	T1	1126	10.0	1126	10.0	0.763	13.7	LOS B	9.1	244.7	0.84	0.95	33.8
16	R2	324	10.0	324	10.0	0.763	12.9	LOS B	9.1	244.7	0.83	0.94	38.1
Approach		1450	10.0	1450	10.0	0.763	13.5	LOS B	9.1	244.7	0.84	0.95	35.2
West: Bush St													
5	L2	150	10.0	150	10.0	0.209	12.6	LOS B	0.0	0.0	0.00	0.64	41.8
2	T1	480	10.0	480	10.0	0.209	6.8	LOS A	0.0	0.0	0.00	0.54	43.9
Approach		630	10.0	630	10.0	0.209	8.2	LOS A	0.0	0.0	0.00	0.57	43.4
All Vehicles		2588	10.0	2588	10.0	0.763	11.8	LOS B	9.1	244.7	0.55	0.82	38.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Intersection 3

Network: 2040 PM

Bush-NB41
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NB41 Offramp													
3	L2	266	10.0	266	10.0	0.458	18.5	LOS C	1.8	49.4	0.64	0.94	30.5
8	T1	1	10.0	1	10.0	0.458	12.7	LOS B	1.8	49.4	0.64	0.94	36.6
18	R2	522	10.0	522	10.0	0.696	13.4	LOS B	4.2	113.4	0.72	0.98	37.8
Approach		789	10.0	789	10.0	0.696	15.1	LOS C	4.2	113.4	0.70	0.96	35.9
East: Bush St													
6	T1	909	10.0	909	10.0	0.611	11.4	LOS B	5.2	139.5	0.74	0.86	35.9
16	R2	192	10.0	192	10.0	0.611	10.7	LOS B	5.2	139.5	0.74	0.85	39.3
Approach		1101	10.0	1101	10.0	0.611	11.3	LOS B	5.2	139.5	0.74	0.86	36.9
West: Bush St													
5	L2	167	10.0	167	10.0	0.355	12.6	LOS B	0.0	0.0	0.00	0.60	42.6
2	T1	902	10.0	902	10.0	0.355	6.8	LOS A	0.0	0.0	0.00	0.54	44.0
Approach		1069	10.0	1069	10.0	0.355	7.7	LOS A	0.0	0.0	0.00	0.55	43.8
All Vehicles		2959	10.0	2959	10.0	0.696	11.0	LOS B	5.2	139.5	0.46	0.77	39.4

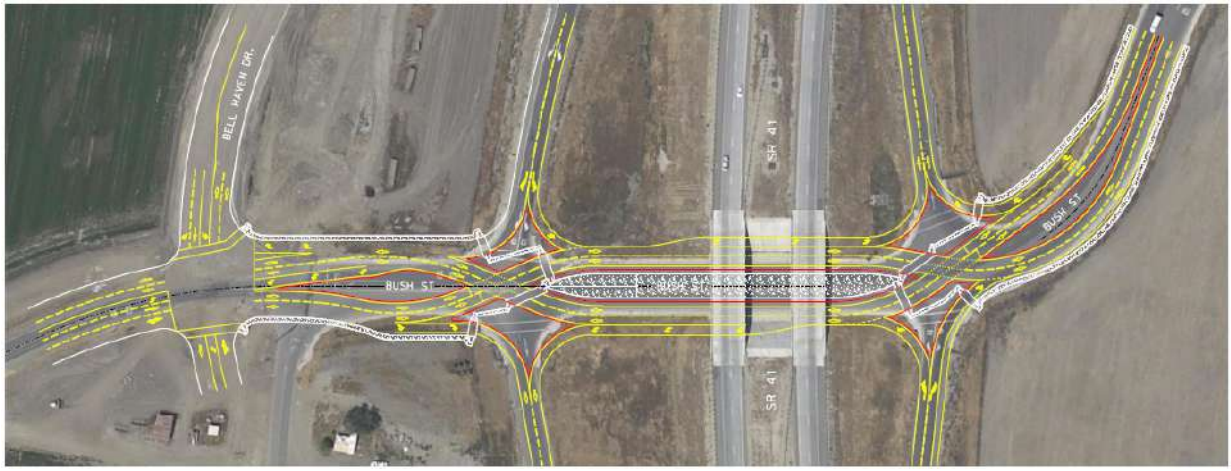
Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Preliminary Cost Estimate

State Route 41-Bush Street Interchange

Roadway work	$2,000,000
Concrete work (curb/gutter/sidewalks/ADA)	$500,000
Structures/Retaining walls	$1,400,000
Traffic/Striping	$200,000
Electrical & signalization	$700,000
Storm water	$200,000
Right of Way	$600,000
Minor items	$500,000
Mobilization	$500,000
Supplemental	$400,000
Contingency	$1,000,000
Total	$8,000,000

The preliminary cost estimate provided above is a pre-Project Initiation Document estimate that is based on the Diverging Diamond Interchange (DDI) alternative. The items and costs (see above) are very general at this stage of the project and are consistent with three similar DDI's that were recently constructed in Minnesota and Missouri. We chose these three for comparison as they have a similar configuration to the Bush Street Interchange with the State Highway structures travelling over the local street. More detailed estimates would be developed during the Project Study Report phase of the project.



Previously Constructed DDI

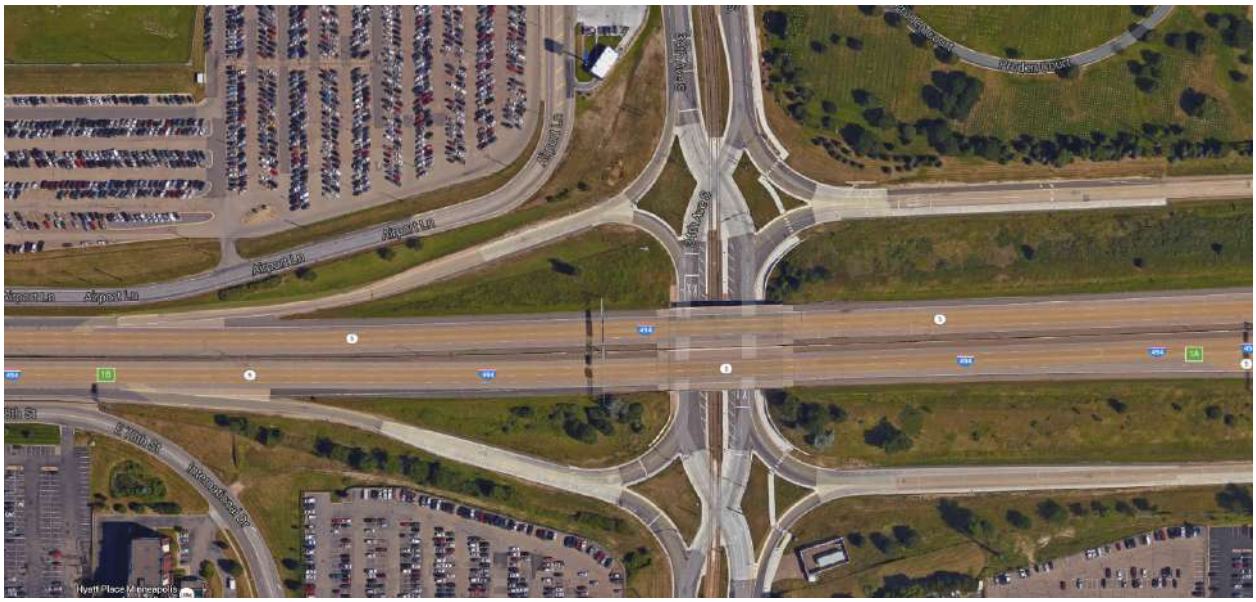
Location 1

Bloomington, MN (I-494 and 34th Ave.)

Location Details:

Retrofit project
Bridge deck, abutments and slope under structure not modified by project
Final construction cost $6.2M
Open to public November 17, 2013

Aerial



NB (prior to construction to retaining wall)

SB (prior to construction to show retaining wall)

Location 2
Kansas City, MO (I-29 and Tiffany Springs Pkwy)

Location Details:

Retrofit project
Bridge deck, abutments and concrete slope under structure not modified
Final construction cost $11 M
Cost includes additional work on adjacent intersections and local roads
DDI cost approximately 60% of total construction cost ($6.6 M)
Open to public July 12, 2014.

Aerial

Northeast View

Southwest View

Location 3
Maryland Heights, MO (I-270 and Dorsett Rd.)

Location Details:

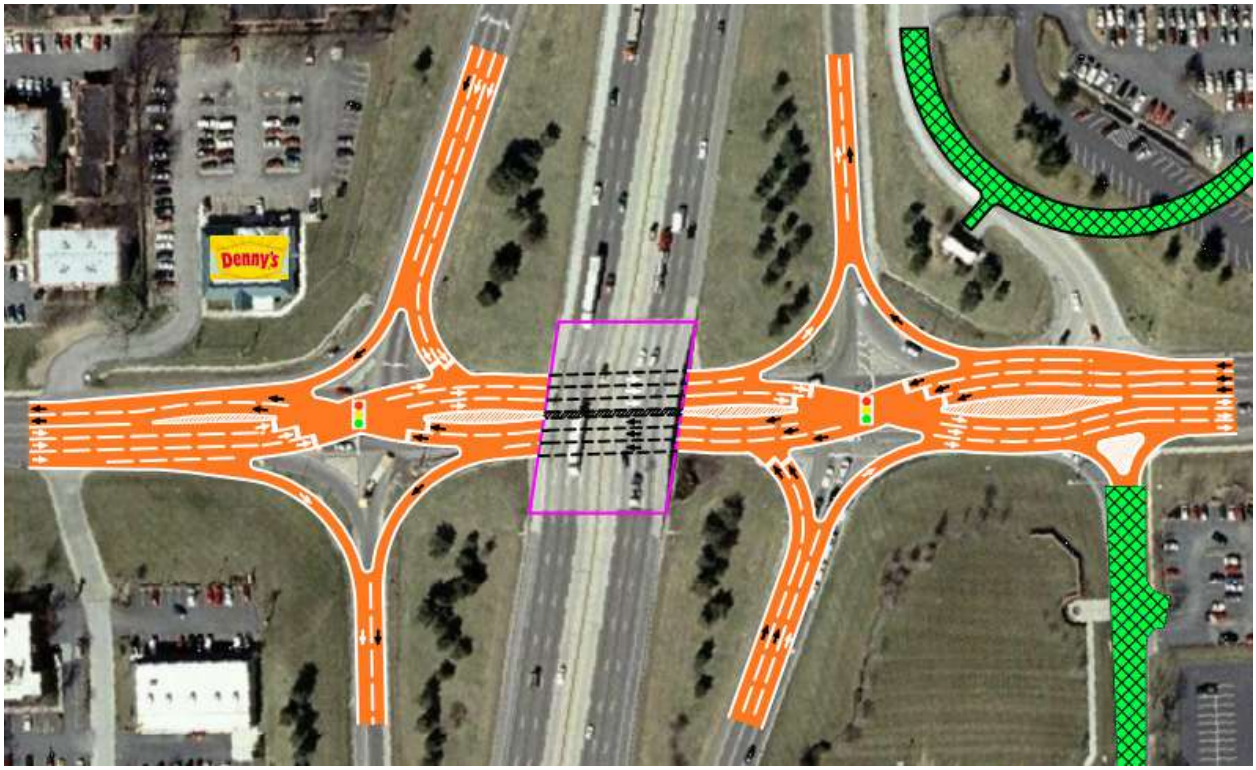
Retrofit with decorative treatment and retaining walls
Bridge structure work required
Final construction cost $10M (not including decorative enhancement
Open to public October 17, 2010

Aerial

East View

West View

Interchange Improvements



City of
LEMOORE
CALIFORNIA

Public Works Division

711 W Cinnamon
Lemoore, CA 93245
Phone (559) 924-6700
Fax (559) 924-9003

Staff Report

ITEM NO. SS-2

To: **Lemoore City Council**

From: **Nathan Olson, PW Director**

Date: **March 15, 2016** **Meeting Date:** **March 15, 2016**

Subject: **Water Rate Study Update**

Proposed Motion:
Informational only.

Subject/Discussion:

On October 2, 2015 the City of Lemoore received an Alternate Compliance Order from the California Water Board outlining action steps for the City to address drought conditions. One of the items in the Order was to pursue and complete a water rate study by March 31, 2016.

As part of developing a water rate model for the City, the 5-year Community Investment Program was required, which was adopted by the City Council on March 1, 2016.

This agenda item is meant to serve as an informational opportunity and is the first step to educate the City as to the current state of the City's water enterprise fund; the State and Federally mandated projects relating to compliance for Total Trihalomethanes; (TTHM's) and on-going operations and maintenance of City water supply and distribution.

The above elements will be the foundation of the proposed water rate increase and in advance of Proposition 218 notification.

Financial Consideration(s):
This agenda item is to discuss early information regarding a future water rate increase that will be required, in combination with long term debt financing, to fund large capital expenditures that will benefit the community 50-60 years into the future.

Alternatives or Pros/Cons:
Pros:
- Ensures the City is compliant with the Alternative Compliance Order.
- Supports the City's efforts to continue to provide safe drinking water.
- Improves system reliability and customer service.

Cons

- Taking no action will put the City out of compliance with State and Federally mandated action.
- Residents and businesses will be impacted by a future proposed water rate increase.

Commission/Board Recommendation:

Not Applicable.

Staff Recommendation:

This agenda item is to provide the Council and community with information regarding the City's water rate study. This process began in the spring of 2015 with the research into solutions to address TTHM. As that research is on-going, staff is continuing efforts for a water rate study. Typically rates are reviewed approximately every 3-5 years (depending on the nature of a system). Lemoore's last water rate increase was in 2007.

Attachments:		**Review:**	**Date:**
☐	Resolution	☐ Finance	
☐	Ordinance	☒ City Attorney	3/9/16
☐	Map	☒ City Manager	3/9/16
☒	Other Alternate Compliance Order & TTHM Compliance Order	☒ City Clerk	3/10/16

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

OFFICE OF ENFORCEMENT

ALTERNATIVE COMPLIANCE ORDER

In the Matter of Urban Water Conservation by

The City of Lemoore

1. On January 17, 2014, Governor Edmund G. Brown Jr. (Governor Brown) issued Proclamation No. 1-17-2014, declaring a State of Emergency to exist in California under the Emergency Services Act due to severe drought conditions. The Proclamation, among other things, called on all Californians to reduce their water usage by 20 percent.

2. On April 25, 2014, Governor Brown issued a Proclamation of a Continued State of Emergency due to drought conditions, based on the need to strengthen the state's ability to manage water and habitat effectively in drought conditions.

3. On April 1, 2015, Governor Brown issued Executive Order B-29-15 (Executive Order) to strengthen the state's ability to manage water and habitat effectively in drought conditions. The Executive Order calls on all Californians to redouble their efforts to conserve water, and directs the State Water Resources Control Board (State Water Board) to impose restrictions on urban water suppliers to achieve a statewide 25 percent reduction in potable urban water usage through February 2016. The Executive Order further requires commercial, industrial, and institutional users to implement water efficiency measures; prohibits irrigation with potable water of ornamental turf in public street medians; and prohibits irrigation with potable water outside newly constructed homes and buildings that is not delivered by drip or microspray systems.

4. On May 5, 2015, the State Water Board adopted Resolution 2015-0032, an Emergency Regulation for Statewide Urban Water Conservation (Emergency Regulation) pursuant to Water Code section 1058.5. The Emergency Regulation adds a new section to title 23 of the California Code of Regulations intended to safeguard urban water supplies in the event of continued drought, minimize the potential for waste and unreasonable use of water, and achieve the 25 percent statewide potable water usage reduction ordered by Governor Brown in the Executive Order. The Emergency Regulation was approved by the Office of Administrative Law and became effective on May 18, 2015.

5. The Emergency Regulation requires each urban water supplier to "reduce its total potable water production by the percentage identified as its conservation standard." California Code Regulations, title 23, section 865(c)(1).

6. Section 865(b)(2) requires urban water suppliers to prepare and submit to the State Water Board by the 15th of each month a monitoring report detailing the total amount of potable water produced compared to the amount produced in the same calendar month in 2013.

7. Section 866(a) allows the Executive Director of the State Water board, or the Executive Director's designee, to issue conservation orders requiring additional actions by the supplier to come into compliance with its conservation standard. Section 866(b) allows the Executive Director of the State Water Board, or the Executive Director's designee, to issue orders requesting information from the supplier concerning water production, water use and/or water conservation. State Water Board Executive Director Thomas Howard has delegated authority under sections 866(b) to State Water Board Chief Deputy Director Caren Trgovcich, who in turn has delegated these authorities to Director of the State Water Board's Office of Enforcement Christian Carrigan.

8. If an urban water supplier believes that the applicable conservation standard is unachievable due to firm commercial and industrial water use and residential use reductions that would affect public health and safety, paragraph 16 of Resolution 2015-0032 allows an urban water supplier to submit a request, accompanied by supporting information or documentation, for alternate enforceable methods of compliance with the conservation standard.

9. The drought conditions that formed the basis for the Executive Order and Emergency Regulations continue to exist and will likely continue to exist for the foreseeable future.

