



**CITY COUNCIL/SUCCESSOR AGENCY/
FINANCING/POWER/
CALIFORNIA CHOICE ENERGY AUTHORITY
REGULAR MEETING
AGENDA**

Tuesday

January 28, 2020

Regular Meeting – **5:00 p.m.**

Council Chambers – Lancaster City Hall

The City Clerk/Agency/Authority Secretary hereby declares the agenda was posted
by 5:00 p.m. on Friday, January 24, 2020
at the entrance to the Lancaster City Hall Council Chambers.
44933 Fern Avenue, Lancaster, CA 93534

LEGISLATIVE BODY

City Council/Successor Agency/Financing/Power/ California Choice Energy Authority

Mayor/Chair R. Rex Parris

Vice Mayor/Vice Chair Marvin Crist

Council Member/Agency Director/Authority Member Darrell Dorris

Council Member/Agency Director/Authority Member Raj Malhi

Council Member/Agency Director/Authority Member Ken Mann

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AGENDA ITEMS TO BE REMOVED

Sometimes it is necessary to remove items from the agenda. We apologize for any inconvenience this may cause you.

PUBLIC BUSINESS FROM THE FLOOR - AGENDIZED ITEMS

Any person who would like to address the Legislative Bodies on any agendized item is requested to complete a speaker card for the City Clerk/Agency/Authority Secretary and identify the agenda item you would like to discuss. Each person will be given an opportunity to address the Legislative Body at the time such item is discussed. Speaker cards are available at the rear of the Council Chambers and your speaker card must be filled out and submitted *prior* to the agenda item being called. We respectfully request that you fill the cards out completely and print as clearly as possible. Following this procedure will allow for a smooth and timely process for the meeting and we appreciate your cooperation. *Individual speakers are limited to three (3) minutes each unless a different time limit is announced.*

Consent Calendar items under the Legislative Body may be acted upon with one motion, a second and the vote. If you desire to speak on an item or items on the Consent Calendar, you may fill out one speaker card for the Consent Calendar. You will be given three minutes, unless a different time limit is announced, to address your concerns before the Legislative Body takes action on the Consent Calendar.

CALL TO ORDER

City Council/Successor Agency/Financing/Power/ California Choice Energy Authority

ROLL CALL

City Council Members /Agency Directors /Authority Members: Dorris, Malhi, Mann;
Vice Mayor/Vice Chair Crist, Mayor/Chair Parris

INVOCATION

PLEDGE OF ALLEGIANCE

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PRESENTATION

1. Justice Sunday Student Recognitions
Presenter: Mayor Parris

COUNCIL ACTIONS

MINUTES

M 1. Approve the City Council/Successor Agency/Financing/ Power/ California Choice Energy Authority Regular Meeting Minutes of January 14, 2020.

CONSENT CALENDAR

CC 1. Waive further reading of any proposed ordinances. (This permits reading the title only in lieu of reciting the entire text.)

CC 2. Approve the Check and Wire Registers for December 22, 2019 through January 11, 2020 in the amount of \$3,617,951.93. Approve the Check Register as presented.

At each regular City Council Meeting, the City Council is presented with check and ACH/wire registers listing the financial claims (invoices) against the City for purchase of materials, supplies, services, and capital projects issued the prior three to four weeks. This process provides the City Council the opportunity to review the expenditures of the City. Claims are paid via checks, Automated Clearing House (ACH) payments, or federal wires. The justifying backup information for each expenditure is available in the Finance Department.

CC 3. Accept and approve the December 2019, Monthly Report of Investments as submitted.

Each month, the Finance Department prepares a report listing the investments for all separate entities under the jurisdiction of the City as identified in the City's Comprehensive Annual Financial Report.

CC 4. Approve Task Order No. 2 - Additional Authorization No. 2 with Kimley-Horn & Associates of Los Angeles, California, for additional design survey services at thirteen (13) different locations to construct bulb-outs, widen existing roads and provide design services for new Location 38, (Avenue K and 45th Street West), in accordance with the Multi-Year Professional Services Agreement, in the amount of \$116,536 with a 10% contingency; and authorize the City Manager, or his designee, to sign all documents.

On May 27, 2015, the City applied for Cycle 2 of the Active Transportation Program for locations within the City that represents the Urban Core. The City was awarded a total grant amount of \$6,259,000, with a local matching fund requirement of \$1,565,000. This project will close the gap in the non-motorized user transportation network with the construction of curb, gutter and sidewalk improvements at 36 separate locations between 25th Street West to 20th Street East, and between Avenue H to Avenue L.

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CC 5. Award **Public Works Construction Project No. 20-007, Drainage Fencing**, to Quality Fence Company Inc., of Paramount, California, in the amount of \$474,940 plus a 10% contingency, to refurbish existing fencing and replace as needed along the east bank of the Amargosa Creek between Lancaster Boulevard and Avenue J, and authorize the City Manager, or his designee, to sign all documents. This contract is awarded to the lowest responsible bidder per California Public Code Section 22038 (b).

In 2018, the City of Lancaster launched the Impact Initiative, which addresses beautification of the community, as well as to enhance the quality of life of our residents. Lancaster's Impact Initiative will plan, create, contribute to, and support activities and innovative programs that transform the visual character of our City. Through this initiative, City Administration envisions a community where blighted areas are substantially eliminated, and the investment in visual improvement to instill civic pride and enhance social trust citywide, as well as improve security and the health and safety for all its residents. With these goals in mind the City aimed to refurbish fencing and replace as needed, the existing drainage channel fencing along the east bank of the Amargosa Creek between Lancaster Boulevard and Avenue J.

CC 6. Approve an amendment to the Agreement for Professional Consulting Services with Spohn Ranch, Inc. increasing the not to exceed contract amount to \$1.31 million.

In March 2019 the City Council awarded the contract for construction of a skatepark at Jane Reynolds Park to Spohn Ranch, Inc. During the course of construction, modifications to the scope of work resulted in an increase to the total project cost. These revisions included the addition of an advanced bowl that is one-of-a-kind, a change to the requirements for the drainage pump system, and the addition of concrete work for sidewalks leading into the skatepark from the perimeter walkways.

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PUBLIC HEARINGS

PH 1. TEFRA Hearing/Approval of Multifamily Housing Revenue Bonds for Terracina at Lancaster Apartments.

Recommendation:

Adopt **Resolution No. 20-02** pursuant to Section 147(f) of the Internal Revenue Code of 1986 approving the issuance of housing revenue bonds (the Housing Revenue Bonds) by the California Municipal Finance Authority (CMFA) in an aggregate principal amount not to exceed \$55,000,000 to assist in the financing of the acquisition, construction, improvement and equipping of a multifamily rental housing project located at 1752 E. Avenue J4, Lancaster, California (the Project).

Lancaster 690, L.P., a California limited partnership (the Borrower) a partnership of which USA Multifamily Development, Inc. (the Developer) or a related person to the Developer is the general partner, has requested that the CMFA adopt a plan of financing providing for the issuance of exempt facility bonds for a qualified residential rental project pursuant to Section 142(a)(7) of the Internal Revenue Code of 1986 (the Code) in an aggregate principal amount not to exceed \$55,000,000 (the Bonds), to finance the acquisition, construction, improvement and equipping of a multifamily rental housing project located at 1752 E. Avenue J4, Lancaster, California. The City itself is not issuing the Housing Revenue Bonds, is not obligated to repay the Housing Revenue Bonds and is not pledging or otherwise committing any of the City's revenue or other assets to secure repayment of the Housing Revenue Bonds. The Housing Revenue Bonds are payable solely from revenue received pursuant to the terms and provisions of certain financing agreements to be executed by the developer.

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PH 2. TEFRA Hearing/Approval of Multifamily Housing Revenue Bonds for Village Pointe Apartments

Recommendation:

Adopt Resolution No. 20-03, pursuant to Section 147(f) of the Internal Revenue Code of 1986, approving the issuance of housing revenue bonds (the Housing Revenue Bonds) by the California Municipal Finance Authority (CMFA) in an aggregate principal amount not to exceed \$60,000,000 to finance or refinance the acquisition and rehabilitation of a multifamily rental housing project located at 43650 Challenger Way, Lancaster, California (the Project).

Village Pointe Community Partners, LP (the Borrower) a partnership of which WNC Development Partners (the Developer) or a related person to the Developer is the general partner, has requested that the California Municipal Finance Authority (the Authority) adopt a plan of financing providing for the issuance of exempt facility bonds for a qualified residential rental project pursuant to Section 142(a)(7) of the Internal Revenue Code of 1986 (the Code) in one or more series issued from time to time, including bonds issued to refund such exempt facility bonds in one or more series from time to time, and at no time to exceed \$60,000,000 in aggregate principal amount (the Bonds), to finance or refinance the acquisition, rehabilitation, improvement and equipping of a multifamily rental housing project located at 43650 Challenger Way, Lancaster, California (the Project). The City itself is not issuing the Housing Revenue Bonds, is not obligated to repay the Housing Revenue Bonds and is not pledging or otherwise committing any of the City's revenue or other assets to secure repayment of the Housing Revenue Bonds. The Housing Revenue Bonds are payable solely from revenue received pursuant to the terms and provisions of certain financing agreements to be executed by the developer.

NEW BUSINESS

NB 1. Lancaster Safer Streets Action Plan (Systemic Safety Analysis Report)

Recommendation:

Adopt the Lancaster Safer Streets Action Plan, also known as Systemic Safety Analysis Report.

On March 13, 2018, the City awarded the contract to complete the Systemic Safety Analysis Report to Fehr & Peers. The Fehr & Peers team worked closely with City staff from April 2018 to December 2019 to complete this program. The resulting report now known as the Lancaster Safer Streets Action Plan has greatly enhanced the City's previously static process of cataloging information obtained from collision reports to a dynamic methodology. City staff can utilize this methodology to determine the best cost-benefit ratio locations where the City can maximize collision reduction with every dollar invested in implementing systemic capital improvements. Additionally, this methodology will allow the City to maintain a ready backlog of improvement projects that can be implemented as soon as a funding source is identified.

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COUNCIL REPORTS

CR 1. Report on the Activities of the Board of Directors for the Antelope Valley Transit Authority
Presenter: Vice Mayor Crist

CR 2. Council Reports

CALIFORNIA CHOICE ENERGY AUTHORITY

No action required at this time.

LANCASTER HOUSING AUTHORITY

No action required at this time.

LANCASTER FINANCING AUTHORITY

No action required at this time.

LANCASTER POWER AUTHORITY

No action required at this time.

LANCASTER SUCCESSOR AGENCY

No action required at this time.

CITY MANAGER / EXECUTIVE DIRECTOR ANNOUNCEMENTS

CITY CLERK / AGENCY / AUTHORITY SECRETARY ANNOUNCEMENT

PUBLIC BUSINESS FROM THE FLOOR - NON-AGENDIZED ITEMS

This portion of the agenda allows an individual the opportunity to address the Legislative Bodies on any item ***NOT ON THE AGENDA*** regarding City/Agency/Authority business and speaker cards must be submitted ***prior*** to the beginning of this portion of the Agenda. Please complete a speaker card for the City Clerk/Agency/Authority Secretary and identify the subject you would like to address. We respectfully request that you fill the cards out completely and print as clearly as possible. Following this procedure will allow for a smooth and timely process for the meeting and we appreciate your cooperation. State law prohibits the Legislative Body from taking action on items not on the agenda and your matter may be referred to the City Manager/Executive Director. ***Individual speakers are limited to three (3) minutes each unless a different time limit is announced.***

COUNCIL / AGENCY / AUTHORITY COMMENTS

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CLOSED SESSION

1. Conference with Legal Counsel - Anticipated Litigation: significant exposure to litigation pursuant to Government Code Section 54956.9(d) (2) - two potential cases.
2. Conference with Legal Counsel - Anticipated Litigation: consideration of initiation of litigation pursuant to Government Code Section 54956.9(d) (4) - two potential cases.
3. Conference with Legal Counsel - Existing Litigation - Government Code Section 54956.9(d) (1)
4. Parker v. Lancaster, LASC MC 027827
5. Kappler v. Lancaster, LASC 18STCVO4990
6. Better Neighborhoods v. Lancaster, LASC BS175020
7. Antelope Valley Groundwater Cases
Included Actions:
Los Angeles County Waterworks District No. 40 v. Diamond Farming Co.
Superior Court of California, County of Los Angeles, Case No. BC325201;
Los Angeles County Waterworks District No. 40 v. Diamond Farming Co.
Superior Court of California, County of Kern, Case No. S-1500-CV-254-348
Wm. Bolthouse Farms, Inc. v. City of Lancaster, Diamond Farming Co. v. City of Lancaster,
Diamond Farming Co. v. Palmdale Water District
Superior Court of California County of Riverside, consolidated actions;
Case Nos. RIC 353 840, RIC 344 436, RIC 344 668
8. Ramos v Patino, LASC Case No. MC027974
9. Roberson v. Torres, LASC Case No. 18AVCV00127
10. Lozoya v. City of Lancaster, LASC Case No. 19AVCV00714
11. Johnson v. City of Lancaster, LASC Case No. 19AVCV00824
12. Rahier v. City of Lancaster, LASC Case No. 19AVCV00163

ADJOURNMENT

Next Regular Meeting:

Tuesday, February 11, 2020 - 5:00 p.m.

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MEETING ASSISTANCE INFORMATION

In compliance with the Americans with Disabilities Act, this meeting will be held at a location accessible to persons with disabilities; if you need special assistance to participate in this meeting, please contact the City Clerk at (661)723-6020. Services such as American Sign Language interpreters, a reader during the meeting, and/or large print copies of the agenda are available. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting/event you wish to attend. Due to difficulties in securing sign language interpreters, five or more business days notice is strongly recommended. For additional information, please contact the City Clerk at (661)723-6020.

AGENDA ADDENDUM INFORMATION

On occasion items may be added after the agenda has been mailed to subscribers. Copies of the agenda addendum item will be available at the City Clerk Department and are posted with the agenda on the windows of the City Council Chambers. For more information, please call the City Clerk Department at (661) 723-6020.

All documents available for public review are on file with the City Clerk Department.

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**LANCASTER
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MINUTES
January 14, 2020**

CALL TO ORDER

Vice Mayor Crist called the meeting of the Lancaster City Council/Successor Agency/Financing/Power/California Choice Energy Authority to order at 5:00 p.m.

ROLL CALL

PRESENT: City Council Members /Agency Directors /Authority Members: Dorris, Malhi, Mann, Vice Mayor/Vice Chair Crist

EXCUSED: Mayor/Chair Parris

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council/Successor Agency/Financing/Power/California Choice Energy Authority excused Mayor/Chair Parris from the meeting, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

STAFF MEMBERS:

City Manager/Executive Director; Assistant City Manager/Deputy Executive Director; City Attorney/Agency/Authority Counsel; City Clerk/ Agency/Authority Secretary; Assistant City Clerk; Assistant to the City Manager, Administrative and Community Services Director; Parks, Recreation and Arts Director; Development Services Director; Finance Director; Chief of Police/Public Safety Director

INVOCATION

Pastor Matt Dumas, Central Christian Church

PLEDGE OF ALLEGIANCE

Council Member Mann

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**SA NB 1. RECOGNIZED OBLIGATION PAYMENT SCHEDULE FOR THE PERIOD
JULY 1, 2020 TO JUNE 30, 2021**

It was the consensus of the City Council to waive the Staff Report for this item.

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council, adopted **Resolution No. SA 01-20**, approving the Recognized Obligation Payment Schedule for the period July 1, 2020 to June 30, 2021, and directing staff to bring before the County of Los Angeles Consolidated Oversight Board for approval, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

**SA NB 2. SUCCESSOR AGENCY ADMINISTRATIVE BUDGETS FOR THE PERIODS
JULY 1, 2020 TO DECEMBER 31, 2020 AND JANUARY 1, 2021 TO
JUNE 30, 2021**

It was the consensus of the City Council to waive the Staff Report for this item.

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council, adopted **Resolution No. SA 02-20**, approving the Successor Agency Administrative Budgets for the periods of July 1, 2020 to December 31, 2020 and January 1, 2021 to June 30, 2021, as detailed in Attachments A & B, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

M 1. MINUTES

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council/Successor Agency/Financing/Power/California Choice Energy Authority approved the City Council/Successor Agency/Financing/Power/California Choice Energy Authority Regular Meeting Minutes of December 14, 2019, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

CITY COUNCIL CONSENT CALENDAR

The City Attorney stated it appears four City Council Members have conflicts of interest regarding Item No. CC 6 due to the proximity of property they own. In order to vote on this item, a double Rule of Necessity pull will need to take place in order to have a quorum; the conflicted members of the City Council will draw straws to determine who will be the voting members of the City Council for the vote at this meeting and for future votes regarding this project.

Additionally, the City Attorney stated the straws should be drawn today, and if the straw drawn on behalf of Mayor Parris is one of the ones who is voting, this item would need to be moved to the next meeting, and if he is not one of the ones who is voting Council can proceed with the vote.

The City Attorney stated she would draw the straw on behalf of the Mayor.

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CITY COUNCIL CONSENT CALENDAR CONTINUED...

The City Clerk presented straws for the City Council to choose; Vice Mayor Crist and Council Member Mann drew the short straws and will be the voting members for this project.

Council Member Dorris left the dais at this time.

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council approved Consent Calendar Item No. CC 6, by the following vote: 3-0-1-1; AYES: Malhi, Mann, Crist; NOES: None; RECUSED: Dorris; ABSENT: Parris

Council Member Dorris returned to the dais at this time.

On a motion by Council Member Mann, and seconded by Council Member Dorris, the City Council approved the Consent Calendar with the exception of Item No. CC 6, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

CC 1. ORDINANCE WAIVER

Waived further reading of any proposed ordinances. (This permits reading the title only in lieu of reciting the entire text.)

CC 2. CHECK REGISTERS

Approved the Check and Wire Registers for November 17, 2019 through December 21, 2019 in the amount of \$12,061,091.02. Approved the Check Registers as presented.

CC 3. INVESTMENT REPORT

Accepted and approved the November 2019, Monthly Report of Investments as submitted.

CC 4. APPROPRIATION AND RECOGNITION OF OFFSETTING REVENUE FROM THE CITY OF PALMDALE, RELATED TO COLUMBIA WAY (AVENUE M) PAVEMENT REHABILITATION – PUBLIC WORKS CONSTRUCTION PROJECT (PWCP) NO. 17-003, 2017 PAVEMENT MANAGEMENT PROGRAM (REVIVE 25)

- a. Approved an appropriation and recognition of offsetting revenue in the amount of \$597,500 from the City of Palmdale for pavement rehabilitation on the south side of Avenue M between 10th Street West and Sierra Highway, and allocated to the accounts listed below:
 - Revenue Account No.: 101-3650-101 Other Financing Sources
 - Expense Account No.: 101-4430-998 Other Financing Uses
- b. Increased PWCP 17-003 construction contract with Hardy & Harper, Inc., by \$597,500.

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CC 5. TASK ORDER NO. 4 - 2018-2020 MULTI-YEAR PROFESSIONAL SERVICES AGREEMENT WITH STANTEC CONSULTING SERVICES, INC.

Approved Task Order No. 4 in accordance with the 2018-2020 Multi-Year Professional Services Agreement with Stantec Consulting Services, Inc., of Santa Barbara, California, in the amount of \$296,052 plus a 10% contingency, and authorized the City Manager, or his designee, to sign all documents.

CC 6. PUBLIC WORKS CONSTRUCTION PROJECT NO. 20-003, 2019 SIDEWALK, CURB AND GUTTER REPAIRS

Awarded **Public Works Construction Project No. 20-003, 2019 Sidewalk, Curb and Gutter Repairs**, to DOD Construction of Bakersfield, California, in the amount of \$1,731,316.50 plus a 10% contingency, to repair, replace or construct new sidewalk, curb, gutter, and other concrete repairs at various locations throughout the City, and authorized the City Manager, or his designee, to sign all documents. This contract is awarded to the lowest responsible bidder per California Public Code Section 22038 (b).

CC 7. ORDINANCE NO. 1070

Adopted **Ordinance No. 1070**, amending various sections of the Lancaster Municipal Code; Chapter 8.50, Landscaping Installation and Maintenance, Chapter 16.20, Residential Subdivision Perimeter Treatment, Chapter 16.24, Landscaping Improvements, various sections of Title 17 (Zoning Ordinance), Lancaster Transit-Oriented Development (T.O.D.) Zone, and the Downtown Lancaster Specific Plan, to comply with state code, provide clarification, consistency, and update standards and regulations.

PH 1. ZONE TEXT AMENDMENT TO TITLE 8, TITLE 16 AND TITLE 17 OF THE LANCASTER MUNICIPAL CODE, LANCASTER TRANSIT-ORIENTED DEVELOPMENT ZONES (T.O.D.) AND THE DOWNTOWN LANCASTER SPECIFIC PLAN

Vice Mayor Crist opened the Public Hearing.

The Development Services Director presented the staff report regarding this item.

Addressing the City Council on this item:

Barbara Nunn – thanked the Council for what they do, and discussed the proposed vacation, and inquired on the possibility of the new property owner raising the rent on this low income apartment complex due to this proposed vacation.

Vice Mayor Crist closed the Public Hearing.

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council adopted **Resolution No. 20-01**, ordering the vacation of a portion of a public utility easement within Parcel 1 of Parcel Map 20211 located near the southeast corner of Cedar Avenue and Kettering Street, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

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NB 1. HYBRID LAW ENFORCEMENT MODEL UPDATE

The City Manager and consultants from Hillard Heintze presented the update on this item.

Discussion among the City Council, Hillard Heintze, Captain Weber and staff included discussion of the purpose behind the Hybrid Law Enforcement Model, budget, public safety, proactive approach in addressing matters throughout the community, improved quality of life and safety, zone deputies, actual plan integration with the Los Angeles County Sheriff Department (LASD), support for successful deployment and implementation, assistance to address calls more efficiently by freeing up time, the need for citizens to still call 911 for emergency response services, impacts of legislation, staffing of certified peace officers, and the need for a strong policy and accountability.

Addressing the City Council on this item:

Maureen Feller – discussed the safety and happiness of the community, community trust, homeless camps, request for trash cans and gloves, past settlements, Chief of Police, and qualifications.

Larry Faddis – discussed past dealings with the Sheriff’s Department and Parking Enforcement.

Brother Perry – discussed the qualifications of peace officers, hiring pool, impacts to the homeless, prioritizing of calls, and review of the proposed plan.

Barbara Nunn – discussed her past volunteer work, her love for military and law enforcement, and her concern pertaining to officers being available to address calls.

Cameron Cragg – Antelope Valley College Political Science Student, discussed the proposed Law Enforcement Hybrid Model, lethal force, and the need for checks and balances.

Additional discussion among the City Council, Hillard Heintze, and staff included the employment of retired deputies, candidate pool, recruitment strategy, authority level of retired deputies, strategy to prevent the duplication of services, service hours, community outreach and engagement, administrative processes, innovative approach to be implemented, plan development and rollout including future updates to the administrative citation appeal process to be presented to Council.

On a motion by Council Member Mann and seconded by Council Member Malhi, the City Council directed staff to commence implementation of Phase II, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

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CA 1. DISCUSS AND CONSIDER NOMINATIONS, APPOINTMENTS AND RE-APPOINTMENTS TO THE FOLLOWING COMMISSIONS; NAMELY HEALTHY COMMUNITY COMMISSION, HOMELESS IMPACT COMMISSION, PLANNING COMMISSION, AND ARCHITECTURAL & DESIGN COMMISSION

Addressing the City Council on this item:

Heather Varden – discussed her desire to be considered for appointment to the Lancaster Homeless Impact Commission and provided her qualifications.

Michael Rives – discussed his beliefs pertaining to how committee members should be appointed.

Brother Perry – discussed his desire to be considered for appointment to the Lancaster Homeless Impact Commission and provided his qualifications.

Mayor Parris requested: The Healthy Community Commission be renamed to Antelope Valley Healthy Community Commission, and the following appointment to the commission: Representative from Supervisor Kathryn Barger’s Office.

On a motion by Mayor Parris, moved by Vice Mayor Crist, and seconded by Council Member Mann, the City Council approved the renaming of the Healthy Community Commission, and appointment to the Healthy Community Commission, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

Mayor Parris requested the following appointments to the Homeless Impact Commission: Angela Hearn and Denise Latanzi.

On a motion by Mayor Parris, moved by Vice Mayor Crist, and seconded by Council Member Mann, the City Council approved the appointments to the Homeless Impact Commission, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

Mayor Parris requested the appointment of a Commissioner to the Planning Commission.

On a motion by Mayor Parris, moved by Vice Mayor Crist, and seconded by Council Member Mann, the City Council approved the appointment of a Commissioner to the Planning Commission, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

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CA 1. DISCUSS AND CONSIDER NOMINATIONS, APPOINTMENTS AND RE-APPOINTMENTS TO THE FOLLOWING COMMISSIONS; NAMELY HEALTHY COMMUNITY COMMISSION, HOMELESS IMPACT COMMISSION, PLANNING COMMISSION, AND ARCHITECTURAL & DESIGN COMMISSION CONTINUED...

Mayor Parris requested the following appointments and re-appointments to the Architectural & Design Commission: Cedric White, April Bartlett, Adam Chant, Richard Despain, Dan Tufts, Barbara Fahey, Timothy Wiley, appointment of a Chair, with Council Member Ken Mann as the City Council Representative.

On a motion by Mayor Parris, moved by Vice Mayor Crist, and seconded by Council Member Mann, the City Council approved the appointments and re-appointments to the Architectural & Design Commission, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

CA 2. DISCUSS AND CONSIDER APPOINTMENTS TO THE FOLLOWING COMMITTEES/ORGANIZATIONS: ANTELOPE VALLEY TRANSIT AUTHORITY (AVTA), EDWARDS AIR FORCE BASE RESTORATION ADVISORY BOARD (RAB), AND PRISON CITIZENS ADVISORY COMMITTEE

At this time, Vice Mayor Crist requested Macy Neshati present the update on the Antelope Valley Transit Authority (AVTA).

Mr. Neshati thanked Council and staff for the tribute and proclamation in honor of his late daughter.

Mr. Neshati provided an update on the activities of the Antelope Valley Transit Authority (AVTA) which included the announcement of reaching their second million miles and accomplishment of changing an all diesel fleet to all electric with a positive return.

Mayor Parris requested the following appointments and re-appointments to the Antelope Valley Transit Authority (AVTA): Council Member Crist, and Angela Underwood-Jacobs, as a citizen, as the two board appointees with remaining Council Members as alternates, with the exception of Mayor Parris who is not an alternate.

On a motion by Mayor Parris and seconded by Vice Mayor Crist, the City Council approved the appointments and re-appointments to the Antelope Valley Transit Authority (AVTA), by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

LANCASTER CITY COUNCIL/ SUCCESSOR AGENCY/
FINANCING/HOUSING/POWER/CALIFORNIA CHOICE ENERGY AUTHORITY
MINUTES

January 14, 2020

CA 2. DISCUSS AND CONSIDER APPOINTMENTS TO THE FOLLOWING COMMITTEES/ORGANIZATIONS: ANTELOPE VALLEY TRANSIT AUTHORITY (AVTA), EDWARDS AIR FORCE BASE RESTORATION ADVISORY BOARD (RAB), AND PRISON CITIZENS ADVISORY COMMITTEE CONTINUED...

Mayor Parris requested the following appointment and re-appointment to the Edwards Air Force Base Restoration Advisory Board (RAB): Council Member Malhi, and Council Member Dorris, as the two elected officials appointed.

On a motion by Mayor Parris, moved by Vice Mayor Crist, and seconded by Council Member Mann, the City Council approved the appointment and re-appointment to the Edwards Air Force Base Restoration Advisory Board (RAB), by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

Mayor Parris requested the following appointment and re-appointment to the Prison Citizens Advisory Committee: Council Member Malhi, as appointee, and Council Member Dorris, as the alternate appointee.

On a motion by Mayor Parris, moved by Vice Mayor Crist, and seconded by Council Member Mann, the City Council approved the appointment and re-appointment to the Prison Citizens Advisory Committee, by the following vote: 4-0-0-1; AYES: Dorris, Malhi, Mann, Crist; NOES: None; ABSTAIN: None; ABSENT: Parris

CR 1. COUNCIL REPORTS

Council Member Dorris discussed recent meetings and community events he attended.

Council Member Malhi discussed upcoming City projects.

Deputy Mayor Gomez discussed the Los Angeles County Air Show and invited everyone to attend.

Planning Commission Chairman Vose discussed upcoming projects being presented to the Planning Commission for consideration.

Vice Mayor Crist discussed recent and upcoming community events.

LANCASTER CITY COUNCIL/ SUCCESSOR AGENCY/
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January 14, 2020

CALIFORNIA CHOICE ENERGY AUTHORITY

No action required at this time.

LANCASTER HOUSING AUTHORITY

No action required at this time.

LANCASTER FINANCING AUTHORITY

No action required at this time.

LANCASTER POWER AUTHORITY

No action required at this time.

CITY MANAGER / EXECUTIVE DIRECTOR ANNOUNCEMENTS

The City Manager discussed the recent updates completed in the Council Chambers including upcoming advancements to be implemented in the Council Chambers.

Additionally, the City Manager provided information on the upcoming LPAC Foundation Speakeasy Fundraiser and introduced the new City Clerk, Andrea Alexander.

CITY CLERK / AGENCY / AUTHORITY SECRETARY ANNOUNCEMENT

The City Clerk provided the public with the procedure to address the City Council/Successor Agency/Authority regarding non-agendized items.

PUBLIC BUSINESS FROM THE FLOOR - NON-AGENDIZED ITEMS

Addressing the City Council at this time:

Heather Varden – discussed the upcoming homeless count.

Fran Sereseres – discussed the recent groundbreaking event she attended and upcoming community events.

Thomas Clark – discussed a landscape citation he received.

Cheral Hymen – Founder and Director of ROCK, discussed the re-appropriation of housing in the community, and provided information on the activities of her non-profit organization.

Kurtis Wilson – discussed response times by the Sheriff's Department, property taxes, rate increases, and 5G towers.

COUNCIL / AGENCY / AUTHORITY COMMENTS

Deputy Mayor Gomez inquired on the length of time the 5G tower had been at Rawley Duntley Park; the City Manager confirmed about three or four months.

LANCASTER CITY COUNCIL/ SUCCESSOR AGENCY/
FINANCING/HOUSING/POWER/CALIFORNIA CHOICE ENERGY AUTHORITY
MINUTES

January 14, 2020

ADJOURNMENT

Vice Mayor/Vice Chair Crist adjourned the meeting at 7:05 p.m. and stated the next City Council/Successor Agency/Financing/Power/California Choice Energy Authority meeting will be held on Tuesday, January 28, 2020 at 5:00 p.m.

PASSED, APPROVED and ADOPTED this 28th day of January, 2020, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

APPROVED:

ANDREA ALEXANDER
CITY CLERK

R. REX PARRIS
MAYOR/CHAIRMAN

LANCASTER CITY COUNCIL/ SUCCESSOR AGENCY/
FINANCING/HOUSING/POWER/CALIFORNIA CHOICE ENERGY AUTHORITY
MINUTES

January 14, 2020

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES }ss
CITY OF LANCASTER }

CERTIFICATION OF MINUTES
CITY COUNCIL/SUCCESSOR AGENCY/FINANCING/HOUSING/POWER/CALIFORNIA
CHOICE ENERGY AUTHORITY

I, _____, _____ of the City of Lancaster,
CA, do hereby certify that this is a true and correct copy of the original City Council/Successor
Agency/Financing/Housing/Power/California Choice Energy Authority Minutes, for which the
original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, CA on this
_____ day of _____, _____.