10. The City of Lemoore (the City) has a conservation target, pursuant to section 865(c), of 32 percent savings over its water usage in 2013. The City is cumulatively 12.1 percent behind its conservation standard.

11. On August 7, 2015 the State Water Board Office of Enforcement issued an Informational Order pursuant to its authority outlined in section 866(b) of the Emergency Regulations to determine what actions the City had taken to comply with its conservation standard.

12. The City submitted a request for alternative compliance. After reviewing the documentation submitted, the State Water Board has determined that an Alternative Compliance Order is warranted. This Order is issued under section 866(a).

13. In lieu of meeting the applicable conservation standard, the State Water Board mandates that the City take the actions described below.

14. Recipients of Alternative Compliance Orders pursuant to Resolution 2015-0032 may petition the State Water Board for reconsideration. (Water Code § 1122; 23 CCR §§ 768 et seq., 866(a)(2))

IT IS HEREBY ORDERED:

1. This Order is effective on the date shown below. All submittal requirements are based on the effective date of this Order.

2. The City shall:

   (A) Immediately pursue a rate study in compliance with California Proposition 218, with the goal of implementing a water rate structure that encourages conservation as well as discouraging waste or overuse. The City shall initiate the public notice period of the proposed change in rate structure by March 31, 2016.

   (B) Prominently display the following items on the home page of the City's website:

      i) A water waste reporting phone number and email address,

      ii) A link to http://saveourwaterrebates.com.

   (C) Identify, within thirty (30) days, the City's highest residential water users and conduct outreach to that group of water users that includes, but is not limited to offering at least seven (7) water use audits per month. As part of each audit, estimate and report on the amount of water that will be saved by implementing each recommendation. The City shall maintain communications with audited customers and document which audit recommendations are implemented,

   (D) Develop a plan, within thirty (30) days, for engaging with Leprino, Agusa, and Olam to maximize water efficiency. The plan shall include, but is not limit to the following actions:

      i) Identify specific actions that will be taken to work with Leprino, Agusa, and Olam in the following areas:

         (1) Recycled wastewater,

         (2) Process efficiency programs,

(3) Fixtures and landscaping,

ii) Offer water efficiency audits. As part of each audit, estimate and report on the amount of water that will be saved by implementing each recommendation. Maintain communications with audited customers to document which audit recommendations are implemented,

iii) Establish a timetable and milestones for implementing each action identified in the plan,

iv) Estimate the water savings that will be realized by implementation of the plan,

(E) Identify, within thirty (30) days, the top twenty-five (25) commercial, industrial, and institutional (CII) users other than Leprino, Agusa, and Olam and develop a plan for offering water use audits to those users. As part of each audit, estimate and report on the amount of water that will be saved by implementing each recommendation. The City shall maintain communications with audited customers and document which audit recommendations are implemented,

(F) Hire or allocate one (1) new or existing part-time employee dedicated to implementing the outreach to the CII sector within sixty (60) days, and

(G) Diligently pursue the opportunity of receiving approximately 150,000 gallons per day of recycled water from Leprino to be used for construction dust control and other possible uses.

3. The City shall continue to report the monthly conservation data required for all water suppliers pursuant to section 865(b)(2) of the Emergency Regulation.

4. The City shall develop and submit a report by November 15, 2015, and every month afterward until February 15, 2016, detailing the previous month's efforts to comply with each of the mandates listed above in section 2. The report shall be submitted via email to Dr. Matthew Buffleben, at Matthew.Buffleben@waterboards.ca.gov, no later than the 15th of the month, for every month within the reporting period.

5. The City is required to take the actions mandated above. Failure to comply with this Order subjects the party to enforcement action including, but not limited to, civil liability of up to $500 per day for each day the violation continues pursuant to Water Code section 1058.5.

6. Reservation of Enforcement Authority and Discretion: Nothing in this Order is intended to or shall be construed to limit or preclude the State Water Board from exercising its authority under any statute, regulation, ordinance, or other law, including, but not limited to, the authority to bring enforcement against water suppliers who are in violation of Water Code section 1052, the Emergency Regulations or any applicable law.

STATE WATER RESOURCES CONTROL BOARD

Christian M. Carrigan, Director
Office of Enforcement

Dated: October 1, 2015

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER

IN RE: **CITY OF LEMOORE**
WATER SYSTEM NO. 1610005

TO: Mr. David Wlachin
City of Lemoore
711 W. Cinnamon Drive
Lemoore, CA 93245

COMPLIANCE ORDER NO. 03-12-14R-004

FOR NONCOMPLIANCE WITH THE
STAGE 2 DISINFECTION BYPRODUCT RULE
MAXIMUM CONTAMINANT LEVEL FOR
TOTAL TRIHALOMETHANES
SECTION 64533(a), TITLE 22, CALIFORNIA CODE OF REGULATIONS

Issued on October 27, 2014

Section 116655 of the California Health and Safety Code authorizes the issuance of a compliance order to a public water system for violation of the California Safe Drinking Water Act (Health and Safety Code, Division 104, Part 12, Chapter 4, commencing with Section 116270) (hereinafter "California SDWA"), or any regulation, standard, permit or order issued or adopted thereunder.

The State Water Resources Control Board (hereinafter "State Board"), acting by and through its Division of Drinking Water (hereinafter "Division") and the Deputy Director for the Division (hereinafter "Deputy Director"), hereby issues a compliance order to the City

of Lemoore (hereinafter "City") for violation of California Code of Regulations (hereinafter "CCR"), Section 64533(a), Maximum Contaminant Levels for Disinfection Byproducts.

APPLICABLE AUTHORITIES

Section 116655, California SDWA, states in relevant part:

(a) Whenever the department determines that any person has violated or is violating this chapter, or any permit, regulation, or standard issued or adopted pursuant to this chapter, the director may issue an order doing any of the following:

(1) Directing compliance forthwith.

(2) Directing compliance in accordance with a time schedule set by the department.

(3) Directing that appropriate preventive action be taken in the case of a threatened violation.

(b) An order issued pursuant to this section may include, but shall not be limited to, any or all of the following requirements:

(1) That the existing plant, works, or system be repaired, altered, or added to.

(2) That purification or treatment works be installed.

(3) That the source of the water supply be changed.

(4) That no additional service connection be made to the system.

(5) That the water supply, the plant, or the system be monitored.

(6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the department.

Section 64533(a), Title 22, CCR, states in relevant part:

(a) Using the monitoring and calculation methods specified in Sections 64534, 64534.2, 64535, and 64535.2, the primary MCLs for the disinfection byproducts shown in Table 64533-A shall not be exceeded in drinking water supplied to the public.

Table 64533-A
Maximum Contaminant Levels and Detection Limits for Purposes of Reporting Disinfection Byproducts

Disinfection Byproduct	Maximum Contaminant Level (mg/L)	Detection Limit for Purposes of Reporting (mg/L)
Total trihalomethanes (TTHM)	0.080	
Bromodichloromethane		0.0010
Bromoform		0.0010
Chloroform		0.0010
Dibromochloromethane		0.0010
Haloacetic acids (five) (HAA5)	0.060	
Monochloroacetic Acid		0.0020
Dichloroacetic Acid		0.0010
Trichloroacetic Acid		0.0010
Monobromoacetic Acid		0.0010
Dibromoacetic Acid		0.0010
Bromate	0.010	0.0050
Chlorite	1.0	0.020

Additional *Applicable Authorities* are located in Attachment A, which is attached hereto and incorporated by reference.

STATEMENT OF FACTS

The City's water system is a publicly owned community water system located in Kings County that supplies water for domestic purposes to approximately 24,945 served through approximately 6,521 service connections, as reported to the Division. The City operates under revised Domestic Water Supply Permit No. 03-12-11P-011, issued on December 7, 2011.

The City utilizes ten (10) active ground water wells that are provided disinfection treatment with 12.5% sodium hypochlorite. In 2011, the Division issued a revised permit the City to

for use of an arsenic blending treatment plant. Four sources located in the City's North Well Field (N-2, N-4, N-5 and N-6) historically exceeded the arsenic maximum contaminant level. Raw water from the North Well Field wells is now blended with the raw water from the City's other wells in town at two compliance points (Effluent from the tank at Well No. 11 and effluent from the South Tank at 40 G. St.). All water delivered to the distribution system meets the arsenic maximum contaminant level.

CCR, Title 22, Chapter 15.5 (hereinafter "Stage 2 Disinfection Byproduct Rule" or "S2DBPR") adopted by California, effective June 21, 2012, requires water systems serving 10,000 or more persons to monitor and report disinfection byproduct and residual disinfectant levels. The S2DBPR applies to any community or nontransient noncommunity water system that treats water with a chemical disinfectant in any part of the treatment process or that provides water containing a chemical disinfectant. CCR Section 64533 establishes a maximum contaminant level (hereinafter "MCL") in drinking water for total trihalomethanes (hereinafter "TTHM") and haloacetic acids (five) (hereinafter "HAA5") in drinking water of 0.080 mg/L and 0.060 mg/L, respectively.

CCR, Section 64534.2, establishes a routine monitoring frequency for a ground water system serving a population greater than or equal to 10,000 individuals of four samples for TTHMs and HAA5s per quarter per treatment plant.

CCR, Section 64535.2(e)(1), specifies ongoing compliance determinations for quarterly TTHM and HAA5 monitoring; specifically, compliance with the TTHM and HAA5 MCLs are based on a locational running annual average (LRAA), computed quarterly, at each

approved sample site. The City is required to collect four TTHM samples and four HAA5 samples at the locations in the distribution system with the highest historic TTHM and HAA5 results, respectively. The City's approved S2DBPR sample sites are:

1. Faun & Lemoore Avenue
2. Carmel & Stinson
3. 898 Iona Avenue
4. Lemoore Avenue & Iona Avenue

The Faun and Lemoore Avenue site (Site No. 1) is in violation of the S2DBPR. A summary of this site's recent TTHM and HAA5 monitoring is presented in the table below.

Table 1: Stage 2 DBPR Sample Site Results
Faun & Lemoore Ave.

Sample Quarter	TTHM (mg/L)	HAA5 (mg/L)
	MCL =	
	0.080	**0.060**
Fourth Qtr. 2013	**0.110**	0.035
First Qtr. 2014	0.061	0.012
Second Qtr. 2014	**0.100**	0.027
Third Qtr. 2014	**0.098**	0.025
4Q 2014 LRAA	**0.092**	0.0248

The City was previously in violation of the TTHM MCL under the Stage 1 Disinfection Byproduct Rule. Compliance Order No. 03-12-11O-002 was issued to the Water System on May 23, 2011, for that violation. This compliance order replaces and voids Compliance Order No. 03-12-11O-002 and its directives.

Section 64463.4 requires public notification to the Division and consumers of a water system whenever any violation of the MCL occurs. Notification to the Division is required by the end of the business day on which the violation has been determined. If the Division

is closed, notification shall be within 24 hours of the determination. The Division was notified on September 10, 2014, in accordance with the above-referenced section.

DETERMINATIONS

Based on the above Statement of Facts, the Division has determined that the City has violated the LRAA MCL for TTHMs during the third quarter of 2014, as shown in Table 1 above.

DIRECTIVES

To ensure that the water supplied by the City of Lemoore's water system is at all times safe, wholesome, healthful, and potable, and pursuant to the California SDWA, City is hereby directed to take the following actions:

1. Comply with CCR, Title 22, Section 64533(a) in future monitoring periods after conducting upgrades of the treatment facility and treatment operations.

2. Provide quarterly public notification of its inability to the meet the TTHM MCL during any calendar quarter that the four-quarter locational running annual average exceeds the TTHM MCL. Notification procedures and format are provided in Attachment B. An electronic version of Attachment B is available upon request.

3. Proof of public notification shall be provided to the Division following each quarterly notification by the 10th day of the month following notification, using the form provided as Attachment C.

4. Continue to collect quarterly samples for TTHM's and HAA5's from the distribution system in accordance with an approved DBP monitoring plan. The analytical results shall be reported to the Division electronically by the analyzing laboratory no later than the 10th day following the month in which the analysis was completed.

5. Prepare a Corrective Action Plan identifying improvements to the water system designed to correct the water quality problem (violation of the TTHM MCL) and eliminate the need to deliver water to consumers that does not meet primary drinking water standards. The plan shall include a time schedule for completion of various phases of the project such as design, construction, and startup.

6. Present the Corrective Action Plan required under Directive No. 5, above, to the Division in an office meeting no later than **December 15, 2014**.

7. Submit quarterly progress reports to the Division. The first quarterly progress report shall describe progress made in the fourth quarter of 2014 and shall be submitted to the Division by **January 10, 2015**, using the form provided as Attachment D.

8. Operate the existing water system to minimize formation of total trihalomethanes and haloacetic acids in the distribution system.

9. Submit a written response by **November 15, 2014**, indicating its willingness to comply with the directives of this Compliance Order.

10. By no later than **October 31, 2017**, achieve compliance with the total trihalomethanes maximum contaminant level, with the completion of a project and demonstration that the locational running annual average is reliably less than the MCL. The City shall provide written notification of the date that compliance is achieved, no later than ten days following receipt of the laboratory sampling results.

All submittals required by this Order shall be addressed to:

Tricia A. Wathen, P.E.,
Senior Sanitary Engineer
State Water Resources Control Board
Division of Drinking Water
Visalia District
265 W. Bullard Avenue, Suite 101
Fresno, CA 93704

The Division reserves the right to make such modifications to this Order as it may deem necessary to protect public health and safety. Such modifications may be issued as amendments to this Order and shall be effective upon issuance. Nothing in this Compliance Order relieves the City of Lemoore of its obligation to meet the requirements of the California SDWA, or any regulation, standard, permit or order issued thereunder.

If the City of Lemoore's water system is unable to perform the tasks specified in this Order for any reason, whether within or beyond its control, and if the City of Lemoore's water system notifies the Division in writing no less than five days in advance of the due date, the Division may extend the time for performance if the City of Lemoore's water system demonstrates that it has used its best efforts to comply with the schedule and other requirements of this Order.

PARTIES BOUND

This Compliance Order shall apply to and be binding upon the City of Lemoore, its owners, shareholders, officers, directors, agents, employees, contractors, successors, and assignees.

SEVERABILITY

The directives of this Compliance Order are severable, and City of Lemoore shall comply with each and every provision thereof notwithstanding the effectiveness of any provision.

FURTHER ENFORCEMENT ACTION

The California SDWA authorizes the Division to issue citations and compliance orders with assessment of administrative penalties to a public water system for violation or continued violation of the requirements of the California SDWA or any permit, regulation, permit or order issued or adopted thereunder including, but not limited to, failure to correct a violation identified in a citation or compliance order. The California SDWA also authorizes the

Division to take action to suspend or revoke a permit that has been issued to a public water system if the system has violated applicable law or regulations or has failed to comply with an order of the Division; and to petition the superior court to take various enforcement measures against a public water system that has failed to comply with an order of the Division. The Division does not waive any further enforcement action by issuance of this compliance order.

10-27-2014
Date

Carl L. Carlucci, P.E.
Supervising Sanitary Engineer
Central California Section
SOUTHERN CALIFORNIA BRANCH
DRINKING WATER FIELD OPERATIONS

CLC/TAW/SS

Attachments:
Attachment A: Applicable Authorities
Attachment B: Public Notification Form
Attachment C: Proof of Notification Form
Attachment D: Quarterly Progress Report Form

Applicable Authorities

Violation of Maximum Contaminant Levels of

Disinfectant Byproducts

California Health and Safety Code, Section 116655, states in relevant part:

> (a) Whenever the department determines that any person has violated or is violating this chapter, or any permit, regulation, or standard issued or adopted pursuant to this chapter, the director may issue an order doing any of the following:
>
> (1) Directing compliance forthwith.
>
> (2) Directing compliance in accordance with a time schedule set by the department.
>
> (3) Directing that appropriate preventive action be taken in the case of a threatened violation.
>
> (b) An order issued pursuant to this section may include, but shall not be limited to, any or all of the following requirements:
>
> (1) That the existing plant, works, or system be repaired, altered, or added to.
>
> (2) That purification or treatment works be installed.
>
> (3) That the source of the water supply be changed.
>
> (4) That no additional service connection be made to the system.
>
> (5) That the water supply, the plant, or the system be monitored.
>
> (6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the department.

California Code of Regulations, Title 22, states in relevant part:

§64533. Maximum Contaminant Levels for Disinfection Byproducts.
(a) Using the monitoring and calculation methods specified in sections 64534, 64534.2, 64535, and 64535.2, the primary MCLs for the disinfection byproducts shown in table 64533-A shall not be exceeded in drinking water supplied to the public.

Table 64533-A
Maximum Contaminant Levels and Detection Limits for Purposes of Reporting Disinfection Byproducts

Disinfection Byproduct	Maximum Contaminant Level (mg/L)	Detection Limit for Purposes of Reporting (mg/L)
Total trihalomethanes (TTHM)	0.080	
Bromodichloromethane		0.0010
Bromoform		0.0010
Chloroform		0.0010
Dibromochloromethane		0.0010
Disinfection Byproduct	**Maximum Contaminant Level (mg/L)**	**Detection Limit for Purposes of Reporting (mg/L)**

Haloacetic acids (five) (HAA5)	0.060	
Monochloroacetic Acid		0.0020
Dichloroacetic Acid		0.0010
Trichloroacetic Acid		0.0010
Monobromoacetic Acid		0.0010
Dibromoacetic Acid		0.0010
Bromate	0.010	0.0050 0.0010[1]
Chlorite	1.0	0.020

[1] For analysis performed using EPA Method 317.0 Revision 2.0, 321.8, or 326.0

§64534. General Monitoring Requirements.

(a) Except as provided in subsection (b), analyses required pursuant to this chapter shall be performed by laboratories certified by the Department to perform such analyses pursuant to Article 3, commencing with section 100825, of Chapter 4 of Part 1 of Division 101, Health and Safety Code. Unless otherwise directed by the Department, analyses shall be made in accordance with EPA approved methods as prescribed in 40 Code of Federal Regulations, part 141.131 (63 Fed. Reg. 69466 (December 16, 1998), as amended at 66 Fed. Reg. 3776 (January 16, 2001), 71 Fed. Reg. 479 (January 4, 2006), 71 Fed. Reg. 37168 (June 29, 2006), and 74 Fed. Reg. 30958 (June 29, 2009)), which are incorporated by reference.

(b) Sample collection, and field tests including pH, alkalinity, and chlorine, chloramines, and chlorine dioxide residual disinfectants, shall be performed by personnel trained to perform such sample collections and/or tests by:

(1) The Department;

(2) A laboratory certified pursuant to subsection (a); or

(3) An operator, certified by the Department pursuant to section 106875(a) or (b) of the Health and Safety Code and trained by an entity in paragraph (1) or (2) to perform such sample collections and/or tests.

(c) Systems shall take all samples during normal operating conditions, which exclude those circumstances covered under section 64533.5(b).

(d) A system may apply to the Department for approval to consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required under section 64534.2(a). In order to qualify for this reduction in monitoring requirements a system shall demonstrate to the Department that the multiple wells produce water from the same aquifer. To make this demonstration, a system shall submit information to the Department regarding the location, depth, construction, and geologic features of each well, and water quality information for each well. The Department will use this information to determine whether the wells produce water from a single aquifer.

(e) Systems shall use only data collected under the provisions of this chapter to qualify for reduced monitoring pursuant to this article.

(f) Systems that fail to monitor shall be in violation of the monitoring requirements for the entire monitoring period that a monitoring result would be used in calculating compliance with

MCLs or MRDLs, and shall notify the public pursuant to sections 64463, 64463.7, and 64465, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(g) Systems that fail to monitor in accordance with the monitoring plan required by section 64534.8 shall be in violation of the monitoring requirements, and shall notify the public pursuant to sections 64463, 64463.7, and 64465, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

§64534.2. Disinfection Byproducts Monitoring.
(a) Community and nontransient noncommunity water systems shall monitor for TTHM and HAA5 at the frequencies and locations indicated in table 64534.2-A.

Table 64534.2-A
Routine and Increased Monitoring Frequency for TTHM and HAA5

COLUMN A *Type of System*	COLUMN B *Persons Served*	COLUMN C *Minimum monitoring frequency*	COLUMN D *Sample location in the distribution system & increased monitoring frequencies*
Systems using approved surface water	≥10,000	Four samples per quarter per treatment plant	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods[1].
	500 - 9,999	One sample per quarter per treatment plant	Locations representing maximum residence time[1].
	< 500	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system shall increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in paragraph (3) of this subsection.

Systems using only ground water not under direct influence of surface water and using chemical disinfectant	≥10,000	One sample per quarter per treatment plant	Locations representing maximum residence time[1].
	<10,000	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system shall increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in paragraph (3) of this subsection.

[1] If a system elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) shall be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples shall be taken at locations representative of at least average residence time in the distribution system.

(1) Systems may apply to the Department to monitor at a reduced frequency in accordance with table 64534.2-B. The application shall include the results of all TOC, TTHM, and HAA5 monitoring conducted in the previous 12 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application to determine whether or not the system is eligible for the reduced monitoring specified in table 64534.2-B;

Table 64534.2-B
Reduced Monitoring Frequency for TTHM and HAA5

If the system is a(n) ...	*serving...*	*the system may reduce monitoring if it has monitored at least one year and...*	*to this level*
Approved surface water system which has a source water TOC[1] level, before any treatment, ≤4.0 mg/L	≥10,000	TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
	500-9,999	TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of

					warmest water temperature.
System using only ground water not under direct influence of surface water and using chemical disinfectant		≥10,000		TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L		One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
		<10,000		TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L for two consecutive years OR TTHM[1] ≤0.020 mg/L and HAA5[1] ≤0.015 mg/L for one year		One sample per treatment plant per three-year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following the quarter in which system qualifies for reduced monitoring.
[1] TOC, TTHM, and HAA5 values based on annual averages.						

(2) Systems on reduced monitoring shall resume monitoring at the frequency specified in column C of table 64534.2-A in the quarter immediately following the quarter in which the system exceeds 0.060 mg/L for the TTHM annual average or 0.045 mg/L for the HAA5 annual average, or 4 mg/L for the source water TOC annual average. For systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons or for systems using approved surface water and serving fewer than 500 persons, if either the TTHM annual average is >0.080 mg/L or the HAA5 annual average is >0.060 mg/L, the system shall go to increased monitoring identified in column D of table 64534.2-A in the quarter immediately following the quarter in which the system exceeds 0.080 mg/L or 0.060 mg/L for the TTHM and HAA5 annual averages, respectively; and
(3) Systems on increased monitoring pursuant to column D of table 64534.2-A may return to routine monitoring specified in column C of table 64534.2-A if, after at least one year of monitoring, TTHM annual average is ≤0.060 mg/L and HAA5 annual average is ≤0.045 mg/L.

(b) Community and nontransient noncommunity water systems using chlorine dioxide shall conduct monitoring for chlorite as follows:
(1) Systems shall take daily samples at the entrance to the distribution system and analyze the samples the same day the samples are taken. For any daily sample that exceeds the chlorite MCL, the system shall take three additional chlorite distribution system samples the following day (in addition to the daily sample required at the entrance to the distribution system) at these locations: as close to the first customer as possible, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. The system shall analyze the additional samples within 48 hours of being notified pursuant to section 64537(b) of the exceedance;
(2) Systems shall take a three-sample set each month in the distribution system. The system shall take one sample at each of the following locations: as close to the first customer as possible, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling shall be conducted in the same manner (as three-sample sets, at the specified locations). The system may use the results of additional monitoring conducted under paragraph (1) to meet the monitoring requirement in this paragraph;
(3) Systems may apply to the Department to reduce monthly chlorite monitoring in the distribution system pursuant to paragraph (2) to one three-sample set per quarter after one year of

monitoring during which no individual chlorite sample taken in the distribution system has exceeded the chlorite MCL and the system has not been required to conduct additional monitoring under paragraph (1). The application shall include the results of all chlorite monitoring conducted in the previous 12 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application and determine whether or not the system is eligible to reduce monitoring to one three-sample set per quarter. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under paragraph (2) exceeds the chlorite MCL or the system is required to conduct additional monitoring under paragraph (1), at which time the system shall revert to routine monitoring; and
(4) If a distribution system sample taken pursuant to paragraph (2) exceeds the chlorite MCL, the system shall take and analyze a confirmation sample within 48 hours of being notified pursuant to section 64537(c) of the exceedance. If the system fails to take a confirmation sample pursuant to this paragraph, it shall take and analyze a confirmation sample within two weeks of notification of the results of the first sample.

(c) Community and nontransient noncommunity systems using ozone shall monitor for bromate as follows:
(1) Systems shall take one sample per month for each treatment plant in the system using ozone. Samples shall be taken at the entrance to the distribution system while the ozonation system is operating under normal conditions;
(2) Systems may reduce bromate monitoring from monthly to once per quarter, if the system's running annual average bromate concentration is ≤0.0025 mg/L based on monthly bromate measurements under paragraph (1) for the most recent four quarters, with samples analyzed using Method 317.0 Revision 2.0, 321.8, or 326.0. The system shall notify the Department in writing within 30 days of the change in monitoring frequency. The system shall continue monthly bromide monitoring of the source water to remain on reduced bromate monitoring; and
(3) Systems shall resume routine bromate monitoring pursuant to paragraph (1) and notify the Department in writing within 30 days of the change in monitoring frequency if:
(A) The running annual average bromate concentration, computed quarterly, is greater than 0.0025 mg/L; or
(B) The running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based upon representative monthly measurements.

(d) By the applicable date specified in section 64530(d), and in lieu of TTHM and HAA5 monitoring in subsection (a):
(1) Community and nontransient noncommunity water systems shall monitor for TTHM and HAA5 at the frequencies and location totals indicated in table 64534.2-C and in accordance with the monitoring plan developed pursuant to section 64534.8;

Table 64534.2-C
Routine Monitoring Frequency for TTHM and HAA5

		Minimum monitoring frequency[1]	
Source water type	*Persons served*	*Number of distribution system monitoring locations*	*Monitoring period*[2]
Systems using approved surface water	≥5,000,000	20 dual sample sets	per quarter

	1,000,000 – 4,999,999	16 dual sample sets	per quarter
	250,000 – 999,999	12 dual sample sets	per quarter
	50,000 – 249,999	8 dual sample sets	per quarter
	10,000 – 49,999	4 dual sample sets	per quarter
	3,301 – 9,999	2 dual sample sets	per quarter
	500 – 3,300	1 TTHM and 1 HAA5 sample: one at the location with the highest TTHM measurement, one at the location with the highest HAA5 measurement	per quarter
	<500	1 TTHM and 1 HAA5 sample: one at the location with the highest TTHM measurement, one at the location with the highest HAA5 measurement[3]	per year
Systems using ground water not under direct influence of surface water	≥500,000	8 dual sample sets	per quarter
	100,000 – 499,999	6 dual sample sets	per quarter
	10,000 – 99,999	4 dual sample sets	per quarter
	500 – 9,999	2 dual sample sets	per year
	<500	1 TTHM and 1 HAA5 sample: one at the location with the highest TTHM measurement, one at the location with the highest HAA5 measurement[3]	per year

[1] All systems shall monitor during the month of highest disinfection byproduct concentrations.
[2] Systems on quarterly monitoring shall take dual sample sets every 90 days at each monitoring location, except for systems using approved surface water and serving 500 – 3,300 persons.
[3] Only one location with a dual sample set per monitoring period is needed if highest TTHM and HAA5 concentrations occur at the same location and month.

(2) Undisinfected systems that begin using a disinfectant other than UV light after the applicable dates in 40 Code of Federal Regulations, part 141.600 (71 Fed. Reg. 388, January 4, 2006), which is incorporated by reference, shall consult with the Department to identify compliance monitoring locations for this subsection. Systems shall then develop a monitoring plan in accordance with section 64534.8 that includes those monitoring locations;
(3) Systems may apply to the Department to monitor at a reduced frequency in accordance with table 64534.2-D, any time the LRAA is ≤0.040 mg/L for TTHM and ≤0.030 mg/L for HAA5 at all monitoring locations. In addition, the source water annual average TOC level, before any treatment shall be ≤4.0 mg/L at each treatment plant treating approved surface water, based on source water TOC monitoring conducted pursuant to section 64534.6. The application shall include the results of all TOC, TTHM, and HAA5 monitoring conducted in the previous 12 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application to determine whether or not the system is eligible for the reduced monitoring specified in table 64534.2-D;

Table 64534.2-D
Reduced Monitoring Frequency for TTHM and HAA5

		Minimum monitoring frequency	
Source water type	*Persons served*	*Number of distribution system monitoring locations*	*Monitoring period*[1]
Systems using approved surface water	≥5,000,000	10 dual sample sets: at the locations with the five highest TTHM and five highest HAA5 LRAAs	per quarter
	1,000,000 – 4,999,999	8 dual sample sets: at the locations with the four highest TTHM and four highest HAA5 LRAAs	per quarter
	250,000 – 999,999	6 dual sample sets: at the locations with the three highest TTHM and three highest HAA5 LRAAs	per quarter
	50,000 – 249,999	4 dual sample sets: at the locations with the two highest TTHM and two highest HAA5 LRAAs	per quarter
	10,000 – 49,999	2 dual sample sets: at the locations with the highest TTHM and highest HAA5 LRAAs	per quarter
	3,301 – 9,999	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement	per year
	500 – 3,300	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter	per year
Systems using only ground water not under direct influence of surface water	≥500,000	4 dual sample sets: at the locations with the two highest TTHM and two highest HAA5 LRAAs	per quarter
	100,000 – 499,999	2 dual sample sets: at the locations with the highest TTHM and highest HAA5 LRAAs	per quarter
	10,000 – 99,999	2 dual sample sets: one at the location and during the	per year

				quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement		
		500 – 9,999		1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter		per year
		<500		1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set every third year if the highest TTHM and HAA5 measurements occurred at the same location and quarter		every third year

[1] Systems on quarterly monitoring shall take dual sample sets every 90 days.

(4) Systems on reduced monitoring shall resume routine monitoring pursuant to table 64534.2-C or conduct increased monitoring pursuant to paragraph (5) (if applicable), if the TTHM LRAA is >0.040 mg/L or the HAA5 LRAA is >0.030 mg/L at any monitoring location (for systems with quarterly reduced monitoring); a TTHM sample is >0.060 mg/L or a HAA5 sample is >0.045 mg/L (for systems with annual or less frequent monitoring); or the source water annual average TOC level, before any treatment, is >4.0 mg/L at any treatment plant treating an approved surface water;

(5) Systems that are required to monitor at a particular location annually or less frequently than annually pursuant to table 64534.2-C or 64534.2-D shall increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is >0.080 mg/L or a HAA5 sample is >0.060 mg/L at any location. Systems on increased monitoring may return to routine monitoring specified in table 64534.2-C if, after at least four consecutive quarters of monitoring, the LRAA for every monitoring location is ≤0.060 mg/L for TTHM and ≤0.045 mg/L for HAA5;

(6) If the operational evaluation level (OEL) exceeds 0.080 mg/L for TTHM or 0.060 mg/L for HAA5 at any monitoring location, systems shall conduct an operational evaluation. The operational evaluation shall include the examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedances. Systems that are able to identify the cause of the OEL exceedance may submit a written request to the Department to limit the scope of the evaluation. The request to limit the scope of the evaluation shall not extend the schedule in section 64537(c) for submitting the written report to the Department;

(7) Systems on reduced monitoring pursuant to table 64534.2-B may remain on reduced monitoring after the applicable date in table 64530-A for compliance with this subsection provided the system meets IDSE requirements under section 64530(c) by qualifying for a 40/30 certification (40 CFR part 141.603) or receiving a very small system waiver (40 CFR part 141.604), meets the reduced monitoring criteria in paragraphs (3) and (4), and does not change or add monitoring locations from those used for compliance monitoring under subsection (a); and
(8) Systems on increased monitoring pursuant to table 64534.2-A shall remain on increased monitoring and conduct increased monitoring pursuant to paragraph (5) at the locations in the monitoring plan developed under section 64534.8 beginning at the applicable date in table 64530-A for compliance with this subsection. Systems on increased monitoring may return to routine monitoring specified in table 64534.2-C pursuant to paragraph (5).

Article 4. Compliance requirements

§64535. General Requirements for Determining Compliance.

(a) All samples taken and analyzed in accordance with section 64534.8 shall be included in determining compliance, pursuant to sections 64535.2, 64535.4, and 64536.4.

(b) For violations of the MCLs in section 64533 or MRDLs in section 64533.5 that may pose an acute risk to human health, notification shall be pursuant to sections 64463, 64463.1, and 64465.

§64535.2. Determining Disinfection Byproducts Compliance.

(a) During the first year of monitoring for disinfection byproducts under sections 64534.2(a), (b), and (c), the system shall comply with paragraphs (1) through (3). During the first year of monitoring for TTHM and HAA5 under section 64534.2(d), the system shall comply with paragraphs (1) through (3) at each monitoring location:
(1) The average of the first quarter's results shall not exceed four times the MCLs specified in section 64533.
(2) The average of the first and second quarter's results shall not exceed two times the MCLs specified in section 64533.
(3) The average of the first, second, and third quarter's results shall not exceed 1.33 times the MCLs specified in section 64533.