(seal)

STAFF REPORT
City of Lancaster

Date: January 28, 2020
To: Mayor Parris and City Council Members
From: Pam Statsmann, Finance Director
Subject: **Check Registers – December 22, 2019 through January 11, 2020**

CC 2
01/28/20
JC

Recommendation:

Approve the Check Registers as presented.

Fiscal Impact:

\$3,617,951.93 as detailed in the Check Registers.

Background:

At each regular City Council Meeting, the City Council is presented with check and ACH/wire registers listing the financial claims (invoices) against the City for purchase of materials, supplies, services, and capital projects issued the prior three to four weeks. This process provides the City Council the opportunity to review the expenditures of the City. Claims are paid via checks, Automated Clearing House (ACH) payments, or federal wires. The justifying backup information for each expenditure is available in the Finance Department.

Check Nos.:	7409495-7409768	\$ 3,289,633.81
ACH/Wire Check Nos.:	101010556-101010562	<u>\$ 328,318.12</u>
		\$ 3,617,951.93
Voided Check No.:	N/A	
Voided ACH/Wire No.:	N/A	

PS:sp

Attachments:

Check Register
ACH/Wire Register

City of Lancaster Check Register



From Check No.: 7409495 - To Check No.: 7409768
 From Check Date 12/22/19 - To Check Date: 01/11/20

Printed: 1/13/2020 12:03

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409495	09472	AZAR, JUDITH	JA-TRVL-ONTARIO-12/12/19	49.14	101 4220256	49.14
7409496	C2060	CA WATER SERVICE COMPANY	11/06/19-12/12/19 WATER SVC	1,223.29	482 4636654	1,223.29
7409497	C5582	CARPETERIA	CH-CARPET-REMOVAL/INSTALL	7,672.50	701 11BS019924	7,672.50
7409498	C5582	CARPETERIA	PAC-CARPET-FURNISH/INSTALL	15,141.00	101 4650403	15,141.00
7409499	D0315	FREGOSO, PHYLLIS	01/20-STANDARD RETAINER	8,300.00	101 4600301	8,300.00
7409500	1215	L A CO WATERWORKS	09/04/19-12/17/19 WATER SVC	37,910.89	101 4631654 101 4633654 101 4634654 203 4636654 482 4636654	5,118.26 641.76 7,087.65 4,699.97 20,363.25
				<u>37,910.89</u>		<u>37,910.89</u>
7409501	D2287	LANCASTER CODE ENFRMNT ASSN	UNION DUES-PP 26/2019	360.00	101 2171000	360.00
7409502	09798	MCKEE, NICOLE	NM-PANT REIMBURSEMENT	70.43	101 4632209	70.43
7409503	09372	MELENDEZ, ROBERTO	RM-TRVL-ONTARIO-12/12/19	49.14	101 4220256	49.14
7409504	03154	SO CA EDISON	11/14/19-12/18/19 ELECTRIC SVC	263.34	101 4633652 209 16ST007924 482 4636652 483 4785660	37.20 48.24 89.65 88.25
				<u>263.34</u>		<u>263.34</u>
7409505	03154	SO CA EDISON	11/07/19-12/10/19 ELECTRIC SVC	550.62	203 4636652 482 4636652 484 4755652	24.83 515.20 10.59
				<u>550.62</u>		<u>550.62</u>
7409506	1907	SO CA GAS COMPANY	11/15/19-12/18/19 GAS SVC	1,824.49	101 4632655 101 4634655	1,430.20 394.29
				<u>1,824.49</u>		<u>1,824.49</u>
7409507	C2555	TIME WARNER CABLE	12/19-TV SERVICE-VICE MAYOR	35.82	101 4315651	35.82
7409508	C2555	TIME WARNER CABLE	12/09/19-01/08/20-BASIC TV	40.77	101 4315651	40.77
7409509	C2555	TIME WARNER CABLE	12/19-INTERNET/TV SERVICE	198.11	101 4315651	198.11
7409510	C2555	TIME WARNER CABLE	12/19-BUSINESS-MAYORS OFFICE	204.08	101 4315651	204.08
7409511	D3370	VERIZON WIRELESS	11/19-IPAD SERVICE	4,751.25	101 4315651	4,751.25

City of Lancaster Check Register



From Check No.: 7409495 - To Check No.: 7409768

Printed: 1/13/2020 12:03

From Check Date 12/22/19 - To Check Date: 01/11/20

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409512	D3370	VERIZON WIRELESS	IPAD/COVERS-PURCHASE	6,121.44	101 4300302	6,121.44
7409513	C7500	A B I DOCUMENT SUPPORT SRVCS	CLAIM #020-18/CLGL-13920A1	928.94	109 4430300	928.94
			CLAIM #020-18/CLGL-13920A1	194.29	109 4430300	194.29
			CLAIM #020-18/CLGL-13920A1	188.21	109 4430300	188.21
			CLAIM #020-18/CLGL-13920A1	168.11	109 4430300	168.11
				<u>1,479.55</u>		<u>1,479.55</u>
7409514	C0999	A N M CONSTR & ENGINEERING	DRAIN PIPE-LABOR/EQUIPMNT/INST	3,900.00	484 4755301	3,900.00
7409515	A5389	A V FAIR	11/19-WATCH & WAGER COMM	2,735.39	101 2189000	2,735.39
7409516	01039	A V FORD LINCOLN MERCURY	COLUME ASSEMBLY-EQ2300	1,426.12	101 4647207	1,426.12
7409517	03854	A V JANITORIAL SUPPLY	EPL-JANITORIAL SUPPLIES	293.46	101 4631406	293.46
7409518	08979	A V PEST CONTROL	JRP-07/19 PEST CONTROL	110.00	101 4631301	110.00
			EDP-08/19 PEST CONTROL	65.00	101 4631301	65.00
			JRP-08/19 PEST CONTROL	110.00	101 4631301	110.00
			PBP-08/19 PEST CONTROL	95.00	101 4631301	95.00
			AHP-08/19 PEST CONTROL	85.00	101 4631301	85.00
			JRP-09/19 PEST CONTROL	110.00	101 4631301	110.00
			EDP-09/19 PEST CONTROL	65.00	101 4631301	65.00
			PBP-09/19 PEST CONTROL	95.00	101 4631301	95.00
			AHP-09/19 PEST CONTROL	85.00	101 4631301	85.00
			JRP-10/19 PEST CONTROL	110.00	101 4631301	110.00
			EDP-10/19 PEST CONTROL	65.00	101 4631301	65.00
			PBP-10/19 PEST CONTROL	95.00	101 4631301	95.00
			AHP-10/19 PEST CONTROL	85.00	101 4631301	85.00
			JRP-11/19 PEST CONTROL	110.00	101 4631301	110.00
			EDP-11/19 PEST CONTROL	65.00	101 4631301	65.00
			PBP-11/19 PEST CONTROL	95.00	101 4631301	95.00
			AHP-11/19 PEST CONTROL	85.00	101 4631301	85.00
				<u>1,530.00</u>		<u>1,530.00</u>
7409519	01058	A V TROPHY & UNIFORM CO	BRASS PLATES(21)	82.32	101 4100205	82.32
7409520	C8369	ADAPT CONSULTING, INC	RUBBER GRIPPERS(3000)	1,493.75	331 4755787	1,493.75
7409521	05445	ADELMAN BROADCASTING, INC	PS/MBC-12/19 ADVERTISING	600.00	101 4649565	600.00
			PS/MBC-12/19 ADVERTISING	570.00	101 4649565	570.00
			PS/MBC-12/19 ADVERTISING	540.00	101 4649565	540.00
				<u>1,710.00</u>		<u>1,710.00</u>
7409522	06352	AGILITY RECOVERY SOLUTIONS	12/19-READYSUITE	665.00	101 4315302	665.00
7409523	07741	AGRI-TURF DISTRIBUTING LLC	WCP-RYEGRASS(40 PALLETS)	1,984.14	101 4631404	1,984.14
			LMS-HERBICIDES	478.41	101 4632404	478.41
			CH-TURF RENO(45 PALLETS)	49.28	101 4633404	49.28
			CH-TURF RENO(80 PALLETS)	462.84	101 4633404	462.84
			LMS-HERBICIDES	186.42	101 4632404	186.42

City of Lancaster Check Register



From Check No.: 7409495 - To Check No.: 7409768

From Check Date 12/22/19 - To Check Date: 01/11/20

Printed: 1/13/2020 12:03

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
				3,161.09		3,161.09
7409524	A8728	ALL THINGS ENGRAVABLE	PLAQUES(5)	82.13	101 4641251	82.13
			PLAQUES(4)/TROPHIES(4)	52.56	101 4641251	52.56
			TROPHIES(171)	1,612.77	101 4641251	1,612.77
				<u>1,747.46</u>		<u>1,747.46</u>
7409525	D3147	AMERICAN PLUMBING SERVICES,INC	EDP-VANDALISM-RSTROOM STOPPAGE	110.00	101 4631301	110.00
7409526	04760	AMERINAT	11/19-MONTHLY SERVICE FEE	504.07	306 4342301	504.07
7409527	04190	AMERIPRIDE SERVICES	UNIFORM CLEANINGS	93.01	101 4753209	93.01
			UNIFORM CLEANINGS	200.73	101 4753209	200.73
			UNIFORM CLEANINGS	96.00	101 4753209	96.00
				<u>389.74</u>		<u>389.74</u>
7409528	02693	ANDY GUMP, INC	OMP-FENC RNTL-12/10/19-1/06/20	33.51	101 4634602	33.51
			HP-FENCE RNTL-12/12/19-1/08/20	17.74	101 4634602	17.74
				<u>51.25</u>		<u>51.25</u>
7409529	09090	ANTELOPE VALLEY LIGHT BULBS	AHP-LED LIGHTS	592.92	101 4631403	592.92
7409530	09751	ARMSTRONG, ALVIN JR	12/19-SPORTS OFFICIAL	232.00	101 4641308	232.00
7409531	C9805	ARROW TRANSIT MIX INC	READY MIX CONCRETE	1,719.48	484 4755409	1,719.48
			READY MIX CONCRETE	516.46	203 4752410	516.46
			READY MIX CONCRETE	531.24	203 4752410	531.24
				<u>2,767.18</u>		<u>2,767.18</u>
7409532	04446	AUTO PROS	SMOG INSPECTION-EQ5653	45.00	101 4633207	45.00
			SMOG INSPECTION-EQ5661	45.00	101 4632207	45.00
			SMOG INSPECTION-EQ5654	45.00	101 4635207	45.00
			SMOG INSPECTION-EQ4357	45.00	101 4245207	45.00
			SMOG INSPECTION-EQ6809	45.00	101 4245207	45.00
			SMOG INSPECTION-EQ5857	45.00	101 4640207	45.00
				<u>270.00</u>		<u>270.00</u>
7409533	04151	AXES FIRE INC	EXTNGSHRS(3)/RECHRG-CERTS(26)	668.84	101 4635301	668.84
7409534	09624	AY CONSULTING LLC	12/19-FINANCE CONSULTANT SVCS	1,452.80	101 4410301	1,452.80
7409535	D0879	B'S EMBROIDERY ETC	EMBRDERY-JACKETS(18)	167.54	101 4634209	167.54
			EMBRDERY-JACKETS(2)	16.43	101 4632209	16.43
			EMBRDERY-SWEATSHIRT(1)	10.95	101 4634209	10.95
				<u>194.92</u>		<u>194.92</u>
7409536	03485	BAKERSFIELD TRUCK CENTER	HUB ASSEMBLY-EQ3779	412.46	480 4755207	412.46
			DOOR HANDLE-EQ3782	75.74	203 4752207	75.74
				<u>488.20</u>		<u>488.20</u>
7409537	L1636	BECKER, SUSAN	LCE-NEM PAYOUT	52.49	490 4250658	52.49

City of Lancaster Check Register



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Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409538	06126	BRAVERY BREWING COMPANY, LLC	FOD-BEER(8 KEGS)	758.00	101 4649563	758.00
7409539	L1637	CAIN, PAM J	LCE-NEM PAYOUT	5.47	490 4250658	5.47
7409540	L0060	CAMACHO, SANDRA	LCE-NEM PAYOUT	20.53	490 4250658	20.53
7409541	C0914	CAMPBELL II, EDWARD LEE	12/19-SPORTS OFFICIAL	115.00	101 4641308	115.00
7409542	L0749	CAMUNEZ, CHERYL	LCE-NEM PAYOUT	127.91	490 4250658	127.91
7409543	00382	CARRIER COMMUNICATIONS	12/19-HAUSER MTN SITE RENT	581.68	101 4245350	581.68
7409544	05412	CARTRAC	10/19-SHOPPING CART RETRIEVAL	2,415.00	203 4752402	2,415.00
7409545	L0532	CASTILLO, LAURA	LCE-NEM PAYOUT	57.48	490 4250658	57.48
7409546	04636	CAYENTA/N HARRIS COMPUTER CORP	12/19-CMS	4,767.00	101 4315302	4,767.00
7409547	08680	CHARLES, RAWLSTON	12/19-SPORTS OFFICIAL	125.00	101 4641308	125.00
7409548	L0071	CHASE, JOSHUA	LCE-NEM PAYOUT	12.68	490 4250658	12.68
7409549	03475	CLARK AND HOWARD	TOW-EQ3782	150.00	203 4752207	150.00
			TOW-EQ1747	50.00	101 4315207	50.00
			TOW-EQ3782	150.00	203 4752207	150.00
				<u>350.00</u>		<u>350.00</u>
7409550	03552	COASTLINE EQUIPMENT CO	CDT/DRIVE MOTOR-EQ5502	(1,488.24)	101 4653207	(1,488.24)
			OIL LINE/LBW FTTNG-EQ3772	109.37	484 4752207	109.37
			TOOTH(70)-EQ3749	1,577.23	203 4752207	1,577.23
			PUSH SWITCH-EQ3772	966.09	484 4752207	966.09
				<u>1,164.45</u>		<u>1,164.45</u>
7409551	L1353	COLE, DAVID	LCE-NEM PAYOUT	20.78	490 4250658	20.78
7409552	C0054	COLE-ROUS, JOHN	12/19-SPORTS OFFICIAL	120.00	101 4641308	120.00
7409553	00794	CORRALES, RUDY	12/19-SPORTS OFFICIAL	46.00	101 4641308	46.00
7409554	07545	COSTAR REALTY INFORMATION INC	12/19-PROFESSIONAL SERVICES	1,351.28	101 4240301	1,351.28
7409555	D4053	DEPT OF PUBLIC HEALTH	EDP-BACKFLOW FEES-AR0263625	37.00	101 4631301	37.00
			LMS-BACKFLOW FEES-AR0263626	37.00	101 4632301	37.00
			JRP-BACKFLOW FEES-AR0263629	37.00	101 4631301	37.00
			MP-BACKFLOW FEES-AR0263630	74.00	101 4631301	74.00
			PBP-BACKFLOW FEES-AR0263631	37.00	101 4631301	37.00
			EDP-BACKFLOW FEES-AR0263632	74.00	101 4631301	74.00
				<u>296.00</u>		<u>296.00</u>
7409556	A0925	DESERT HAVEN ENTERPRISES	1550 NEW GROVE-CLEAN OUT	224.72	363 4342770	224.72

City of Lancaster Check Register



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Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409557	00414	DESERT LOCK COMPANY	AHP-VANDALISM TO LOCK PADLOCKS(6)	57.50 121.09 <u>178.59</u>	101 4631402 101 4634404	57.50 121.09 <u>178.59</u>
7409558	09191	DESIGNERS TOUCH LANDSCAPE INC	JRP-LANDSCAPE RENOVATIONS	24,850.00	212 11ZZ006924	24,850.00
7409559	08839	DUKE ENGINEERING AND ASSOCS	MTNC YD-AS-BUILT FLOOR PLAN	2,837.50	229 11BS019924	2,837.50
7409560	05665	EGGERTH, DARRELL	12/19-SPORTS OFFICIAL	161.00	101 4641308	161.00
7409561	L1638	FARIAS, JASON	LCE-NEM PAYOUT	1.25	490 4250658	1.25
7409562	00617	FEDERAL EXPRESS CORPORATION	EXPRESS MAILING	47.75 <u>47.75</u>	101 4245212 101 4410212	26.23 21.52 <u>47.75</u>
7409563	09588	FERGUSON ENTERPRISES, LLC	JRP-DRINKING FOUNTAINS(2)	13,149.98 <u>13,149.98</u>	212 4631764 212 4631764	124.95 13,025.03 <u>13,149.98</u>
7409564	A9988	FIRE ACE INC	OMP-FIRE SPRINKLER SYST REPAIR	21,750.00	101 4634402	21,750.00
7409565	08441	FRANKLIN TRUCK PARTS INC	BRAKE DRUM-EQ3769	830.23	203 4752207	830.23
7409566	L1639	GARCIA, MARIANN A	LCE-NEM PAYOUT	7.32	490 4250658	7.32
7409567	04721	GET TIRES, INC	TIRES(8)/TIRES(2)-EQ3783 TIRES(2)/SRVC CLL-EQ3826	5,657.49 793.57 <u>6,451.06</u>	203 4752207 203 4752207	5,657.49 793.57 <u>6,451.06</u>
7409568	L1640	GREEN, DIONDRE	LCE-NEM PAYOUT	0.17	490 4250658	0.17
7409569	L1641	GUINN, NANCY	LCE-NEM PAYOUT	57.06	490 4250658	57.06
7409570	00849	HAAKER EQUIPMENT CO	AIR CYLINDER-EQ3779	355.13	480 4755207	355.13
7409571	03579	HEIN, ARLETH	12/19-SPORTS OFFICIAL	349.00	101 4641308	349.00
7409572	L1427	HEMENWAY, STACEY	LCE-NEM PAYOUT	8.73	490 4250658	8.73
7409573	819	HERC RENTALS INC	CH-EQUIPMNT RNTL-11/2/19 MBC-GENERATOR/LIGHT RNTLS	108.05 2,649.70 <u>2,757.75</u>	101 4634602 101 4649565	108.05 2,649.70 <u>2,757.75</u>
7409574	L1642	HERRERA, FELIX ANTONIO	LCE-NEM PAYOUT	0.61	490 4250658	0.61
7409575	D0501	HIESL CONSTRUCTION INC	123 E AVE J2-NSP1 RDVLPMT	595.00	363 4342770	595.00
7409576	09760	IDEMIA IDENTITY & SECURITY USA	ANNUAL MAINTENANCE-12/19-11/20	1,599.00	101 4315402	1,599.00
7409577	D3626	INLAND EMPIRE REG CMPSTNG AUTH	COMPOST	375.00	101 4635404	375.00

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Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409578	A2594	INTERSTATE BATTERY SYS OF A V	BATTERY-EQ5500	156.37	101 4783207	156.37
			BATTERIES(2)-EQ5621	183.22	101 4600207	183.22
			BATTERIES(2)-EQ3980	362.15	483 4785207	362.15
			BATTERIES(2)-EQ3981	362.15	483 4785207	362.15
				<u>1,063.89</u>		<u>1,063.89</u>
7409579	05804	ITERIS, INC	MTNC YD-EQUIPMENT UPGRADE	23,493.23	211 4785763	23,493.23
7409580	01419	JOHNSTONE SUPPLY	EPL-HEATER SUPPLY	163.44	101 4631403	163.44
7409581	09709	KHJR REAL ESTATE ADVISORY SRV	11/19-HEALTH DSTRCT SVCS	14,610.67	101 4240301	14,610.67
7409582	C7873	LANCASTER AUTO MALL ASSOC	12/19-AUTO MALL SIGN EXPENSES	185.17	101 4240340	185.17
7409583	09417	MALDONADO, ARIEL	12/19-SPORTS OFFICIAL	161.00	101 4641308	161.00
7409584	L1643	MANNING, JEFFREY	LCE-NEM PAYOUT	1.37	490 4250658	1.37
7409585	L0837	MARTIN, DAISY	LCE-NEM PAYOUT	332.82	490 4250658	332.82
7409586	06663	MASON, MELINDA	WREATHS ACROSS AMER-DAY PHOTOS	150.00	101 4100205	150.00
7409587	09797	MCA DIRECT	MUNI ELECTION HANDBOOK(2020)	235.93	101 4210262	235.93
7409588	09803	MCFADDEN, DAYONA	RFND-DAMAGE DEPOSIT FEE	259.00	101 2182001	259.00
7409589	02270	MELDON GLASS	LMS-LOBBY DOOR REPAIR	430.00	101 4632402	430.00
7409590	01184	MONTE VISTA CAR WASH	CAR WASHES(18)	336.00	101 4200207	18.00
					101 4200207	19.00
					101 4245207	19.00
					101 4245207	19.00
					101 4300207	18.00
					101 4410207	18.00
					101 4640207	19.00
					101 4640207	19.00
					101 4647207	19.00
					101 4647207	19.00
					101 4647207	19.00
					101 4647207	19.00
					101 4753207	19.00
					101 4783207	19.00
					101 4800207	18.00
					101 4800207	18.00
					101 4800207	18.00
					101 4800207	19.00
					480 4755207	19.00
				<u>336.00</u>		<u>336.00</u>
7409591	L1644	MORENO, JOSE	LCE-NEM PAYOUT	11.76	490 4250658	11.76
7409592	05773	MORRISON WELL MAINTENANCE	NSC-11/19-BACTERIOLOGICAL TEST	200.00	101 4635301	200.00

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7409593	09802	MRC MEDIA, LLC	ADVR-HOLLYWD REPORTR(12/13/19)	935.00	101 4601251	935.00
7409594	08562	NAPA AUTO PARTS	OIL FILTER-EQ3989	7.93	480 4755207	7.93
			BLWR MTR SSMBL-EQ3825	85.00	101 4245207	85.00
			IGNITION WIRE-EQ6807	109.50	101 4245207	109.50
			BLWR MTR SSMB-EQ3825	78.37	101 4245207	78.37
			IGNITION COIL-EQ6807	94.98	101 4245207	94.98
			CDT/BLWR MTR SSMBL-EQ3825	(85.00)	101 4245207	(85.00)
			OIL FILTER-EQ3412	3.76	203 4752207	3.76
			SHOCKS(2)-EQ3412	104.84	203 4752207	104.84
			OIL FILTER-EQ1515	4.28	101 4800207	4.28
			PUMP ASSEMBLY-EQ4360	975.11	203 4785207	975.11
			STP LGHT SWTCH-EQ5654	23.47	101 4635207	23.47
			BTTRY CBL TRMNL-EQ5654	16.32	101 4635207	16.32
			OIL FILTER-EQ4337	3.74	203 4785207	3.74
			LQPLSTC ADHSV-EQ3980	23.64	483 4785207	23.64
			SRPNTN BELT-EQ6822	32.40	101 4245207	32.40
			AC BELT-EQ6822	57.10	101 4245207	57.10
			HYD HS FTTNGS-EQ5846	60.45	101 4635207	60.45
				<u>1,595.89</u>		<u>1,595.89</u>
7409595	06513	ODYSSEY POWER	MTNC YD-GENERATOR MAINTENANCE	745.00	203 4752402	745.00
			MTNC YD-GENERATOR MAINTENANCE	365.00	203 4752402	365.00
			MTNC YD-GENERATOR MAINTENANCE	708.75	203 4752402	708.75
			GENERATORS REPAIRS/MTNC	1,541.16	480 4755402	1,541.16
				<u>3,359.91</u>		<u>3,359.91</u>
7409596	07540	OFFICETEAM	KG-FIN STAFF-11/25-29/19	1,561.78	101 4410308	1,561.78
			KG-FIN STAFF-12/02-06/19	2,015.20	101 4410308	2,015.20
			KG-FIN STAFF-12/09-13/19	2,015.20	101 4410308	2,015.20
				<u>5,592.18</u>		<u>5,592.18</u>
7409597	L1645	OLSEN, AMBER	LCE-NEM PAYOUT	9.88	490 4250658	9.88
7409598	L0349	ORTIZ FLORES, JOSE	LCE-NEM PAYOUT	218.09	490 4250658	218.09
7409599	A7221	P E R S LONG TERM CARE PROGRAM	LONG TERM CARE PREM-PP 26/2019	871.01	101 2170200	871.01
7409600	05741	P P G ARCHITECTURAL FINISHES	LMS-HANDRAIL/GREEN PAINT	124.67	101 4632403	124.67
			JRP-PAINT SUPPLIES	218.57	101 4631403	218.57
			JRP-PAINT SUPPLIES	33.44	101 4631403	33.44
			GRAFFITI REMOVAL SUPPLIES	19.67	203 4752502	19.67
			GRAFFITI REMOVAL SUPPLIES	191.11	203 4752502	191.11
			GRAFFITI REMOVAL SUPPLIES	72.62	203 4752502	72.62
			JRP-PAINT SUPPLIES	95.05	101 4631403	95.05
			MP-PAINT SULPPLIES	89.18	101 4631403	89.18
			JRP-SHELTER PAINT	166.22	101 4631403	166.22
			GRAFFITI REMOVAL SUPPLIES	90.16	203 4752502	90.16
				<u>1,100.69</u>		<u>1,100.69</u>
7409601	06984	PACIFIC DESIGN & INTEGRATION	PROMAX PROCARE RENEWAL	7,485.00	101 4307296	7,485.00

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7409602	02169	PATTON'S METAL WORKING	BASE PLATES(6)-EQ3771	43.07	203 4752207	43.07
7409603	06709	PRICE, ROGER	12/19-SPORTS OFFICIAL	64.00	101 4641308	64.00
7409604	06160	PRIME TIME PARTY RENTALS	MBC-TABLES/CHAIRS/LIGHTS/WGHTS	2,700.00	101 4649565	2,700.00
7409605	06087	PRIORITY AUTO GLASS	FRONT DOOR GLASS-EQ1746 WINDSHIELD KIT-EQ1715	140.00 230.02 <u>370.02</u>	101 4300207 101 4640207	140.00 230.02 <u>370.02</u>
7409606	09664	PROMO DOG, INC	MOAH-TEES (25)	232.00	101 4653209	232.00
7409607	04361	PROTECTION ONE	LMS-12/19-ALARM MONITORING LMS-12/19 ELEVATOR MAINTENANC	52.02 37.58 <u>89.60</u>	101 4632301 101 4632301	52.02 37.58 <u>89.60</u>
7409608	06607	PUMPMAN INC	PAC-SEWAGE PUMP SYSTEM REPAIR	4,225.00	101 4650402	4,225.00
7409609	06313	R C BECKER & SON, INC	PWCP17-012-PAY REQUEST(#7) PWCP17-005-PAY REQUEST(#1)	278.36 2,152.40 <u>2,430.76</u>	101 4761301 101 4761301	278.36 2,152.40 <u>2,430.76</u>
7409610	L1540	RAYA, MARISSA	LCE-NEM PAYOUT	20.66	490 4250658	20.66
7409611	07002	READYREFRESH BY NESTLE	11/19-WTR COOLER RENTAL	84.83	101 4650301	84.83
7409612	C4435	ROACH'S TERMITE PEST CONTROL	RDP-09/19 PEST CONTROL RDP-05/19 PEST CONTROL RDP-06/19 PEST CONTROL NSC-07/19 PEST CONTROL RDP-07/19 PEST CONTROL RDP-08/19 PEST CONTROL NSC-09/19 PEST CONTROL OMP-09/19 PEST CONTROL RDP-11/19 PEST CONTROL	65.00 65.00 65.00 185.00 65.00 65.00 185.00 190.00 65.00 <u>950.00</u>	101 4634301 101 4634301 101 4634301 101 4635301 101 4634301 101 4634301 101 4635301 101 4634301 101 4634301	65.00 65.00 65.00 185.00 65.00 65.00 185.00 190.00 65.00 <u>950.00</u>
7409613	09764	ROBERTS, SHAWNO	12/19-SPORTS OFFICIAL	168.00	101 4641308	168.00
7409614	L1646	RUST, CORY	LCE-NEM PAYOUT	116.40	490 4250658	116.40
7409615	D3947	S G A CLEANING SERVICES	LMS-FENCE REPAIR JRP-COUNTER TOP MATERIALS JRP-COUNTER TOPS LMS-IRRIGATION REPAIRS JRP-VENT REPAIRS JRP-INST DRINKING FOUNTAIN STP-INSTALLATIONS PARTITIONS JRP-FLOOR WAX EDP-GRAFFITI REMOVAL	285.00 220.00 450.00 760.00 435.00 985.00 990.00 380.00 385.00 <u>4,890.00</u>	101 4632402 101 4631403 101 4631403 101 4632402 101 4631403 101 4631403 101 4635403 101 4631403 101 4631301	285.00 220.00 450.00 760.00 435.00 985.00 990.00 380.00 385.00 <u>4,890.00</u>

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7409616	03962	SAFETY KLEEN	HAZ WASTE PARTS WASHER	141.41	101 4753657	141.41
7409617	A8260	SAGE STAFFING	SO-PBLC SFTY STF-12/02-08/19	497.86	101 4820308	497.86
7409618	C3064	SANTOS, RENALDO	12/19-SPORTS OFFICIAL	207.00	101 4641308	207.00
7409619	1919	SAV-ON FENCE COMPANY	STP-REMOVE/REPAIR DAMGED CHAIN	1,900.00	101 4631404	1,900.00
7409620	05934	SHI INTERNATIONAL CORP	CONSULTATION-11/7-11/20/19	4,200.00	101 4315301	4,200.00
7409621	01816	SMITH PIPE & SUPPLY INC	WCP-IRRIGATION SUPPLIES	91.78	101 4631404	91.78
			JRP-IRRIGATION SUPPLIES	48.71	101 4631404	48.71
			JRP-IRRIGATION SUPPLIES	465.42	101 4631404	465.42
			JRP-IRRIGATION SUPPLIES	30.81	101 4631404	30.81
			TBP-IRRIGATION SUPPLIES	258.34	101 4631404	258.34
			TBP-IRRIGATION SUPPLIES	236.14	101 4631404	236.14
				<u>1,131.20</u>		<u>1,131.20</u>
7409622	D2143	STREAMLINE AUDIO VISUAL, INC	MBC-AUDIO RNTL/ENGR-02/14/19	2,954.50	101 4649565	2,954.50
7409623	1531	SUBURBAN PROPANE	TBP-PROPANE TANK LEASE	40.00	101 4631402	40.00
7409624	C8057	SUNBELT RENTALS	LMS-LIFT RENTAL (FOD)	901.39	101 4632602	901.39
7409625	A1393	TEAMSTERS LOCAL 911	12/19 UNION DUES	3,068.00	101 2157000	3,068.00
7409626	08177	TEKWERKS	01/20-REMOTE MONITORING/MNGMNT	1,355.00	101 4315402	1,355.00
7409627	06962	TEN8 UNIFORMS	RANGERS UNIFORMS	314.04	101 4647209	314.04
7409628	2009	THE TIRE STORE	TIRES(4)-EQ1515	389.40	101 4800207	389.40
7409629	C5522	THOMSON REUTERS-WEST PMT CENT	11/19-INFORMATION CHARGES	826.79	101 4245301	826.79
7409630	04239	TIM WELLS MOBILE TIRE SERVICE	STL WHL VST SSTM-EQ3384	652.89	203 4752207	652.89
			SERVICE CALL-EQ5853	135.00	101 4635207	135.00
			SERVICE CALL-EQ3415	137.82	480 4755207	137.82
			TIRES(2)/MNT/DSMNT-EQ5846	1,312.87	101 4635207	1,312.87
				<u>2,238.58</u>		<u>2,238.58</u>
7409631	09754	TOYOTA OF LANCASTER	RSC-PURCHASES-11/29/19	3,000.00	490 4250772	3,000.00
7409632	D3099	TPX COMMUNICATIONS	12/19-TELEPHONE SERVICE	10,995.27	101 4315651	10,995.27
7409633	L0899	TRAN, MICHAEL	LCE-NEM PAYOUT	65.06	490 4250658	65.06
7409634	09696	TURF ROBOTICS LLC	GPS PAINT MACHINE	28,470.00	101 4635753	28,470.00
7409635	07923	ULTRASYSTEMS ENVIRONMENTAL INC	CP19002-CONSULTING SVC	8,100.00	210 12ST039924	8,100.00
7409636	A2124	UNDERGROUND SERVICE ALERT/SC	12/19-TICKETS(160)	274.00	484 4752301	274.00

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			CA STATE FEE FOR REGLTRY COSTS	162.55	484 4752311	162.55
				436.55		436.55
7409637	08783	UNIFIRST CORPORATION	UNIFORM CLEANINGS	106.10	480 4755209	106.10
7409638	L1647	VOLKMAR, LINDA	LCE-NEM PAYOUT	10.51	490 4250658	10.51
7409639	04496	VULCAN MATERIAL WESTERN DIV	FINANCE CHARGE	101.21	203 4752410	101.21
			FINANCE CHARGE	58.39	203 4752410	58.39
			ASPHALT	3,946.69	101 4649568	3,946.69
			COLD MIX	130.31	203 4752410	130.31
			COLD MIX	234.33	203 4752410	234.33
			COLD MIX	104.85	203 4752410	104.85
			COLD MIX	347.66	203 4752410	347.66
			COLD MIX	128.66	203 4752410	128.66
			COLD MIX	211.61	203 4752410	211.61
			COLD MIX	380.51	203 4752410	380.51
			COLD MIX	171.37	203 4752410	171.37
			COLD MIX	340.27	203 4752410	340.27
			COLD MIX	338.63	203 4752410	338.63
			COLD MIX	292.64	203 4752410	292.64
			COLD MIX	103.20	203 4752410	103.20
			ASPHALT	225.88	203 4752410	225.88
			COLD MIX	108.95	203 4752410	108.95
			COLD MIX	89.24	203 4752410	89.24
			COLD MIX	221.19	203 4752410	221.19
				7,535.59		7,535.59
7409640	D3242	ZIMMER, DANIEL	12/19-SPORTS OFFICIAL	92.00	101 4641308	92.00
7409641	05771	ZONES, INC	WIRELESS ACCESS POINT	1,159.12	101 4631404	1,159.12
			WIRELESS ACCESS POINT	803.30	101 4631404	803.30
				1,962.42		1,962.42
7409642	05635	ALL AMERICAN ASPHALT	CP19001-2019 PVMNT MNGMNT PRGR	94,061.16	150 2100003	(4,950.59)
					209 12ST038	4,950.59
					209 12ST038	94,061.16
				94,061.16		94,061.16
7409643	04231	D M R TEAM, INC	CP21006-SR-138 AVE K INTRCHNG	73,296.00	210 15BR004924	73,296.00
7409644	05635	ALL AMERICAN ASPHALT	CP19001-2019 PVMNT MNGMNT PRGR	1,531,258.75	150 2100003	(59,791.12)
					150 2100003	(15,801.45)
					150 2100003	(5,000.00)
					203 12ST038924	59,791.12
					203 12ST038924	1,136,031.20
					211 12ST038924	5,000.00
					211 12ST038924	95,000.00
					232 12ST038924	15,801.45
					232 12ST038924	300,227.55
				1,531,258.75		1,531,258.75

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7409645	D3517	AMERICASPRINTER.COM	MOAH-CATALOGS(2500)	2,091.08	101 4653205	2,091.08
7409646	09636	BATTERY JACK INC	METAL DETECTOR	2,056.08	101 2175000	(18.95)
			METAL DETECTOR	781.20	101 4200295	2,075.03
					101 2175000	(7.20)
					101 4200295	788.40
				<u>2,837.28</u>		<u>2,837.28</u>
7409647	08329	E C S IMAGING INC	PRJCT MANAGEMENT/CONSLTNG SVCS	31,722.00	101 4315302	31,722.00
7409648	D3240	FASTENAL COMPANY	PERENNIAL RYE BLEND	9,855.00	101 4635404	9,855.00
7409649	09083	INT'L BUSINESS MACHINES CORP	WATSON DATA PLATFORM CONSULTNG	40,000.00	101 4240301	40,000.00
7409650	03366	JAS PACIFIC	PLAN REVIEW/INSPECTION SVCS	7,610.82	101 4783301	7,610.82
			PLAN REVIEW/INSPECTION SVCS	15,062.50	101 4783301	15,062.50
				<u>22,673.32</u>		<u>22,673.32</u>
7409651	08895	JPW COMMUNICATIONS, LLC	WINTER 2019 OUTLOOK DESIGN	16,400.00	101 4305301	16,400.00
7409652	03762	OFFICE DEPOT	IT-WORKSTATION(20)	25,945.59	101 4315291	25,945.59
7409653	09160	ST. FRANCIS ELECTRIC, LLC	10/19-STREET LIGHTING RPSNSE	11,844.00	203 4785461	11,844.00
			10/19-STREET LIGHTING MTNC	6,355.00	483 4785460	6,355.00
			10/19-STREET LIGHTING MTNC	4,406.00	203 4785461	4,406.00
			10/19-STREET LIGHTING MTNC	1,139.00	483 4785660	1,139.00
			10/19-STREET LIGHTING MTNC	804.00	483 4785460	804.00
				<u>24,548.00</u>		<u>24,548.00</u>
7409654	D2143	STREAMLINE AUDIO VISUAL, INC	PAC-AUDIO RNTL/ENGINR-12/02/19	3,335.00	101 4650602	3,335.00
7409655	2501	ZUMAR INDUSTRIES, INC	TRAFFIC CONTROL SIGNS/HARDWARE	2,173.10	203 4785455	2,173.10
7409656	06211	HARDY & HARPER, INC.	CP17003-2017 PVMNT MNGMNT PRGM	430,956.30	150 2100003	(17,204.46)
					150 2100003	(5,477.45)
					206 12ST040924	5,477.45
					206 12ST040924	104,071.56
					210 12ST036924	17,204.46
					210 12ST036924	326,884.74
				<u>430,956.30</u>		<u>430,956.30</u>
7409657	09069	ACTON ICE DELIVERY	OMP-SNOW(10TONS)	1,800.00	101 4640251	1,800.00
7409658	08754	CA MUNICIPAL COMPLNCE CNSLTNTS	12/19-PS-CONSULTING SVCS	25,917.00	101 4820301	25,917.00
7409659	D0775	CAUDLE, JASON	JC-PR DM-SACRAMENTO-1/22-24/20	165.00	101 4200202	165.00
7409660	09807	DORRIS, DARRELL	DD-PR DM-SACRAMENTO-1/22-24/20	165.00	101 4100201	165.00
7409661	1215	L A CO WATERWORKS	10/21/19-12/20/19 WATER SVC	8,304.15	482 4636654	8,304.15

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7409662	D2287	LANCASTER CODE ENFRMNT ASSN	UNION DUES-PP 1/2020	360.00	101 2171000	360.00
7409663	09372	MELLENDEZ, ROBERTO	RM-MILEAGE-ONTARIO-12/12/19	45.75	101 4220256	45.75
7409664	03154	SO CA EDISON	12/01/19-01/01/20 ELECTRIC SVC	91.02	483 4785660	91.02
7409665	03154	SO CA EDISON	10/15/19-12/21/19 ELECTRIC SVC	167.34	482 4636652	84.90
					484 4755652	82.44
				167.34		167.34
7409666	03154	SO CA EDISON	11/22/19-01/03/20 ELECTRIC SVC	1,539.38	203 4636652	167.53
					482 4636652	1,128.06
					483 4785660	72.13
					484 4755652	171.66
				1,539.38		1,539.38
7409667	03154	SO CA EDISON	09/05/19-01/03/20 ELECTRIC SVC	19,274.89	101 4240902	440.12
					101 4632652	945.59
					101 4633652	1,654.96
					101 4634652	3,189.03
					101 4650652	12,643.50
					209 12ST032924	71.07
					232 15BW005924	33.72
					232 16ST005924	51.67
					321 15ST026924	28.80
					363 4342770	23.98
					483 4785660	192.45
				19,274.89		19,274.89
7409668	D2990	SO CA GAS COMPANY	RIGHT OF WAY-QUITCLAIM FEE	350.00	306 4240900D	350.00
7409669	1907	SO CA GAS COMPANY	11/13/19-12/19/19 GAS SVC	18,083.86	101 4631655	4,913.64
					101 4633655	7,601.35
					101 4635655	703.49
					101 4650655	3,480.68
					101 4651655	1,082.76
					101 4800403	242.25
					363 4342770	59.69
				18,083.86		18,083.86
7409670	C2555	TIME WARNER CABLE	12/17/19-01/16/20-PRA INFO DSK	65.75	101 4315651	65.75
7409671	C2555	TIME WARNER CABLE	12/14/19-1/13/20 BROADBAND SVC	164.99	101 4315651	164.99
7409672	D2264	VARELA, MELISSA	MV-MLGE-SNTA BRBRA-11/12-15/19	138.04	101 4220256	138.04
7409673	C6406	WELLS, KATHY	KW-MILEAGE-HOUSTON-12/17-19/19	69.60	490 4250201	69.60
7409674	C6406	WELLS, KATHY	KW-PR DM-SACRAMNTO-01/22-24/20	165.00	490 4250201	49.50
					490 4250201	49.50
					490 4250201	66.00

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Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
				165.00		165.00
7409675	06576	A V CHEVROLET	INJECTOR CONNECTOR-EQ6807	327.05	101 4245207	327.05
7409676	03854	A V JANITORIAL SUPPLY	AHP-JANITORIAL SUPPLIES	361.08	101 4631406	361.08
			WCP-JANITORIAL SUPPLIES	1,829.75	101 4631406	1,829.75
				<u>2,190.83</u>		<u>2,190.83</u>
7409677	06849	ACCONTEMPS	SP-FINANCE STAFF-12/16-20/19	2,600.00	101 4410308	2,600.00
7409678	A8728	ALL THINGS ENGRAVABLE	JERSEYS(68)	807.54	101 4641251	807.54
7409679	04662	ALTEC INDUSTRIES INC	KIT/LABOR-EQ3980	1,180.41	483 4785207	1,180.41
7409680	C6143	AMERICAN BUSINESS MACHINES	IMAGE RUNNER ADV COPIER	8.00	101 4410254	8.00
7409681	04190	AMERIPRIDE SERVICES	UNIFORM CLEANINGS	91.02	101 4753209	91.02
			UNIFORM CLEANINGS	84.49	101 4753209	84.49
			UNIFORM CLEANINGS	64.77	101 4753209	64.77
			UNIFORM CLEANINGS	75.28	101 4753209	75.28
				<u>315.56</u>		<u>315.56</u>
7409682	L1648	ANDRINO, LUIS	LCE-NEM PAYOUT	15.95	490 4250658	15.95
7409683	C9805	ARROW TRANSIT MIX INC	READY MIX CONCRETE	608.44	484 4755409	608.44
7409684	D2995	ARTILLERY, LLC	MOAH-JAN/FEB 20-ADVERTISING	1,250.00	101 4653205	1,250.00
7409685	04151	AXES FIRE INC	FIRE CERTS(6)/HYDO TEST	92.00	101 4785207	12.00
					203 4752207	12.00
					203 4752207	12.00
					203 4752207	12.00
					203 4752207	12.00
					480 4755207	12.00
					480 4755207	12.00
				<u>92.00</u>		<u>92.00</u>
7409686	D0879	B'S EMBROIDERY ETC	EMBRDERY-JACKETS(24)	223.38	101 4633209	223.38
			POLO SHIRT(5)/VEST(2)	187.14	203 4785209	187.14
				<u>410.52</u>		<u>410.52</u>
7409687	09804	BAKER, BRENDEN	MAYORS SCHOLARSHIP AWARD RECPNT	1,000.00	106 4430200	1,000.00
7409688	01863	BAVCO	MTNN YD-BACKFLOW REPAIRS	90.97	203 4752404	90.97
7409689	06020	CANON FINANCIAL SERVICES, INC	12/19 COPIER LEASE	6,850.91	101 4410254	6,850.91
7409690	03475	CLARK AND HOWARD	TOWING-EQ6811	60.00	101 4245207	60.00
7409691	08484	CONSOLIDATED ELECTRCL DIST INC	JRP-LIGHTS	1,352.33	101 4631402	1,352.33
			CH-LIGHTING REPLACEMENT	1,204.50	101 4633403	1,204.50
				<u>2,556.83</u>		<u>2,556.83</u>

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7409692	09806	CRUEL REFLECTIONS	PERFORMANCE	50.00	101 4651251	50.00
7409693	09810	CRUZ, JAZMIN	AFTER SCHOOL PROGRM RFND	100.00	101 2182001	100.00
7409694	09159	CUSTOM TRUCK ONE SOURCE, L.P.	NNL NSPCTN RL DVC-EQ3980	1,020.00	483 4785207	1,020.00
7409695	07072	DELUXE SMALL BUSINESS SALES	CUSTOM SNAPSET(500)	608.45	101 4753214	608.45
7409696	00414	DESERT LOCK COMPANY	INCUBATOR-SERVICE TRIP	60.00	101 4636403	60.00
			CH-TBP-KEYS(4)	15.33	101 4633403	15.33
			CH-KEYS(8)	8.00	101 4633403	8.00
			CH-KEYS(4)	4.00	101 4633403	4.00
				<u>87.33</u>		<u>87.33</u>
7409697	05473	DEWEY PEST CONTROL	MOAH-11/22/19 CLEAN UP SERVICE	150.00	101 4651402	150.00
7409698	L1065	DHINSA, JASWINDER	LCE-NEM PAYOUT	3.74	490 4250658	3.74
7409699	06533	ENNIS-FLINT, INC.	STREET SIGNS/MARKINGS	1,610.89	203 4785454	1,610.89
7409700	D3240	FASTENAL COMPANY	MTNC YD-NUTDRIVER/ADAPTER/SETS	147.00	203 4785208	5.78
					203 4785208	37.45
					203 4785208	49.40
					203 4785208	54.37
			MTNC YD-SCRAPER/CONTRBAG/CYLND	2,444.30	331 4755785	36.64
					331 4755787	54.20
					480 4755208	129.35
					480 4755403	0.67
					480 4755403	11.89
					480 4755403	158.42
					480 4755405	191.63
					480 4755405	1,861.50
				<u>2,591.30</u>		<u>2,591.30</u>
7409701	09416	FAZIO, MATTHEW S.	12/19-LTV VIDEO PRODUCTION	520.00	101 4307296	520.00
			12/19-LTV VIDEO PRODUCTION	520.00	101 4307296	520.00
				<u>1,040.00</u>		<u>1,040.00</u>
7409702	07124	FIRST AMERICAN DATA TREE, LLC	12/19-PROFESSIONAL SERVICES	200.00	101 4230301	200.00
7409703	D1793	FISH WINDOW CLEANING	MTNC YD-WINDOW CLEANING	34.00	203 4752402	34.00
7409704	L0143	FLORES, JORGE	LCE-NEM PAYOUT	29.63	490 4250658	29.63
7409705	07807	FLORES, ULISES	LCE-NEM PAYOUT	273.25	490 4250658	273.25
7409706	07665	FRONTIER ENERGY INC	11/19-PROFESSIONAL SERVICES	4,097.00	490 4250770	4,097.00
7409707	09103	G & F LIGHTING SUPPLY	MTNC YD-CF23/SMS/41-46	376.95	483 4785665	376.95
7409708	C9980	GRANICUS, INC	01/18-PRFRMNCE ACCELERATOR STE	3,600.00	101 4315291	3,600.00

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7409709	C7863	GREEN SET, INC	MBC-RENTAL ITEMS	8,917.68	101 4649565	8,917.68
7409710	00822	H W HUNTER, INC	AD MODULE-EQ3307	314.15	484 4752207	314.15
7409711	09760	IDEMIA IDENTITY & SECURITY USA	SYSTEM UPGRADE	2,906.50	101 2175000	(99.28)
					101 4315302	3,005.78
				<u>2,906.50</u>		<u>2,906.50</u>
7409712	09070	INSIGHT NORTH AMERICA LLC	11/19-INVESTMENT ADVISORY SRVC	2,853.33	101 3501110	2,853.33
7409713	A2594	INTERSTATE BATTERY SYS OF A V	BATTERIES(10)	1,179.04	101 4245207	122.84
					101 4783207	103.70
					101 4785207	245.68
					203 4752207	108.73
					203 4752207	116.80
					203 4752207	122.84
					480 4755207	243.67
					483 4785207	114.78
			BATTERIES(5)	519.86	101 4631207	55.70
					101 4635207	122.84
					203 4752207	114.78
					480 4755207	103.70
					480 4755207	122.84
				<u>1,698.90</u>		<u>1,698.90</u>
7409714	01419	JOHNSTONE SUPPLY	3SPD BLOWER MOTOR	120.69	101 4633403	120.69
7409715	D1903	KERN MACHINERY INC-LANCASTER	SEAT/CSHN KT-EQ5846	521.10	101 4635207	521.10
7409716	A8656	KIMLEY-HORN & ASSOCIATES INC	CP16008-PEDESTRIAN GAP CLOSURE	29,480.00	232 15SW016924	29,480.00
7409717	L1649	LANG, CRISTINA	LCE-NEM PAYOUT	146.17	490 4250658	146.17
7409718	D1736	LEVEL 3 COMMUNICATIONS LLC	12/19-INTERNET/DATA	4,415.86	101 4315651	4,415.86
7409719	L1650	MANCINO, JOHN D	LCE-NEM PAYOUT	96.47	490 4250658	96.47
7409720	02270	MELDON GLASS	CDR ST-INSTALLED TEMP GLASS	318.00	101 4633403	318.00
7409721	07980	MOORE, JACK T	12/19-EQUIPMENT MAINTENANCE	199.03	101 4633402	199.03
7409722	L0325	MUELLER, MICHAEL	LCE-NEM PAYOUT	50.24	490 4250658	50.24
7409723	L0661	MURAVEZ, ERIC	LCE-NEM PAYOUT	17.13	490 4250658	17.13
7409724	08562	NAPA AUTO PARTS	BACK UP ALARM-EQ5862	27.80	101 4632207	27.80
			STRCH FT BLT-EQ6822	51.44	101 4245207	51.44
			SCREW-EQ5839	1.66	101 4635207	1.66
			FL PMP SSMBL-EQ3307	<u>244.32</u>	484 4752207	<u>244.32</u>
				325.22		325.22

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					101 4640207	12.95
					101 4640207	12.95
					101 4641207	2.00

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					101 4641207	12.95
					101 4647207	2.00
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					484 4752207	2.00
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					484 4752207	12.95
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					484 4755207	2.00
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			SEPT '19 GPS MONITORING SVC/ID	2,182.70	101 4200207	2.00
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					101 4753207	2.00
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					101 4753207	2.00

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					203 4752207	2.00
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					203 4752207	2.00
					203 4752207	2.00
					203 4752207	12.95
					203 4752207	12.95
					203 4752207	12.95
					203 4752207	12.95

City of Lancaster Check Register



From Check No.: 7409495 - To Check No.: 7409768

From Check Date 12/22/19 - To Check Date: 01/11/20

Printed: 1/13/2020 12:03

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
					480 4755207	12.95
					480 4755207	12.95
					480 4755207	12.95
					480 4755207	12.95
					480 4755207	12.95
					480 4755207	12.95
					483 4785207	2.00
					483 4785207	2.00
					483 4785207	2.00
					483 4785207	2.00
					483 4785207	2.00
					483 4785207	2.00
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					483 4785207	12.95
					483 4785207	12.95
					483 4785207	12.95
					483 4785207	12.95
					483 4785207	12.95
					484 4752207	2.00
					484 4752207	2.00
					484 4752207	12.95
					484 4752207	12.95
					484 4752207	12.95
					484 4755207	2.00
					484 4755207	12.95
				4,365.40		4,365.40
7409726	06513	ODYSSEY POWER	OMP-GENERATOR SERVICE CALL	708.75	101 4634402	708.75
7409727	07540	OFFICETEAM	KG-FIN STAFF-12/23-27/19	654.94	101 4410308	654.94
7409728	09805	OLIVA, IVAN	PERFORMANCE	50.00	101 4651251	50.00
7409729	05509	P A R S	10/19-REP FEES	5,107.33	101 4220301	5,107.33
7409730	A7221	P E R S LONG TERM CARE PROGRAM	LONG TERM CARE PREM-PP 1/2020	812.51	101 2170200	812.51
7409731	09275	PACIFIC COAST LOCATORS	DIG ALERT SERVICE	9,500.00	480 4755301	3,166.67
					483 4785301	3,166.66
					484 4755301	3,166.67
				9,500.00		9,500.00
7409732	07144	PALMDALE CHAMBER SINGERS	MBC-PERF-MUSIC-12/14/19	300.00	101 4649565	300.00
7409733	07249	PATRIOT PLUMBING	OMP-BACKFLOW INSTLLTN	815.50	101 4634402	815.50
			OMP-INSTLL HOT WATER HEATER	1,788.00	101 4634402	1,788.00
			44814 CEDAR-DRAIN REPAIRS	110.00	101 4800403	110.00
			BGC-URINAL STOPPAGE REPAIR	497.50	101 4633402	497.50
				3,211.00		3,211.00
7409734	05998	PAVING THE WAY FOUNDATION	CMMNTY SPPRT/GOOD CTZNSHP PRGM	500.00	101 4820301	500.00
			CMMNTY SPPRT/GOOD CTZNSHP PRGM	1,968.00	101 4820301	1,968.00
				2,468.00		2,468.00

City of Lancaster Check Register



From Check No.: 7409495 - To Check No.: 7409768

From Check Date 12/22/19 - To Check Date: 01/11/20

Printed: 1/13/2020 12:03

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409735	08967	PIONEER ATHLETICS	NSC-WHITE PAINT	1,368.76	101 4635404	1,368.76
7409736	06160	PRIME TIME PARTY RENTALS	OBSTACLE COURSE RENTAL	600.00	101 4640251	600.00
7409737	02996	PULLTARPS MFG	TARPS(3)-EQ3826	1,214.22	203 4752207	1,214.22
7409738	06607	PUMPMAN INC	07/19-06/20-QRTLTY PUMP MTNC	1,665.00	480 4755402	1,665.00
7409739	09297	QH HS ASSOC STUDENT BODY	MBC-PERFORMANCE-12/14/19	300.00	101 4649565	300.00
7409740	09298	QH HS ASSOC STUDENT BODY	MBC-PERFORMANCE-12/14/19	300.00	101 4649565	300.00
7409741	05864	QUINN COMPANY	STRNG SSTM/LABOR-EQ3394	1,794.96	203 4752207	1,794.96
7409742	L1651	RAMIREZ, PATRICIA	LCE-NEM PAYOUT	75.53	490 4250658	75.53
7409743	09230	RAUDA, RICHARD	MOAH-CONCERT PERFORMANCE	50.00	101 4651251	50.00
7409744	09513	REDSTONE GOVERNMENT CONSULTING	10/27-11/30/19-PROFESSNL SVCS	30,599.28	101 4220245	30,599.28
7409745	L1652	RETIZ, RAFAEL	LCE-NEM PAYOUT	4.12	490 4250658	4.12
7409746	D3947	S G A CLEANING SERVICES	JRP-WELDING REPAIR	220.00	101 4631402	220.00
			OMP-WELDING REPAIR	220.00	101 4634402	220.00
			OMP-RESTROOM REPAIR/PAINTING	360.00	101 4634402	360.00
			OMP-MATERIALS/PAINT FOR REPAIR	398.00	101 4634403	398.00
			OMP-LABOR FOR REPAIR/PAINTING	960.00	101 4634402	960.00
			JRP-SHELTER MATERIALS	1,990.00	101 4631403	1,990.00
			AHP-FENCE REPAIRS VANDALISM	750.00	101 4631402	750.00
				<u>4,898.00</u>		<u>4,898.00</u>
7409747	A8260	SAGE STAFFING	SO-PBLC SFTY STF-12/09-15/19	520.49	101 4820308	520.49
7409748	08196	SALEM, NISSIM	LCE-NEM PAYOUT	84.94	490 4250658	84.94
7409749	08126	SECURITY DEFENDERS	AHP/JRP-SCRITY SVC-12/12-20/19	1,485.00	101 4631301	1,485.00
7409750	1894	SIGNS & DESIGNS	NN-FACEPLATE	13.14	101 4300259	13.14
7409751	5210	SLATER PIANO SERVICE	PAC-PIANO TUNNG-LUTHERON CHOIR	100.00	101 4650301	100.00
7409752	08988	SMITH, CHRISTINA	12/21/19-1/3/20 CONSULTNG SRVS	2,885.00	101 4300301	2,885.00
7409753	09222	SNS CHOIRS	MBC-PERF-MUSIC-12/14/19	500.00	101 4649565	500.00
7409754	A0390	STOVER SEED COMPANY	NSC-GRAND SLAM FS(150)	1,971.00	101 4635404	1,971.00
7409755	05590	STUDIO EQUIPMENT RENTALS INC	OMP-GENERATOR RNTL-10/05-07/19	880.00	101 4640251	880.00
			FOD-GENERATOR RNTL-11/02-03/19	436.00	101 4649563	436.00
				<u>1,316.00</u>		<u>1,316.00</u>

City of Lancaster Check Register



From Check No.: 7409495 - To Check No.: 7409768

From Check Date 12/22/19 - To Check Date: 01/11/20

Printed: 1/13/2020 12:03

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
7409756	09316	TEKWERKS INTERNET	02/20-INTERNET SERVICE	1,575.00	101 4315651	1,575.00
7409757	09762	THE CREATIVE GROUP	AL-ACS STAFF-12/09-13/19	2,800.00	101 4307296	2,800.00
7409758	C5522	THOMSON REUTERS-WEST PMT CENT	11/19-INFORMATION CHARGES	421.28	101 4820301	421.28
7409759	04239	TIM WELLS MOBILE TIRE SERVICE	TIRE REPAIR-EQ4337	25.00	203 4785207	25.00
7409760	C6713	TRISTAR SAFETY SERVICES	SIGNAL ARROWBOARD-EQ4360	3,200.69	203 4785207	3,200.69
7409761	08783	UNIFIRST CORPORATION	UNIFORM CLEANINGS	117.51	480 4755209	117.51
			UNIFORM CLEANINGS	117.51	480 4755209	117.51
			UNIFORM CLEANINGS	117.51	480 4755209	117.51
			UNIFORM CLEANINGS	117.51	480 4755209	117.51
				<u>470.04</u>		<u>470.04</u>
7409762	05551	UNITED SITE SRVCS OF CA,SO DIV	FENCE RENTAL-11/07-12/04/19	19.72	101 4633602	19.72
7409763	2228	VALLEY CONSTRUCTION SUPPLY INC	MATTE BLACK HARD HAT(1)	33.93	101 4633293	33.93
7409764	09590	VIVINT INC	PS-SMRT HME SVC-12/25-01/24/20	73.53	101 4800301	73.53
7409765	D0298	WILLDAN FINANCIAL SERVICES	ARBITRAGE RBAT SRV-12/14-12/19	1,800.00	991 4240962	1,800.00
7409766	04627	Z A P MANUFACTURING INC	MTNC YD-H.I.P/INK CARTRIDGES	2,140.73	203 4785455	2,140.73
			MTNC YD-SIGN H.I.P(10)	200.20	203 4785455	200.20
			MTNC YD-SIGN H.I.P(8)	134.50	203 4785455	134.50
				<u>2,475.43</u>		<u>2,475.43</u>
7409767	08118	BYD ENERGY LLC	LED STREETLIGHTS(816)	227,738.10	217 16TS029924	227,738.10
7409768	09665	TERRACARE ASSOCIATES, LLC	09/19-IRRIGATION	616.73	203 4636404	616.73
			10/19-LMD MAINTENANCE	52,463.36	482 4636402	52,463.36
			10/19-PARKS LANDSCAPE MTNC	2,969.14	482 4636401	2,969.14
			10/19-PERIMETER AREAS MTNC	16,616.52	203 4636264	16,616.52
			10/19-IRRIGATION	1,768.54	203 4636404	1,768.54
			PLANTED TREES-AVE I/10TH/15TH	850.00	482 4636265	850.00
			11/19-IRRIGATION	652.92	203 4636404	652.92
			11/19-IRRIGATION	259.73	203 4636404	259.73
			11/19-LMD MAINTENANCE	52,463.36	482 4636402	52,463.36
			11/19-PARKS LANDSCAPE MTNC	2,969.14	482 4636401	2,969.14
				<u>131,629.44</u>		<u>131,629.44</u>

Chk Count 274

Check Report Total 3,289,633.81

City of Lancaster Check Register



From Check No.: 101010556 - To Check No.: 101010562

From Check Date 12/22/19 - To Check Date: 01/11/20

Printed: 1/13/2020 12:45

Check No	Supplier	Supplier Name	Invoice Description	Invoice Amt	Charge Code	GL Amount
101010556	05987	THE VISITORS BUREAU-LANCASTER	10/19 TBID FEES	46,142.01	101 2501000	46,142.01
101010557	00370	CITY OF LANCASTER/PETTY CASH	PETTY CASH DRAW	3,500.00	101 1020004	3,500.00
101010558	09509	ADP, LLC	ADP FEES-PE 12/07/19-12/20/19	688.21	101 4220301	688.21
			ADP FEES-PE 12/11/19-12/20/19	621.75	101 4220301	621.75
			ADP FEES-PE 11/30/19-12/27/19	70.00	101 4220301	70.00
			ADP FEES-PE 12/16/19-12/27/19	2,756.74	101 4220301	2,756.74
				<u>4,136.70</u>		<u>4,136.70</u>
101010559	08688	HIGH DESERT POWER PROJECT, LLC	11/19-ENERGY PROCUREMENT	37,500.00	490 4250653	37,500.00
101010560	00370	CITY OF LANCASTER/PETTY CASH	PETTY CASH DRAW	3,500.00	101 1020004	3,500.00
101010561	06606	SARGENT TOWN PLANNING INC	HEALTH DISTRICT MASTER PLAN	153,495.96	206 15ST058924	153,495.96
101010562	D2446	THE BLVD ASSOCIATION	DLPBID FEES-12/01-12/30/19	80,043.45	401 2501100	80,043.45
Chk Count	<u>7</u>			Check Report Total	<u>328,318.12</u>	

STAFF REPORT
City of Lancaster

CC 3
01/28/20
JC

Date: January 28, 2020
To: Mayor Parris and City Council Members
From: Pam Statsmann, Finance Director
Subject: **Monthly Report of Investments – December 2019**

Recommendation:

Accept and approve the December 2019 Monthly Report of Investments as submitted.

Fiscal Impact:

None

Background:

Each month, the Finance Department prepares a report listing the investments for all separate entities under the jurisdiction of the City as identified in the City’s Comprehensive Annual Financial Report.

Portfolio Recap

Yield:

	<u>December 2019</u>	<u>November 2019</u>
Total Portfolio	1.80%	2.04%
Local Agency Investment Fund	2.04%	2.10%
Total Portfolio Balance:	\$67,722,141	\$62,650,537

The portfolio balance increased from November to December by \$5,071,604 or 6.5%. Significant revenues for December included \$7,003,668 Property Tax, \$1,725,705 Sales & Use Tax, \$974,056 Commonwealth Land & Title, \$658,128 Highway Users Tax, \$472,928 MTA Proposition A & C, \$383,509 Miscellaneous Grants, and \$343,066 Measure M & R. The largest City expenditures were \$2,528,688 Payroll & Benefits related, \$2,277,524 to LA County Sheriff for November 2019 law enforcement services, \$1,622,851 for Capital Projects, and \$77,289 US Bank Cal-card.