(b) TTHM and HAA5 MCL compliance, as monitored pursuant to section 64534.2.(a), shall be determined as follows:
(1) For systems monitoring quarterly, the running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected pursuant to section 64534.2(a) shall not exceed the MCLs specified in section 64533;
(2) For systems monitoring less frequently than quarterly, the average of samples collected that calendar year pursuant to section 64534.2(a) shall not exceed the MCLs specified in section 64533. If the average of the samples collected under section 64534.2(a) exceeds the MCL, the system shall increase monitoring to once per quarter per treatment plant. Compliance with the MCL shall then be determined by the average of the sample that triggered the quarterly monitoring and the following three quarters of monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation immediately. After monitoring quarterly for four consecutive quarters (including the quarter that triggered the quarterly monitoring), and until such time as monitoring returns to routine monitoring pursuant to section 64534.2(a)(3), compliance shall be determined pursuant to paragraph (1);

(3) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections 64463, 64463.4, and 64465, including language in appendix 64465-G, in addition to reporting to the Department pursuant to sections 64537 through 64537.6; and
(4) If a public water system fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(c) Compliance for bromate shall be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by section 64534.2(c). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections 64463, 64463.4, and 64465, including language in appendix 64465-G, in addition to reporting to the Department pursuant to sections 64537 through 64537.6. If a public water system fails to complete 12 consecutive months of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(d) Compliance for chlorite shall be based on the results of samples collected by the system pursuant to sections 64534.2(b).
(1) If any daily sample taken at the entrance to the distribution system exceeds the chlorite MCL and one (or more) of the three samples taken in the distribution system pursuant to section 64534.2(b)(1) exceeds the chlorite MCL, the system is in violation of the MCL and shall take immediate corrective action to reduce the concentration of chlorite to a level below the MCL. The system shall notify the Department within 48 hours of the determination and notify the public pursuant to the procedures for acute health risks in sections 64463, 64463.1, and 64465, including language in appendix 64465-G, in addition to reporting to the Department pursuant to sections 64537 through 64537.6. Failure to take samples in the distribution system the day following an exceedance of the chlorite MCL at the entrance to the distribution system is also an MCL violation and the system shall notify and report as described in this paragraph;
(2) If the average of an individual sample from the three-sample set taken pursuant to 64534.2(b)(2) and its confirmation sample taken pursuant to section 64634.2(b)(4) exceeds the chlorite MCL, the system is in violation of the MCL and shall take the corrective action and notify and report as described in paragraph (1). If the average of the individual sample and its confirmation does not exceed the MCL, the system shall inform the Department of the results within seven days from receipt of the original analysis. Failure to take a confirmation sample pursuant to section 64534.2(b)(4) is also an MCL violation and the system shall notify and report as described in paragraph (1); and
(3) If any two consecutive daily samples taken at the entrance to the distribution system exceed the chlorite MCL and all distribution system samples taken pursuant to 64534.2(b)(1) are less than or equal to the chlorite MCL, the system is in violation of the MCL and shall take corrective action to reduce the concentration of chlorite to a level below the MCL at the point of sampling. The system shall notify the public pursuant to the procedures for nonacute health risks in sections 64463, 64463.4, and 64465, including the language in appendix 64465-G, in addition to reporting to the Department pursuant to sections 64537 through 64537.6. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorite MCL at the entrance to the distribution system is also an MCL violation and the system shall notify and report as described in this paragraph.

(e) TTHM and HAA5 MCL compliance, as monitored pursuant to section 64534.2(d), shall be determined as follows:
(1) For systems monitoring quarterly, each locational running annual average (LRAA), computed quarterly, shall not exceed the MCLs specified in section 64533;
(2) For systems monitoring annually or less frequently, each sample collected shall not exceed the MCLs specified in section 64533. If no sample exceeds the MCL, the sample result for each monitoring location shall be considered the LRAA for the monitoring location. If any sample exceeds the MCL, systems shall increase monitoring pursuant to section 64534.2(d)(5). Compliance with the MCL shall then be determined by the average of the sample that triggered the quarterly monitoring and the following three quarters of monitoring, unless the result of fewer than four quarters of monitoring will cause the LRAA to exceed the MCL, in which case the system is in violation immediately. After monitoring quarterly for four consecutive quarters (including the quarter that triggered the quarterly monitoring), and until such time as monitoring returns to routine monitoring pursuant to section 64534.2(d)(5), compliance shall be determined pursuant to paragraph (1);
(3) If a system fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data. If more than one sample per quarter is taken at a monitoring location, all the samples taken in the quarter at that monitoring location shall be averaged to determine a quarterly average to be used in the LRAA calculation; and
(4) If the LRAA exceeds the MCL, calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters), the system is in violation of the MCL and shall notify the public pursuant to sections 64463, 64463.4, and 64465, including the language in appendix 64465-G, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

§64469 Reporting Requirements

(d) Within 10 days of giving initial or repeat public notice pursuant to Article 18 of this Chapter, except for notice given under 64463.7(d), each water system shall submit a certification to the Department that it has done so, along with a representative copy of each type of public notice given.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Este informe contiene información muy importante sobre su agua potable.
Tradúzcalo o hable con alguien que lo entienda bien.

City of Lemoore has levels of Disinfection Byproducts Above Drinking Water Standards

Our water system recently failed a drinking water standard. Although this is not an emergency, as our customers, you have a right to know what you should do, what happened, and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Testing results we received on _____ show that our system exceeds the standard, or maximum contaminant level (MCL), for Total Trihalomethanes. The MCL standards for Total Trihalomethanes and Haloacetic Acids (Five) are 80 ug/L and 60 ug/L, respectively. The average level of Total Trihalomethanes over the last year was _____ ug/L. The average level of Haloacetic Acids (Five) over the last year was _____ ug/L.

What should I do?

- **You <u>do not</u> need to use an alternative (e.g. , bottled) water supply.**
- This is not an immediate risk. If it had been, you would have been notified immediately. However, *some people who use water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.*
- If you have other health issues concerning the consumption of this water, you may wish to consult your doctor.

What happened? What was done?

[Describe corrective action]_____

_____

We anticipate resolving the problem within _____.

For more information, please contact [name] _____ at [phone number] _____ or at the following mailing address:

_____.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Secondary Notification Requirements

Upon receipt of notification from a person operating a public water system, the following notification must be given within 10 days [Health and Safety Code Section 116450(g)]:

- SCHOOLS: Must notify school employees, students, and parents (if the students are minors).
- RESIDENTIAL RENTAL PROPERTY OWNERS OR MANAGERS (including nursing homes and care facilities): Must notify tenants.
- BUSINESS PROPERTY OWNERS, MANAGERS, OR OPERATORS: Must notify employees of businesses located on the property.

This notice is being sent to you by the City of Lemoore water system.

State Water System ID#: 1610005. Date distributed: _____.

Attachment C

Certification of Completion of Public Notification

This form, when completed and returned to the Division of Drinking Water - Visalia District (265 W. Bullard Ave. #101, Fresno, CA 93704 or fax to 559-447-3304), serves as certification that public notification to water users was completed as required by Title 22, California Code of Regulations, Sections 64463-64465.

Public Water System Name: _____

Public Water System No.: _____

Public notification for **failure to comply with the TTHM MCL and/or HAA5 MCL for the third quarter of 2014** was performed by the following method(s) (check and complete those that apply):

The notice was mailed to users on: _____
A copy of the notice is attached.

The notice was hand delivered to water customers on: _____
A copy of the notice is attached.

The notice was published in the local newspaper on: _____
A copy of the newspaper notice is attached.

The notice was published in conspicuous places on: _____
A copy of the notice is attached.
A list of locations the notice was posted is attached.

The notice was delivered to community organizations on: _____
A copy of the notice is attached.
A list of community organizations the notice was delivered to is attached.

I hereby certify that the above information is factual.

_____
Printed Name

_____
Title

_____
Signature

_____
Date

Disclosure: Be advised that Section 116725 and 116730 of the California Health and Safety Code state that any person who knowingly makes any false statement on any report or document submitted for the purpose of compliance with the attached order may be liable for a civil penalty not to exceed five thousand dollars ($5,000) for separate violation each day that the violation continues. In addition, the violators may be prosecuted in criminal court and, upon conviction, be punished by a fine of not more than $25,000 for each day of violation, or be imprisoned in the county jail not to exceed one year, or by both the fine and imprisionment.

Due to the Division of Drinking Water within 10 days of issuance of notice to customers
System Number: 1610005
Enforcement Action No. _____

Attachment D

Quarterly Progress Report

Water System: City of Lemoore	Water System No.:1610005
Compliance Order No.: 03-12-14R-004	Violation: TTHM MCL
Calendar Quarter:	Date Prepared:

This form should be prepared and signed by City personnel with appropriate authority to implement the directives of the Compliance Order and the Corrective Action Plan. Please attach additional sheets as necessary. The quarterly progress report must be submitted by the 10th day of each subsequent quarter, to the Division of Drinking Water, Visalia District Office.

Summary of Compliance Plan:

Tasks completed in the reporting quarter:

Tasks remaining to complete:

Anticipate compliance date:

Name

Signature

Title

Date

March 1, 2016 Minutes
Study Session
Joint City Council /
★ Lemoore Redevelopment Successor Agency Meeting

CALL TO ORDER:
At 5:30 p.m. the meeting was called to order.

ROLL CALL:

Mayor/Chair:	WYNNE
Mayor Pro Tem/Vice Chair:	CHEDESTER
Council/Board Members:	MADRIGAL, NEAL
Absent:	SIEGEL

City Staff and contract employees present: City Manager Welsh; City Attorney Van Bindsbergen; City Clerk Venegas.

PUBLIC COMMENT

There was no public comment.

STUDY SESSION – Section SS

SS-1 Lemoore Police Department Annual Report

Chief Smith introduced the Lemoore Police Department Annual Report.

The following Lemoore Police Department staff provided information as well as highlights for their programs:

- *Sergeant Gonsalves – Detective Unit, Training Program*

Adjourned for a short break at 5:47pm to allow viewing of new Lemoore Volunteer Fire truck. Re-adjourned at 5:56pm.

- *Sergeant Lucio – Traffic Unit (Motor), Police Explorer Program, Traffic Accidents*
- *Commander Ochoa – Traffic Enforcement, Community Service/Crime Prevention, Community Based Program, Code Enforcement, Volunteers In Policing, Chaplain Program, Animal Control, Police Reserves Unit*
- *Commander Rossi – Kings County Narcotics Task Force, Youth Development Officer Program, Gang Task Force*
- *Sergeant Chaney – Problem Oriented Policing Team*
- *Sergeant Santos – Central Valley Regional Special Weapons and Tactics Team*
- *Sergeant Kendall – Canine Unit, Range/Firearms Training*
- *Chief Smith – Recruitment/Retention, Police Athletic League (PAL) Program*

CLOSED SESSION PUBLIC COMMENT

There was no public comment.

At 7:23 p.m. Council adjourned to Closed Session.

CLOSED SESSION

1. **Public Employee Evaluation – City Manager**
   Pursuant to Government Code Section 54957

ADJOURNMENT

At 7:31 p.m. Council adjourned.

March 1, 2016 Minutes
Regular Meeting
Joint City Council /
★ Redevelopment Successor Agency /

CALL TO ORDER:

At 7:32 p.m. the meeting was called to order.

ROLL CALL:	Mayor/Chair:	WYNNE
	Mayor Pro Tem/Vice Chair:	CHEDESTER
	Council/Board Members:	MADRIGAL, NEAL
	Absent:	SIEGEL

City Staff and contract employees present: City Manager Welsh; City Attorney Van Bindsbergen; Interim Planning Director Holwell: Police Chief Smith; Public Works Director Olson; Interim Finance Director Herrera; Quad Knopf Engineer Joyner; City Clerk Venegas.

ANNOUNCEMENT FROM CLOSED SESSION

There was no announcement.

PUBLIC COMMENT

There was no public comment.

DEPARTMENT AND CITY MANAGER REPORTS – Section 1

1-1 Department & City Manager Reports

Public Works/Interim Parks and Recreation Director Olson informed Council the Volunteer Appreciation Dinner was a great success. Parks and Recreation has the following events scheduled: Mongolian Dinner 3/6 from 6-9pm; St. Paddy's Day Run 3/19 @ 8am; Easter Egg Hunt 3/26.

City Clerk Venegas presented a copy of the South San Joaquin Valley Division - League of California Cities 2016 training calendar to all Council Members.

Interim Planning Director Holwell attended the Community Conversation at West Hills College this evening. Fresno State University President Joseph Castro spoke on outreach to the community.

City Attorney Van Bindsgergen inquired about developing a policy regarding council member requests staff receives outside of a council meeting that requires legal counsel would be brought forth at a later date. Requesting direction on how to proceed.

City Manager Welsh announced the following:

- *She will have a meeting with Public Works Director Olson and the Senior Center on Thursday to start moving the Community Development Block Grant project forward.*
- *Saturday she will be throwing the first pitch for the Lemoore Little League.*
- *A design for horticulture was received from the high school for City Hall's landscape. Will look into how to move forward.*

Items denoted with a ★ are Redevelopment Successor Agency items and will be acted upon by the Redevelopment Successor Agency Board. Agendas for all City Council/Redevelopment Successor Agency meetings are posted at least 72 hours prior to the meeting at the City Hall, 119 Fox St., Written communications from the public for the agenda must be received by Administrative Services no less than seven (7) days prior to the meeting date. The City of Lemoore complies with the Americans with Disabilities Act (ADA of 1990). The Council Chamber is accessible to the physically disabled. If you need special assistance, please call (559) 924-6705, at least 4 days prior to the meeting.

All items listed under Consent Calendar are considered to be routine and will be enacted by one motion. For discussion of any Consent Item, it will be made a part of the Regular Agenda at the request of any member of the City Council or any person in the audience.

CONSENT CALENDAR – Section 2

2-1 **Approval – Minutes – Regular Meeting – February 16, 2016 *(incorrectly dated March 16, 2016 on agenda)***

2-2 **Approval – Resolution 2016-06 to Correct Resolution Number for Records Retention Schedules and Email Policy Approved 2/2/16**

Motion by Council Member Chedester, seconded by Council Member Madrigal, to approve the Consent Calendar as presented.

Ayes: Chedester, Madrigal, Neal, Wynne
Absent: Siegel

CEREMONIAL / PRESENTATIONS – Section 3

There were no ceremonial / presentations.

PUBLIC HEARINGS – Section 4

4-1 **Establish Citywide Community Improvement Program (CIP) Fund 247 and Adopt the 5-Year CIP Budget and Enabling Budget Resolution 2016-07**

Public hearing opened at 7:59 p.m.

Spoke: Lisa Elgin

Public Hearing closed at 8:00 p.m.

Motion by Council Member Chedester, seconded by Council Member Neal, to approve the Approve the establishment of Citywide Community Investment Program (CIP) Fund 247 and

approve the $125,802,100 total 5-Year CIP Budget plan, and appropriate $38,812,500 for fiscal year 2015/16 and 2016/17, respectively, for the 150 projects list as presented in Resolution #2016-07.

Ayes: Chedester, Neal, Madrigal, Wynne
Absent: Siegel

NEW BUSINESS – Section 5

5-1 Report and Recommendation – Memorandum of Understanding for Kings County Sales Tax Initiative for Public Safety

Motion by Council Member Chedester, seconded by Council Member Neal, to approve Memorandum of Understanding with the County of Kings in support of a Public Safety Sales Tax Initiative and authorize the Mayor to execute Memorandum of Understanding.

Ayes: Chedester, Neal, Madrigal, Wynne
Absent: Siegel

CITY COUNCIL REPORTS AND REQUESTS – Section 6

6-1 City Council Reports / Requests

Council Member Madrigal commended the Public Works Department. He received a call from a business owner regarding water and the situation was addressed.

Council Member Neal congratulated everyone who attended the Volunteer Appreciation Dinner.

Mayor Wynne stated the Volunteer Appreciation Dinner was very well attended. It is a great event and thank you to everyone.

ADJOURNMENT

At 8:10 p.m. the meeting adjourned.

ATTEST:

Mary J. Venegas
City Clerk

APPROVED:

Lois Wynne
Mayor

City of
LEMOORE
CALIFORNIA

Public Works Department

711 W. Cinnamon Drive
Lemoore, CA 93245
Phone (559) 924-6740
Fax (559) 924-6708

Staff Report

ITEM NO. 2-2

To: **Lemoore City Council**

From: **Nathan Olson, Public Works Director**

Date: **March 1, 2016** **Meeting Date: March 15, 2016**

Subject: **Second Amendment to Utility Agreement with Caltrans – 19th Avenue/Highway 198 Interchange Ponding Basin**

Proposed Motion:
Approve the attached Second Amendment to Utility Agreement No. 06-1345.33 with Caltrans and authorize the City Manager to execute the agreement.

Subject/Discussion:
The construction of the interchange at 19th Avenue and Highway 198 has been completed and Staff has been in contact with Caltrans to close out the project and request final reimbursements for costs for the final stage of the project. In conjunction with this work, the City had several projects that needed to be completed to allow for the interchange construction. The projects included the relocation of water and sewer lines, the relocation of the underground Fox Ditch and the regrading of the ponding basin/park site.

The final portion of the project, was prompted by the dedication of part of the park/ponding basin for the off and on ramp construction at the northeast corner of the interchange. In February 2013, Caltrans provided the City an amended utility agreement to increase the amount of funding available for reimbursement in the amount of $1,352,884.

Since then there were several required change orders due to concrete revisions, irrigation repairs, etc. There were also unforeseen items, such as the storm drain force main changes and fence changes. Additional striping was required in the parking lot along with additional parking lot asphalt concrete tonnage. There were also several issues with the landscaping and hydroseeding of the softball fields. Due to this, costs exceeded the amount allowed in the amended utility agreement with Caltrans. In order for Caltrans to pay the City's final invoice, another amendment is required.