The City’s temporary idle cash, those funds that are not immediately needed to pay current bills and not governed by bond indentures or bond resolutions, is invested in accordance with the City’s adopted Investment Policy. This policy is reviewed regularly by the City Council, with the latest policy adopted February 13, 2018, by Resolution No. 18-06.

The City's cash management system is designed to accurately monitor and forecast expenditures and revenues, thus enabling the City to invest funds to the fullest extent possible within the guidelines of this Investment Policy. The City attempts to achieve the highest yield obtainable through a diversified portfolio only after meeting the criteria established for safety and liquidity in that order. The principal investment objectives of the City are:

1. Preservation of capital and protection of investment principal;
2. Maintenance of sufficient liquidity to meet anticipated cash flows;
3. Attainment of a market rate of return;
4. Diversification to avoid incurring unreasonable market risks, and;
5. Compliance with the City's Municipal Code and with all applicable City resolutions, California statutes and Federal regulations.

The City's portfolio is a short-term and intermediate-term fixed income portfolio. The maximum maturity of any investment is 5 years, with consideration of anticipated cash flow requirements and known future liabilities. The City contracts with an investment advisory service (Insight Investment) to assist in the effort to maximize the returns of the City portfolio. The City's investments include publicly traded Treasury notes, Treasury Bills, Federal Agency Investments, Time Deposits, and Local Agency Investment Fund (LAIF) under the auspices of the State Treasurer for investment. Funds invested in LAIF are available within 24 hours, and other investments are available upon maturity at full face value. These investments enable the City to meet its expenditure requirements for the next six months, as required by state law.

The City's investment procedures are governed by Sections 53600 et. seq. of the California Government Code. Additional requirements have been placed on the City's authorized investments by the Investment Policy (a copy is available in the Finance Department or from the City Clerk), and all investments listed on the attached report adhere to these requirements.

PS:MA

Attachment:

Monthly Report of Investments

**ATTACHMENT A
CITY OF LANCASTER
MONTHLY REPORT OF INVESTMENTS
31-Dec-19**

	Interest Rate	Amount	Total
<u>City of Lancaster</u>			
Wells Fargo Bank			\$13,433,097
City of Lancaster Account (note 1)	0.00%	\$13,333,097	
Certificate of Deposit	0.10%	\$100,000.00	
Bank of America			\$100,000
Certificate of Deposit	0.05%	\$100,000.00	
U S Bank - Safekeeping (note 2)			\$40,176,390
Commercial Paper	0.00%	\$0	
US Treasury Notes	2.43%	\$19,830,308	
Federal Government Agencies	1.72%	\$6,935,166	
Corporate Securities	2.50%	\$11,780,930	
Municipal/Provincial Bonds	2.50%	\$1,531,545	
Cash & Equivalents	0.00%	\$98,441	
Chase Bank			\$150,934
Certificate of Deposit	0.01%	\$150,934.37	
Local Agency Investment Fund (L.A.I.F.)	2.04%	\$8,513,525	\$8,513,525
Total City of Lancaster			\$62,373,947
Successor Agency for the Lancaster Redevelopment Agency			
Local Agency Investment Fund (L.A.I.F.)	2.04%	\$5,348,194	\$5,348,194
Total Lancaster Successor Agency			\$5,348,194
Total Pooled Portfolio (note 3)			\$67,722,141
Weighted Average	1.80%		

**ATTACHMENT A
CITY OF LANCASTER
MONTHLY REPORT OF INVESTMENTS
31-Dec-19**

	Interest Rate	Amount	Total
River City Bank			\$4,005,280
Lancaster Choice Energy LockBox Account	0.00%	\$2,735,288	
CCEA Cash Collateral Account	2.21%	\$509,029	
CCEA Operating Account	0.00%	\$760,963	
The Bank of New York Mellon Trust Company, N.A.			\$1,483,822
LRA & LA County Escrow Account - Government Bonds	0.00%	\$1,483,822	
US Bank			\$80,935,315
CFD 89-1 1990 Special Bonds	1.47%	\$424	
LFA CFD 89-1 1997 Special Bonds	1.47%	\$1,775	
LFA L O BONDS 1997 SERIES A & B	0.56%	\$1,140,032	
LRA Combined 2004 Fire Protection Facilities Project Bonds	1.47%	\$854,908	
LRA Combined 2004 Sheriff Facilities Prjct Refunding Bonds	1.47%	\$1,806,015	
LRA Public Capital Facilities 2010 Project Lease Revenue Bond	1.47%	\$412,925	
LPA Solar Renewable Energy Issue of 2012A	1.47%	\$2,302,358	
SA Combined Project Areas Refunding Bonds 2015A & B	1.47%	\$488,958	
SA Combined Project Areas Refunding Bonds 2016 A-1 & A-2	1.47%	\$1,032,924	
SA Combined Project Areas Refunding Bonds 2016B	1.47%	\$972,303	
LFA 2016 Assessment Revenue Bonds (Streetlights Acquisition)	1.47%	\$799	
SA 2017 Tax Allocation Revenue Bonds (TARB)	1.47%	\$1,265,287	
LFA LRB 2018 Construction and Improvements	1.47%	\$15,315,315	
LFA 2018 Lease Revenue Bonds	1.47%	\$234	
LFA LRB 2019 Street Improvements	1.47%	\$55,341,059	
Total Restricted Cash/Investments Held in Trust		\$80,935,315	
Total Restricted Cash/Investments Held in Trust (note 4)			\$86,424,417

All investments are authorized pursuant to and consistent with the investment policy of the City of Lancaster. Policy adopted 02/13/18 under resolution number 18-06.

Pam Statsmann
Finance Director

**ATTACHMENT A
CITY OF LANCASTER
MONTHLY REPORT OF INVESTMENTS
December 31, 2019**

- (1) This is the actual City bank account balance as of 12/31/2019. It only reflects checks that have been presented for payment and deposits received by the bank. The balance on deposit per the City books would reflect reductions for all checks and warrants issued and all deposits transmitted.
- (2) This is the safekeeping account utilized for investing City funds pursuant and consistent with the investment policy adopted 02/13/2018. The current portfolio consists of treasury notes, government agencies, corporates, and CDs.

(3) Pooled Portfolio:

	<u>% of Portfolio</u>	<u>Policy Limit</u>
Cash	21.53%	None
CDs	0.56%	25% of total portfolio
Commercial Paper	0.00%	25% of total portfolio
US Treasury	31.79%	None
Federal Securities	11.12%	None
Corporate Securities	18.89%	30% of total portfolio
Municipal/Provincial	2.46%	None
LAIF	13.65%	None

- (4) These are restricted cash and investments are held in trust by the banks indicated. These amounts cannot be pooled for other investing.

City of Lancaster
Cash Balances by Fund
December 31, 2019

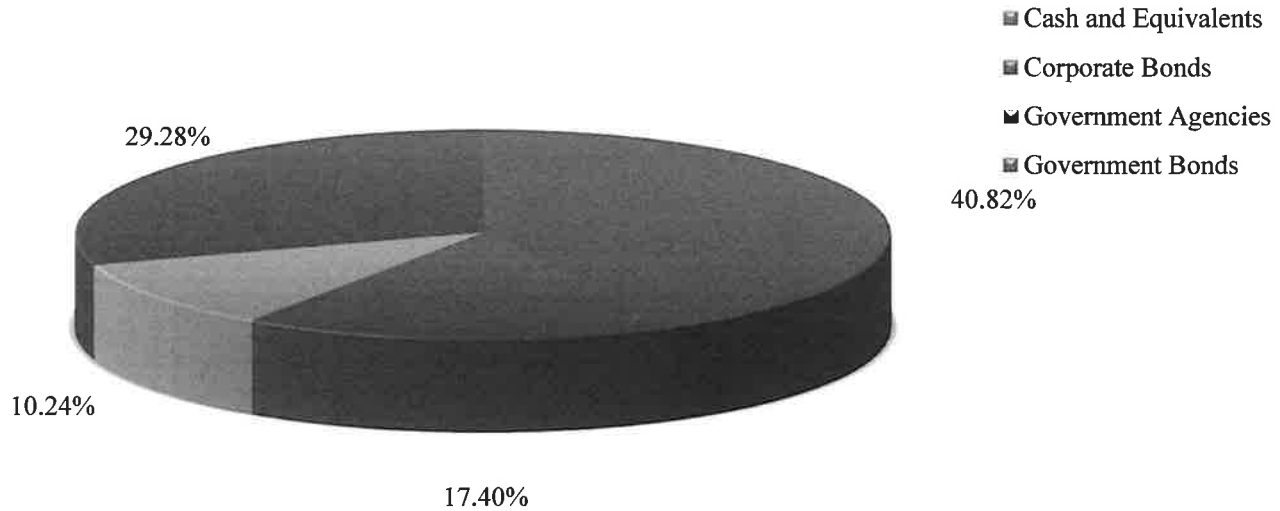
Fund No.	Fund Name	Ending Balance	Fund No.	Fund Name	Ending Balance
101	GENERAL FUND	\$ (4,710,454)	323	STATE GRANT - STPL	\$ -
104	CAPITAL REPLACEMENT FUND	\$ 1,274,524	324	STATE GRANT - OTS	\$ (5,389)
106	COMMUNITY SERVICES FOUNDATION	\$ 129,931	330	STATE GRANT RECYCLING	\$ 215,004
109	CITY SPECIAL RESERVES FUND	\$ 19,754,778	331	STATE GRANT - OIL RECYCLING	\$ 34,746
150	CAPITAL PROJECTS FUND - CITY	\$ (8,762,323)	349	MISC STATE GRANTS	\$ (169,409)
203	GAS TAX	\$ 3,164,424	361	CDBG	\$ (378,220)
204	AQMD	\$ (28,086)	363	NBRHD STABILIZATION PRGM	\$ 2,459,349
205	PROP 1B	\$ 185,277	364	HPRP-HOMELESS PREV & RAPID REH	\$ -
206	TDA ARTICLE 8 FUND	\$ (206,694)	391	LANCASTER HOME PROGRAM	\$ 865,542
207	PROP "A" TRANSIT FUND	\$ 2,138,183	399	FEDERAL MISCELLANEOUS GRANTS	\$ (1,797,337)
208	TDA ARTICLE 3 BIKEWAY FUND	\$ (48,736)	401	AGENCY FUND	\$ 346,149
209	PROPOSITION "C" FUND	\$ 6,003,460	402	PERFORMING ARTS CENTER	\$ (15,250)
210	MEASURE R FUND	\$ 2,590,598	404	GRANTS FUND	\$ -
211	MEASURE M FUND	\$ 4,274,598	408	X-AEROSPACE GRANTS FUND	\$ -
212	MEASURE A FUND	\$ (372,803)	456	STILL MEADOW LN SWR ASSMNT DST	\$ 6,588
213	PARKS DEVELOPMENT FUND	\$ 435,701	480	SEWER MAINT FUND	\$ 4,947,744
217	SIGNALS - DEVELOPER FEES FUND	\$ 2,420,927	482	LANDSCAPE MAINTENANCE DISTRICT	\$ 2,146,897
220	DRAINAGE - DEVELOPER FEES FUND	\$ 4,495,019	483	LIGHTING MAINTENANCE DISTRICT	\$ 388,889
224	BIOLOGICAL IMPACT FEE FUND	\$ 817,163	484	DRAINAGE MAINTENANCE DISTRICT	\$ 2,409,376
226	USP - OPERATION	\$ 2,569	485	RECYCLED WATER FUND	\$ 146,755
227	USP - PARKS	\$ 1,367,352	486	LANCASTER POWER AUTHORITY	\$ 2,720,197
228	USP - ADMIN	\$ 23,767	490	LANCASTER CHOICE ENERGY	\$ 4,385,491
229	USP - CORP YARD	\$ 159,400	491	CALIFORNIA CHOICE ENERGY AUTH	\$ 138,401
230	MARIPOSA LILY FUND	\$ 62,733	701	LANCASTER FINANCING AUTHORITY	\$ (872,635)
232	TRAFFIC IMPACT FEES FUND	\$ 1,862,296	810	ASSESSMENT DISTRICT FUND	\$ 154,596
233	DEVELOPER IN LIEU	\$ 100,856	811	AD 93-3	\$ 203,124
248	TRAFFIC SAFETY FUND	\$ 107,362	812	AD 92-101	\$ 91,530
251	ENGINEERING FEES	\$ -	830	CFD 89-1 EASTSIDE WATER FUND	\$ 260,321
252	PROP 42 CONGESTION MANAGEMENT	\$ 93,194	831	CFD 90-1 (BELLE TIERRA)	\$ 455,144
261	LOS ANGELES COUNTY REIMB	\$ (22,654)	832	CFD 91-1 (QUARTZ HILL)	\$ 777,371
301	LANCASTER HOUSING AUTH. OPS.	\$ 1,864,205	833	CFD 91-2 (LANC BUSINESS PARK)	\$ 438,874
306	LOW & MOD INCOME HOUSING	\$ 6,658,691	991	REDEV OBLIGATION RETIREMENT FD	\$ 3,566,229
321	MTA GRANT - LOCAL	\$ (1,362,289)			
				Total Cash Balance	\$ 68,393,046

* Variance from portfolio balance due to deposits in transit and outstanding checks at month end

**City of Lancaster
Recap of Securities Held
December 31, 2019**

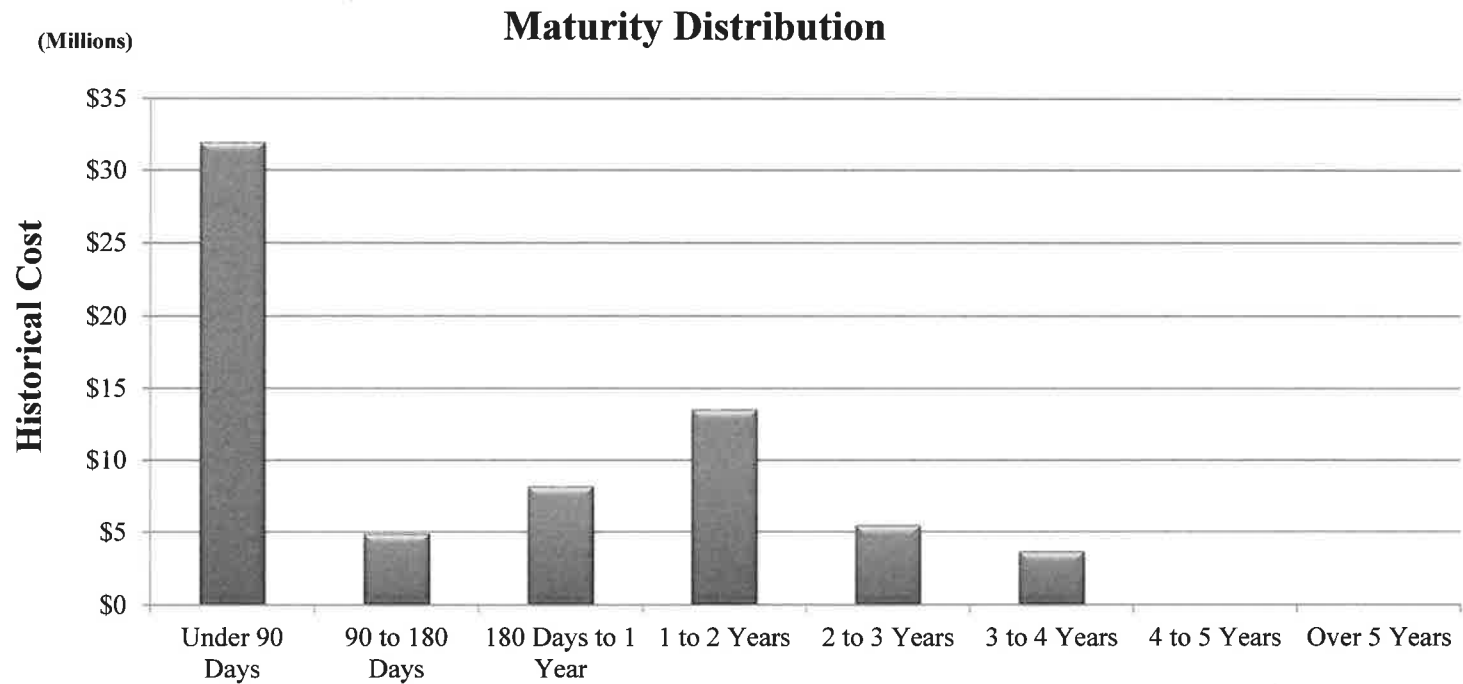
	Historical Cost	Amortized Cost	Fair Value	Unrealized Gain (Loss)	Weighted Average Effective	% Portfolio/ Segment	Weighted Average Market
Cash and Equivalents	\$27,644,192	\$27,644,192	\$27,644,192	\$0	1	40.82%	0.00
Corporate Bonds	\$11,780,930	\$11,789,980	\$11,856,860	\$66,880	425	17.40%	1.09
Government Agencies	\$6,935,166	\$6,909,600	\$6,911,343	\$1,743	358	10.24%	0.93
Government Bonds	\$19,830,308	\$19,811,851	\$19,990,736	\$178,886	616	29.28%	1.63
Municipal/Provincial Bonds	\$1,531,545	\$1,529,492	\$1,527,825	(\$1,667)	1,005	2.26%	2.64
TOTAL	\$67,722,141	\$67,685,113	\$67,930,956	\$245,843	529	100.00%	1.39

Portfolio Diversification



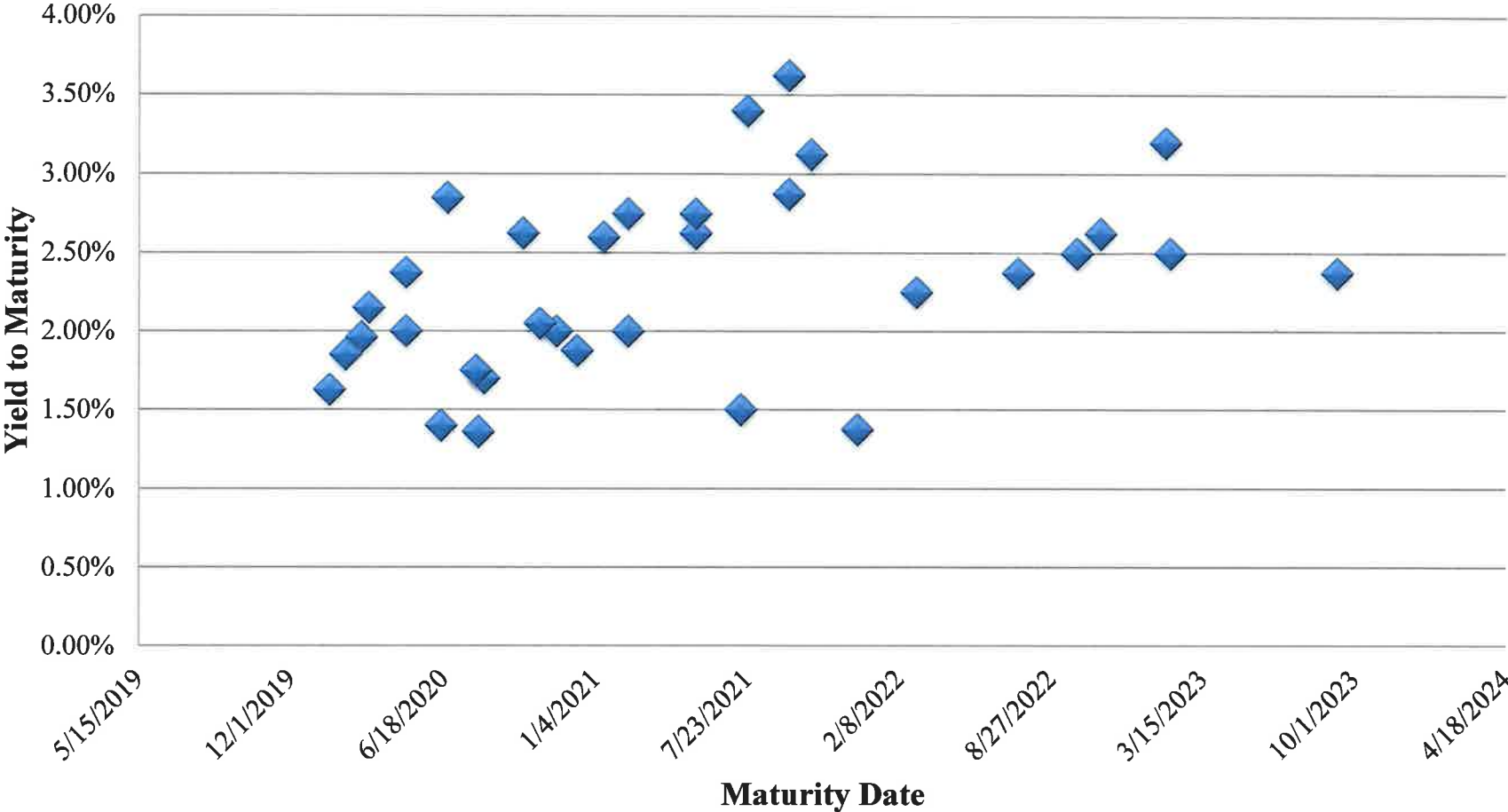
City of Lancaster
Maturity Distribution
December 31, 2019

Maturity	Historical Cost	Percent
Under 90 Days	\$31,985,364	47.23%
90 to 180 Days	\$4,898,728	7.23%
180 Days to 1 Year	\$8,184,366	12.09%
1 to 2 Years	\$13,541,178	20.00%
2 to 3 Years	\$5,458,598	8.06%
3 to 4 Years	\$3,653,906	5.40%
4 to 5 Years	\$0	0.00%
Over 5 Years	\$0	0.00%
	\$67,722,141	100.00%



City of Lancaster
Securities Held
December 31, 2019

Securities Held



STAFF REPORT
City of Lancaster

CC 4
01/28/20
JC

Date: January 28, 2020

To: Mayor Parris and City Council Members

From: Jeff Hogan, Development Services Director

Subject: **Task Order for Multi-Year Professional Services (Service Group Category 1 - Roadway and Structures Engineering) Design Services for PWCP 16-008 - Pedestrian Gap Closure Improvements, ATPL-5419(050), at Various Locations Between 25th Street West to 20th Street East, and Between Avenue H to Avenue L**

Recommendation:

Approve Task Order No. 2 - Additional Authorization No. 2 with Kimley-Horn & Associates of Los Angeles, California, for additional design survey services at thirteen (13) different locations to construct bulb-outs, widen existing roads and provide design services for new Location 38, (Avenue K and 45th Street West), in accordance with the Multi-Year Professional Services Agreement, in the amount of \$116,536 with a 10% contingency, and authorize the City Manager, or his designee, to sign all documents.

Fiscal Impact:

\$128,189.60 (including 10% contingency); sufficient funds are available in Capital Improvements Budget Account Numbers 204-15SW016-924, 206-15SW016-924, 211-15SW016-924, and 232-15SW016-924.

Background:

On May 27, 2015, the City applied for Cycle 2 of the Active Transportation Program for locations within the City that represents the Urban Core. The City was awarded a total grant amount of \$6,259,000, with a local matching fund requirement of \$1,565,000.

This project will close the gap in the non-motorized user transportation network with the construction of curb, gutter and sidewalk improvements at 36 separate locations between 25th Street West to 20th Street East, and between Avenue H to Avenue L.

On June 11, 2019, Council approved the award of Task Order No. 2 for the Preparation of Plans, Specifications and Estimates (PS&E) Design Services to Kimley-Horn and Associates, Inc. A contract was executed for a total contract not to exceed the amount of \$400,082.

On October 22, 2019, Council approved the award of Additional Authorization No. for additional right-of-way services in the amount of \$275,082. Task Order No. 2 was revised for a total contract amount not to exceed \$675,164.

With approval of this Additional Authorization No. 2, to provide additional survey and design services in the amount of \$116,536. Task Order No. 2 will be revised for a total contract amount not to exceed \$791,700.

EW:gb

Attachment:

Second Revised Task Order No. 2

SECOND REVISED TASK ORDER NO. 2
UNDER

AGREEMENT FOR PROFESSIONAL CONSULTANT SERVICES – RFQ 694-18
SERVICE GROUP CATEGORY 1 – ROADWAY AND STRUCTURES

DATED JANUARY 23, 2019

BETWEEN

THE CITY OF LANCASTER, "OWNER"
AND
KIMLEY HORN AND ASSOCIATES, INC "CONSULTANT"

PROJECT TITLE: PWCP 16-008

PROJECT DESCRIPTION: Pedestrian Gap Closure Improvements

SCOPE OF WORK: Per Attached Exhibit "1", Scope of Services

PERIOD OF SERVICES: Per Attached Exhibit "2", Schedule

COMPENSATION
FOR SERVICES: Per Fee Schedule - Not to Exceed \$791,700.00

"OWNER"

"CONSULTANT"

CITY OF LANCASTER

KIMLEY-HORN AND ASSOCIATES, INC

By: _____
Jason Caudle
City Manager

By: _____
Robert Blume
Vice President

Date: _____

Date: _____

Approved by Dept. Head: _____

APPROVED AS TO FORM:

Allison E. Burns, Esq.
City Attorney

O125000 March 2019

EXHIBIT “1”

SCOPE OF SERVICES

The work to be performed under this task order shall include:

- A. Task Order 2 – Original Scope of Services
- B. Task Order 2 – Additional Authorization No. 1 Scope of Services
- C. Task Order 2 – Additional Authorization No. 2 Scope of Services

EXHIBIT "1-A"

*Service Group Category 1
Prepare Plans, Specifications and Estimates (PS&E)
Pedestrian Gap Closure Improvements, ATPL-5419(050)
(Reference: PWCP 16-008)
Exhibit 1, Page 1 of 20*

EXHIBIT 1: SCOPE OF SERVICES

PROJECT BACKGROUND AND OBJECTIVE

The Pedestrian Gap Closure Improvements project is part of a comprehensive effort by the City of Lancaster to promote active transportation. On May 27, 2015, the City applied for Cycle 2 of the Active Transportation Program for various locations within the City that represents the Urban Core. The City was awarded a total grant amount of \$6,259,000.00, with a local matching fund requirement of \$1,565,000.00.

This project will close the gap in the non-motorized user transportation network with the construction of curb, gutter and sidewalk improvements at various locations between 25th Street West to 20th Street East, and between Avenue H to Avenue L. The proposed project will improve local and inter-jurisdictional pedestrian trips by closing the gap between existing improvements to move non-motorized users away from the vehicular lanes of travel. This project will encourage walking and bicycling among all users by increasing safety and mobility with connecting to transit access points and local destinations.

PROJECT DESCRIPTION AND LOCATION

The Pedestrian Gap Closure Improvements project will include typical improvements to construct curb, gutter and sidewalk to close the gap between existing improvements which will promote safety and mobility among users. Improvements will vary depending upon location site and may include other improvements such as earthwork and grading, street widening, pavement repair, street tree removal and replacement, installation of curb, gutter, sidewalk, ADA curb ramp, street lighting system, striping, signing and marking to include buffered and dedicated bike lane. Where the improvements take place at unimproved intersections near schools, new pedestrian ADA curb ramps and bulb-outs will be installed to shorten crossing distances and allow for safer street crossings.

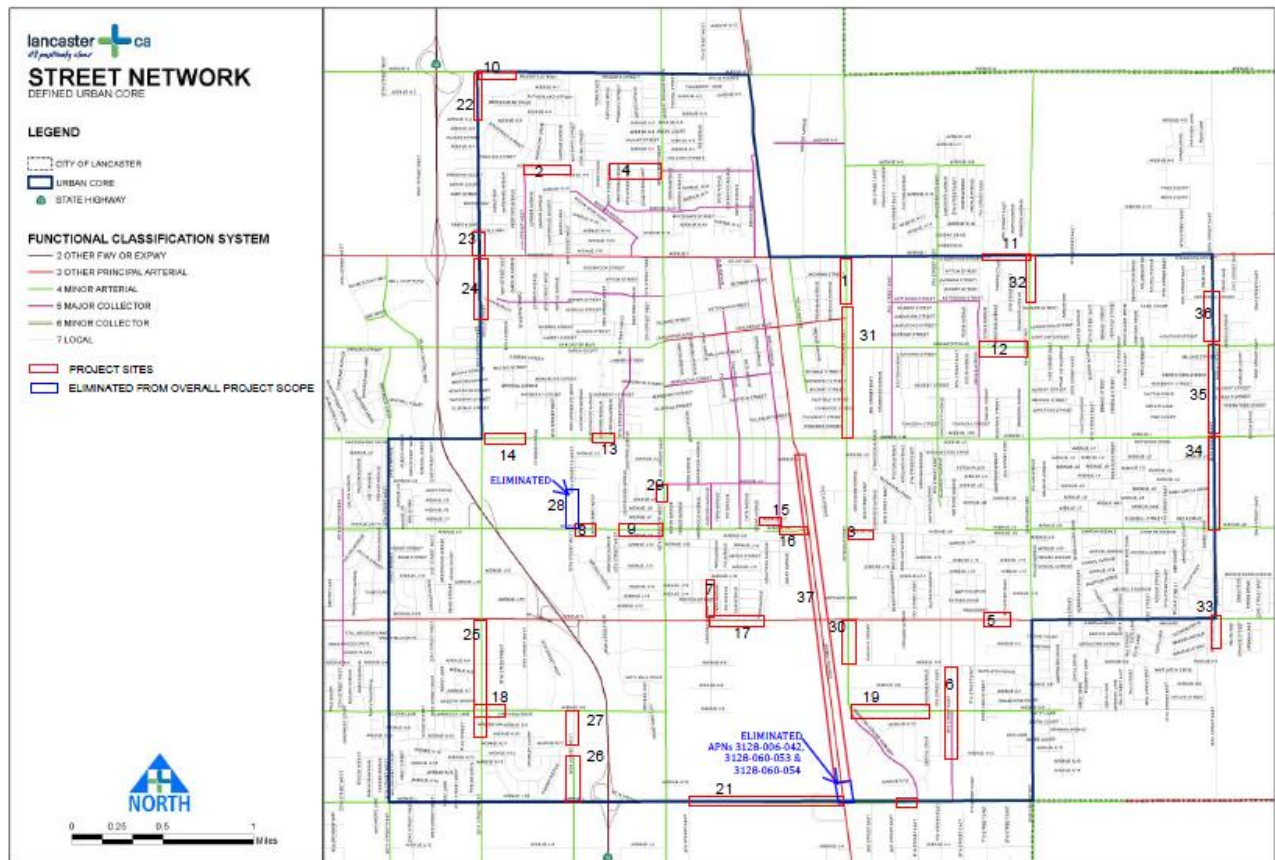
There are 36 separate locations for this project that are presented in the table below:

No.	Street	Segment	Location
1	Division Street	Avenue I to Kettering Street	Both Sides
2	Avenue H-8	17th Street West to 15th Street West	Both Sides
3	Avenue J-8 (AVE J-9)	Division Street to 2nd Street East	South side
4	Avenue H-8	13th Street West to 10th Street West	Both Sides
5	Avenue K	7th Street East to 8th Street East	North side
6	5th Street East	Avenue K-4 to Avenue K-12	East Side
7	Gadsden Avenue	Avenue J-12 to Avenue K	Both Sides
8	Avenue J-8	15th Street West to 13th Street West	North side
9	Avenue J-8	12th Street West to 10th Street West	South side
10	Avenue H	20th Street West to 18th Street West	South side
11	Avenue I	7th Street East to Challenger Way	South side
12	Lancaster Blvd	Andale Avenue to Challenger Way	South side
13	Avenue J (FR)	Leatherwood Street to Lone Oak Street	North side
14	Avenue J	20th Street West to 17th Street West	South side
15	Avenue J-7	Cedar Avenue to Beech Avenue	Both Sides
16	Avenue J-8	Beech Avenue to Sierra Hwy	Both Sides
17	Avenue K	Gadsden Avenue to Park Avenue	North side
18	Avenue K-8	West of 20th Street West to 18th Street West	North side
19	Avenue K-8	Division Street to Gingham Street	North side
20	Avenue L	3rd Street East to Division Street	Both Sides
21	Avenue L	8th Street West to Sierra Hwy	Both Sides
22	20th Street West	Avenue H to Avenue H-4	Both Sides
23	20th Street West	Arbuckle Way to Avenue I	West side
24	20th Street West	Avenue I to Louise Avenue	Both Sides
25	20th Street West	Avenue K to Avenue K-10	West side
26	15th Street West	Park Somerset Drive to Avenue L	East Side
27	15th Street West	Avenue K-8 to Avenue K-11	West side
28*	15th Street West	Avenue J-5 to Avenue J-8	East Side
29	10th Street West (FR)	Avenue J-4 to Avenue J-5	West side
30	Division Street	Avenue K to Avenue K-4	West side
31	Division Street	Kettering Street to Avenue J	West side
32	Challenger Way	Avenue I to Kettering Street	East Side
33	20th Street East	Avenue K to Ogden Ln	East Side
34	20th Street East	Avenue J to Avenue J-8	East Side
35	20th Street East	Lancaster to Avenue J	East Side
36	20th Street East	Jackman Street to Lancaster Blvd	Both Sides
37**	Sierra Hwy	Avenue J-2 to Columbia Way (Ave L-12)	West side

*Location 28 was identified as an environmentally sensitive area, therefore, Location 28 has been eliminated and is no longer part of the project.