Caltrans has provided a Second Amendment to Utility Agreement No. 06-1345.33 in the amount of $1,827,149.81.

Financial Consideration(s):
Final invoice amount to be reimbursed to City in the amount $548,311.72.

Alternatives or Pros/Cons:

Pros:

- City is reimbursed and will be able to close out the project.

Cons:

- None noted.

Commission/Board Recommendation:

Not applicable.

Staff Recommendation:

It is recommended that Council approve the Second Amendment to Utility Agreement No. 06-1345.22 in the amount of $1,827,149.81 and authorize the City Manager to execute the agreement.

Attachments:		**Review:**	**Date:**
☐	Resolution	☐ Finance	
☐	Ordinance	☒ City Attorney	3/9/16
☐	Map	☒ City Manager	3/9/16
☒	Other Second Amendment	☒ City Clerk	3/10/16

Dist	Co	Rte	P.M.	EA
06	KINGS	198	8.9/10.1	325501

Federal Aid No.: ACNH-P198(056)

Owner's File: N/A

FEDERAL PARTICIPATION: On the Project ☒ Yes ☐ No

On the Utilities ☒ Yes ☐ No

SECOND AMENDMENT TO UTILITY AGREEMENT NO. 06-1345.33

WHEREAS, the State of California, acting by and through its Department of Transportation, hereinafter called STATE and City of Lemoore, hereinafter called OWNER, have entered into that certain Utility Agreement No. 06-1345.33, dated July 26, 2011, which Agreement sets forth the terms and conditions pursuant to which OWNER will relocate an existing irrigation canal (and all appurtenances) to accommodate STATE's construction on Route 198, Project No. 06-325501,

WHEREAS, in the performance of said work, increased costs over and above those estimated at the time of the execution of said Agreement were incurred due to the fact that there were unforeseen items discovered during construction related to the lighting, irrigation, concrete, storm drain and fence changes,

WHEREAS, it has been determined that, since final costs have overrun the amount shown in said Agreement by 35.06%, and when the increased cost exceeds by 25% the estimated amount set forth in said Agreement, said Agreement shall be amended to show the increased cost of the work to the STATE; and,

WHEREAS, the estimated cost to the STATE of the work to be performed under said Agreement was $1,352,884.50, and by reason of the increased costs referred to above, the amended estimated cost to the STATE is $1,827,149.81.

NOW, THEREFORE, it is agreed between the parties as follows:

1. The estimated cost to the STATE of $1,352,884.50 as set forth in said Agreement is hereby amended to read $1,827,149.81.

2. All other terms and conditions of said Agreement remain unchanged.

AMENDMENT TO UTILITY AGREEMENT (Cont.)

(FORM #)

UTILITY AGREEMENT NO.
06-1345.33

THE ESTIMATED COST TO STATE FOR ITS SHARE OF THE ABOVE DESCRIBED WORK IS $1,827,149.81

CERTIFICATION OF FUNDS				
I hereby certify upon my own personal knowledge that budgeted funds are available for the period and purpose of the expenditure shown here.				
HQ Accounting Officer			Date	
ITEM	CHAP	STAT	FY	AMOUNT

FUND TYPE	EA	AMOUNT
Design Funds		$
Construction Funds		$
RW Funds	0600000367	$ 474,265.31

IN WITNESS WHEREOF, the parties have executed this Second Amendment to Utility Agreement No. 06-1345.33 this _____ day of _____ 2016.

STATE: DEPARTMENT OF TRANSPORTATION

By _____
DAVID SHERMAN Date
Acting District Utility Coordinator, Right of Way

OWNER: CITY OF LEMOORE

By: _____
Name/Title Date

APPROVAL RECOMMENDED:

By _____
PAULA PADEN Date
Utility Coordinator

DO NOT WRITE BELOW - FOR ACCOUNTNG PURPOSES ONLY

PLANNING AND MANAGEMENT TO COMPLETE UNSHADED FIELDS:

T CODE	DOCUMENT NUMBER	SUF FIX	DIST	UNIT	CHG DIST	EA	SUB JOB	SPECIAL DESIGNATION	FFY	**UTILITY COMPLETES:** FA	OBJ CODE	DOLLAR AMOUNT
	UA										**054**	
	UA										**054**	

EA FUNDING VERIFIED:		REVIEW/REQUEST FUNDING:
Sign:>		Sign>
Print> Laura Varela R/W Planning and Management Date		Print> Paula Paden Utility Coordinator Date

Distribution: 2 originals to R/W Accounting
1 original Utility Owner
1 original to File

City of
LEMOORE
CALIFORNIA

Office of the City Manager

119 Fox Street
Lemoore, CA 93245
Phone (559) 924-6700
Fax (559) 924-9003

Staff Report

ITEM NO. 2-3

To:	**Lemoore City Council**
From:	**Andi Welsh, City Manager**
Date:	**March 10, 2016** **Meeting Date: Mach 15, 2016**
Subject:	**Contract with MuniTemps for Temporary Staffing in the Finance Department**

Proposed Motion:
Approve negotiation and contracting authority for the City Manager to enter a contract with MuniTemps, a temporary agency in an amount not to exceed $150,000.

Subject/Discussion:
The Finance Department currently has 9.5 full-time equivalent (FTE) positions. Since late December/early January, a number of staffing changes have occurred, which resulted in 4.5 FTE positions vacant and a need to retain the services of qualified finance consultants on a temporary basis until the City can complete the process for hiring qualified staff to fill the vacancies in the Finance Department.

The Finance Department plays a critical role in ensuring ongoing functions such as utility billing, accounts payable, annual audit, budget preparation (5 year community investment program and maintenance & operating budget), procurement and purchasing, and policy analysis and review occur. The City is not able to function with nearly half the department vacant.

The City is advertising to fill the vacancies, but anticipates the process taking approximately 3-6 months to complete. While the City Manager has authority to hire staff, the concept being considered is entering into a contract with a temporary agency to provide a financial consulting team until the process for each of the positions can be completed.

The City has had Muni-Temp temporary staffing on board since January assisting with the 2015 fiscal year audit, development of the 5 year community investment program, development of the 2017 fiscal year budget, and on-going operations.

The Finance Director position has been open for recruitment for the past two months, with interviews tentatively set for early in April. An accounting clerk position is currently open for recruitment, as well. The City Manager is working with the temporary staffing agency to develop a best practices model for finance staffing and operations.

Financial Consideration(s):
Funds would be utilized from the general fund. There are salary savings from the vacant positions. This request is the second request since January 2016 for $150,000 in contracting fees, bringing the total to $300,000.

Alternatives or Pros/Cons:
Pros:
- Ensures the City is compliant with state and federal operational requirements.
- Provides an opportunity for an analysis of the City's current operations.
- Maintains continuity with current temporary staffing agency.

Cons:
- None known at this time.

Commission/Board Recommendation:
Not Applicable.

Staff Recommendation:
Authorize the City Manager continue contracting with a temporary agency for a financial consulting team in an amount not to exceed $150,000.

Attachments:	**Review:**	**Date:**
☐ Resolution	☐ Finance	
☐ Ordinance	☒ City Attorney	3/10/16
☐ Map	☒ City Manager	3/10/16
☐ Other _____	☒ City Clerk	3/10/16

City of
LEMOORE
CALIFORNIA

Maintenance & Fleet Division
711 W. Cinnamon Drive
Lemoore, CA 93245
Phone (559) 924-6739
Fax (559) 924-6708

Staff Report

ITEM NO. 2-4

To: **Lemoore City Council**

From: **Nathan Olson, Public Works Director**

Date: **March 10, 2016** **Meeting Date:** **March 15, 2016**

Subject: **Amendment to FY 2015-16 Transportation Development Act (TDA) Estimates**

Proposed Motion:

It is recommended that City Council authorize the City Manager to sign the Claim for Transportation Development Act (TDA) Funds for FY 2015-16, Amendment No. 2.

Subject/Discussion:

At the March 17, 2015 City Council meeting, Council approved Resolution 2015-16 and authorized Interim City Manager Ron Hoggard to sign Claim for TDA Fund and future amendments as the apportionment to KCAPTA are revealed.

Currently Kings County Association of Governments has received additional changes to the TDA shares due to the Federal apportionment to KCAPTA and available toll credits. This has allowed savings to the Local Transportation Fund (LTF), which necessitates an amendment. The City was allocated in June 2015, $357,962. The new amendment will allocate additional funding in the amount of $172,079, for a total funded amount in streets and roads (LTF) of $530,041.

Staff is requesting that City Council be made aware of the additional changes and authorize City Manager Welsh to sign the latest summary claim for additional funding.

Financial Consideration(s):

City to receive additional funding in the Local Transportation Fund 033, in an amount of $172,079 from the June 3, 2015 signed Amendment No. 1.

Alternatives or Pros/Cons:

Pros:

- The City benefits in additional streets and road project funding.

Cons

- Loss of funding.

Commission/Board Recommendation:

None.

Staff Recommendation:

The City Council authorize City Manager Welsh to sign FY 2015-16 TDA Claim Amendment No. 2.

Attachments:		**Review:**	**Date:**
☐ Resolution		☐ Finance	
☐ Ordinance		☒ City Attorney	3/10/16
☐ Map		☐ City Manager	
☒ Other	Amendment No. 2 & FY 15-16 TDA Approval	☒ City Clerk	3/10/16

CLAIM FOR TDA FUNDS
FY 2015-16
AMENDMENT NO. 2

1. Claimant: City of Lemoore
Attn: Andrea Welsh
119 Fox St.
Lemoore, CA 93245

2.	Article 3 (Pedestrian and Bicycles):	$	0
3.	Amended amount claimed: 16.9148%	$	659,677
4.	Article 4 (Public Transit):	$	101,287
5.	Article 6.5 (State Transit Assistance):	$	0
6.	Article 8 (Planning and Administration):	$	28,349
7.	Article 8 (Specialized Transportation Services):	$	0
8.	Article 8 (Streets and Roads):	$	530,041

_____
Signature and Title

_____
Date

Kings County Association of Governments

339 West D Street, Suite B, Lemoore, California 93245
(559) 852-2654 ❖ FAX (559) 924-5632
www.kingscog.org

Member Agencies: Cities of Avenal, Corcoran, Hanford, Lemoore, and County of Kings

February 26, 2016

Andrea Welsh
City of Lemoore
119 Fox St.
Lemoore, CA 93245

Subject: FY 2015-16 TDA Claim - Amendment No. 2

Dear Andrea:

I have attached for your review the latest summary of the FY 2015-16 Transportation Development Act (TDA) estimates. The changes to the TDA shares are due to the Federal apportionment to KCAPTA and available toll credits, which have allowed KCAPTA savings to the Local Transportation Fund (LTF).

This change will necessitate an amendment to your TDA claim. Please submit your amended claim form to KCAG by March 16, 2016. If you have any questions regarding this matter, please contact me at (559) 852-2657 at your convenience.

Sincerely,

KINGS COUNTY ASSOCIATION OF GOVERNMENTS
Terri King, Executive Director

Teresa Nickell

Teresa Nickell, Regional Planner

Encl.

City of
LEMOORE
CALIFORNIA

Maintenance &
Fleet Divisions

711 W. Cinnamon Dr.
Lemoore, CA 93245
Phone (559) 924-6739
Fax (559) 924-6708

Staff Report

ITEM 4-4

To: **Lemoore City Council**

From: **Joe Simonson, Parks and Recreation Director**

Date: **March 13, 2015** **Meeting Date: March 17, 2015**

Subject: **Local Transportation Fund Share – Resolution 2015-06**

Discussion:

The City has received the "Estimated Fiscal Year 2015-16" Transportation Development Act Shares from Kings County Association of Governments (KCAG) regarding Fiscal Year 2015-16 Local Transportation Fund (LTF) Claims. LTF shares are based on annual Department of Finance population estimates that will be released on May 1, 2015. KCAG's estimate of the City's share of streets and roads, based upon the May 2014 population estimate of 25,281, is $656,514. Minor adjustments will be made upon receipt of the final report and adoption of KCAG and KCAPTA budgets. Attached is the Article 8 Claim Form for the Kings County procedural records to request Lemoore's share of funds, a Categorical Notice of Exemption and Resolution 2015-06.

KCAG also included an Article 3 Claim Form for Pedestrian and Bicycle Facilities funding. However, this year, as in the past, none of the agencies will be requesting these funds to be separated from the general LTF shares. This procedure allows all agencies to use these monies where needed and ties no strings for its use. Staff recommends that the City of Lemoore not request funds under Article 3.

As part of the requirements to request funds under Article 8, the City must provide a list of those projects for which the funds will be used. City Council will be reviewing and approving 2015-17 Capital Improvement Projects in future months. Staff and City Engineer have reviewed street project areas to propose and Staff recommends applying the funds to a Street Slurry Seal and Reclamite Street projects for an approximate amount of $700,000. (See Attachment C)

All agencies filing a claim for funds are required to hold a public hearing to determine if unmet transit needs exist within their jurisdiction. The Kings County Area Public Transit Agency (KCAPTA) held public hearings on February 25, 2015 and will hold a meeting on March 25, 2015 on behalf of its member agencies.

Budget Impact:

Article 8 estimates indicate the City will receive $426,521 to be used for local streets and roads. The remaining funds will go to KART and KCAG. Local Transportation Fund 033 currently has an amount to cover closing in the canal along Cinnamon Drive. A grant has been submitted for sidewalk construction in front of the CMC Municipal/Recreation Complex which will be applied to a portion of the project.

Recommendation:

It is recommended that City Council, by motion, approve the environmental documentation, and adopt Resolution 2015-06 making a determination regarding public transit needs and designating the Interim City Manager to submit the TDA claim application including any needed amendments after the 2015 population figures are released.

ATTACHMENT "B"

RESOLUTION NO. 2015 – 06

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE MAKING A DETERMINATION REGARDING PUBLIC TRANSIT NEEDS WITH THE CITY OF LEMOORE AND DESIGNATING A RESPONSIBLE PERSON TO SUBMIT A CLAIM APPLICATION FOR TRANSPORTATION DEVELOPMENT ACT FUNDS FOR FISCAL YEAR 2015-16

At a Regular Meeting of the City Council of the City of Lemoore duly called and held on March 17, 2015 at 7:30 p.m. on said day, it was moved by Council Member Chedester, seconded by Council Member Madrigal and carried that the following Resolution be adopted:

WHEREAS, the City of Lemoore has participated with the Kings County Area Public Transit Agency (KCAPTA) to provide a Public Transportation Program for the City of Lemoore; and

WHEREAS, KCAPTA is currently providing the City of Lemoore with a modified fixed route bus system; and

WHEREAS, KCAPTA and the Kings County Commission on Aging are consolidated into a single public transportation entity; and

WHEREAS, The City Council, at its March 17, 2015 Meeting, requested public comment regarding unmet transit needs; and

WHEREAS, a public hearing was held on February 25, 2015 and another public hearing will be held on March 25, 2015 by KCAPTA on behalf of its member agencies to determine if there exists unmet transit needs; and

WHEREAS, this joint effort is reflected through the Kings County Regional Planning Agency; and

WHEREAS, one of the functions of said Agency and its member agencies is to submit an approved Claim for Transportation Development Act Funds.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Lemoore hereby finds and determines based upon the testimony and evidence considered that there are no areas within its jurisdiction with unmet public transit needs which could be reasonably met by the expansion of the existing transportation system or by the establishment of a new system.

BE IT FURTHER RESOLVED that the City Council of the City of Lemoore claims the unused balance of the Local Transportation Fund, not used for public transportation, for

maintenance of local streets and roads, and finds that maintenance of streets and roads is categorically exempt from environmental review.

BE IT FURTHER RESOLVED that the Lemoore City Manager is hereby designated as the authorized person to sign and submit the City of Lemoore's request or amended request for the use of Transportation Development Act Funds.

Passed and adopted at a Regular Meeting of the City Council of the City of Lemoore held on the 17th day of March, 2015 by the following vote:

AYES: Chedester, Madrigal, Neal, Wynne
NOES: None
ABSENT: Siegel
ABSTAINING: None

APPROVED:

Lois Wynne
Lois Wynne, Mayor

ATTEST:

Mary J. Venegas
Mary J. Venegas, City Clerk

CLAIM FOR TDA FUND

OTHER CLAIMS
ARTICLE 8

1. Claimant: City of Lemoore

   119 Fox St.

   Lemoore, CA 93245

2. Claim for FY 2015-16

3. Amount of Apportionment (estimate): 16.8337% $ 656,514

4. Purpose for which claimed funds will be used:

   Article 8, Section 99400(a), Local Street and Roads. $ 426,521

   Article 8, Section 99400(c), Transportation Services. $ 0

   Article 8, Section 99233.1 and 99402, Planning. $ 26,833

   Article 8, Section 99234.9, Rail Passenger Service Projects $ 0

5. NOTE: KCAPTA will Claim $203,160 through Article 4.

6. Has your governing body conducted a public hearing for the purpose of soliciting comments on the unmet transit needs that may exist within your jurisdiction?

   NO _____ YES XXX

7. Has your governing body passed a resolution in which the finding was made that there are no areas within your jurisdiction with unmet public transit needs which could reasonably be met by expansion of existing transportation systems or by establishing a new system?

   NO _____ YES XXX

   Include a copy of that resolution and documentation of the finding, including evidence and information that provides the basis for the finding, and designate it as "Attachment B".

8. Has your governing body passed a resolution authoring the person whose signature appears below to submit this claim?

NO _____ YES XXX

9. Proposed road maintenance and construction budget for the fiscal year of this claim:

$ _____

Include a list of road maintenance and construction projects for which the funds are requested and designate it as "Attachment C".

10. Has your governing body certified environmental documents for projects to be funded by this claim?

NO _____ YES XXX

11. _____ March 18, 2015

Signature and Title Interim City Manager Date

Payment for projects approved by KCAG will be made to Claimant as money is available for distribution in Claimant's account.

City of
LEMOORE
CALIFORNIA

Finance Department

119 Fox Street
Lemoore, CA 93245
Phone (559) 924-6700
Fax (559) 924-9003

Staff Report

ITEM NO. 2-5

To: **Lemoore Redevelopment Successor Agency**

From: **John Herrera, Finance Director Consultant**

Date: **February 22, 2016** **Meeting Date: March 15, 2016**

Subject: **Contract with Richards, Watson & Gershon and the Lemoore Redevelopment Successor Agency- Special Legal Services relating to Former Redevelopment Agency matters**

Proposed Motion:
Authorize the Executive Director of the Lemoore Redevelopment Successor Agency to execute a contract with the law firm of Richards, Watson & Gershon (RWG) at an hourly bill rate of $250 to perform special legal services related to SB107, filing of Last & Final ROPS (Recognized Obligation Payment Schedules), and other specialized former redevelopment legal matters in an amount not to exceed $25,000.

Subject/Discussion:
On January 13, 2016, the Successor Agency adopted Resolution No. 2016-02 approving the retention of RWG to be bond counsel and disclosure counsel for the potential issuance of refunding bonds to refinance tax allocation bonds issued by the former Lemoore Redevelopment Agency in 2011.

Since then, staff has been working with RWG attorneys (on a contingent basis) as bond counsel for the proposed bond refunding. Through this work effort, staff discovered that there may be significant considerations regarding the proposed issuance of refunding bonds that the Successor Agency had not previously identified.

If the 2011 bond refunding is not carried out, there is no need for RWG to serve as bond counsel. However, under SB 107, it is still possible for the Successor Agency to use up to 35% of 2011 bond proceeds for projects as allowed by SB107, subject to the filing of a Last & Final Recognized Obligation Payment Schedule (ROPS). The Last & Final ROPS is a concept created by SB 107, which was enacted in September 2015. There are issues regarding its preparation and implementation which the relevant parties (including the State Department of Finance, the county auditor-controllers and the successor agencies) are still working to resolve. Staff recommends engaging RWG for assistance on the preparation of the Last & Final ROPS, the extraction of 2011 bond proceeds for project purposes (to the extent permitted by law), and other specialized redevelopment successor agency legal services.

Financial Consideration(s):
The services of RWG is billed at $250 per hour, with an estimate of costs for each of the redevelopment services as follows:

- $5,000 Filing of Last & Final ROPS with State Department of Finance.
- $4,000 Application of federal tax law to outstanding bond issues.
- $8,000 Defeasance of 2011 bonds (net of 35% extraction) (if needed).
- $5,000 Other specialized Redevelopment tasks to be determined.

The total estimate of specialized Redevelopment legal costs is $22,000 and would be charged to the Successor Agency administration budget.

Alternatives or Pros/Cons:
Pros:

- Approval of hiring RWG for special legal services will assist the Successor Agency with potentially extracting money from the 2011 Tax Allocation Bonds as well as provide legal advice related to tax compliance with IRS matters, and other Redevelopment Successor Agency activities.
- Optimizing the SB107 legislation benefits to Lemoore.
- Assist with the defeasance of the remaining balance of the 2011 bonds.

Cons:

- None noted.

Staff Recommendation:
Recommendation that the Successor Agency approve a contract with the law firm of RWG to be perform special legal services related to SB107, filing of Last & Final ROPS, and other specialized Redevelopment Successor Agency legal services at an hourly bill rate of $250 in an amount not to exceed $25,000.

Attachments:		**Review:**	**Date:**
☐	Resolution	☒ Finance	2/23/16
☐	Ordinance	☒ City Attorney	3/10/16
☐	Map	☒ City Manager	3/9/16
☒	Other Legal Services Proposal	☒ City Clerk	3/10/16

RICHARDS | WATSON | GERSHON
ATTORNEYS AT LAW – A PROFESSIONAL CORPORATION

355 South Grand Avenue, 40th Floor, Los Angeles, California 90071-3101
Telephone 213.626.8484 Facsimile 213.626.0078

February 18, 2016

City Manager's Office
FEB 23 2016
RECEIVED

Mr. John Herrera, CPA
Successor Agency to the
Lemoore Redevelopment Agency
119 Fox Street
Lemoore, California 93245

Re: Special Legal Services Fee Letter

Dear Mr. Herrera:

This letter sets forth our proposal to provide special legal services to the Successor Agency to the Lemoore Redevelopment Agency, which we will provide to the Successor Agency on an "as needed" basis. Such services may include assistance with respect to Recognized Obligation Payment Schedules, analysis and preparation of documents relating to the application of outstanding bond proceeds pursuant to the Redevelopment Dissolution Act, the application of federal tax law, securities law, and other post-issuance compliance matters for outstanding bonds, and such other services as the Successor Agency may determine from time to time. The foregoing services are separate and apart from our services as bond counsel or disclosure counsel. Those services will be subject to separate fee letters to be entered into at the time of each financing.

For providing special legal services rendered by our attorneys to the Successor Agency, we will charge a composite blended hourly rate of $250 per hour, invoiced on a monthly basis. In addition to our fees, we would be reimbursed for expenses incurred by us on your behalf, such as costs of copying documents, telecommunications, travel, and delivery services. When a bill is to be sent, we will review it before it is issued to ensure that the amount charged is appropriate and accurately reflects the services rendered.

If you have any questions or comments regarding this matter, please do not hesitate to contact me, Teresa Ho-Urano, or Bill Strausz.

We appreciate the opportunity to provide the Successor Agency with special legal services and look forward to working with you.

Very truly yours,

Diana K. Chuang

Agreed and Accepted:

SUCCESSOR AGENCY TO THE
LEMOORE REDEVELOPMENT AGENCY

By:_____

Name: _____

Title: _____

cc: Teresa Ho-Urano, Esq.
Bill Strausz, Esq.

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City of
LEMOORE
CALIFORNIA

Public Works Department

711 W. Cinnamon Drive
Lemoore, CA 93245
Phone (559) 924-6740
Fax (559) 924-6708

Staff Report

ITEM NO. 4-1

To: **Lemoore Housing Authority**

From: **Nathan Olson, Public Works Director**

Date: **February 2, 2016** **Meeting Date: March 15, 2016**

Subject: **Resolution 2016-01 of the Lemoore Housing Authority Declaring Default on the Property Located at 613 Follett Street in Lemoore, CA**

Proposed Motion:
Approve Resolution 2016-01 declaring the borrowers of the property located at 613 Follett Street in Lemoore, California, in default of the Rehabilitation Loan Agreement for failure to maintain the property and for vacating the residence.

Subject/Discussion:
The Council, at its meeting on January 5, 2016, passed a Resolution declaring 613 Follett a public nuisance. Notices were sent to all respective property owners advising them of the public hearing set for February 16, 2016 which was deferred to March 15, 2016.

This property is unique in that it must be maintained and occupied pursuant to a rehabilitation agreement with the Lemoore Housing Authority.

On September 28, 2004, the Lemoore Housing Authority ("HA") and Borrowers entered into an agreement titled 'Rehabilitation Loan Agreement' ("RLA") for the purposes of financing repair work to be performed on the Property with funds provided by the HA under its Housing Rehabilitation Program. Under the terms of the RLA, HA loaned Borrowers the sum of $119,877.00 (one hundred nineteen thousand eight hundred seventy-seven dollars) free of interest for the rehabilitation of the Property. Pursuant to the RLA, repayment of the principal would be deferred for fifty (50) years from the date of the RLA provided that Borrowers maintain continuous residence on the Property until the end of the fifty-year term.

However, Borrowers have failed to maintain or inhabit the property as required by the RLA.

In addition to being declared a public nuisance for lack of running water and for lacking adequate sanitation for an extended period of time in violation of Health and Safety Code section 17920.3 A-5; an inspection of the vacant Property found a number of serious deficiencies, including:

1. The Property is infested with roaches and fly fecal matter.
2. There was possible black mold in the walls.
3. The floor and walls which were viewable are in such disrepair, the repairs to the

interior of the home will likely require the house be stripped to the he studs and concrete floor.
4. The exterior of the home needs new window glass and screens.
5. A new garage door is needed.
6. New gutters are needed.
7. New fencing is needed.
8. The electrical panel breakers need to be replaced.
9. New landscaping is recommended.
10. Trash, weeds and debris both interior and exterior of the home will need to be removed.
11. A new air conditioning unit may need replacement.
12. Paint on the interior and exterior.
13. And additional clean up, repair or replacement of floors and wall may be need, however a complete inspection of the floors and dry wall were not possible because the hazardous nature of trash and debris inside the home.

Due to Borrower's failure to maintain and inhabit the Property the Lemoore Housing Authority has the option to declare the borrowers in default, demand immediate repayment of the loan and foreclose on the property if the default is not cured.

If foreclosure is effectuated, the home will need to be cleaned up and made ready for sale. Any proceeds from such a sale would need to be used for Housing Authority projects.

Financial Consideration(s):
Finances for clean-up of the property will be used from Housing Authority Funds which will then be reimbursed from the proceeds of the sale of the home.

Alternatives or Pros/Cons:
Pros:
- Addresses properties in disrepair.
- Protects neighborhoods by taking action to address blighted properties.

Cons:
- None noted.

Commission/Board Recommendation:
Not Applicable.

Staff Recommendation:
It is recommended that the Lemoore Housing Authority approve Resolution 2016-01 declaring the borrows in default of the RLA and directing staff to proceed with foreclosure and sale if the borrows do not repair the deficiencies within 30 days.

Attachments:		**Review:**	**Date:**
☒ Resolution	2016-01	☐ Finance	
☐ Ordinance		☐ City Attorney	
☐ Map		☒ City Manager	
☐ Other	_____	☒ City Clerk	03/10/16

RESOLUTION NO. 2016 -01

A RESOLUTION OF THE LEMOORE HOUSING AUTHORITY DECLARING DEFAULT ON THE PROPERTY LOCATED AT 613 FOLLETT STREET IN LEMOORE, CA

WHEREAS, there is a residential dwelling located at 613 Follett Street, Lemoore, CA 93245 ("Property") and title to the Property is vested in Vickie L. Cobine and Delbert Shier, II ("Borrowers").

WHEREAS, on September 28, 2004, the Lemoore Housing Authority ("HA") and Borrowers entered into an agreement titled 'Rehabilitation Loan Agreement' ("RLA") for the purposes of financing repair work to be performed on the Property with funds provided by the HA under its Housing Rehabilitation Program. Under the terms of the RLA, HA loaned Borrowers the sum of $119,877.00 (one hundred nineteen thousand eight hundred seventy-seven dollars) free of interest for the rehabilitation of the Property. Pursuant to the RLA, repayment of the principal would be deferred for fifty (50) years from the date of the RLA provided that Borrowers maintain continuous residence on the Property until the end of the fifty-year term.

WHEREAS, the RLA further requires Borrowers to maintain the Property in the condition to which it was rehabilitated and free of nuisances acceptable to community standards.

WHEREAS, Borrowers have moved out of the Property.

WHEERAS, Pursuant to the RLA, should the Property not be maintained or not be inhabited by the Borrowers, the City shall provide Borrowers with a list of deficiencies to be corrected within thirty (30) calendar days from receipt of notification. If Borrowers fail to correct the deficiencies within the prescribed time, the loan will become due and payable and the HA may foreclosure on the property pursuant to the RLA.

WHEREAS, the property was declared a public nuisance on January 5, 2016 as identified in Resolution 2016-01. Inspection of the vacant Property found a number of serious deficiencies that establish Borrowers had failed to adequately maintain the Property in violation of the RLA. The deficiencies found in the inspection include the follows:

1. The Property is infested with roaches and fly fecal matter.
2. There was possible black mold in the walls.
3. The floor and walls which were viewable are in such disrepair, the repairs to the interior of the home will likely require the house be stripped to the he studs and concrete floor.
4. The exterior of the home needs new window glass and screens.
5. A new garage door is needed.
6. New gutters are needed.
7. New fencing is needed.
8. The electrical panel breakers need to be replaced.
9. New landscaping is recommended.

10. Trash, weeds and debris both interior and exterior of the home will need to be removed.
11. A new air conditioning unit may need replacement.
12. Paint on the interior and exterior.
13. And additional clean up, repair or replacement of floors and wall may be need, however a complete inspection of the floors and dry wall were not possible because the hazardous nature of trash and debris inside the home.

WHEREAS, the Property was 'tagged' for remaining without running water and for lacking adequate sanitation for some time in violation of Health and Safety Code section 17920.3 A-5.

NOW, THEREFORE, BE IT RESOLVED by the Lemoore Housing Authority that:

- Borrowers shall be provided with a copy of this Resolution on its adoption, along with a letter listing the deficiencies set forth above as items one (1) through eleven (13), which shall serve as written notice to Borrowers that they have thirty (30) calendar days from receipt of notification of the deficiencies to correct the deficiencies and move back into the Property. Borrowers shall be notified that failure to correct these deficiencies and move back into the Property within the prescribed time will result in default and foreclosure of the property of the RLA;

- The HA declares Borrowers in default and pursuant to the RLA, the loan amount of $100,000 is immediately due and payable in full;

- Should Borrowers fail to correct the deficiencies and to move back into the Property within thirty (30) calendar days from receipt of notification of the deficiencies, it is the intent of the HA that the Board will exercise their authority to foreclose on the Property pursuant to the RLA.

- Should the Property be foreclosed, the Property shall be made ready for sale, by cleaning and repairing only what is necessary and then placed for sale "As Is". The proceeds from the sale shall be placed in the Housing Authority fund.

- The City Manager or her designee is authorized to take all actions necessary to carry out the intent of this Resolution.

PASSED AND ADOPTED at a Regular Joint Meeting of the Lemoore City Council and the Lemoore Housing Authority held on March 15, 2016 by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

Mary J. Venegas
City Clerk

APPROVED:

Lois Wynne
Mayor

City of
LEMOORE
CALIFORNIA

Office of the City Manager

119 Fox Street
Lemoore, CA 93245
Phone (559) 924-6700
Fax (559) 924-9003

Staff Report

ITEM NO. 5-1

To: **Lemoore City Council**

From: **Janie Venegas, City Clerk**

Date: **March 7, 2016** **Meeting Date: March 15, 2016**

Subject: **West Side City Joint Powers Association Board Seat**

Proposed Motion:
Should the City Council wish to reconsider the expenditure amount for the West Side City Joint Powers Agreement Board Seat, motion should state new monetary figure.

Subject/Discussion:
With the passage of the California Water Bond Act in 2014, it has become necessary for the five counties comprising the central San Joaquin Valley (Merced, Madera, Fresno, Kings, Tulare) to form a new public entity via a Joint Powers Agreement (JPA) that would serve as the administrative entity for the five county region in the implementation of the provisions of the Water Bond. This new entity is known as the San Joaquin Valley Water Infrastructure Authority (SJVWIA). It will be comprised of a member from each of the five counties, two cities, two water districts, a tribe, and an at-large member, all from within the five county region, for a total of eleven members. The primary role of the SJVWIA will be to stay engaged with the implementation of the Water Bond and advocate for funding of the Temperance Flat Dam project, as well as monitoring the process to ensure that the central San Joaquin Valley's disadvantaged communities water quality and quantity issues are addressed. The City of Lemoore does not directly benefit from the JPA, but does have tangential benefits to participating in the JPA.

On Thursday, January 28, 2016, the five counties met. Kings County Association of Governments (KCAG) nominated Avenal as the West Side City JPA Board Seat. Avenal was successfully voted in as the primary Board Seat. As a voting member, Avenal is required to pay $50,000 as the initial fee to be a voting Board Member.

Avenal represents the West Side Cities which includes Hanford, Corcoran and Lemoore. As a result, the understanding was that the $50,000 initial fee would be divided between the four cities for a $12,500 maximum per city. There are ten voting board members and each board member is required to pay $50,000. The monies will go toward engineering the package for building Temperance Flat Dam project for water storage.

On February 2, 2016, the Lemoore City Council approved the maximum expenditure of $12,500 for the West Side Joint Powers Agreement Board Seat. At that time, it was understood the initial $50,000 fee would be divided between Avenal, Hanford, Corcoran and Lemoore for a $12,500 maximum per city. Avenal's City Council agreed to pay the

$12,500. After the February 2, 2016 Lemoore City Council meeting, both the Cities of Hanford and Corcoran agreed to pay $5,000 and Corcoran.