**Location 37 excludes parcels 3128-006-042, 3128-006-053 and 3128-006-054 that are already improved.

PROJECT MAP



The proposed project area is a 13.6 square mile area within the City that includes a mixture of schools, single family residences, high density residences, commercial, industrial, and health care related properties. It encompasses eight public schools, Antelope Valley Hospital, the Lancaster Metrolink Station, and Downtown Lancaster. At the improvement locations within the project area, the gap between existing sidewalk improvements can vary between 10' to 1,100'. Non-motorized users traveling along these gaps are forced to walk in the unimproved shoulder, or on the edge of pavement, sometimes within feet of vehicular traffic.

Specific improvements to transportation-related destinations are described below:

Elementary Schools: The Urban Core encompasses eight public schools. Where improvements occur at or along a route to school, improvements will be based on Lancaster's Safe Routes to Schools Master Plan. Where improvements occur at intersections, high visibility crosswalks will be installed. The two main schools impacted by the proposed improvements are Joshua Elementary School and Sunnydale Elementary

School. These improvements occur at less than ¼ mile from the school. Proposed bulb-outs for this project are at the intersections of:

- 1.) Avenue J-8 and 2nd Street East, near Joshua Elementary School;
- 2.) Avenue J-8 and 13th Street West, near Sunnydale Elementary School; and
- 3.) Avenue J-8 and 12th Street West, near Sunnydale Elementary School

Existing Facilities: Project will close the sidewalk gaps leading to the Lancaster Metrolink Station. Improvements will also close the sidewalk gaps to the Kaiser Permanente medical facility on Avenue L, and Antelope Valley Hospital on 15th Street West.

Antelope Valley Transit Authority: The AVTA serves the City of Lancaster and provides service within the Urban Core. There are 7 AVTA routes that run within the Urban Core and improvements will close the sidewalk gap leading to AVTA bus stops.

Street lighting improvements shall also be installed at several of the locations, as budget allows.

GENERAL SCOPE OF WORK

As the preliminary engineering and construction phases of this project are funded in part with a federal grant administered by Caltrans, the project shall be executed in accordance with Caltrans Local Assistance Procedures Manual (LAPM), Local Assistance Program Guidelines (LAPG) Chapter 22, and the City's federal funding agreement to ensure compliance with all Federal requirements.

The scope of work for this project is to provide mapping and surveying services, civil and electrical design, and preparation of PS&E package for construction. The firm shall also assist the City in obtaining approvals through Caltrans including but not limited to providing, data documents and/or exhibits in support of NEPA environmental revalidation, right-of-way (ROW) certification, and construction authorization.

A detailed outline of the scope of work by Task is included below.

Milestone tasks and schedule are included in Exhibit 2.

All persons furnished by a firm/team shall be its employees, sub-consultants or agents subject to its supervision and control, and not City or Caltrans employees/agents.

CITY PROVIDED INFORMATION

The following items shall be provided by the City:

- Copies (hardcopy or PDF as available) of all record drawings within the City archives, to include: Street plans, storm drain plans for facilities and pipelines, street lighting plans, traffic signal plans, signing and striping plans, LMD, sewer, water and recycled water plans.
- Copies (hardcopy or PDF as available) of all Survey notes, Monumentation notes and Engineer tie sheets

DESIGN STANDARDS AND CONSULTANT EXPECTATIONS

The proposed improvements shall, at a minimum, follow the City of Lancaster Engineering Design Guidelines Policies and Procedures Manual. Wherever the City guidelines are absent of the latest industry updates, standards or details, Consultant shall utilize the latest Standard Specifications and Plans for Public Works Construction (“Green Book”), the Los Angeles County Department of Public Works Design Standards and Caltrans Standards. Wherever there is a conflict in design standards, Consultant shall submit a clarification in writing to the City Project Manager for direction and approval. In most cases, the more stringent design standards shall apply.

Consultant shall refer to Detailed Scope of Work herein.

The Consultant shall refer to the City’s Safe Routes to Schools Master Plan for engineering design concept of proposed bulb-outs.

Consultant shall refer to the City’s Master Plan of Trails and Bikeways and Complete Streets for the development of the striping, signing and marking plans.

In addition, the Consultant shall coordinate and work with the following City Divisions during design: Capital Engineering Division (primary), City Engineering Division (Traffic Engineering Group), Public Works Division and Utilities Services Division. Any correspondence between Consultant and City employees, other than the Project Manager, shall be copied same day to the Project Manager as well as in the final deliverables.

As part of the design, the Consultant shall identify and pothole utilities as required to confirm all vertical and horizontal locations of proposed improvements, including new utilities, foundations or other structural elements that shall be affected. Potholing results shall be documented and presented in a report to include, at a minimum: potholing location map, lateral

and horizontal location of pothole relative to adjacent fixed facilities, as well as northing and easting elevation of ground surface at pothole, depth from ground surface to top and bottom of utility, conduit dimensions and material type, type of utility (i.e. gas, fiber, water, etc.), lateral and vertical separation if adjacent utility is less than 3 feet outside conduit to outside conduit and photos of excavation/exposed conduit. See Southern California Gas Company Potholing Policy included at the end of Exhibit 1. Costs associated with potholing shall be included in the Consultant's proposal. For proposal purposes, the Consultant shall assume 5 potholes and shall provide unit rate in Exhibit 3. Prior to potholing, the Consultant and City shall agree on final number and locations of potholes and amend contract to adjust total lump sum not to exceed at the unit rate established in Exhibit 3.

It is the Consultant's responsibility to identify the need for geotechnical investigation and testing in support of their design. The City will provide relevant available geotechnical information from adjacent projects. It is assumed that the project will not require geotechnical investigations and the available geotechnical information will provide sufficient information to base the engineering design. If additional investigations are required and recommended, a supplemental scope and fee will be required. Geotechnical recommendations shall be documented and presented in a technical memorandum in general accordance with the City of Lancaster Engineering Design Guidelines, Policies and Procedures Manual. The geotechnical technical memorandum shall include recommendations for new pavement structural sections to match existing sections as applicable. Where explorations are recommended, and this scope is modified, boring logs shall note thickness of existing asphalt concrete pavement and thickness of existing pavement section aggregate base as applicable. Costs associated with geotechnical investigation from existing available data shall be included in the Consultant's proposal.

The Consultant shall provide to the City deliverables in hardcopy and electronic format as detailed in the City's Standards for CAD Deliverables.

PROJECT PERSONNEL

The consultant shall adequately staff the project to deliver a high-quality project on time and within budget.

The Consultant shall establish a single individual as PM/PE, who shall stay with this project from beginning to completion. The consultant shall obtain prior written approval of the City prior to replacement of PM/PE for any reason.

The PM/PE shall be a registered Professional Civil Engineer licensed by the State of California with minimum of ten years of experience in similar projects after obtaining registration.

The Consultant shall establish a single individual as Utility Coordinator, who shall stay with this project from beginning to completion. The consultant shall obtain prior written approval of the City prior to replacement of Utility Coordinator for any reason.

The Utility Coordinator shall have a minimum of five years of proven Caltrans compliant utility coordination experience in similar projects and be thoroughly versed in compliance with Caltrans LAPM Chapters 13 and 14.

ADDITIONAL INFORMATION

This project includes Federal funding and shall comply with Caltrans requirements and all applicable State and Federal regulations. Excerpts from the ATP grant application are included at the end of Exhibit 1. Caltrans Federal Master Agreement and Program Supplement Agreement are also included at the end of Exhibit 1.

The City shall make progress payments per the completed units detailed in Exhibit 3 submitted by the Consultant. The Consultant shall generate an invoice that details the specific units completed, shall provide sufficient back up to verify expenditures claimed and Consistency with fee grids submitted in the cost proposal, and a brief progress report describing work completed during the invoicing period, delay details if schedule is slipping, how the Consultant will recover the schedule to meet the contract completion date, and work to be completed in the next invoicing period.

The invoice must include a summary table that details the total contract price, previously paid, current invoice amount and remaining balance.

Consultant shall not start work prior to receiving Notice to Proceed. The Notice to Proceed shall be issued in writing once the agreement and insurance documents are submitted and approved and a purchase order has been executed.

Consultant shall not perform additional work without written authorization from the City of Lancaster Project Manager. Written Authorization shall come in the form of an Additional Authorization to the Agreement.

DETAILED SCOPE OF WORK

TASK 1 PROJECT ADMINISTRATION AND MANAGEMENT

The Consultant shall schedule meetings (in person, web, or conference call) with the City and design team to provide feedback during the project; maintain schedule; provide a single Project Manager (PM/PE) to coordinate with City Capital Engineering PM, other City Departments/Divisions, each task lead/designer, utilities, etc. to deliver a complete consolidated plan set and specification sections that are consistent and do not conflict between improvements; and implement QA/QC measures.

1.1 Work Plan

The Consultant shall prepare a Work Plan that includes a list of deliverables, milestone submittal schedule, summary of organization responsibilities and contacts, specific scope of work, task budgets, reporting and invoicing procedures, quality assurance plan, and project filing system. The Work Plan shall be submitted to the City prior to the first invoice.

1.2 Meetings

- **KICK-OFF MEETING**
Kick-off meeting shall be held shortly after the issuance of the Notice to Proceed, at the City of Lancaster Maintenance Facility, 615 West Avenue H, Lancaster, California 93534. The City Project Manager and stakeholders shall provide information, guidance and answer questions. This meeting shall serve to establish project requirements and to document input in developing the final design and construction documents. The meeting shall also be used to clarify the lines of communication and other administrative details.
- **PROGRESS MEETINGS**
For the basis of Proposal, the Consultant shall assume monthly progress meetings (or a conference call, if appropriate) with City PM to review progress and obtain direction. The Consultant shall maintain a list of action items with projected completion dates and shall include progress in weekly updates, at monthly meetings and with invoice. The Consultant shall send current action item list via email to the City PM no later than three (3) working days following each progress meeting.
- **ADDITIONAL MEETINGS**
The Consultant shall organize additional meetings, as required, to complete the project. Additional meetings include, but are not necessarily limited to, meeting with other agencies such as resource agencies and utility companies. Cost for additional meetings shall be included in the lump sum not to exceed contract amount. No separate payment shall be made.

1.3 Project Management

Consultant shall maintain the project schedule and provide *weekly* written project status reports throughout the duration of the project. The weekly reports are critical to forecast resource needs and ensure the appropriate staff and support services are available, when needed, to deliver the project on schedule and within budget. Consultant shall notify the Project Manager of any scope, schedule or budget issues that may arise. The Consultant shall prepare and maintain a critical path schedule for the project and submit with weekly status reports.

The Consultant shall establish and apply internal accounting methods and procedures acceptable to the City and Caltrans for documenting and monitoring contract costs. The Consultant shall submit a consolidated monthly invoice in a format acceptable to the City and broken down in a manner consistent with the Work Plan (see Section 1.1). The Consultant shall include with the monthly invoice a progress report that reflects the work completed within the invoice period. Payments to the Consultant are to be in arrears. The Consultant must have actually incurred and paid the costs prior to invoicing the City.

The Consultant shall provide all applicable documentation, mapping, plans, forms and specifications to the City that facilitate successful submittal and approval of the Caltrans Request for Authorization for construction.

1.4 Quality Assurance & Quality Control

Consultant must provide quality assurance and control of survey, design plans, specifications, and estimates prior to each submittal. This task is required to verify that no unsafe design changes have been made or proposed, geometric layout has not been critically altered, improvement goals are being met, economy of project is maintained, plans are consistent across improvements, there are no conflicts between trades, and construction integrity of the design is ensured.

1.5 Permits

The Consultant shall be responsible for determining which permits are required to construct the project. Consultant shall prepare for the City's signature any required permits from State or Federal agencies and other entities. The Consultant shall coordinate; obtain resource agency permits, agreements, and/or approvals. The Consultant shall also prepare for the City's signature permits to enter and any other necessary permits/right of entry from landowners for all research, such as surveying, geotechnical, and any other design-related work.

TASK 2 RESEARCH

Research shall include all avenues required that may be used in support of the civil design improvements between the project limits, to produce a complete Plans, Specifications and Estimates (PS&E) package; as a minimum, cost shall include the following:

2.1 Utilities

The Consultant shall positively locate utilities in accordance with underground utilities standards to determine the depth for clearance and connection points or conflicts for any underground improvements, such as gas lines, sewer lines, storm drains, or water lines. Research all existing utilities (including dry utilities) – request and obtain atlas maps and record drawings from utility companies by submitting Utility Notification Letter A with vicinity map exhibits that provide each location for this project (Utility Notification Letter A template is included at the end of Exhibit 1). Letter A shall be distributed immediately after the Notice to Proceed is issued. Consultant shall field verify the utility locations represented on these maps and obtain all updated maps from all utility companies including any other utilities not provided by City or mentioned.

The City will not print Utility Notification Letters on City letterhead for the Consultant nor will the City intercede on the Consultant's behalf to reduce/eliminate costs associated with utility research/coordination. The Consultant shall include all costs for Utility research/coordination in the lump sum not to exceed cost to complete.

The Consultant shall contact utility companies, including, but not limited to, the following:

- Southern California Edison
- Southern California Gas
- AT&T
- Frontier Telecommunications
- Spectrum/Charter Communications
- Sprint
- LACO Waterworks District
- LACO Sanitation District

2.2 Survey Records

Research all survey records and obtain tie sheets, field books, monument recovery notes and/or street improvements plans depicting centerline of ROW survey monumentation

from the County. The City will obtain and provide survey notes, monumentation notes and tie sheets within City archive.

2.3 Mapping and Right-of-Way (ROW)

Research pertinent record maps and assessor parcel information to compile the boundary lines from a "best fit" combination of these record sources.

2.4 Incidental Research

TASK 3 DESIGN ENGINEERING AND SURVEYS

3.1 Design Surveys

The consultant will determine the best approach to complete base mapping for the project. This will include the use of available georeferenced aerial photography and assessor parcel information for each location. Where it is determined that field surveys are required to control the design and construction, field surveys will be completed. The supplemental survey information will be integrated into the aerial base mapping. This information may be used in support of civil design of improvements at the locations deemed necessary. The aerial base mapping used for this project shall include extended and transition limits for the purpose of striping, signing and markings per the Master Plan for Trails and Bikeways. As a minimum, cost shall include the following:

Where field surveys are determined to be necessary, the Consultant shall perform design surveys to conform to the Caltrans Surveys Manual. Establish appropriate field controls for both vertical and horizontal (monuments and benchmarks)

Consultant shall coordinate and conduct the design surveying necessary for the final engineering work. Topographic base mapping by ground survey methods will not be required. The aerial base maps shall identify all appropriate existing street improvements, drainage structures, fire hydrants, utility facilities, landscaping, striping, markings, signs, street lights, and other appurtenant improvements in each project area. Where additional control surveys are required to control the design and construction of the improvements, the Consultant will discuss the proposed additional survey work with the City, and if agreed to by the City, Consultant will provide a supplemental scope and fee request for these services.

Where elevations are provided to control the construction, elevations will be tied to a local benchmark with assumed datum. Where practicable the survey shall be referenced to the closest found City and County benchmark if near the project area. Where applicable flow line elevations along the gutter will be included to determine the limits of removal for curb and gutter. Design and typical cross sections shall be plotted using a 1:4 vertical and a 1:40 horizontal scale at 50' intervals to depict proposed and existing elevations and cross slope.

The aerial base and supplemented topography will be prepared in an AutoCAD drawing file. The mapping will be compiled at a scale of 1"=40'. Each surveyed feature will be clearly labeled or noted by symbol as identified in the field.

For the purposes of this proposal an allocation is included for a minimal amount of field survey work that will need to be better determined once the project is better defined. If additional field survey work is needed beyond this initial allocation, a supplemental scope and fee will be required for any remaining survey work deemed necessary beyond the allocation.

3.2 Geotechnical

No geotechnical field investigation and/or exploration work is proposed for this project. If after the review of the available geotechnical information provided by the City, it is determined that field work is necessary, the team will coordinate the appropriate scope of work with the City and request a scope and budget change. If soil samples are needed and pavement coring may be completed to inform the design. In preparation for the field exploration, Consultant will notify Underground Service Alert (USA) at least 48-hours prior to commencing the field work to locate known underground utilities or services where drilling geotechnical borings. The following is an outline of the work if borings are determined to be needed:

- Coordination with the supervising civil engineer and City of Lancaster staff regarding the scope and schedule of Consultant's work and select location for pavement core and soil borings
- Coordination with the coring/boring contractor and traffic control personnel prior to the start of work
- A no fee permit shall be obtained from the City of Lancaster prior to the start of geotechnical work.
- Coordination and Clearance with underground service alert
- Completion of cores through the existing asphalt concrete (AC) and/or Portland cement concrete (PCC) pavements, where necessary.
- Observations and documentation of subsurface materials exposed along the

alignment at each core location. Subgrade soil samples will be collected at each bore location for lab testing. Collection of soils may require the use of a hand auger in order to obtain a sufficient amount of soil to perform the testing.

- Base material and pavement cores shall be immediately replaced/repared following observation and/or sample collection, to minimize mobilization costs. Hot mix asphalt or Caltrans Set 45 shall be used for pavement repair.
- Temporary traffic control shall be provided in accordance with the latest California MUTCD.
- Perform R-value and soil classification testing on soil samples at each boring location.
- Prepare a technical memorandum and provide pavement design recommendations based on R-Value test results as applicable.

TASK 4 SCOPING OF IMPROVEMENTS

Prior to project kick-off meeting, the Consultant shall examine and evaluate each location to identify ultimate improvements to be constructed for this project in accordance with the City's Engineering Design Guidelines and confirm scoping prior to commencing design. Improvements will vary depending upon location site and will include construction of pavement, curb, gutter and/or sidewalk to close the gap between existing developments, and may also include improvements such as earthwork and grading, street widening, pavement repair, street tree removal and replacement, installation of ADA curb ramp, bulb-outs, street lighting system, striping, signing and/or marking with buffered and dedicated bike lanes. The available aerial base mapping will be used along with the initial Assessor Parcel information from the County GIS system to provide the initial layout plans for review to confirm the scope of the improvements at each location.

TASK 5 ENGINEERING PLANS, SPECIFICATIONS AND ESTIMATES

5.1 Engineering Plans

The final design shall include all the tasks necessary for a construction-ready project, including design surveys as determined necessary and where applicable; preparation of plans, specifications and estimates; utility coordination and permitting. The Engineering plans shall include title sheets, sections and details sheet, demolition sheet, erosion control plan sheets, street improvement plan sheets – (plan and some profile sheets (where appropriate)), Street Lighting Plans, and Signing and Striping Plans.

Typical and design cross sections are considered necessary to design the improvements, illustrate transitions and join to existing improvements, evaluate drainage, and to accurately establish the earthwork volumes and extent of construction or reconstruction beyond the ROW lines onto private property where, and if, necessary. Cross sections where applicable shall be prepared at a scale and frequency approved by the City and detailed herein as necessary to control the design.

The following plan sheets are anticipated to be included in the design:

- a. Title Sheet - Includes project information, vicinity map, location map, benchmark, sheet index and City and utility contact information. (1 Sheet)
- b. Notes - Contains standard City and Engineers notes, legend, and abbreviations. (1 Sheet)
- c. Survey Control – Contains Surveyor’s notes and benchmark information, control data, curve and line tables, and plan showing control points and start/end construction labeled in cyan and right-of-way lines labeled in proper colors per City of Lancaster standards as applicable. (1 Sheet)
- d. Sections and Details - Contains typical roadway sections, sheet layouts, and details for work described on the plans. (6 Sheets)
- e. Demolition Sheet - Shows items to be removed, relocated, or protected. (5 Sheets)
- f. Plan and Profile Sheets – For the street improvements, standard roadway plan and profile sheets shall be used. Profiles will only be provided where determined necessary to control the design of the improvements. The plan view will be prepared at a scale of 1”=40’ for horizontal and 1”=10’ for vertical (where applicable). The plans will identify the required work to construct the improvements of this project and where applicable include stations, offsets, and elevations. Utility modifications to relocate clear of the proposed improvements shall also be shown on the plan view of the sheets. Where necessary, show utility relocations in details and profiles for better clarification. Bulb-out and curb profiles shall be included. The sheets will provide the appropriate construction callouts, including limits of the project, pavement areas, curb, gutter and sidewalk, bulb-outs, ramps, driveway conforms, and other details necessary to construct the project. The plans will include sufficient detail to locate the improvements based on roadway station callouts and horizontal line and curve data or other referencing to existing facilities as appropriate. The plan will include the existing right-of-way clearly marked and adjacent properties identified by parcel number and property owner. (35 sheets)

- g. Construction Details – Project details will be included as necessary. Details may include pavement section details, drainage details, utility relocation details, new utility construction details, etc. for the project design. However, details may also include curb return conforms or grading details. In addition, specific design criteria will be provided to accommodate and create safe and ADA compliant pedestrian facilities. Pavement structural section shall be designed to match existing intersection pavement or based on a resulting Geotechnical report R-values and Testing and Traffic Index as provided by the City. (10 sheets)
- h. Storm Drainage Improvement Plans - Consultant shall determine if storm drain facilities or upgrades will be required within the project limits. While Master Plan of Drainage Facility design is not expected and not included in the scope of work, local drainage facility design is expected, and proposal shall include these costs based on current available storm data, existing improvements and existing conditions. Storm drainage details shall be included as necessary. Some storm drain data may only require details within the street profiles and/or cross-slopes and this will be evaluated during the project design. Details may also include storm drain tie-ins, modified drainage inlets, drainage grading, etc. Consultant shall review and determine adequate and appropriate methods for the drainage of runoff with respect to the vertical design of the street improvements. This also includes recommendations for street improvement profiles, cross-sections, crown line placement, and flow patterns as appropriate. (2 sheets).
- i. Water System Improvement Plans – to be submitted to water purveyor for their review and approval are not expected and outside of the scope of work. Minor adjustments and relocations to existing water mainline and services facilities shall be included with the street improvement plans.
- j. LS-3 Rate Schedule Electrical and Street Lighting Plans - A street lighting plan shall be produced for segment of street to receive street lighting. Plans shall consist of street light type and location, conduits, pull boxes, meter boxes & meter, electrical design and ties to existing circuits or service points and shall be prepared per City of Lancaster requirements for LS-3 Rate Schedule Street Lights. SCE preliminary work order maps shall be obtained and included. Street light layout shall be prepared and stamped by a licensed Civil Engineer while electrical plans shall be prepared and stamped by a licensed Electrical Engineer. Meter pedestal addresses shall be obtained from the City and included on the plans. (assume 5 sheets)

Note: Consultant shall determine if existing overhead utilities will conflict with any proposed improvements and include an SCE approved high voltage contractor in the provisions of the improvement plans, specifications and estimate.

- k. Striping, Signing and Marking Plans - The plans will use California MUTCD references and detail numbers, where applicable and available, and specific information to specify signing, striping or pavement markings not included in the current manual. A schedule of proposed striping and a schedule of pavement markings will be shown on the plans. Project limits to include all required approach striping. For Signs, the size, shape, lettering type and size, colors, and symbols, to specify signs not included in the current manual. A schedule of proposed signs will be shown on the plan. Project limits to include all required approach signing. (12 sheets)
- l. Miscellaneous Utility Plans – Placeholders for utility relocation and utility work order plans prepared and provided by appropriate utility company. Consultant shall coordinate and obtain any utility work order maps required and shall be included on these sheets.

5.1.1 Conceptual Plans (30%)

The Consultant will produce 30% plans to confirm conceptual layout, scope of improvements and framework of consolidated plan set.

The City will be allowed two weeks to review and provide comments.

5.1.2 Preliminary Plans (60%)

The Consultant will produce 60% design documents. The 60% design documents will include preliminary plans and estimates (i.e., opinions of probable construction costs). The 60% design documents will include horizontal control and call-outs to sufficiently layout the design elements (proposed pavement, curb, gutter, sidewalk, **street lighting**, etc.) and centerline profile to identify any major drainage issues for locations that require street widening (i.e., low points). **It is critical that the 60% plans include preliminary locations of all street lighting facilities to meet grant milestone requirements and maintain grant funding.** Design documents shall also include traffic plans for review of the Signing and Striping plans.

When the Consultant submits 60% design to the City for review, the Consultant shall also send utility companies formal notification (Utility Letter B) with copies of the plans, showing locations with potential utility conflicts. Formal letter shall be per template Utility Notification Letter B included at the end of Exhibit 1. The Consultant shall coordinate and communicate directly with each utility company and document utility coordination in accordance with Caltrans LAPM. Copies of utility coordination logs, diary, and all documents shall be provided to the City in support of Caltrans right-of-way certification.

The City will not print Utility Notification Letters on City letterhead for the Consultant nor will the City intercede on the Consultant's behalf to reduce/eliminate costs associated with utility research/coordination. The Consultant shall include all costs for Utility research/coordination in the lump sum not to exceed cost, complete.

Design of, non-City owned, utility relocations are not included in this scope of services.

Potholing information shall be submitted to the City after completion of this task. If an area of possible conflict was not potholed, the Consultant shall pothole the area to verify the conflicts. The consultant shall determine the unit price per pothole and provide that cost in Exhibit 3. The potholes will be limited to 5 potholes at no additional cost to the City. The Consultant shall depict existing utilities on plans for any necessary utility relocation.

The City will be allowed two weeks to review 60% design package and provide comments.

Following the submittal and the 60% review, Consultant will arrange to meet with the City to discuss the design comments. The City will provide Consultant with one non-conflicting set of redline mark-up plans.

5.1.3 Final Plans (90%)

Based on the 60% comments, the Consultant will bring the 60% preliminary design documents to a 90% level of design. The 90% design documents will include 90% plans, 90% estimates and draft specifications. The plans will include necessary and appropriate horizontal control in addition to vertical grades as necessary to layout the design elements, including detailed grades at curb returns and profiles of existing or proposed utilities and sufficient details to construct the design elements.

Prior to the 90% submittal, the Consultant shall verify quality assurance of the horizontal and vertical control of the proposed layout is adequate to verify that the design is accurate with respect to City design standards and that no unsafe design changes are proposed, and construction integrity of the design is maintained.

The City will be allowed two weeks to review 90% design package and provide comments.

Following the 90% submittal and City review, the Consultant will arrange to meet with the City to discuss the design comments. The City will provide the Consultant with one non-conflicting set of redline mark-up plans.

5.1.4 Final Plans (100%) Signed for Bid

Based on the 90% comments and any Caltrans RFA comments (see Task 6.3), the Consultant will bring the design documents to a 100% level of design with all agency comments addressed and signed for inclusion in the City's Bid Package. The 100% design documents will include 100% plans, 100% estimates and final specifications.

The Consultant shall send the utility companies formal notification with copies of the 100% signed plans. Formal letter shall be per template Utility Notification Letter C included at the end of Exhibit 1.

The City will not print Utility Notification Letters on City letterhead for the Consultant nor will the City intercede on the Consultant's behalf to reduce/eliminate costs associated with utility research/coordination. The Consultant shall include all costs for Utility research/coordination in the lump sum not to exceed cost, complete.

5.2 Specifications

The City shall prepare the main body of the specifications (boiler plate); specifications expected from the Consultant shall be limited to details, cut sheets and written specifications beyond those provided in the Green Book. Draft specifications shall be provided with plan submittals as noted in Task 5.1 at the 90% and 100% submittals.

5.3 Cost Estimate

The Consultant shall compile and prepare the Cost Estimate based on all biddable construction items identified in the design package and consistent with the latest City bid forms. The estimated quantities shall be arranged and grouped as agreed with the City Project Manager.

Computations showing estimated quantities and costs for each location of work, as well as the sum totals, shall be submitted to the City. Cost Estimates shall be provided with plan submittals as noted in Task 5.1 at the 60%, 90% and 100% submittals. Quantities and costs shall be updated and in agreement with each plan submittal.

5.4 Submittal Requirements

The Consultant shall make submittals for City review as noted in Task 5.1, 5.2 and 5.3. Submittals shall be electronic PDF format and shall include previous check prints.

The design drawings should be as complete, accurate, and error-free as possible prior to submittal. Likewise, for Reports, Special Provisions, Cost Estimates, etc.

The Consultant shall correct errors, omissions, and unworkable and/or improper design/drafting on the original drawings subsequent to the completion of the plan checking process.

Reports, Plans, Specifications, and Estimate shall be in English units and must conform to Caltrans, Federal, City, and County standards, regulations, policies, procedures, manuals, and practices. The Consultant shall provide clear, concise, and complete plans, specifications and cost estimates. The Consultant shall include other details that are of benefit to and/or requested by the City, such as details of private improvements to be constructed, reconstructed, or relocated, consisting of driveways, landscaping, irrigation, fences, etc.

All drawings shall be prepared in AutoCAD per City Standards and deliverables shall be in accordance with the City's CAD Deliverables Standard.

TASK 6 CALTRANS SUPPORT

6.1 NEPA Revalidation

Although the project has obtained NEPA CE through Caltrans, street lights were not included and the City will take the lead in revalidation. Consultant shall provide exhibits and data as needed in support of re-validation including but not limited to preliminary (60%) plans, limits of work, excavation details, etc. The CE did not identify street widening, lane additions, capacity improvements or drainage improvements and these will need to be evaluated during the design phase to confirm the requirements for revalidation.

If during revalidation review additional notes are required on the plans, the Consultant shall comply and provide plan revisions and associated documentation to reflect revisions, as needed at no additional cost to the City.

6.2 ROW Certification

The City will take the lead in ROW acquisitions and preparing ROW certification package for Caltrans acceptance; however, the Consultant shall identify APNs for areas where ROW acquisition is needed and provide:

- lists of APNs with 30%, 60%, 90% and 100% submittals

- coordination with ROW Consultant
- information/CAD drawings as needed to support ROW Consultant's efforts in preparing acquisition documents (Road Deeds, ROW Agreement Exhibits, etc.)
- Utility Cover Adjustment Summary (Caltrans Exhibit 13-B, as needed)
- Utility notification data and copies of all utility notification documentation for Status of Required Utility Relocations (Caltrans Exhibit 14-D and Utility Notification Letters A, B and C)
- Copies of Utility coordination notes/diary, communications, logs etc. to be kept and maintained per Caltrans LAPM Chapter 13 and 14.
- Stamped and signed exhibit maps and plans as needed to accompany Caltrans submittal for ROW Certification. Stamped and signed plans shall be labeled "FOR ROW CERTIFICATION"

If during ROW Certification review additional utility notifications are required and/or additional notes are required on the plans, the Consultant shall comply and provide additional documentation and plan revisions, as needed at no additional cost to the City. As a minimum, plans and maps for ROW Certification shall include and address the following:

- Begin and end limits (start and end) for construction for all components of work shall be clearly labeled in cyan with stationing listed.
- Existing ROW shall appear in red and shall be clearly labeled, "Existing City Right-of-Way".
- Proposed ROW shall appear in green and shall be clearly labeled, "Proposed City Right-of-Way" (if same as existing, shall appear red).
- Utilities and appurtenant facilities to be relocated, removed and/or to remain and protected in place shall be clearly labelled.
- Service facilities shall be clearly identified as such to differentiate them from mainline utility facilities (i.e. meter boxes, fire hydrants, etc.)
- All sheets shall include the following, "All work to be in City of Lancaster Right-Of-Way".

6.3 Request for Authorization (Construction)

After 90% comments have been incorporated and prior to final 100% bid documents, the City will be required to submit RFA package to Caltrans for authorization to advertise. Consultant shall prepare and produce a consolidated RFA plan set and provide RFA specifications, signed and stamped by the PE. Stamped and signed plans shall be labeled "RFA SUBMITTAL"

Project Location Map

Attachment D




ATTACHMENT D – PROJECT LOCATION MAP









STREET NETWORK

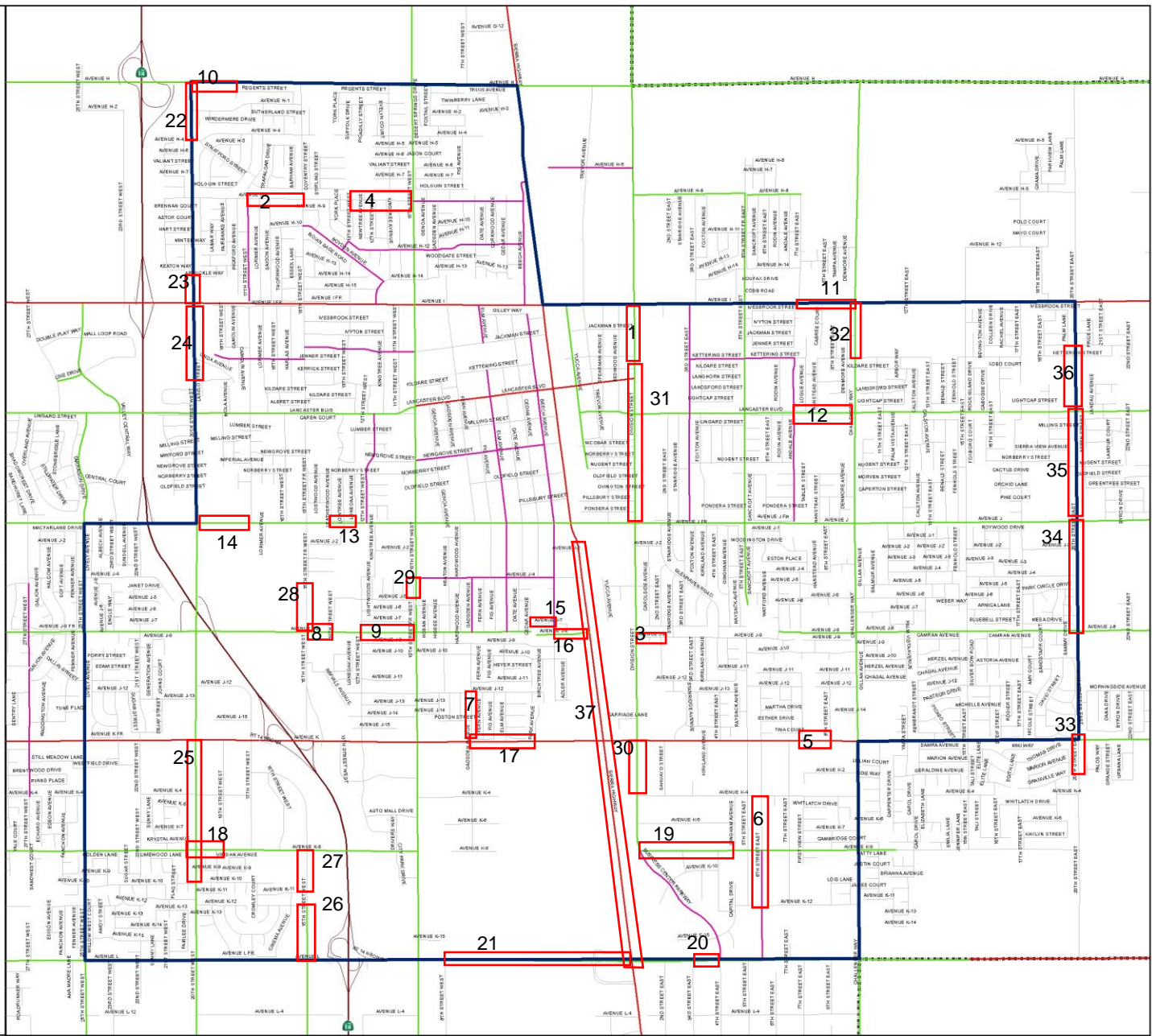
 DEFINED URBAN CORE

LEGEND

-  CITY OF LANCASTER
-  URBAN CORE
-  STATE HIGHWAY

FUNCTIONAL CLASSIFICATION SYSTEM

-  2 OTHER FWY OR EXPWY
-  3 OTHER PRINCIPAL ARTERIAL
-  4 MINOR ARTERIAL
-  5 MAJOR COLLECTOR
-  6 MINOR COLLECTOR
-  7 LOCAL

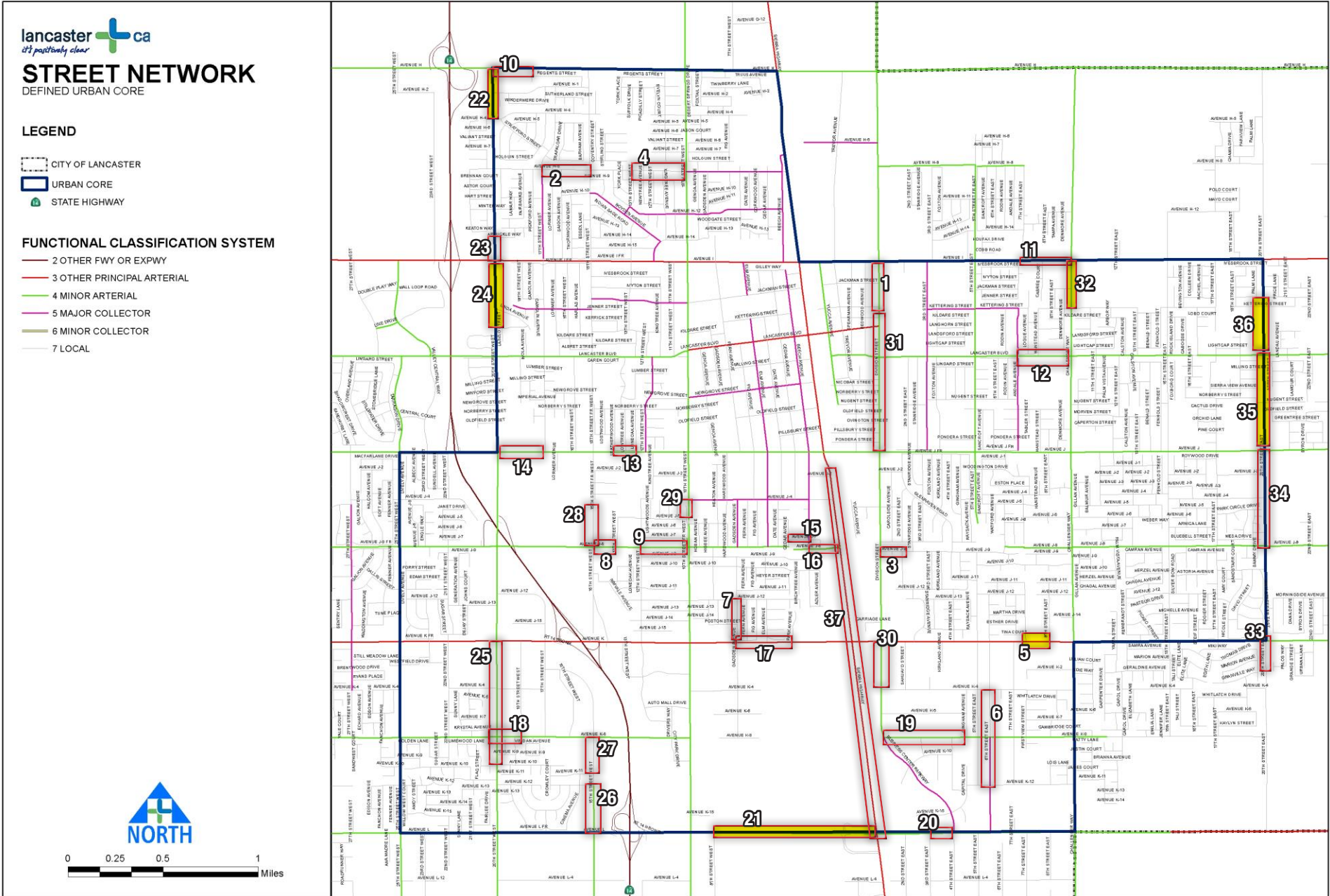


ATTACHMENT D - PROJECT LOCATIONS

No.	Street	Segment	Location
1	Division Street	Avenue I to Kettering Street	Both Sides
2	Avenue H-8	17th Street West to 15th Street West	Both Sides
3	Avenue J-8 (AVE J-9)	Division Street to 2nd Street East	South side
4	Avenue H-8	13th Street West to 10th Street West	Both Sides
5	Avenue K	7th Street East to 8th Street East	North side
6	5th Street East	Avenue K-4 to Avenue K-12	East Side
7	Gadsden Avenue	Avenue J-12 to Avenue K	Both Sides
8	Avenue J-8	15th Street West to 13th Street West	North side
9	Avenue J-8	12th Street West to 10th Street West	South side
10	Avenue H	20th Street West to 18th Street West	South side
11	Avenue I	7th Street East to Challenger Way	South side
12	Lancaster Blvd	Andale Avenue to Challenger Way	South side
13	Avenue J (FR)	Leatherwood Street to Loneoak Street	North side
14	Avenue J	20th Street West to 17th Street West	South side
15	Avenue J-7	Cedar Avenue to Beech Avenue	Both Sides
16	Avenue J-8	Beech Avenue to Sierra Hwy	Both Sides
17	Avenue K	Gadsden Avenue to Park Avenue	North side
18	Avenue K-8	West of 20th Street West to 18th Street West	North side
19	Avenue K-8	Division Street to Gingham Street	North side
20	Avenue L	3rd Street East to Division Street	Both Sides
21	Avenue L	8th Street West to Sierra Hwy	Both Sides
22	20th Street West	Avenue H to Avenue H-4	Both Sides
23	20th Street West	Arbuckle Way to Avenue I	West side
24	20th Street West	Avenue I to Louise Avenue	Both Sides
25	20th Street West	Avenue K to Avenue K-10	West side
26	15th Street West	Park Somerset Drive to Avenue L	East Side
27	15th Street West	Avenue K-8 to Avenue K-11	West side
28	15th Street West	Avenue J-5 to Avenue J-8	East Side
29	10th Street West (FR)	Avenue J-4 to Avenue J-5	West side
30	Division Street	Avenue K to Avenue K-4	West side
31	Division Street	Kettering Street to Avenue J	West side
32	Challenger Way	Avenue I to Kettering Street	East Side
33	20th Street East	Avenue K to Ogden Ln	East Side
34	20th Street East	Avenue J to Avenue J-8	East Side
35	20th Street East	Lancaster to Avenue J	East Side
36	20th Street East	Jackman Street to Lancaster Blvd	Both Sides
37	Sierra Hwy	Avenue J-2 to Columbia Way (Ave L-12)	West side

SURVEY LOCATIONS

ATTACHMENT D – PROJECT LOCATION MAP




 Minimal field surveying included in scope to control design and construction

EXHIBIT 1: SCOPE OF SERVICES

INTRODUCTION

The Pedestrian Gap Closure Improvements project is part of a comprehensive effort by the City of Lancaster to promote active transportation. On May 27, 2015, the City applied for Cycle 2 of the Active Transportation Program for various locations within the City that represents the Urban Core. The City was awarded a total Federal grant amount of \$6,259,000.00, with a local matching fund requirement of \$1,565,000.00. The total Federal ATP funding for ROW and Utility Relocations for this project is \$873,000.00 and local matching amount is \$218,000.00.

On June 18, 2019, the City executed a Task Order for the Preparation of Plans, Specifications and Estimates (PS&E) Services with Kimley-Horn and Associates, Inc. (KHA).

Under this Task Order, the Consultant (or Sub-consultant) shall be a Caltrans certified/qualified firm and shall provide right-of-way (ROW) services for the Pedestrian Gap Closure Project Improvements, ATPL-5419(050), in accordance with Caltrans Local Assistance Manual (LAPM) Chapter 13.

PROJECT DESCRIPTION AND LOCATION

The Pedestrian Gap Closure Improvements project will include typical improvements to construct curb, gutter and sidewalk to close the gap between existing improvements, which will promote safety and mobility among users. Improvements will vary depending upon location site and may include other improvements such as earthwork and grading, street widening, pavement repair, street tree removal and replacement, installation of curb, gutter, sidewalk, ADA compliant curb ramp, street lighting system, striping, and signing and marking to include buffered and dedicated bike lane. Where the improvements take place at unimproved intersections near schools, new pedestrian ADA curb ramps and bulb-outs will be installed to shorten crossing distances and allow for safer street crossings.

There are 36 separate locations for this project that are presented in the table below, however, not every single location will require real property acquisitions.

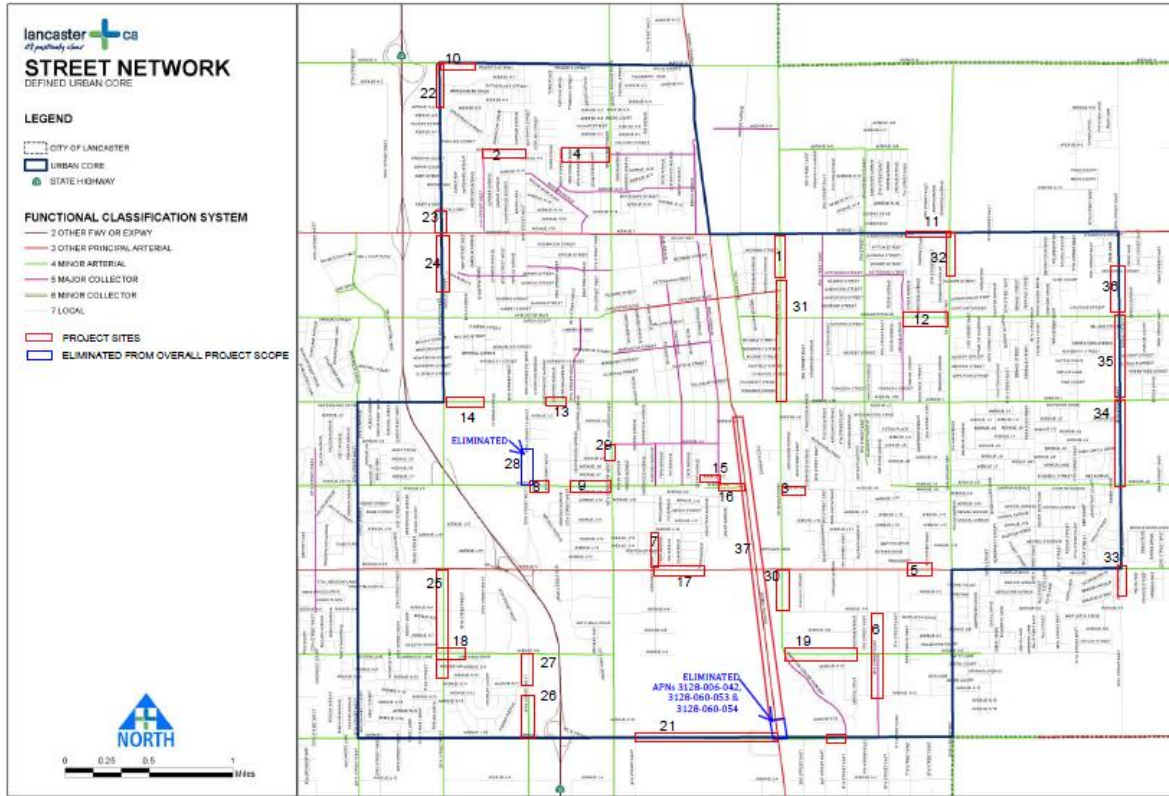
TABLE 1

No.	Street	Segment	Location
1	Division Street	Avenue I to Kettering Street	Both Sides
2	Avenue H-8	17th Street West to 15th Street West	Both Sides
3	Avenue J-8 (AVE J-9)	Division Street to 2nd Street East	South side
4	Avenue H-8	13th Street West to 10th Street West	Both Sides
5	Avenue K	7th Street East to 8th Street East	North side
6	5th Street East	Avenue K-4 to Avenue K-12	East Side
7	Gadsden Avenue	Avenue J-12 to Avenue K	Both Sides
8	Avenue J-8	15th Street West to 13th Street West	North side
9	Avenue J-8	12th Street West to 10th Street West	South side
10	Avenue H	20th Street West to 18th Street West	South side
11	Avenue I	7th Street East to Challenger Way	South side
12	Lancaster Blvd	Andale Avenue to Challenger Way	South side
13	Avenue J (FR)	Leatherwood Street to Lone Oak Street	North side
14	Avenue J	20th Street West to 17th Street West	South side
15	Avenue J-7	Cedar Avenue to Beech Avenue	Both Sides
16	Avenue J-8	Beech Avenue to Sierra Hwy	Both Sides
17	Avenue K	Gadsden Avenue to Park Avenue	North side
18	Avenue K-8	West of 20th Street West to 18th Street West	North side
19	Avenue K-8	Division Street to Gingham Street	North side
20	Avenue L	3rd Street East to Division Street	Both Sides
21	Avenue L	8th Street West to Sierra Hwy	Both Sides
22	20th Street West	Avenue H to Avenue H-4	Both Sides
23	20th Street West	Arbuckle Way to Avenue I	West side
24	20th Street West	Avenue I to Louise Avenue	Both Sides
25	20th Street West	Avenue K to Avenue K-10	West side
26	15th Street West	Park Somerset Drive to Avenue L	East Side
27	15th Street West	Avenue K-8 to Avenue K-11	West side
28*	15th Street West	Avenue J-5 to Avenue J-8	East Side
29	10th Street West (FR)	Avenue J-4 to Avenue J-5	West side
30	Division Street	Avenue K to Avenue K-4	West side
31	Division Street	Kettering Street to Avenue J	West side
32	Challenger Way	Avenue I to Kettering Street	East Side
33	20th Street East	Avenue K to Ogden Ln	East Side
34	20th Street East	Avenue J to Avenue J-8	East Side
35	20th Street East	Lancaster to Avenue J	East Side
36	20th Street East	Jackman Street to Lancaster Blvd	Both Sides
37**	Sierra Hwy	Avenue J-2 to Columbia Way (Ave L-12)	West side

*Location 28 was identified as an environmentally sensitive area, therefore, Location 28 has been eliminated and is no longer part of the project.

**Location 37 excludes parcels 3128-006-042, 3128-006-053 and 3128-006-054 that are already improved.

PROJECT MAP



GENERAL SCOPE OF SERVICES TO BE PROVIDED

The Consultant shall provide ROW Services in accordance with the Caltrans Right of Way Manual and all applicable federal regulations. ROW services include, but are not limited to:

Project management of ROW acquisitions; verification of all of the locations needed for right of way acquisition. Table 2 lists parcels (APNs) that the City has identified as potential locations for partial acquisitions. The City shall provide 60% Design plans from KHA (PDF and CAD). The Consultant shall identify through latest County maps, Title records, and the design plans all of the Right of Way needed to construct the proposed improvements; Obtaining of preliminary title reports and investigate for any title issues, existing offers of dedication, etc.; preparation of right of way engineering documents including legal descriptions and plats/exhibits; analysis and determination of Minimum Value Estimate (MVE) per Uniform Act regulations, negotiate to obtain property owner consent for dedication, ensure escrow clearance; providing support in the submittal of the Caltrans Request for Authorization for ROW Data Sheet form (Exhibit 17-EX-21), and in the preparation of Caltrans ROW Certification form (Exhibit 13-B).

The Consultant must be Caltrans Qualified/Certified and must have extensive knowledge of the Caltrans Uniform Act laws and regulations in Appraisal and Acquisition of any Real

Property. The Consultant must have a wide range of experience in the preparation of ROW engineering documents to write and prepare legal descriptions of the portion of the property being acquired, as well as prepare maps and exhibits for visual presentation of property acquisitions associated with this project.

The Consultant will approach and negotiate with the Property Owners to ensure that 1) all Caltrans/Federal requirements are met, in the event they are applicable, and 2) the Owners are fully notified of their rights per Caltrans Right of Way Manual, prior to acquisition. The Consultant will be expected to approach the current Owner with the road easement documents and obtain signature(s) for dedication. The City's goal in acquisition of property is to acquire right of way through negotiation and dedication, avoiding the condemnation process whenever possible.

If the Property Owner does not agree with the terms of dedication even after offering MVE compensation for the acquisition/damages and discussing benefits and value of the improvements within the take area, the City may require additional ROW services from the selected Consultant, (i.e. appraisal/appraisal review, establish just compensation, and/or escrow clearance requirements, etc.). The selected Consultant shall not proceed with any additional ROW services without written authorization to proceed.

Consultant shall provide all required documents, associated with acquisitions, for inclusion by the City in the Caltrans ROW Request for Authorization Data Sheet and Caltrans ROW Certification submittals.

This project includes Federal funding and shall comply with Caltrans requirements and all applicable State and Federal regulations. Excerpts from the ATP grant application are included in the City's Caltrans Federal Master Agreement and Program Supplement Agreement (incorporated herein by reference).

The City shall make progress payments per the completed units detailed in Exhibit 3 submitted by the Consultant. The Consultant shall generate an invoice that details the specific units completed, shall provide sufficient back up to verify expenditures claimed and Consistency with fee grids submitted in the cost proposal, and a brief progress report describing work completed during the invoicing period, delay details if schedule is slipping, how the Consultant will recover the schedule to meet the contract completion date, and work to be completed in the next invoicing period.

The invoice must include a summary table that details the total contract price, previously paid, current invoice amount and remaining balance.

Consultant shall not start work prior to receiving Notice to Proceed. The Notice to Proceed shall be issued in writing once the agreement is submitted and approved.

Consultant shall not perform additional work without written authorization from the City of Lancaster Project Manager. Written Authorization shall come in the form of a Revised Task Order. In addition to the information provided in this Section, see Detailed Scope of Work below.

TABLE 2

Item#	Parcel #	Project Location #	Street	Segment	Side of Street
1	3119-014-008	10	Avenue H	20th Street W to 18th Street W	South side of Ave H
2	3146-001-002	11	Avenue I	7th Street East to Challenger	South side of Ave I
3	3146-001-003	11	Avenue I	7th Street East to Challenger	South side of Ave I
4	3146-001-006	11	Avenue I	7th Street East to Challenger	South side of Ave I
5	3126-026-019	20	Avenue L	3 rd Street East to Division Street	South side of Ave L
6	3126-026-020	20	Avenue L	3 rd Street East to Division Street	South side of Ave L
7	3128-009-007	21	Avenue L	8 th Street West to Sierra Hwy	South side of Ave L
8	3128-007-027	21	Avenue L	8 th Street West to Sierra Hwy	South side of Ave L
9	3128-007-028	21	Avenue L	8 th Street West to Sierra Hwy	South side of Ave L
10	3128-007-029	21	Avenue L	8 th Street West to Sierra Hwy	South side of Ave L
11	3119-014-008	22	20th Street West	Avenue H to Avenue H-4	East side of 20th W
12	3121-034-006	24	20th Street West	Avenue I to Louise Avenue	East side of 20th W
13	3112-012-005	25	20th Street West	Avenue K to Avenue K-10	West side of 20th W
14	3112-050-005	25	20th Street West	Avenue K to Avenue K-10	West side of 20th W
15	3112-050-004	25	20th Street West	Avenue K to Avenue K-10	West side of 20th W
16	3112-050-003	25	20th Street West	Avenue K to Avenue K-10	West side of 20th W
17	3112-050-002	25	20th Street West	Avenue K to Avenue K-10	West side of 20th W
18	3112-050-001	25	20th Street West	Avenue K to Avenue K-10	West side of 20th W
19	3138-025-001	31	Division Street	Kettering Street to Avenue J	West side of Division St
20	3138-027-001	31	Division Street	Kettering Street to Avenue J	West side of Division St
21	3138-027-036	31	Division Street	Kettering Street to Avenue J	West side of Division St
22	3138-012-019	31	Division Street	Kettering Street to Avenue J	West side of Division St
23	3138-012-060	31	Division Street	Kettering Street to Avenue J	West side of Division St
24	3138-010-024	31	Division Street	Kettering Street to Avenue J	West side of Division St
25	3170-041-030	33	20th Street East	Avenue K to Ogden Lane	East side of 20th E
—	3150-010-039	34*	20th Street East	Avenue J to J-8	East side of 20th E
—	3150-060-092	35*	20th Street East	Lancaster Blvd to Avenue J	East side of 20th E
26	3150-007-059	36	20th Street East	Jackman Street to Lancaster Blvd	East side of 20th E
—	3147-020-046	36*	20th Street East	Jackman Street to Lancaster Blvd	West side of 20th E
27	3150-007-060	36	20th Street East	Jackman Street to Lancaster Blvd	East side of 20th E
28	3150-007-065	36	20th Street East	Jackman Street to Lancaster Blvd	East side of 20th E
29	3150-007-058	36	20th Street East	Jackman Street to Lancaster Blvd	East side of 20th E
—	3132-012-010	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy

* - Removed from list (Table 2)

TABLE 2 (Continued)

Item#	Parcel #	Project Location #	Street	Segment	Side of Street
—	3132-013-005	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3130-030-016	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3130-024-036	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3130-024-037	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-001-019	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-001-008	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-001-009	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-001-022	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-005-031	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-005-032	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-005-034	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-005-036	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-005-037	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-006-028	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-006-029	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-007-025	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-007-026	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-008-004	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-001	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-002	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-003	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-004	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-005	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-006	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-007	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-008	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-009	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-009	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-010	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy
—	3128-014-012	37*	Sierra Hwy	Avenue J-2 to Avenue L-12	West side of Sierra Hwy

*. Removed from list (Table 2)

There are 29 total parcels that are anticipated to require right of way partial acquisitions as presented in the Table 2 above.

DETAILED SCOPE OF WORK

ROW TASK 1 PROJECT MANAGEMENT

1.1 General

The Consultant shall track and manage services to be provided; schedule meetings (in person, web, or conference call) with the City to provide feedback during the project; maintain a critical path schedule with details related to tasks, sub-tasks, and deliverables; provide a single Project Manager (PM) to coordinate with the City PM and City Design Consultant (KHA); implement QA/QC measures; etc. to deliver services noted herein.

The Consultant shall maintain ongoing general consultation and project coordination with the City and make the City aware of any additional services and/or documentation required by Caltrans Right of Way and/or federal regulation, outside this scope, identified during the term of this contract.

The Consultant shall prepare a Work Plan that includes list of deliverables, acquisition milestone schedule with details related to tasks, sub-tasks, and deliverables, task budgets and project schedule. The Work Plan shall be submitted to the City prior to the first invoice.

1.2 Meetings

For this task order, the Consultant shall assume 3 progress meetings and 1 additional meeting with City, KHA, Caltrans Right of Way, and Caltrans Local Assistance staff.

1.3 Deliverables

Cost of the following deliverables shall include reimbursable costs including but not limited to shipping, supplies, etc.:

- a) Meeting (Agenda and Minutes)
- b) Copies of all project management communication (correspondence, meeting minutes, telephone conversation records, etc.)
- c) Progress Updates and Action Items

ROW TASK 2 IDENTIFY APNs THAT REQUIRE PROPERTY ACQUISITIONS

2.1 General

The City shall provide 60% Design plans from KHA (PDF and CAD). The Consultant

shall verify through latest County maps, Title records, and coordination with KHA that the APNs listed below in Table 2 are accurate and up to date in terms of Right of Way needed to construct proposed improvements and to accurately identify any additional APNs where ROW acquisition is needed to construct the proposed improvements.

The Consultant shall provide an accurate and final list of property acquisitions and temporary access/temporary construction easements required to construct the proposed improvements at every location for this project. The City will take the lead in completing Right of Way Data Sheet Exhibit 17-EX-21 with Consultant providing necessary ROW data and Utility information for submittal with Caltrans ROW Request for Authorization.

2.2 Deliverables

- 2.2.1 Final Parcel list of Property Acquisitions
- 2.2.2 Needed ROW data and information to complete Caltrans Exhibit 17-EX-21 (ROW Data Sheet) for Submittal to Caltrans

ROW TASK 3 PRELIMINARY TITLE REPORT AND INVESTIGATIONS

3.1 General

For each property, the Consultant shall:

- a) secure vesting deeds, back up documents, property profiles, and tax maps for each property, identify any offers of dedication or other potential easements of record that may affect the acquisition of right of way;
- b) secure preliminary title report which will remain valid for a minimum of 6 months or until there is an ownership change;
- c) secure copies of recorded back-up documents, as needed;
- d) share title information, as needed;
- e) prepare list of title exceptions to be cleared; confirm manner of disposition is consistent with approved project plan; and
- f) facilitate changes to preliminary title report after the preparation of the legal description, if necessary for partial acquisition.

3.2 Deliverables

Cost of the following deliverables shall include reimbursable costs including but not limited to shipping, supplies, etc.:

- 3.2.1 Preliminary Title Report for each property
- 3.2.2 List of title exceptions to be cleared
- 3.2.3 Copies of all relevant investigation information and

communication (correspondence, meeting minutes, telephone conversation records, etc.)

ROW TASK 4 PREPARE RIGHT OF WAY ENGINEERING DOCUMENTS

4.1 General

Right of Way Engineering begins with the collection of information necessary to determine the location of boundary lines and property rights. It continues through preparation of maps, documents and legal descriptions to the ROW functions. The selected Consultant shall prepare and provide road easement documents including cover sheet, legal description and plat, stamped and signed by the Consultant Land Surveyor, and shall make any corrections required during acquisition negotiations and/or provide additional supporting ROW documents as needed.

4.2 Deliverables

Draft Road Easement Documents for each acquisition. Cost shall include reimbursable costs including but not limited to shipping, supplies, etc.

ROW TASK 5 MINIMUM VALUE ESTIMATE (MVE) AND APPRAISAL

5.1 General

Due to the expected low valuation (<\$10,000) of some of the right of way areas needed for the project, the Consultant shall prepare a waiver valuation or minimum value estimate (MVE) for each acquisition pursuant to Code of Federal Regulations Section 24.102(c)(2) and any other applicable Federal and State regulations wherein an appraisal and appraisal review are not required.

The Consultant shall prepare the latest Caltrans Minimum Value Estimate form according to the Caltrans Right of Way Manual.

The Consultant shall prepare and submit an MVE report to accompany the Caltrans MVE form.

If the estimated value for a particular acquisition will exceed the \$10,000 threshold, Consultant shall request authorization to perform an appraisal report and appraisal review from the City. Additional work including any appraisal report and appraisal review shall not be performed without the written authorization from the City of Lancaster.