Financial Consideration(s):
Maximum expenditure of $12,500 from the General Fund (4211-4310) for the West Side City JPA Board Seat. Each City is in the process of actively raising funds for this effort. If successful, the maximum amount would be reduced.

Alternatives or Pros/Cons:
Pros:
- A primary voting seat on the JPA.
- JPA actively involved in securing Prop 1 funds approved November 1, 2014.
- JPA actively involved in soliciting federal monies to assist with JPA expenses.

Cons
- None noted.

Commission/Board Recommendation:
Not Applicable.

Staff Recommendation:
This agenda item provides the opportunity for the City Council to discuss, and possibly, reconsider Lemoore's contribution to the JPA.

Attachments:	**Review:**	**Date:**
☐ Resolution	☐ Finance	
☐ Ordinance	☐ City Attorney	
☐ Map	☒ City Manager	3/10/16
☐ Other _____	☒ City Clerk	3/10/16

City of
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CALIFORNIA

Office of the City Manager

119 Fox Street
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Fax (559) 924-9003

Staff Report

ITEM NO. 5-2

To: **Lemoore City Council**

From: **Janie Venegas, City Clerk**

Date: **March 9, 2016** **Meeting Date: March 15, 2016**

Subject: **Nomination of Applicant to the Governing Board of the San Joaquin Valley Air Pollution Control District – Resolution 2016-08**

Proposed Motion:
Adopt Resolution 2016-08 nominating an applicant to the Governing Board of the San Joaquin Valley Air Pollution Control District.

Subject/Discussion:
There is currently a vacancy on the San Joaquin Valley Air Pollution Control District Governing Board that must be filled by a Council Member from a small city in Madera or Kings County. Pursuant to the Health and Safety Code Section 40600.5, appointments to the District's Governing Board will be made by the District's Special City Selection Committee (Committee). According to procedures adopted by the Committee, applications from eligible Council Members have been solicited. The next step in the appointment process is for all of the cities in Madera and Kings County to review the applicants and nominate one candidate for the vacant position. These nominations will then be reviewed by the Committee who will make the final appointment. The League of California Cities (League) is assisting in a limited role in order to promptly fill the vacant seat. The League is simply providing assistance in implementing a fair and transparent process that complies with all pertinent laws.

The following candidates have submitted applications for the vacant seat:

- Mayor Waseem Ahmed, City of Chowchilla
- Council Member David Ayers, City of Hanford
- Council Member Andrew Medellin, City of Madera
- Council Member William Oliver, City of Madera
- Council Member Derek Robinson, City of Madera

The City of Lemoore must vote to nominate one of these candidates to the Committee for appointment to the District's Governing Board. The City of Lemoore must also pass a Resolution in support of the nomination.

In order for the city's nomination to be considered by the Committee, staff must return a copy of the approved City Council Resolution on this matter to the Committee by March 22, 2016.

The result of nominations will be presented to the District's Special City Selection Committee at their March 29, 2016 meeting for them to consider in making an appointment to fill the vacant seat.

The timeline for the appointment is as follows:

- March 2 through March 21, 2016 – Each City schedules a publicly noticed City Council meeting to vote for a nominee from the slate of applicants.
- March 22, 2016 – Deadline for City Clerks to submit city nomination results to the League.
- March 29, 2016 – District's Special City Selection Committee convenes, reviews City nominations to make an appointment to the District's Governing Board

Financial Consideration(s):
None.

Alternatives or Pros/Cons:
Pros:

- City has input as to who is selected to the Governing Board.

Cons

- None noted.

Commission/Board Recommendation:
Not Applicable.

Staff Recommendation:
Approve Resolution 2016-08 and appointment of member to the Governing Board of the San Joaquin Valley Air Pollution Control District.

Attachments:		**Review:**	**Date:**
☒ Resolution	2016-08	☐ Finance	
☐ Ordinance		☒ City Attorney	3/10/16
☐ Map		☒ City Manager	3/10/16
☒ Other	Applications	☒ City Clerk	3/10/16

RESOLUTION NO. 2016-08

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE NOMINATING AN APPLICANT TO THE GOVERNING BOARD OF THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

WHEREAS, Health and Safety Code Section 40600.5 created a Special City Selection Committee (Committee) for the appointment of City Council members to the San Joaquin Valley Air Pollution Control District (District) Governing Board, and

WHEREAS, there is currently a vacancy on the District Governing Board which is to be filled by a "small" city with less than 100,000 population from the Central Region which consists of Madera, Fresno and Kings counties.

WHEREAS, there can only be one city representative on the Governing Board from each county and there is already a City representative from Fresno County the remaining eligible cities to fill this vacancy are "small" cities from Madera and Kings Counties.

WHEREAS, the Committee has adopted procedures for soliciting applications from eligible council members, having eligible cities nominate an individual from interested applicants to the Committee for consideration of appointment.

WHEREAS, in selecting a nominee for appointment by the Committee to the District Governing Board, the City Council considered the application materials from the eligible candidates, and

WHEREAS, the vote to select a nominee took place as an item on the publicly noticed agenda and was discussed during the normal City Council meeting with time for public comment.

NOW, THEREFORE, BE IT RESOLVED that the City of Lemoore nominates Councilmember _____ as our preferred candidate for appointment to the District Governing Board.

PASSED AND ADOPTED at a Regular Meeting of the City Council of the City of Lemoore held on the 15th day of March 2016 by the following vote:

AYES:
NOES:
ABSTAINING:
ABSENT:

ATTEST:

_____
Mary J. Venegas
City Clerk

APPROVED:

_____
Lois Wynne
Mayor

APPLICATION FOR APPOINTMENT AS A CITY REPRESENTATIVE ON GOVERNING BOARD OF THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

Current Vacancies
Small City: *One member representing the cities with a population less than 100,000 from Kings or Madera Counties. Councilmembers from Chowchilla, Madera, Avenal, Hanford, Corcoran, and Lemoore are eligible to apply.*

If you are an elected official on the council of the cities identified above, you may submit an application for appointment to the Governing Board of the San Joaquin Valley Air Pollution Control District to fulfill a currently vacant seat for the remainder of the term. The term for this seat ends December 31, 2017.

Applicant Name: WASEEM AHMED

Residence Address (Must live within the boundaries of the San Joaquin Valley APCD): CHOWCHILLA CA 93610

Mailing Address: P.O. BOX 582, CHOWCHILLA CA 93610

Telephone: (559) 517-1664 Primary (559) 665-8615 Alt.

Email Address: WA4CHOWCHILLA@GMAIL.COM

When does your current City Council term end: DECEMBER, 2018

Applicant Signature: **Date**: 02-24-16

Please submit this form along with any other pertinent information (e.g., resume, candidate statement, education, experience) that you desire to be considered to the email address below. **Please limit additional information to no more than one page.**

Please complete this application and return it by February 29, 2016 to:
specialcityselectioncommittee@gmail.com

For questions, please contact Craig Vejvoda either by cell (559-358-0577) or email (cvejvoda@lightspeed.net).

Thank you for your prompt attention.

Waseem Ahmed

P. O. BOX 582, Chowchilla, CA 93610, Phone (559) 517-14
E-Mail: wa4chowchilla@gmail.com

Profile:

I'm currently serving as Mayor of Chowchilla. I devoted virtually my entire career to public service. Before taking office in 2014, I served as Chairman of the Chowchilla Planning Commission.

I have been a long time Chowchilla resident who knows the area, understand the needs of the community and I'm proud to call Chowchilla my home. Before moving to Chowchilla I owned and established several businesses throughout northern California.

I was raised and graduated from high school in Concord California. After high school, I attended San Francisco State University where I majored in business administration. Later in pursuit of advancement in business education, I went to Sacramento State University.

I believe that government was put into place to serve all people, and was established to help them do things for the collective group that everyone otherwise cannot do for themselves. I know that winning is not a one-person effort, it's a TEAM effort. The value of the team is greater than the sum of its individual parts.

I have previously served on the San Joaquin Valley Air Pollution Citizens Advisory Board (SJVUAPCD), board member of the Chowchilla Industrial Development Corporation, two terms as President of the Chowchilla District Chamber of Commerce, member of the Madera County Work Force Investment Board and the Chowchilla Parks and Recreation Commission. I have an established history of service to the community, an appreciation of Chowchilla's near 100-year heritage and a vision for its future.

I was elected to my first term with the Chowchilla City Council in December 2014 and my term expires in December 2018.

APPLICATION FOR APPOINTMENT AS A CITY REPRESENTATIVE ON GOVERNING BOARD OF THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

Current Vacancies
Small City: *One member representing the cities with a population less than 100,000 from Kings or Madera Counties. Councilmembers from Chowchilla, Madera, Avenal, Hanford, Corcoran, and Lemoore are eligible to apply.*

If you are an elected official on the council of the cities identified above, you may submit an application for appointment to the Governing Board of the San Joaquin Valley Air Pollution Control District to fulfill a currently vacant seat for the remainder of the term. The term for this seat ends December 31, 2017.

Applicant Name:	David Ayers
Residence Address (Must live within the boundaries of the San Joaquin Valley APCD) :	Hanford, CA 93230
Mailing Address:	277 West Adrian Way Hanford, CA 93230
Telephone:	(559) 582-4117 Primary (559) 779-4696 Alt.
Email Address:	dgayerspt@comcast.net
When does your current City Council term end:	12-2018
Applicant Signature:	**Date:** 2-28-16

Please submit this form along with any other pertinent information (e.g., resume, candidate statement, education, experience) that you desire to be considered to the email address below. **Please limit additional information to no more than one page.**

Please complete this application and return it by February 29, 2016 to:
specialcityselectioncommittee@gmail.com

For questions, please contact Craig Vejvoda either by cell (559-358-0577) or email (cvejvoda@lightspeed.net).

Thank you for your prompt attention.

APPLICATION FOR APPOINTMENT AS A CITY REPRESENTATIVE ON GOVERNING BOARD OF THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

Current Vacancies
Small City: *One member representing the cities with a population less than 100,000 from Kings or Madera Counties. Councilmembers from Chowchilla, Madera, Avenal, Hanford, Corcoran, and Lemoore are eligible to apply.*

If you are an elected official on the council of the cities identified above, you may submit an application for appointment to the Governing Board of the San Joaquin Valley Air Pollution Control District to fulfill a currently vacant seat for the remainder of the term. The term for this seat ends December 31, 2017.

Applicant Name: Andrew J. Medellin	
Residence Address (Must live within the boundaries of the San Joaquin Valley APCD) : Madera, CA 93637	
Mailing Address: 225 S. Pine St., Ste. 104	
Telephone: (559) 363-2936 Primary	(559) 674-3661 Alt.
Email Address: asd3661@yahoo.com	
When does your current City Council term end:	
Applicant Signature	**Date:** 2/29/16

Please submit this form along with any other pertinent information (e.g., resume, candidate statement, education, experience) that you desire to be considered to the email address below. **Please limit additional information to no more than one page.**

Please complete this application and return it by February 29, 2016 to:
specialcityselectioncommittee@gmail.com

For questions, please contact Craig Vejvoda either by cell (559-358-0577) or email (cvejvoda@lightspeed.net).

Thank you for your prompt attention.

APPLICATION FOR APPOINTMENT AS A CITY REPRESENTATIVE ON GOVERNING BOARD OF THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

Current Vacancies
Small City: *One member representing the cities with a population less than 100,000 from Kings or Madera Counties. Councilmembers from Chowchilla, Madera, Avenal, Hanford, Corcoran, and Lemoore are eligible to apply.*

If you are an elected official on the council of the cities identified above, you may submit an application for appointment to the Governing Board of the San Joaquin Valley Air Pollution Control District to fulfill a currently vacant seat for the remainder of the term. The term for this seat ends December 31, 2017.

Applicant Name:	William G. Oliver
Residence Address (Must live within the boundaries of the San Joaquin Valley APCD):	Madera CA 93638
Mailing Address:	Same
Telephone:	(559) 474-0303 Primary (559) 476-2518 Alt.
Email Address:	woliver21@gmail.com
When does your current City Council term end:	December 2018
Applicant Signature	**Date:** 02/29/16

Please submit this form along with any other pertinent information (e.g., resume, candidate statement, education, experience) that you desire to be considered to the email address below. **Please limit additional information to no more than one page.**

Please complete this application and return it by February 29, 2016 to:
specialcityselectioncommittee@gmail.com

For questions, please contact Craig Vejvoda either by cell (559-358-0577) or email (cvejvoda@lightspeed.net).

Thank you for your prompt attention.

William Oliver Candidate Statement

Please accept my application for the City Representative position on the Governing Board of the San Joaquin Valley Air Pollution Control District. I believe my experience and aptitude are well-suited to benefit the District in realizing its mission, vision and values.

I am a third generation Maderan with roots to the San Joaquin Valley for over 100 years. I am proud of my Valley heritage and place great value on its future. I believe there is no greater public health, safety and economic concern than the air we breathe. As a Governing Board member, I would welcome the challenges we face with a proactive and team-oriented approach while basing decisions on science, facts and stakeholder input. Challenges such as perpetual drought, triple-digit heat and intensifying wildfires, among others, have failed to evade us and require the best of our ingenuity, focus and hard-work in short-order, but also require a long-term, eye to the future.

As a Madera City Councilmember, I've approached decisions with an open-mind and open-door. Whether making myself available through constituent mobile office hours, making my cellular phone available to the public, or collecting input and concerns through neighborhood watch, public engagement has been the basis for which I make decisions and carry out my policy priorities. If appointed, I intend to bring that same approach while working with my Board colleagues, staff and the public to ensure prudent, inclusive and accountable decision making.

Moreover, I recognize the District's jurisdiction meets at the intersection of business, government and community sectors. Through my current employment with the Fresno County Economic Development Corporation as a Business Support Manager, I've worked with businesses impacted by public projects such as California High-Speed Rail. As a business advocate, I've developed best practices in addressing business hardships due to a consequential public project or decision, employing empathy, dissemination of accurate information and a platform to collect and address issues and concerns.

I believe my experience, focus and commitment complement the values of the District for which I would be humbled to serve. I know I am poised to serve the residents of our region well on the San Joaquin Valley Air Pollution Control District Governing Board. Thank you for your consideration.

APPLICATION FOR APPOINTMENT AS A CITY REPRESENTATIVE ON GOVERNING BOARD OF THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

Current Vacancies
Small City: *One member representing the cities with a population less than 100,000 from Kings or Madera Counties. Councilmembers from Chowchilla, Madera, Avenal, Hanford, Corcoran, and Lemoore are eligible to apply.*

If you are an elected official on the council of the cities identified above, you may submit an application for appointment to the Governing Board of the San Joaquin Valley Air Pollution Control District to fulfill a currently vacant seat for the remainder of the term. The term for this seat ends December 31, 2017.

Applicant Name: DEREK O. ROBINSON, SR.

Residence Address (Must live within the boundaries of the San Joaquin Valley APCD): MADERA, CA. 93638

Mailing Address: MADERA, CA. 93638

Telephone: (559) 474-7690 Primary ( ) Alt.

Email Address: DOROBINSON12@GMAIL.COM

When does your current City Council term end: 12-07-16

Applicant Signature **Date:** 02-24-2016

Please submit this form along with any other pertinent information (e.g., resume, candidate statement, education, experience) that you desire to be considered to the email address below. **Please limit additional information to no more than one page.**

Please complete this application and return it by February 29, 2016 to:
specialcityselectioncommittee@gmail.com

For questions, please contact Craig Vejvoda either by cell (559-358-0577) or email (cvejvoda@lightspeed.net).

Thank you for your prompt attention.

Mayor Pro Tem Derek O. Robinson Sr.
Madera City Council District 4

Derek Robinson was elected to the City Council in 2012 and served as Mayor Pro Tem in 2014. He also serves as a Board Member on the Successor Agency to the Former Madera Redevelopment Agency and the Housing Authority of the City of Madera.

Derek graduated from John Muir High School in Pasadena, California. He served in the United States Army from 1973 to 1978. He attended Long Beach City College and then earned his Bachelor of Arts degree from the University of California Berkeley.

Derek worked for the U.S. Postal Service in Fresno from 1984 through 2002 and served as a shop steward in the American Postal Workers Union in Berkeley, California from 1988 to 1990. Derek also served as a youth counselor at the San Francisco Youth Correctional Center from 1984 to 1986; the Byron Boys Ranch, Contra Costa Correctional Facility from 1989 to 1993; and the Fresno Juvenile Correctional Facility from 1995 to 2002.

Derek competed in track and field events from 1978 to 2002. He also served as a student coach, an assistant coach and as a coach at Long Beach City College; Saint Mary's High School in Berkeley, California; Miramonte High School in Orinda, California; Berkeley High School in Berkeley, California; San Joaquin Valley Tomahawks in Fresno, California; Fresno City College in Fresno, California; Kings River Community College in Reedley, California; and Clovis High School in Clovis, California.

Derek has been a resident of Madera since 1992. He is married to Michelle Robinson and they have one daughter. Derek has four other children.