Upon receipt of written authorization from the City of Lancaster and environmental clearances, the Consultant's Valuation Analyst will review title information pertaining to

respective ownership and will review drawings and other pertinent information relative to the parcel. Consultant will mail a notification letter and acquisition policies brochure to the property owner requesting permission to conduct an on-site inspection of the property, advising them of their right to accompany the Valuation Analyst at the time of the inspection, and requesting information regarding the property appraised which could influence the appraised value.

The Valuation Analyst will inspect the property personally with the owner (if possible) and document the inspection with photographs for use in the report. The Valuation Analyst will perform market research to support the selected appraisal methodologies.

The Consultant's qualified licensed appraiser shall perform appraisal establishing the just compensation value including any damages and obtain the services of a Review Appraiser to confirm the appraisal methodology and valuation meets all Federal and State requirements. Consultant shall obtain City's approval of appraisal value.

5.2 Deliverables

Cost of the following deliverables shall include reimbursable costs including but not limited to shipping, supplies, etc.:

5.2.1 Minimum Value Estimate Report including backup/supporting documentation, photos, etc.

5.2.2 Copies of all communication (notices, correspondence, meeting minutes, telephone conversation records, etc.)

ROW TASK 6 OBTAIN DEDICATIONS/NEGOTIATIONS WITH PROPERTY OWNERS

6.1 General

The Consultant shall establish and maintain a complete and current record file in a form acceptable to Caltrans.

The Consultant shall establish personal contact with property owner to present details of project to secure dedication of minimum required right of way pursuant to 1997 Development Agreement and establish clear communication channels with the property owner.

The Consultant shall receive and analyze title information and appraisal in sufficient detail to negotiate with the property owner and other parties; prepare offer letter, summary statement, and list of compensable items in accordance with state or federal regulations and the approval of the City; present written purchase offer to owner or their representative in person, when possible; and secure receipt of delivery of offer as

practical and present and secure tenant information statements, as applicable.

The Consultant shall follow-up and negotiate with property owner, as necessary; prepare and submit recommended settlement justification to City for review and approval; review any independent appraisal secured by property owner; and coordinate reimbursement of appraisal fees (up to \$5,000) with the City. Ongoing negotiations and settlement discussions will continue after the initial offer or until we reach settlement or impasse, as dictated by the overall Project Schedule and City's direction. The Consultant shall provide final recommendation for just compensation with supporting backup/analysis and the City will review and approve prior to final offer to Owner.

The Consultant shall prepare and assemble acquisition contracts and related acquisition documents required for the acquisition of all necessary property interests; maintain a diary report of all contacts made with property owner or representative and a summary of the status of negotiations indicating method of contact, attitude of owner, problem areas, and other pertinent information. Copies of all applicable written correspondence will be maintained in files.

The Consultant shall prepare an impasse letter where, after diligent attempts to settle by negotiation, it appears eminent domain will be needed or prudent to acquire the needed interest.

Litigation support: in the event an acquisition is unable to be settled via voluntary means, the negotiations staff will provide a condemnation-ready case file, all relevant negotiations history, and meet with client as needed to provide relevant acquisition content.

The Consultant shall transmit executed/recorded acquisition documents to the City. Each transmittal package shall include an executed and properly notarized deed(s), executed acquisition contract with attachments, and a brief settlement memorandum which summarizes the pertinent data relative to the transaction.

6.2 Deliverables

Cost of the following deliverables shall include reimbursable costs including but not limited to shipping, supplies, etc.:

- 6.2.1 Copies of all communication logs and diary reports documenting negotiations
- 6.2.2 Copies of all communication (notices, correspondence, meeting minutes, telephone conversation records, etc.) with Owner

6.2.3 Original Recorded Easement Documents

ROW TASK 7 ESCROW/TITLE CLEARANCE

7.1 General

The Consultant shall assist the escrow/title company in the following:

- a) Open escrow and coordinate execution of closing instructions providing for title insurance coverage at the settlement amount.
- b) Provide escrow officer with fully executed acquisition contract and notarized deed.
- c) Work in conjunction with escrow officer to facilitate the clearance of title matters as set forth in the settlement memorandum and escrow instructions.
- d) Assist escrow to secure full or partial reconveyance or subordination instruments from lien holders of record.
- e) Review settlement statement for accuracy.
- f) Coordinate deposit of acquisition price and estimated closing costs with escrow.
- g) Before the closing, review the title insurance policy for accuracy.
- h) Prepare and mail a letter to County Assessor requesting cancellation of taxes if appropriate.

7.2 Deliverables

Cost of the following deliverables shall include reimbursable costs including but not limited to shipping, supplies, etc.:

7.2.1 Copies of all communication (correspondence, meeting minutes, telephone conversation records, etc.)

7.2.2 Clear Title

TASK 8

Not used.

TASK 9 RIGHT OF WAY CERTIFICATION

9.1 General

The Consultant shall attend a certification planning meeting with City, KHA, Caltrans Right of Way, and Caltrans Local Assistance staff, as noted in ROW Task 1, to determine project requirements and certification level required prior to start of acquisition.

Consultant shall coordinate with the City PM and KHA to confirm design and utility coordination activities have been completed in compliance with applicable laws and regulations.

The City will take the lead in preparing ROW certification package for Caltrans acceptance and required utility documents (all utility information to be provided by the City and KHA). Consultant shall compile all necessary back-up documents required for ROW certification package including but not limited to: deed, final order of condemnation, access easements, cooperative agreements, permits, and right of entries; and provide support in the preparation of certification forms in accordance with Caltrans Right of Way Manual.

Attend and coordinate pre and post-audit submittal meetings, if necessary.

9.2 Deliverables

Cost of the following deliverables shall include reimbursable costs including but not limited to shipping, supplies, etc.:

- 9.2.1 ROW Certification package signed and ready for City to submit to Caltrans. (as needed)

ADDITIONAL SERVICES NOT INCLUDED

Services other than those set forth in this exhibit shall constitute extra services. Extra services include but are not limited to, attendance at meetings other than those included in the Scope of Services, appraisal and appraisal review, etc. shall be considered additional services and will be performed only with written authorization from the City and for additional fees to be negotiated prior to authorization.

ITEMS TO BE PROVIDED BY THE CITY

The City shall provide:

- Any existing ROW documentation collected to date in support of Caltrans ROW certification for Public Works Construction Project (PWCP) 16-008 including County APN maps, Parcel Maps, Tract Maps, County Corner Records, Road Easements, and Records of Survey (it is the Consultants responsibility to verify these are correct/most current documents and shall supplement/discard as needed)
- City and KHA Utility Coordination documentation
- KHA 60% Design Plans (PDF and CAD)

EXHIBIT "1-C"

*Multi-Year Professional Services
Service Group Category 1 – Roadway and Structures Engineering
Pedestrian Gap Closure Improvements, ATPL-5419(050); (Reference: PWCP 16-008)*

EXHIBIT 1: SCOPE OF WORK

ADDITIONAL AUTHORIZATION NO. 2

This Additional Authorization will amend the Task Order No. 2 Scope of Work as indicated below.

Add Location #38:

Consultant shall add Location #38 at Avenue K and 45th Street West to all Tasks. This requires additional mapping, utility coordination, surveys, design, etc. This brings the total to 37 separate locations.

Modify Task 3.1 Design Surveys

The original scope was based on an assumption that minimal surveys would be required at locations 5, 21, 22, 24, 32, 35 and 36. Through design refinement, it has been determined that none of these original locations will require design surveys.

As the team further refined the project scope of each location, new survey locations were identified and are listed below.

Bulbout Locations:

Location 3: Avenue J-8 (AVE J-9), Division Street to 2nd Street East

Location 8: Avenue J-8, 15th Street West to 13th Street West

Location 9: Avenue J-8, 12th Street West to 10th Street West

Widening Locations:

Location 1: Division St at Avenue I

Location 20: Division St at Avenue L

Location 26: 15th St West and Avenue L

Location 30: Division St between Avenue K to K-4

Location 31: Division St

(Newgrove St to Norberry St)

(Nugent St to Oldfield)

(Ovington to Ponera St)

Location 32: Challenger Way Kettering St

Location 37: Sierra Hwy and Avenue K ~4000'

Location 38: Avenue K and 45th St W (new Location)

Delete Task 3.2 Geotechnical

Task 3.2 Geotechnical support for the project was scoped to provide a paper study of the various locations utilizing existing information. \$24,150 was allocated to provide these services and provide a summary report.

TASK 4 Additional Scoping of Improvements

For the new location #38, Kimley-Horn shall examine and evaluate the new location to identify ultimate improvements to be constructed for this project in accordance with the City's Engineering Design Guidelines and confirm scoping prior to commencing design. The improvements may vary depending upon the site and will include construction of pavement, curb, gutter and/or sidewalk to close the gap between existing improvements, and will include earthwork and grading, street widening, pavement repair, installation of ADA curb ramp, street lighting system, striping, signing and/or marking with buffered and dedicated bike lanes.

Since the additional location #38 will require special consideration, Kimley-Horn will meet with the City prior to final scope and fee determination to confirm the initial assumptions included in this additional authorization.

TASK 5 Additional Engineering Plans, Specifications and Estimates

5.1 Additional Engineering Plans

Additional plans, specifications and estimates are required beyond the original assumptions as noted below. The final design shall include all the tasks necessary for a construction-ready project, including design surveys as determined necessary and where applicable; preparation of plans, specifications and estimates; utility coordination and permitting.

The following additional plan sheets shall be included in the design:

- f. Plan and Profile Sheets –New location #38 requires a plan and profile sheet. For the street improvements, standard roadway plan and profile sheets shall be used. Profiles will only be provided where determined necessary to control the design of the improvements. The plan view will be prepared at a scale of 1" =40' for horizontal and 1" =10' for vertical (where applicable). The plans will identify the required work to construct the improvements of this project and where applicable include stations, offsets, and elevations. Utility modifications to relocate clear of the proposed improvements shall also be shown on the plan view of the sheets. Where necessary, show utility relocations in details and profiles for better clarification. Bulb-out and curb profiles shall be included. The sheets will provide the appropriate construction callouts, including limits of the project, pavement areas, curb, gutter and sidewalk, bulb-outs, ramps, driveway conforms, and other details necessary to construct the project. The plans will include enough detail to locate the improvements based on roadway station callouts and horizontal line and curve data or other referencing of existing facilities as appropriate. The plan will include the existing right-of-way clearly marked and adjacent properties

Multi-Year Professional Services

Service Group Category 1 – Roadway and Structures Engineering

Pedestrian Gap Closure Improvements, ATPL-5419(050); (Reference: PWCP 16-008)

identified by parcel number and property owner. One (1) additional plan and profile sheet is required to include location #38, bringing the total number of plan and profile sheets to 36.

j. LS-3 Rate Schedule Electrical and Street Lighting Plans – Street lighting plans were assumed to be included at some of the locations. Street lighting scope was assumed to be limited and to include a total of 5 plan sheets. A street lighting plan shall be produced for segment of street to receive street lighting. Plans shall consist of street light type and location, conduits, pull boxes, meter boxes & meter, electrical design and ties to existing circuits or service points and shall be prepared per City of Lancaster requirements for LS-3 Rate Schedule Street Lights. SCE preliminary work order maps shall be obtained and included. Street light layout shall be prepared and stamped by a licensed Civil Engineer while electrical plans shall be prepared and stamped by a licensed Electrical Engineer. Meter pedestal addresses shall be obtained from the City and included on the plans. The proposed design as coordinated with the City now includes a total seventeen (17) plan sheets. This includes twelve (12) additional sheets for street lighting. One of the additional sheets is required for new location #38 and the others are included at existing locations as determined by the City through project development.

k. Striping, Signing and Marking Plans - Striping, Signing and Marking Plans were assumed to be included at some of the locations. The scope was assumed to be limited and include a total of twelve (12) plan sheets in the original scope. The plans will use California MUTCD references and detail numbers, where applicable and available, and specific information to specify signing, striping or pavement markings not included in the current manual. A schedule of proposed striping and a schedule of pavement markings will be shown on the plans. Project limits to include all required approach striping. For Signs, the size, shape, lettering type and size, colors, and symbols, to specify signs not included in the current manual. A schedule of proposed signs will be shown on the plan. Project limits to include all required approach signing. Miscellaneous Utility Plans – Placeholders for utility relocation and utility work order plans prepared and provided by appropriate utility company. Consultant shall coordinate and obtain any utility work order maps required and shall be included on these sheets. The proposed design as coordinated with the City now includes a total of nineteen (19) Striping, Signing and Marking Plans. This includes a total of seven (7) additional sheets. One sheet is required for new location #38, the other sheets are required to detail the road dieting efforts proposed by the City to reduce impacts and right of way requirements.

EXHIBIT “2”

SCHEDULE

- A. Task Order 2 – Original Schedule
- B. Task Order 2 – Additional Authorization No. 1 Schedule
- C. Task Order 2 – Additional Authorization No. 2 Schedule

EXHIBIT "2-A"

EXHIBIT 2: SCHEDULE

In order to preserve grant funding, time is of the essence. Immediately following selection, the selected Consultant will be notified with a Notice of Intent to Award. Task Order and Purchase Order will be processed and executed as soon as possible following selection, and shall be in place prior to Notice to Proceed.

Milestone	Completed By
Issue Design RFP	04/18/19
All questions submitted in writing by 2:00 PM	05/13/19
Proposals Submitted prior to 2:00 PM (1:59:59)	05/20/19
Consultant Selection	05/21/19
Design Award (Council)	06/11/19
Design Award Letter	06/14/19
Consultant returns signed Task Order	06/21/19
Design Notice to Proceed	06/25/19
Kick-off meeting with City Stakeholders	06/27/19
Survey and 30% Plans	09/26/19
Potholing and 60% PS&E	11/21/19
90% PS&E	01/16/20
Signed Plans and Specs (RFA)	02/27/20
100% PS&E, Signed Plans and Specs (Bid)	04/30/20

City review periods, as noted in Exhibit 1, are included in this schedule; no additional time will be awarded for allowable time with City.

With submittal of a Proposal, the Consultant acknowledges understanding and awareness of the proposed schedule. No price adjustments will be permitted for acceleration.

EXHIBIT "2-B"

EXHIBIT 2: SCHEDULE

In order to preserve grant funding, time is of the essence. Immediately following selection and City Council Approval, the selected Consultant will be advised with a Notice of Intent to Award. Task Order will be processed and executed as soon as possible following selection, and shall be in place prior to Notice to Proceed.

MILESTONE	COMPLETED BY
Issue TO RFP	September 3, 2019
Award Date (Council)	October 22, 2019
Consultant returns signed agreement	October 31, 2019
Notice to Proceed	November 5, 2019
60% Design Plans to ROW Consultant	November 25, 2019
Submittal of Caltrans ROW RFA; Exhibit 17-EX-21 (ROW Data Sheet)	April 20, 2020
Acquisitions Completed and Deliverables Submitted	July 1, 2020
Submittal of Caltrans ROW Certification; Exhibit 13-B	July 9, 2020

City review periods are included in this schedule; no additional time will be granted for allowable time with the City.

With submittal of a Proposal, the Consultant acknowledges full understanding and awareness of the proposed schedule. No price adjustments will be permitted for acceleration.

Multi-Year Professional Services
Service Group Category 1 – Roadway and Structures Engineering
Pedestrian Gap Closure Improvements, ATPL-5419(050); (Reference: PWCP 16-008)

EXHIBIT “2-C”

EXHIBIT 2: SCHEDULE

No change authorized with Additional Authorization No. 2.

EXHIBIT “3”

FEE SCHEDULE

The Consultant shall maintain separate costs and shall identify the specific costs. The costs under this task order shall include:

- A. Task Order 2 – Original Payment and Fees
- B. Task Order 2 – Additional Authorization No. 1 Payment and Fees
- C. Task Order 2 – Additional Authorization No. 2 Payment and Fees

<u>Original Authorization:</u>	\$400,082.00
<u>Previous Addt'l Authorizations:</u>	\$275,082.00
<u>Authorization No. 2:</u>	\$116,536.00
<u>Total Not To Exceed:</u>	\$791,700.00

EXHIBIT "3-A"

Service Group Category 1
Prepare Plans, Specifications and Estimates (PS)
Pedestrian Gap Closure Improvements, ATPL-5419(050)
(Reference: PWCP 16-008)
Exhibit 3, Page 1 of 2

EXHIBIT 3: PAYMENT AND FEES*

TASK NO.	DESCRIPTION	PRICE
1.	PROJECT ADMINISTRATION AND MANAGEMENT	\$ <u>34,910</u>
1.1	Work Plan	
1.2	Meetings	
1.2.1	Kick off Meeting	
1.2.2	Progress Meetings	
1.2.3	Additional Meetings	
1.3	Project Management	
1.4	Quality Assurance & Quality Control	
1.5	Permits	
2.	RESEARCH	\$ <u>28,404</u>
2.1	Utilities	
2.2	Survey Records	
2.3	Mapping and ROW	
2.4	Incidental	
3.	DESIGN ENGINEERING AND SURVEYS	\$ <u>49,366</u>
3.1	Design Surveys	
3.2	Geotechnical	
4.	SCOPING OF IMPROVEMENTS	\$ <u>24,665</u>
5.	ENGINEERING PS&E	\$ <u>240,905</u>
5.1	Engineering Plans	
5.1.1	Conceptual Plans (30%)	
5.1.2	Preliminary Plans (60%)	
5.1.3	Final Plans (90%)	
5.1.4	Final Plans (100%) Signed for Bid	
5.2	Specifications	
5.3	Cost Estimate	

EXHIBIT 3: PAYMENT AND FEES*

TASK NO.	DESCRIPTION	PRICE
6.	CALTRANS SUPPORT	\$ <u>13,582</u>
6.1	NEPA Revalidation from Caltrans	
6.2	ROW Certification	
6.3	Request for Authorization (Construction)	
	ADDITIONAL STUDIES/INVESTIGATION	\$ <u>8,250</u>
	Potholing (assume 5 for proposal purposes)	
TOTAL COST*		\$ <u>400,082</u>
TIME AND MATERIALS NOT TO EXCEED		

TOTAL COST AMOUNT WRITTEN IN WORDS _____
FOUR HUNDRED THOUSAND AND EIGHTY-TWO DOLLARS

* In support of Exhibit 3, Consultant shall provide two fee grids (in table format), with an itemized breakdown by:
 a. Hours** and Personnel
 b. Rate and Personnel
 c. Unit rate for potholing (EA)

** Hours are for progress tracking purposes only. This is a lump sum not to exceed contract to provide services as described in Exhibit 1, *complete*. Additional hours and associated costs will only be considered for change in scope and must be authorized in writing prior to expenditure.

KIMLEY-HORN AND ASSOCIATES, INC.											Vertex	Taft	EMI
Anticipated Level of Effort Staff/Task											Surveys Total Budget *	Perthling*	Geotechnical Budget *
Contract Manager - Bob Blume	Project Manager- Robin Osbourne	Project Engineer (Professional II)	Senior Engineer (Professional II)	Utility Engineer - Frank Hoffmann (Sr. Professional I)	Design Engineer (Analyst)	Analyst	Admin Support	KHA Hours Total	KHA Labor Totals	KHA Expense Totals			
P-8	P6	P4-P5	P6	P7	P3-P4	P1-P3							
\$ 300	\$ 210	\$ 170	\$ 220	\$ 230	\$ 140	\$ 115	\$ 95						
TASK 1: Project Management & Coordination													
13	42	36	20	20	60	28	17	176	\$ 33,375	\$ 1,535	\$ -	\$ -	\$ 34,910
2	6	8	2	4	16	0	4	42	\$ 7,200	\$ 351	\$ -	\$ -	\$ 7,551
8	16	16	2	10	8	0	0	60	\$ 13,340	\$ 568	\$ -	\$ -	\$ 12,908
2	4	4	0	4	2	0	0	16	\$ 3,320				\$ 3,320
4	8	8	2	2	4	0	0	28	\$ 5,700				\$ 5,700
2	4	4	0	4	2	0	0	16	\$ 3,320				\$ 3,320
1	8	0	0	0	0	0	10	19	\$ 2,930	\$ 135	\$ -	\$ -	\$ 3,065
1	8	4	16	4	4	0	2	35	\$ 7,290	\$ 335	\$ -	\$ -	\$ 7,625
1	4	8	0	2	4	0	1	20	\$ 3,615	\$ 166	\$ -	\$ -	\$ 3,781
TASK 2: Research													
4	16	16	4	12	60	64	5	181	\$ 27,155	\$ 1,249	\$ -	\$ 8,250	\$ 36,654
1	4	4	4	8	8	24	2	55	\$ 6,610	\$ 396	\$ -	\$ 8,250	\$ 17,256
1	4	4	0	0	4	0	1	14	\$ 2,475	\$ 114	\$ -	\$ -	\$ 2,589
1	4	4	0	4	40	40	1	94	\$ 13,035	\$ 600	\$ -	\$ -	\$ 13,635
1	4	4	0	0	8	0	1	18	\$ 3,035	\$ 140	\$ -	\$ -	\$ 3,175
TASK 3: Design Engineering and Surveys													
1	2	4	0	0	12	4	2	32	\$ 5,130	\$ 236	\$ 22,000	\$ -	\$ 22,000
1	2	4	0	0	8	4	1	20	\$ 3,075	\$ 141	\$ 22,000	\$ -	\$ 25,216
1	2	4	0	0	4	0	1	12	\$ 2,055	\$ 95	\$ -	\$ -	\$ 22,000
TASK 4: Scoping of Improvements													
4	8	32	18	12	32	32	4	142	\$ 23,580	\$ 1,085	\$ -	\$ -	\$ 24,665
4	8	32	18	12	32	32	4	142	\$ 23,580	\$ 1,085	\$ -	\$ -	\$ 24,665
1	2	8	4	4	8	8	1	36	\$ 6,015	\$ -	\$ -	\$ -	\$ 6,015
1	2	8	2	2	8	8	1	32	\$ 5,115	\$ -	\$ -	\$ -	\$ 5,115
1	2	8	8	4	8	8	1	40	\$ 6,895	\$ -	\$ -	\$ -	\$ 6,895
1	2	8	4	2	8	8	1	34	\$ 5,555	\$ -	\$ -	\$ -	\$ 5,555
TASK 5: Engineering Plans, Specifications and Estimates													
6	36	192	48	52	560	750	12	1655	\$ 230,310	\$ 10,594	\$ -	\$ -	\$ 240,904
4	28	160	28	48	480	710	8	1465	\$ 201,090	\$ 9,250	\$ -	\$ -	\$ 210,340
1	8	40	8	8	120	160	2	347	\$ 47,770	\$ -	\$ -	\$ -	\$ 47,770
1	8	48	8	16	160	260	2	503	\$ 68,070	\$ -	\$ -	\$ -	\$ 68,070
1	8	48	8	16	160	250	2	493	\$ 66,920	\$ -	\$ -	\$ -	\$ 66,920
1	4	24	4	8	40	40	2	123	\$ 18,330	\$ -	\$ -	\$ -	\$ 18,330
1	4	16	4	4	40	40	2	71	\$ 11,450	\$ 527	\$ -	\$ -	\$ 11,977
1	4	16	16	0	40	40	2	119	\$ 17,770	\$ 817	\$ -	\$ -	\$ 18,587
TASK 6: Caltrans Support													
3	12	24	0	8	24	0	3	74	\$ 12,985	\$ 597	\$ -	\$ -	\$ 13,582
1	4	8	0	0	8	0	1	22	\$ 3,715	\$ 171	\$ -	\$ -	\$ 3,886
1	4	8	0	8	8	0	1	30	\$ 5,555	\$ 256	\$ -	\$ -	\$ 5,811
1	4	8	0	0	8	0	1	22	\$ 3,715	\$ 171	\$ -	\$ -	\$ 3,886
32	118	308	90	104	716	850	43	2,261	\$ 332,535	\$ 15,297	\$ 22,000	\$ 8,250	\$ 400,082
* subs costs include 10% markup (not ODC's)													
2261.													



Rate Schedule

Effective October 2018 to October 2020

<u>Classification</u>	<u>Billing Rate per Hour</u>
Project Manager	\$285 - \$325
Analyst	\$120 - \$160
Professional I	\$160 - \$195
Professional II	\$195 - \$225
Sr. Professional I	\$225 - \$265
Sr. Professional II	\$265 - \$300
Sr. Professional III	\$300 - \$360
Project Support	\$125 - \$170
Administrative Support	\$95 to \$115

Other Direct Costs: Outside Printing/Reproduction, Delivery Services/USPS, Misc. Field Equipment/Supplies, and Travel Expenses will be billed at actual cost (if approved in advance).

Subconsultant Mark-up: 10%



Earth Mechanics, Inc.

Geotechnical & Earthquake Engineering

EMI FEE SCHEDULE (2018 – 2020)

City of Lancaster
SR-14 / Avenue J Interchange

LABOR CATEGORY	FULLY BURDENED HOURLY RATE RANGE
Principal	\$264 - \$285
Principal Engineer/Geologist	\$229 - \$248
Senior Engineer/Geologist	\$195 - \$210
Senior Project Engineer/Geologist	\$161 - \$174
Project Engineer/Geologist	\$146 - \$158
Senior Staff Engineer/Geologist	\$111 - \$120
Staff Engineer/Geologist	\$100 - \$109
Senior Technician	\$124 - \$134
Technician	\$60 - \$64
Clerical	\$104 - \$112

General notes

1. Please allow forty-eight (48) hours advance notice for one crew and seventy-two (72) hours advance notice for two crews. This will help insure that a crew will be available to meet your construction schedule.
2. In the event of simultaneous requests please establish the staking priority upon request.
3. Please be sure the area to be staked is cleared and ready for stakes.
4. Stakes should be used within a reasonable time of staking to ensure quality and accuracy.
5. This cost is based on daytime working hours. Night work and mandatory overtime charges will be billed as extra work.
6. Construction meetings will be attended on a time and material basis.
7. All Time and Material items are subject to a 2 hour minimum.
8. Control establishment: Client to provide electronic files with centerline, boundary and field datum used for this design. This is **not** a boundary survey.
9. This proposal is valid for 60 days.
10. Stakes that do not comply with the latest plan or industry standards shall be voided and our office notified prior to any construction.
11. Any cut and fill depths which may be marked on survey lath are shown for the Contractor's convenience only and are not to be solely relied on for construction, the information shown on the cut sheet shall take precedence over any marks shown on field stakes.
12. Vertex Survey, Inc. recommends and reserves the right to inspect, prior to any concrete pour, the following: curb forms, curb wire guides, building/abutment foundation forms, bolt patterns, catch basin forms, structure forms etc... and failure to request said inspection will render Vertex Survey, Inc. harmless of any resulting errors or emissions.
13. We recommend that construction stakes and/or markings be protected and used immediately as Vertex Survey, Inc. cannot guarantee their accuracy after equipment and foot traffic occurs near these points.
14. This agreement may be terminated upon: (a) written notice from either client or Surveyor prior to any expenses being incurred on client's behalf; or (b) client's payment for expenses and services rendered up to the date of Surveyor's receipt of client's written notice to terminate.
15. This proposal is submitted under the direction of Mike Lopez, A Ca. Professional Land Surveyor (LS 8995) and an Officer of Vertex Survey, Inc.

HOURLY RATE SCHEDULE

(GOOD THRU 12/31/19)

OFFICE	Hourly
Licensed Surveyor/Principal	\$160
Project Manager/Supervisor	\$150
FIELD	
Field Crew (2 man crew)	\$260
Field Crew (3man crew)	\$360
SUPPORT	
Office Calculations and Support	\$135
Deliveries/Research/Certified Payroll	\$100
Fees and plotting	Cost plus 5%

EXHIBIT 3: PAYMENT AND FEES

TASK NO.	DESCRIPTION	PRICE
1.	PROJECT MANAGEMENT	<u>\$ 22,784</u>
1.1	General	
1.2	Meetings	
1.2.1	Progress Meetings	
1.2.2	Additional Meetings	
1.3	Deliverables	
a)	Meeting (Agenda and Minutes)	
b)	Copies of Communications	
c)	Progress updates and Action Items	
2.	IDENTIFY APNs FOR ACQUISITIONS	<u>\$ 18,885</u>
2.1	General	
2.2	Deliverables	
2.2.1	Final Parcel list of Property Acquisitions	
2.2.2	ROWdata for Caltrans Exhibit 17-EX-21	
3.	PRELIMINARY TITLE REPORT & INVESTIGATION	<u>\$ 17,332</u>
3.1	General	
3.2	Deliverables	
3.2.1	Preliminary Title Report for each property	
3.2.2	List of Title Exemptions to be cleared	
3.2.3	Copies of all relevant investigation information	
4.	PREPARE ROW ENGINEERING DOCUMENTS	<u>\$ 31,581</u>
4.1	General	
4.2	Deliverables	
5.	MINIMUM VALUE ESTIMATE	<u>\$ 48,741</u>
5.1	General	
5.2	Deliverables	
5.2.1	Minimum Value Estimate Report	
5.2.2	Copies of all communications	
6.	OBTAIN DEDICATIONS/NEGOTIATIONS WITH PROPERTY OWNERS/	<u>\$ 116,674</u>
6.1	General	
6.2	Deliverables	
6.2.1	Copies of all Communication logs and diary reports	
6.2.2	Copies of Communication with owner	
6.2.3	Original recorded easement document	
7.	ESCROW/TITLE CLEARANCE	<u>\$ 16,692</u>
7.1	General	
7.2	Deliverables	
7.2.1	Copies of all communication	
7.2.2	Clear title	

Multi Year Professional Servicers
 Service Group Category 5 - Real Property Services/ROW Acquisition/Mapping
 Pedestrian Gap Closure Improvements, ATPL-5419(050); (Reference: PWCP 16-008)

EXHIBIT 3: PAYMENT AND FEES

TASK NO.	DESCRIPTION	PRICE
8	NOT USED	
9	RIGHT OF WAY CERTIFICATION	\$ <u>2,393</u>
9.1	General	
9.2	Deliverables	
9.2.1	ROW Certification package	
	TOTAL COST TIME AND MATERIALS NOT TO EXCEED	\$ <u>275,082</u>

TOTAL COST AMOUNT WRITTEN IN WORDS
TWO HUNDRED SEVENTY-FIVE AND EIGHTY-TWO DOLLARS
↑ THOUSAND

PRP

* In support of Exhibit 3, Consultant shall provide two fee grids (in table format), with an itemized breakdown by:
 a. Hours** and Personnel
 b. Rate and Personnel

** Hours are for progress tracking purposes only. This is a lump sum not to exceed contract to provide services as described in Exhibit 1, *complete*. Additional hours and associated costs will only be considered for change in scope and must be authorized in writing prior to expenditure.

EXHIBIT “3-C”

EXHIBIT 3: PAYMENT AND FEES

Additional Authorization No. 2

	<u>Task</u>	<u>Fee</u>
1	Project Management and Coordination	\$2,385
2	Research	\$3,253
3	Design Engineering and Surveys	\$59,163
4	Scoping of Improvements	\$6,914
5	Engineering PS&E	\$44,821
6	Caltrans Support	\$0
	Additional Studies/Investigations (10 Potholes) & Expenses	\$0
		<hr/>
	TOTAL	\$116,536

STAFF REPORT
City of Lancaster

CC 5
01/28/20
JC

Date: January 28, 2020

To: Mayor Parris and City Council Members

From: Jeff Hogan, Development Services Director

Subject: **Public Works Construction Project No. 20-007 Drainage Fencing**

Recommendation:

Award Public Works Construction Project No. 20-007, Drainage Fencing, to Quality Fence Company Inc., of Paramount, California, in the amount of \$474,940 plus a 10% contingency, to refurbish existing fencing and replace as needed along the east bank of the Amargosa Creek between Lancaster Boulevard and Avenue J, and authorize the City Manager, or his designee, to sign all documents. This contract is awarded to the lowest responsible bidder per California Public Code Section 22038 (b).