Professional Affiliations / Other Public Service
Currently serving on or served in the past:
Madera County Local Child Care and Development Planning Council Steering Committee
Community Action Partnership of Madera County
Madera County Economic Development Commission
Madera County Transportation Commission
San Joaquin River Conservancy
2nd Vice President for the League of California Cities South San Joaquin Valley Division
League of California Cities Administrative Services Policy Committee
United Way Fresno and Madera Counties Board
City of Madera Parks and Recreation Advisory Board
Madera Elks Lodge
Madera Kiwanis Club

Awards and Special Achievements
Special Achievement Award United States Postal Service October 1998
Special Achievement Award Defense Language Institute, Presidio of Monterey, California January 1978
United States Postal Service Certificate of Appreciation July 1987
Letter of Commendation United States Postal Service July 1991
Athlete of the Year, Metropolitan Conference of the California Community and Junior College Association 1979
African American Trailblazers Award 2015

City of
LEMOORE
CALIFORNIA

Office of the City Manager

119 Fox Street
Lemoore, CA 93245
Phone (559) 924-6700
Fax (559) 924-9003

To: **Lemoore City Council**

From: **Janie Venegas, City Clerk**

Date: **March 10, 2016** **Meeting Date: March 15, 2016**

Subject: **Activity Update**

Reports

- Warrant Register – FY 15-16 March 4, 2016

Warrant Register 3-04-16

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4211 - CITY COUNCIL

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR		BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4310	PROFESSIONAL CONTRACT SVC									
9 /16	03/03/16	21	48566		0298	LEMOORE CHAMBER		13,500.00	.00	2ND QTR BILLING
TOTAL	PROFESSIONAL CONTRACT SVC						.00	13,500.00	.00	
TOTAL	CITY COUNCIL						.00	13,500.00	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4213 - CITY MANAGER

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4340	UTILITIES								
9 /16	03/03/16	21		48557	6685 DIRECTTV		79.52	.00	02/04/16 - 03/03/16
9 /16	03/03/16	21		48557	6685 DIRECTTV		65.52	.00	02/05/16 - 03/04/16
TOTAL	UTILITIES					.00	145.04	.00	
TOTAL	CITY MANAGER					.00	145.04	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4215 - FINANCE

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4320	MEETINGS & DUES								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		9.59	.00	MILEAGE/SIMS
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		1.22	.00	MILEAGE/ROE
TOTAL	MEETINGS & DUES					.00	10.81	.00	
TOTAL	FINANCE					.00	10.81	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4221 - POLICE

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4220	OPERATING SUPPLIES								
9 /16	03/03/16	21		48560	2960 GALLS		1,243.40	.00	SL20X LED
9 /16	03/03/16	21		48560	2960 GALLS		24.19	.00	REPLACEMENT BATTERIES
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		3.21	.00	SPIKE STRIP REPAIRS
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		8.91	.00	LPD SUPPLIES
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		21.95	.00	VIDEO CARD
TOTAL	OPERATING SUPPLIES					.00	1,301.66	.00	
4220U	OPERAT SUPPLIES- UNIFORMS								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		21.49	.00	UNIFORMS
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		20.00	.00	EMBROIDER PATCHES
TOTAL	OPERAT SUPPLIES- UNIFORMS					.00	41.49	.00	
4310	PROFESSIONAL CONTRACT SVC								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		10.45	.00	UPS STORE
TOTAL	PROFESSIONAL CONTRACT SVC					.00	10.45	.00	
4320	MEETINGS & DUES								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		16.68	.00	SGT TESTING BREAKFAST
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		16.68	.00	CPL TESTING BREAKFAST
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		14.00	.00	COURTROOM TESTIMONY
TOTAL	MEETINGS & DUES					.00	47.36	.00	
4340	UTILITIES								
9 /16	03/03/16	21		48589	0116 VERIZON WIRELESS		1,048.41	.00	01/17/16 - 02/16/16
TOTAL	UTILITIES					.00	1,048.41	.00	
4360	TRAINING								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		45.00	.00	SWAT SCHOOL
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		14.00	.00	LEGAL ISSUES IN LE
TOTAL	TRAINING					.00	59.00	.00	
TOTAL	POLICE					.00	2,508.37	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4222 - FIRE

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4340	UTILITIES								
9 /16	03/03/16	21		48589	0116 VERIZON WIRELESS		168.40	.00	01/17/16 - 02/16/16
TOTAL	UTILITIES					.00	168.40	.00	
TOTAL	FIRE					.00	168.40	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4230 - PUBLIC WORKS

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4320	MEETINGS & DUES								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		20.00	.00	APWA MEMBERSHIP
TOTAL	MEETINGS & DUES					.00	20.00	.00	
TOTAL	PUBLIC WORKS					.00	20.00	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4231 - STREETS

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4340	UTILITIES								
9 /16	03/03/16	21		48577	0363 P G & E		61.20	.00	01/16/16 - 02/17/16
9 /16	03/03/16	21		48577	0363 P G & E		7,320.68	.00	01/15/16 - 02/16/16
9 /16	03/03/16	21		48577	0363 P G & E		1,011.02	.00	01/15/16 - 02/16/16
TOTAL	UTILITIES					.00	8,392.90	.00	
4825	MACHINERY & EQUIPMENT								
9 /16	03/03/16	21		48583	1213 SCELZI ENTERPRIS		734.00	.00	INSTALL REC. HITCH
TOTAL	MACHINERY & EQUIPMENT					.00	734.00	.00	
TOTAL	STREETS					.00	9,126.90	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4242 - RECREATION

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4310	PROFESSIONAL CONTRACT SVC								
9 /16	03/03/16	21		48574	6322 MELANIE TATCO		112.00	.00	ZUMBA KIDS/FEB2016
9 /16	03/03/16	21		48578	T1975 PIUNNO, TONI		290.50	.00	JAZZERCISE/FEB2016
9 /16	03/03/16	21		48587	1467 SIMONSON,JOE		100,000.00	.00	SETTLEMENT AGREEMENT
9 /16	03/03/16	21		48572	6371 MANUEL VELARDE		314.30	.00	KARATE/FEB 2016
9 /16	03/03/16	21		48564	T2055 KAREN ANDERSON		147.00	.00	HIP HOP/FEB 2016
9 /16	03/03/16	21		48570	6545 LIVIA THOMPSON		28.00	.00	MEDITATION/FEB 2016
9 /16	03/04/16	20		48563	5742 LUCIANA JOHNSTON		-525.00	.00	DRAMA/FEB2016
TOTAL	PROFESSIONAL CONTRACT SVC					.00	100,366.80	.00	
TOTAL	RECREATION					.00	100,366.80	.00	
TOTAL	GENERAL FUND					.00	125,846.32	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 028 - CITY GRANTS- CAP PROJ
BUDGET UNIT - 4726G - CINNAMON CANAL DR. STUDY

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4317	CONSTRUCTION/IMPLEMENTA.								
9 /16	03/03/16	21	48585	6635	SEE'S CONSULTING		1,018.00	.00	COMPACTION TESTING
9 /16	03/03/16	21	48585	6635	SEE'S CONSULTING		1,758.00	.00	COMPACTION TESTING
9 /16	03/03/16	21	48585	6635	SEE'S CONSULTING		656.00	.00	FIELD TESTING
9 /16	03/03/16	21	48585	6635	SEE'S CONSULTING		241.00	.00	COMPACTION TESTING
9 /16	03/03/16	21	48585	6635	SEE'S CONSULTING		1,790.00	.00	COMPACTION TESTING
9 /16	03/03/16	21	48585	6635	SEE'S CONSULTING		5,288.00	.00	COMPACTION TESTING
9 /16	03/03/16	21	48567	0300	LEM CITY-PETTY C		3.35	.00	GAS BILL
TOTAL	CONSTRUCTION/IMPLEMENTA.					.00	10,754.35	.00	
TOTAL	CINNAMON CANAL DR. STUDY					.00	10,754.35	.00	
TOTAL	CITY GRANTS- CAP PROJ					.00	10,754.35	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 040 - FLEET MAINTENANCE
BUDGET UNIT - 4265 - FLEET MAINTENANCE

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4220F	OPERATING SUPPLIES FUEL								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		60.00	.00	FUEL FOR NEW CARS
TOTAL	OPERATING SUPPLIES FUEL					.00	60.00	.00	
4350	REPAIR/MAINT SERVICES								
9 /16	03/03/16	21		48551	0056 BILLINGSLEY TIRE		20.00	.00	REPAIR
TOTAL	REPAIR/MAINT SERVICES					.00	20.00	.00	
TOTAL	FLEET MAINTENANCE					.00	80.00	.00	
TOTAL	FLEET MAINTENANCE					.00	80.00	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 045 - GOLF COURSE - CITY
BUDGET UNIT - 4245 - GOLF COURSE-CITY

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4000K	COST OF REVENUE-KITCHEN								
9 /16	03/03/16	21		48568	1628 LEMOORE FOOD LOC		188.10	.00	SAUSAGE/TRI TIP/GOLF
TOTAL	COST OF REVENUE-KITCHEN					.00	188.10	.00	
4000P	COST OF REVENUE-PRO SHOP								
9 /16	03/03/16	21		48548	6450 TITLEIST		186.92	.00	BEANIE BLK/RED
TOTAL	COST OF REVENUE-PRO SHOP					.00	186.92	.00	
4220	OPERATING SUPPLIES								
9 /16	03/03/16	21		48590	6206 WILBUR-ELLIS COM		321.32	.00	DACONIL WEATHER STIK
TOTAL	OPERATING SUPPLIES					.00	321.32	.00	
4220M	OPERATING SUPPLIES MAINT.								
9 /16	03/03/16	21		48590	6206 WILBUR-ELLIS COM		979.09	.00	SQUIRREL BAIT/RAN PRO
TOTAL	OPERATING SUPPLIES MAINT.					.00	979.09	.00	
4310	PROFESSIONAL CONTRACT SVC								
9 /16	03/03/16	21		48580	6548 RINGER, TOM		6,500.00	.00	MGMNT SVCS-FEB16
TOTAL	PROFESSIONAL CONTRACT SVC					.00	6,500.00	.00	
4340	UTILITIES								
9 /16	03/03/16	21		48577	0363 P G & E		372.78	.00	12/29/15-01/27/16
TOTAL	UTILITIES					.00	372.78	.00	
TOTAL	GOLF COURSE-CITY					.00	8,548.21	.00	
TOTAL	GOLF COURSE - CITY					.00	8,548.21	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 050 - WATER
BUDGET UNIT - 4250 - WATER

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4310	PROFESSIONAL CONTRACT SVC								
9 /16	03/03/16	21	48588	6663	SUSP, INC		10,800.00	.00	SVCS 01/01-01/31/16
TOTAL	PROFESSIONAL CONTRACT SVC					.00	10,800.00	.00	
4340	UTILITIES								
9 /16	03/03/16	21	48577	0363	P G & E		106.97	.00	01/18/16 - 02/17/16
9 /16	03/03/16	21	48577	0363	P G & E		19.71	.00	01/19/16 - 02/17/16
TOTAL	UTILITIES					.00	126.68	.00	
TOTAL	WATER					.00	10,926.68	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 050 - WATER
BUDGET UNIT - 4251 - UTILITY OFFICE

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4320	MEETINGS & DUES								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		9.58	.00	MILEAGE/SIMS
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		1.21	.00	MILEAGE/ROE
TOTAL	MEETINGS & DUES					.00	10.79	.00	
TOTAL	UTILITY OFFICE					.00	10.79	.00	
TOTAL	WATER					.00	10,937.47	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 056 - REFUSE
BUDGET UNIT - 4256 - REFUSE

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4220	OPERATING SUPPLIES								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		24.84	.00	TRANSMISSION FLUID
9 /16	03/03/16	21 6990	-01	48584	6518 SCHAEFER SYSTEMS		13,487.00	-12,071.00	95 GALLON REFUSE CONTAINE
9 /16	03/03/16	21 6990	-02	48584	6518 SCHAEFER SYSTEMS		650.00	-650.00	ESTIMATED FRIGHT CHARGE
TOTAL	OPERATING SUPPLIES					.00	14,161.84	-12,721.00	
4320	MEETINGS & DUES								
9 /16	03/03/16	21		48567	0300 LEM CITY-PETTY C		40.00	.00	N.A. ASSOCIATION
TOTAL	MEETINGS & DUES					.00	40.00	.00	
TOTAL	REFUSE					.00	14,201.84	-12,721.00	
TOTAL	REFUSE					.00	14,201.84	-12,721.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.fund between '001' and '099' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 060 - SEWER& STROM WTR DRAINAGE
BUDGET UNIT - 4260 - SEWER

ACCOUNT	DATE	T/C	ENCUMBR	REFERENCE	VENDOR	BUDGET	EXPENDITURES	ENCUMBRANCES	DESCRIPTION
4220	OPERATING SUPPLIES								
9 /16	03/03/16	21		48586	2072 SIERRA CHEMICAL		5,227.96	.00	CHLORINE
9 /16	03/03/16	21		48586	2072 SIERRA CHEMICAL		-3,000.00	.00	DEPOSIT RETURN
9 /16	03/03/16	21		48586	2072 SIERRA CHEMICAL		3,493.64	.00	CHLORINE
9 /16	03/03/16	21		48586	2072 SIERRA CHEMICAL		-4,000.00	.00	DEPOSIT REFUND
TOTAL	OPERATING SUPPLIES					.00	1,721.60	.00	
4340	UTILITIES								
9 /16	03/03/16	21		48577	0363 P G & E		259.34	.00	01/20/16 - 02/18/16
TOTAL	UTILITIES					.00	259.34	.00	
TOTAL	SEWER					.00	1,980.94	.00	
TOTAL	SEWER& STROM WTR DRAINAGE					.00	1,980.94	.00	
TOTAL REPORT						.00	172,349.13	-12,721.00	

SELECTION CRITERIA: account.acct between '2000' and '2999'AND transact.yr='16' and transact.period='9' and transact.batch='VM030416'
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND

ACCOUNT	DATE	T/C	REFERENCE	VENDOR/PAYER	DEBIT	CREDIT	DESCRIPTION
2020	ACCOUNTS PAYABLE						
9 /16	03/03/16	21	48554	6254 DIVISION OF THE STAT		196.20	SB 1186 4TH QTR FEES
9 /16	03/03/16	21	48579	2709 PVP COMMUNICATIONS		834.89	SHOE,BAND, BUTTONS
TOTAL	ACCOUNTS PAYABLE				.00	1,031.09	
2242	ADA&EDUCATION [SB1186]						
9 /16	03/03/16	21	48554	6254 DIVISION OF THE STAT	196.20		SB 1186 4TH QTR FEES
TOTAL	ADA&EDUCATION [SB1186]				196.20	.00	
2279	STORED VEH. FINES/TRF.OFF						
9 /16	03/03/16	21	48579	2709 PVP COMMUNICATIONS	834.89		SHOE,BAND, BUTTONS
TOTAL	STORED VEH. FINES/TRF.OFF				834.89	.00	
TOTAL	GENERAL FUND				1,031.09	1,031.09	
TOTAL REPORT					1,031.09	1,031.09	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.account between '3000' and '3999' and transact.batch='VM03
ACCOUNTING PERIOD: 9/16

FUND - 001 - GENERAL FUND
BUDGET UNIT - 001 - GENERAL FUND

ACCOUNT	DATE	T/C	RECEIVE REFERENCE	PAYER/VENDOR	BUDGET	RECEIPTS	RECEIVABLES	DESCRIPTION
3625	CIVIC AUDITORIUM RENTAL							
9 /16	03/03/16	21 0	48582	T2124 RUTH RODRIGUEZ		-150.00		REFUND/VET HALL#2152
9 /16	03/03/16	21 0	48562	T2126 JOHN IGNACIO		-150.00		REFUND/VET HALL#21523
TOTAL	CIVIC AUDITORIUM RENTAL				.00	-300.00	.00	
3681	RECREATION FEES							
9 /16	03/03/16	21 0	48571	T2125 LUIS TAMAYO		-60.00		DBL BOOKED PROG
TOTAL	RECREATION FEES				.00	-60.00	.00	
3878	CASH OVER/SHORT							
9 /16	03/03/16	21 0	48567	0300 LEM CITY-PETTY CA		- .05		OVER/SHORT
TOTAL	CASH OVER/SHORT				.00	- .05	.00	
TOTAL	GENERAL FUND				.00	-360.05	.00	
TOTAL	GENERAL FUND				.00	-360.05	.00	

SELECTION CRITERIA: transact.yr='16' and transact.period='9' and transact.account between '3000' and '3999' and transact.batch='VM03
ACCOUNTING PERIOD: 9/16

FUND - 056 - REFUSE
BUDGET UNIT - 056 - REFUSE

ACCOUNT	DATE	T/C	RECEIVE	REFERENCE	PAYER/VENDOR	BUDGET	RECEIPTS	RECEIVABLES	DESCRIPTION
3710	GRANT PROCEEDS								
9 /16	03/03/16	21	6990	48584	6518 SCHAEFER SYSTEMS		-6,929.00		TO BE PAID FROM CAL RECYC
TOTAL	GRANT PROCEEDS					.00	-6,929.00	.00	
TOTAL	REFUSE					.00	-6,929.00	.00	
TOTAL	REFUSE					.00	-6,929.00	.00	
TOTAL REPORT						.00	-7,289.05	.00	