Fiscal Impact:

\$522,434 (including 10% contingency) to be awarded; sufficient funds are available in Capital Improvements Budget Account Number 220-12FW003-924. There are no associated annual maintenance costs.

Background:

In 2018, the City of Lancaster launched the Impact Initiative, which addresses beautification of the community, as well as to enhance the quality of life of our residents. Lancaster’s Impact Initiative will plan, create, contribute to, and support activities and innovative programs that transform the visual character of our City. Through this initiative, City Administration envisions a community where blighted areas are substantially eliminated, and the investment in visual improvement to instill civic pride and enhance social trust citywide, as well as improve security and the health and safety for all its residents. With these goals in mind the City aimed to refurbish fencing and replace as needed, the existing drainage channel fencing along the east bank of the Amargosa Creek between Lancaster Boulevard and Avenue J.

Per Section 2.2, this project is subject to the Community Workforce Agreement by and between the City of Lancaster and Los Angeles/Orange Counties Building and Construction Trades Council, and the Signatory Craft Councils and Unions (“CWA”). The PWCP 20-007 contract documents were prepared, and the project was advertised accordingly. Per Section 2.6(b) of the CWA, Letters of Assent shall be submitted by the Contractor and each of its subcontractors, of whatever tier, 48 hours prior to commencement of work, or within forty-eight (48) hours after the award of Project Work to that Contractor (or subcontractor), whichever occurs later.

On December 17, 2019, at 11:00 a.m., the City conducted an electronic bid opening for Public Works Construction Project No. 20-007 via PlanetBids. Three (3) bids were received. The bids were as follows:

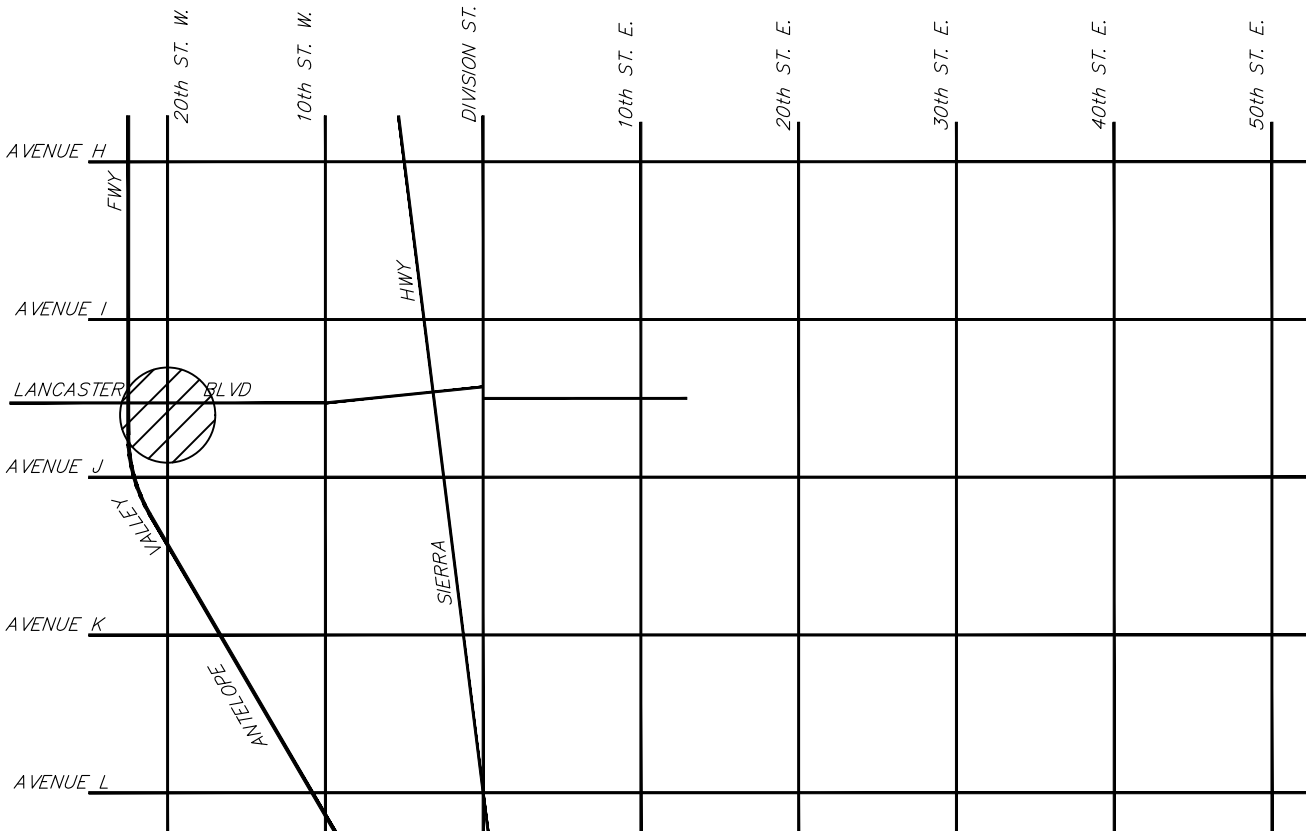
	<u>Contractor</u>	<u>City</u>	<u>Bid Amount</u>
1.	Quality Fence Co. Inc.	Paramount, CA	\$474,940.00
2.	Izurieta Fence Co. Inc.	Los Angeles, CA	\$565,850.00
3.	Ultra Tek Development LLC.	Bell Flower, CA	\$298,008.14*
	Engineer's Estimate		\$325,815.00

* Lowest Bid was deemed non-responsive due to bidder not providing appropriate Bid Bond in time.

JF:gb

Attachment:
Vicinity Map

PWCP 20-007 DRAINAGE FENCING



LEGEND

 PROJECT LOCATION



VICINITY MAP
N.T.S.

STAFF REPORT
City of Lancaster

CC 6
01/28/20
JC

Date: January 28, 2020

To: Mayor Parris and City Council Members

From: Jeff Campbell, Parks, Recreation and Arts Director

Subject: **Amendment to the Agreement for Professional Consulting Services with Spohn Ranch, Inc. for the Skatepark at Jane Reynolds Park**

Recommendation:

Approve an amendment to the Agreement for Professional Consulting Services with Spohn Ranch, Inc. increasing the not to exceed contract amount to \$1.31 million.

Fiscal Impact:

\$274,000; payable with bond funds procured in December 2018

\$36,000; payable with Capital Improvement Projects funds: 227-12GS006-924

Background:

In March 2019 the City Council awarded the contract for construction of a skatepark at Jane Reynolds Park to Spohn Ranch, Inc. During the course of construction, modifications to the scope of work resulted in an increase to the total project cost. These revisions included the addition of an advanced bowl that is one-of-a-kind, a change to the requirements for the drainage pump system, and the addition of concrete work for sidewalks leading into the skatepark from the perimeter walkways.

NJ:jzs

STAFF REPORT
City of Lancaster, California

PH 1
01/28/20
JC

Date: January 28, 2020

To: Mayor Parris and City Council Members

From: Chris Aune, Innovation & Economic Development Housing Manager

Subject: **TEFRA Hearing/Approval of Multifamily Housing Revenue Bonds for Terracina at Lancaster Apartments.**

Recommendation:

Adopt **Resolution No. 20-02**, pursuant to Section 147(f) of the Internal Revenue Code of 1986, approving the issuance of housing revenue bonds (the Housing Revenue Bonds) by the California Municipal Finance Authority (CMFA) in an aggregate principal amount not to exceed \$55,000,000 to assist in the financing of the acquisition, construction, improvement and equipping of a multifamily rental housing project located at 1752 E. Avenue J4, Lancaster, California (the Project).

Fiscal Impact:

There is no financial impact. The City itself is not issuing the Housing Revenue Bonds, is not obligated to repay the Housing Revenue Bonds and is not pledging or otherwise committing any of the City's revenue or other assets to secure repayment of the Housing Revenue Bonds. The Housing Revenue Bonds are payable solely from revenue received pursuant to the terms and provisions of certain financing agreements to be executed by the developer.

Background:

Lancaster 690, L.P., a California limited partnership (the Borrower) a partnership of which USA Properties Fund, Inc. (the Developer) or a related person to the Developer is the general partner, has requested that the CMFA adopt a plan of financing providing for the issuance of exempt facility bonds for a qualified residential rental project pursuant to Section 142(a)(7) of the Internal Revenue Code of 1986 (the Code) in an aggregate principal amount not to exceed \$55,000,000 (the Bonds), to finance the acquisition, construction, improvement and equipping of a multifamily rental housing project located at 1752 E. Avenue J4, Lancaster, California.

The Borrower requests that the City approve CMFA's issuance of the Housing Revenue Bonds in order to finance the above-mentioned project. The Housing Revenue Bonds will be tax-exempt private activity bonds for purposes of the Internal Revenue Code and, as such, require the approval of the elected body of the governmental entity having jurisdiction over the area where the project to be financed is located. In order for the City to approve CMFA's issuance of the Housing Revenue Bonds, the City must conduct a Tax Equity and Fiscal Responsibility Act (TEFRA) hearing to allow for public comment on the use of the tax-exempt bond financing. Notice of today's TEFRA public hearing was published in the Antelope Valley Press, a newspaper of general circulation in the community, on January 19, 2020.

The City has a significant interest in the success of these projects. Therefore, staff recommends adoption of this resolution in order to approve CMFA's issuance of the Housing Revenue Bonds pursuant to Section 147(f) of the Internal Revenue Code of 1986. Adoption of this resolution does not establish or warrant in any manner the creditworthiness or repayment of the Housing Revenue Bonds.

Attachment:

Resolution No. 20-02

RESOLUTION NO. 20-02

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER APPROVING APPROVING THE ISSUANCE OF HOUSING REVENUE BONDS (THE HOUSING REVENUE BONDS) BY THE CALIFORNIA MUNICIPAL FINANCE AUTHORITY (CMFA) IN AN AGGREGATE PRINCIPAL AMOUNT NOT TO EXCEED \$55,000,000 TO ASSIST IN THE FINANCING OF THE ACQUISITION, CONSTRUCTION, IMPROVEMENT AND EQUIPPING OF A MULTIFAMILY RENTAL HOUSING PROJECT LOCATED AT 1752 E. AVENUE J4, LANCASTER, CALIFORNIA (THE PROJECT)

WHEREAS, USA Properties Fund, Inc. (the “Sponsor”), on behalf of Lancaster 690, L.P. a California limited partnership, or another entity to be established by the Sponsor or an affiliate thereof (such limited partnership or other entity, as applicable, being referred to herein as the “Borrower”), has requested that the California Municipal Finance Authority (the “Authority”) issue one or more series of revenue bonds in an aggregate principal amount not to exceed \$55,000,000, including but not limited to revenue bonds issued as part of a plan to finance the facilities described herein (the “Bonds”), for the acquisition, construction, improvement and equipping of a 264-unit multifamily rental housing development for low- and very low-income households (the “Project”), to be located at 1752 E. Avenue J4, in the City of Lancaster, California (the “City”); and

WHEREAS, an “applicable elected representative” of the jurisdiction in which the Project is to be located is required to approve the issuance of the Bonds under Section 147(f) of the Code; and

WHEREAS, the City Council of the City (the “City Council”) is the elected legislative body of the City and is an “applicable elected representative” for purposes of Section 147(f) of the Code; and

WHEREAS, the Authority has requested that the City Council approve the issuance of the Bonds by the Authority in order to satisfy the public approval requirement of Section 147(f) of the Code and the requirements of Section 4 of the Joint Exercise of Powers Agreement Relating to the California Municipal Finance Authority, dated as of January 1, 2004 (the “Agreement”), among certain local agencies, including the City; and

WHEREAS, pursuant to Section 147(f) of the Code, the City Council has, following notice duly given, held a public hearing regarding the issuance of the Bonds, and now desires to approve the issuance of the Bonds by the Authority;

NOW, THEREFORE, BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA, AS FOLLOWS:

Section 1. The foregoing recitals are true and correct.

Section 2. The City Council hereby approves the issuance of the Bonds by the Authority, including but not limited to Bonds issued as part of a plan to finance the Project. It is the purpose and intent of the City Council that this resolution constitute approval of the issuance of the Bonds by the Authority for the Project, for the purposes of (a) Section 147(f) of the Code by the applicable elected representative of the governmental unit having jurisdiction over the area in which the Project is to be located, in accordance with said Section 147(f) and (b) Section 4 of the Agreement.

Section 3. The officers of the City are hereby authorized and directed, jointly and severally, to do any and all things and to execute and deliver any and all documents which they deem necessary or advisable in order to carry out, give effect to and comply with the terms and intent of this resolution and the financing transaction approved hereby.

Section 4. The Clerk shall forward a certified copy of this Resolution to the Authority in care of its counsel:

Ronald E. Lee, Esq.
Jones Hall, APLC
475 Sansome Street, Suite 1700
San Francisco, CA 94111

Section 5. This resolution shall take effect immediately upon its adoption.

PASSED, APPROVED, and ADOPTED this 28th day of January, 2020, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

APPROVED:

ANDREA ALEXANDER
City Clerk
City of Lancaster

R. REX PARRIS
Mayor
City of Lancaster

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF LANCASTER)

CERTIFICATION OF RESOLUTION
CITY COUNCIL

I, _____, _____ City of Lancaster, CA, do hereby certify that this is a true and correct copy of the original Resolution No. 20-02, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this _____ day of _____, _____.

(seal)

STAFF REPORT
City of Lancaster, California

PH 2
01/28/20
JC

Date: January 28, 2020

To: Mayor Parris and City Council Members

From: Chris Aune, Innovation & Economic Development Housing Manager

Subject: **TEFRA Hearing/Approval of Multifamily Housing Revenue Bonds for Village Pointe Apartments**

Recommendation:

Adopt **Resolution No. 20-03**, pursuant to Section 147(f) of the Internal Revenue Code of 1986, approving the issuance of housing revenue bonds (the Housing Revenue Bonds) by the California Municipal Finance Authority (CMFA) in an aggregate principal amount not to exceed \$60,000,000 to finance or refinance the acquisition and rehabilitation of a multifamily rental housing project located at 43650 Challenger Way, Lancaster, California (the Project).

Fiscal Impact:

There is no financial impact. The City itself is not issuing the Housing Revenue Bonds, is not obligated to repay the Housing Revenue Bonds and is not pledging or otherwise committing any of the City's revenue or other assets to secure repayment of the Housing Revenue Bonds. The Housing Revenue Bonds are payable solely from revenue received pursuant to the terms and provisions of certain financing agreements to be executed by the developer.

Background:

Village Pointe Community Partners, LP (the Borrower) a partnership of which WNC Development Partners (the Developer) or a related person to the Developer is the general partner, has requested that the California Municipal Finance Authority (the Authority) adopt a plan of financing providing for the issuance of exempt facility bonds for a qualified residential rental project pursuant to Section 142(a)(7) of the Internal Revenue Code of 1986 (the Code) in one or more series issued from time to time, including bonds issued to refund such exempt facility bonds in one or more series from time to time, and at no time to exceed \$60,000,000 in aggregate principal amount (the Bonds), to finance or refinance the acquisition, rehabilitation, improvement and equipping of a multifamily rental housing project located at 43650 Challenger Way, Lancaster, California (the Project).

The Borrower requests that the City approve CMFA's issuance of the Housing Revenue Bonds in order to finance the above-mentioned project. The Housing Revenue Bonds will be tax-exempt private activity bonds for purposes of the Internal Revenue Code and, as such, require the approval of the elected body of the governmental entity having jurisdiction over the area where the project to be financed is located. In order for the City to approve CMFA's issuance of the Housing Revenue Bonds, the City must conduct a Tax Equity and Fiscal Responsibility Act (TEFRA) hearing to allow for public comment on the use of the tax-exempt bond financing. Notice of today's TEFRA public hearing was published in the Antelope Valley Press, a newspaper of general circulation in the community, on January 19, 2020.

The City has a significant interest in the success of these projects. Therefore, staff recommends adoption of this resolution in order to approve CMFA's issuance of the Housing Revenue Bonds pursuant to Section 147(f) of the Internal Revenue Code of 1986. Adoption of this resolution does not establish or warrant in any manner the creditworthiness or repayment of the Housing Revenue Bonds.

Attachment:

Resolution No. 20-03

RESOLUTION 20-03

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER APPROVING THE ISSUANCE OF HOUSING REVENUE BONDS (THE HOUSING REVENUE BONDS) BY THE CALIFORNIA MUNICIPAL FINANCE AUTHORITY (CMFA) IN AN AGGREGATE PRINCIPAL AMOUNT NOT TO EXCEED \$60,000,000 TO FINANCE OR REFINANCE THE ACQUISITION AND REHABILITATION OF A MULTIFAMILY RENTAL HOUSING PROJECT LOCATED AT 43650 CHALLENGER WAY, LANCASTER, CALIFORNIA (THE PROJECT)

WHEREAS, Village Pointe Community Partners, LP (the “Borrower”) a partnership of which WNC Development Partners (the “Developer”) or a related person to the Developer is the general partner, has requested that the California Municipal Finance Authority (the “Authority”) adopt a plan of financing providing for the issuance of exempt facility bonds for a qualified residential rental project pursuant to Section 142(a)(7) of the Internal Revenue Code of 1986 (the “Code”) in one or more series issued from time to time, including bonds issued to refund such exempt facility bonds in one or more series from time to time, and at no time to exceed \$60,000,000 in aggregate principal amount (the “Bonds”), to finance or refinance the acquisition, rehabilitation, improvement and equipping of a multifamily rental housing project located at 43650 Challenger Way, Lancaster, California (the “Project”); and

WHEREAS, pursuant to Section 147(f) of the Code, the issuance of the Bonds by the Authority must be approved by the City of Lancaster (the “City”) because the Project is located within the territorial limits of the City; and

WHEREAS, the City Council of the City (the “City Council”) is the elected legislative body of the City and is one of the “applicable elected representatives” required to approve the issuance of the Bonds under Section 147(f) of the Code; and

WHEREAS, the Authority has requested that the City Council approve the issuance of the Bonds by the Authority in order to satisfy the public approval requirement of Section 147(f) of the Code and the requirements of Section 4 of the Joint Exercise of Powers Agreement Relating to the California Municipal Finance Authority, dated as of January 1, 2004 (the “Agreement”), among certain local agencies, including the City; and

WHEREAS, pursuant to Section 147(f) of the Code, the City Council has, following notice duly given, held a public hearing regarding the issuance of the Bonds, and now desires to approve the issuance of the Bonds by the Authority;

NOW, THEREFORE, BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF LANCASTER, CALIFORNIA, AS FOLLOWS:

Section 1. The foregoing resolutions are true and correct.

Section 2. The City Council hereby approves the issuance of the Bonds by the Authority. It is the purpose and intent of the City Council that this resolution constitute approval of the issuance of the Bonds by the Authority, for the purposes of (a) Section 147(f) of the Code by the applicable elected representative of the governmental unit having jurisdiction over the area in which the Project is located, in accordance with said Section 147(f) and (b) Section 4 of the Agreement.

Section 3. The issuance of the Bonds shall be subject to the approval of the Authority of all financing documents relating thereto to which the Authority is a party. The City shall have no responsibility or liability whatsoever with respect to the Bonds.

Section 4. The adoption of this Resolution shall not obligate the City or any department thereof to (i) provide any financing to acquire or construct the Project or any refinancing of the Project; (ii) approve any application or request for or take any other action in connection with any planning approval, permit or other action necessary for the acquisition, construction, rehabilitation, installation or operation of the Project; (iii) make any contribution or advance any funds whatsoever to the Authority; or (iv) take any further action with respect to the Authority or its membership therein.

Section 5. The officers of the City are hereby authorized and directed, jointly and severally, to do any and all things and to execute and deliver any and all documents which they deem necessary or advisable in order to carry out, give effect to and comply with the terms and intent of this resolution and the financing transaction approved hereby.

Section 6. This Resolution shall take effect from and after its passage and approval.

PASSED, APPROVED, and ADOPTED this 28th day of January, 2020, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:

APPROVED:

ANDREA ALEXANDER
City Clerk
City of Lancaster

R. REX PARRIS
Mayor
City of Lancaster

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss
CITY OF LANCASTER)

CERTIFICATION OF RESOLUTION
CITY COUNCIL

I, _____, _____ City of Lancaster, CA, do hereby certify that this is a true and correct copy of the original Resolution No. 20-03, for which the original is on file in my office.

WITNESS MY HAND AND THE SEAL OF THE CITY OF LANCASTER, on this _____ day of _____, _____.

(seal)

STAFF REPORT
City of Lancaster

NB 1
01/28/20
JC

Date: January 28, 2020

To: Mayor Parris and City Council Members

From: Jeff Hogan, Development Services Director

Subject: **Lancaster Safer Streets Action Plan (Systemic Safety Analysis Report)**

Recommendation:

Adopt the Lancaster Safer Streets Action Plan, also known as Systemic Safety Analysis Report.

Fiscal Impact:

None

Background:

In March 2017, the City received a grant from CalTrans to participate in the Systemic Safety Analysis Report Program. The grant was for \$225,000, with a \$25,000 local fund match. The state-funded Systemic Safety Analysis Report Program (SSARP) was established in 2016. The intent of this program is to assist local agencies in preparing future Highway Safety Improvement Program and other safety program applications. Those agencies that have adopted one of these reports will be given priority consideration for funding.

On March 13, 2018, the City awarded the contract to complete the Systemic Safety Analysis Report to Fehr & Peers. The Fehr & Peers team worked closely with City staff from April 2018 to December 2019 to complete this program.

The resulting report now known as the Lancaster Safer Streets Action Plan has greatly enhanced the City's previously static process of cataloging information obtained from collision reports to a dynamic methodology. City staff can utilize this methodology to determine the best cost-benefit ratio locations where the City can maximize collision reduction with every dollar invested in implementing systemic capital improvements. Additionally, this methodology will allow the City to maintain a ready backlog of improvement projects that can be implemented as soon as a funding source is identified.

TN:cvh/sr

Attachment:

Lancaster Safer Streets Action Plan (Systemic Safety Analysis Report)

CALIFORNIA SYSTEMIC SAFETY
ANALYSIS REPORT PROGRAM

LANCASTER SAFER STREETS ACTION PLAN

January 2020



EXECUTIVE SUMMARY

The purpose of the Lancaster Safer Streets Action Plan is to develop a systemic safety framework in support of reductions in the number and severity of crashes in the City of Lancaster. This plan lays the groundwork and provides the resources necessary for the preparation of successful Highway Safety Improvement Program (HSIP) grant applications by the City. It involves a data-driven process to address fatal and severe injuries for people traveling on foot, by bike, or by car; identify high-risk roadway characteristics; recommend countermeasures to address these crashes and characteristics; and ultimately, devise a traffic safety program to eliminate traffic-related deaths and severe injuries.

The Safer Streets Action Plan was funded through a Systemic Safety Analysis Report Program (SSARP) grant provided by the California Department of Transportation (Caltrans). The SSARP will build on the work completed in the City of Lancaster Complete Streets Safety Assessment (CSSA), completed in 2018, by expanding the geographic area analyzed for safety issues, and by incorporating a systemic and proactive approach to safety analysis. The SSARP process focuses not only on historically high-crash locations, but also incorporates analysis of high-risk roadway characteristics and contextual factors to identify safety solutions that can be implemented throughout the roadway network and, in many locations, before crashes occur.

THE PURPOSE OF THE SAFER STREETS ACTION PLAN IS TO:

1

Provide a citywide systemic safety framework

2

Identify representative locations and corresponding key crash types

3

Develop a list of safety countermeasures recommended for each location

4

Provide resources to secure funding to improve the representative locations

The SSAR program was initiated by Caltrans to help local agencies take a more proactive approach to identifying safety improvement projects by completing a system-wide, data-driven analysis of crashes. The SSAR evaluation includes crash and roadway database development, review of local crash data, safety data analysis, crash profile analysis, safety countermeasures identification, and project prioritization.

Chapter 1 contains a review of the plans and policies already in place in Lancaster that govern roadway planning and construction. The plans and policies summarized in this chapter include the General Plan, the Citywide Traffic Calming Policy, the Plan

of Trails & Bikeways, the Safe Routes to School Plan, and the Lancaster Master Plan of Complete Streets. The goals and projects identified in these plans were used to inform and supplement the recommendations in the Lancaster Safer Streets Action Plan.

The crash analysis process – described in Chapter 2 and Appendix A – involved creating a crash database to identify locations with a history of crashes and examining the crash trends at those locations to discern patterns and contributing factors. The database includes crashes that occurred from January 1, 2013 through the end of 2017, provided through the City’s Crossroads database. The database of 9,742 crashes, including 79 fatal crashes and 146 crashes resulting in severe injury, shows that the most common type of crash is a broadside crash, and the most common cause of a crashes is a right-of-way violation by a driver.

In addition to identifying locations with a history of crashes, this Plan also evaluated the systemic nature of crashes in the city, focusing not only on where crashes have occurred, but if the number of crashes exceeded the expected crash rate for that location. This analysis helped to pinpoint lower volume streets with safety issues, in addition to the locations with the highest number of crashes.

Chapter 3 includes the recommended representative projects and locations. Through the crash analysis process, nine intersections and three roadway segments were identified as representative project locations. These locations represent a variety of roadway contexts seen throughout Lancaster,

and the projects recommended for each location can also be considered for locations with similar characteristics or similar crash patterns. At each location, a short-, medium-, and long-term project list is presented in this chapter. To aid in the preparation of HSIP grant applications, each project is accompanied by a cost estimate, the benefit-cost ratio, and planning graphics that illustrate the proposed improvements.

Chapter 4 presents a summary of available funding sources that can be used to finance safety projects in addition to HSIP funding. This list includes regional, state, and federal funding programs, a description of the program purpose, and the date of the next funding opportunity.

To address the safety concerns identified in the crash analysis, a safety Countermeasure Toolbox is presented in Appendix B. The Toolbox includes a series of infrastructure improvement projects that can be used in HSIP funding applications. Each countermeasure is described along with its key design features, benefits, and application contexts. These countermeasures are used in the project lists in Chapter 3 and can be a resource to the City for future planning and safety improvements.

While infrastructure improvements are the core focus due to their efficacy and because they can be funded by HSIP, Appendix B also contains holistic recommendations for other improvements that support a safe transportation system. Other recommendations focus on bus stop safety, the importance of maintenance, curbside management, future fleet safety recommendations, and general policy for education and enforcement.

ENGINEER'S SEAL

PREPARED BY

(Name) _____ Date _____
(Title)
(ID Number)
Project Engineer

SIGNED FOR APPROVAL

(Name) _____ Date _____
(Title)
(ID Number)
City of Lancaster

By signing and stamping this Systemic Safety Analysis Report, the engineer is attesting to this report's technical information and engineering data upon which local agency's recommendations, conclusions, and decisions are made.

STATEMENT OF PROTECTION OF DATA FROM DISCOVERY AND ADMISSIONS

Section 148 of Title 23, United States Code

REPORTS DISCOVERY AND ADMISSION INTO EVIDENCE OF CERTAIN REPORTS, SURVEYS, AND INFORMATION — Notwithstanding any other provisions of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section, shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at the location identified or addressed in the reports, surveys, schedules, lists, or other data.

ACKNOWLEDGMENTS

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CHAPTER I

PLAN AND POLICY REVIEW

This chapter provides a review of previous planning efforts that are relevant to enhancing traffic safety as part of the Lancaster Safer Streets Action Plan. Lancaster aims to achieve a multimodal sensitive roadway system that responds to the evolving transportation landscape and addresses safe mobility for all.

The Lancaster Safer Streets Action Plan will adhere to the guidelines under the Systematic Safety Analysis Reporting Program (SSARP), a data-driven procedure to address fatal and severe injuries for people traveling on foot, by bike, or by car; identify high-risk roadway characteristics; recommend countermeasures to address these crashes and characteristics; and ultimately, devise a traffic safety program to eliminate traffic-related deaths and severe injuries.

Over the years, the City of Lancaster has amended its General Plan, Zoning Code, and adopted other guiding plans with the goal of making Lancaster a more sustainable and livable community. These plans include:

- > Citywide Traffic Calming Policy, 2008
- > Lancaster Master Plan of Trails and Bikeways (MPTB), 2012
- > Lancaster Safe Routes to School (SRTS) Master Plan, 2016
- > Lancaster Master Plan of Complete Streets (MPCS), 2017
- > Lancaster Complete Streets Safety Assessment, 2018

This chapter provides a summary of the priorities established in previous planning efforts, a review of the methodologies and safety analyses that informed the recommended list of projects, and a discussion on how the recommendations align with the City's traffic safety goals and affirm the direction of the Lancaster Safer Streets Action Plan.

OVERVIEW OF PLANS AND POLICIES

Prior plans have taken varied approaches to developing project lists based on existing conditions, crash data, community input, traffic analyses, and other methodologies. Key findings were analyzed in each plan to understand what safety analyses have been performed and what can be improved to inform the Lancaster Safer Streets Action Plan. Table 1 - Safety Analyses Completed in Relevant City of Lancaster Plans provides a summary of key findings from each plan.

TABLE 1 SAFETY ANALYSES COMPLETED IN RELEVANT CITY OF LANCASTER PLANS

PLANS	CRASHES (PED/BIKE ONLY)	COMMUNITY OUTREACH	SAFETY COUNTERMEASURES/ DESIGN GUIDELINES	EDUCATION AND ENFORCEMENT PROGRAMS	PRIORITIZED PROJECT LIST
1. General Plan 2030 (2009)	n/a	n/a	Per amendment (17-04), City will consider traffic calming before raising speed limits in designated areas	n/a	n/a
2. Citywide Traffic Calming Policy (2008)	n/a	n/a	Traffic calming countermeasures included	Education and enforcement programs included as part of the traffic calming countermeasures	n/a
3. Master Plan of Trails & Bikeways (2012)	Crashes were analyzed and were not primary basis for project list	Community input informed development of projects	Design guidelines for bicycle, pedestrian, trails, new development, landscape design and public realm enhancements included	Education & enforcement programs recommended	Project list was determined based on existing conditions, community input and field observations
4. Master Plan of Complete Streets (2015)	n/a	Community input informed development of project list	Complete streets design guidelines and suggested road cross sections included	n/a	Project list was determined based on existing conditions, community input, traffic forecasting analysis, and field observations
5. Safe Routes to School (SRTS) Plan (2017)	Crashes were analyzed and were not primary basis for project list	Community input informed development of project list	Guidelines on school area countermeasures, and signs and markings per CA MUTCD included	Education & enforcement programs recommended	Project list was determined based on community input and field observations
6. Complete Streets Safety Assessment (CSSA) (2018)	Crashes were analyzed and were not primary basis for project list	n/a	Pedestrian, bicycle and other road user safety countermeasures included	Current education & enforcement programs evaluated, and new programs recommended	Project list was determined at the request of City staff

GENERAL PLAN 2030

Adopted on July 14, 2009, Lancaster’s General Plan serves as the long-term vision to address numerous aspects of the City, including housing, transportation, land use, and public health, among others.

The Plan describes compact growth strategies that could facilitate shorter trips and encourage increased bicycling and walking. One of the stated assumptions in the General Plan is that Lancaster will experience population growth, and that much of this will be accommodated by high-intensity urban infill. Land use in Lancaster is categorized as either an Urbanizing Area or Rural Area, and all of the population growth projected through 2030 could be accommodated in the Urbanizing Area. The General Plan also assumes that the rising cost of fuel, as well as state and regional initiatives to curb greenhouse gases, will result in increased use of alternative modes of transportation. Under this assumption, it is critical to promote roadway safety as there will be more vulnerable road users walking and biking on Lancaster’s streets.

Two components of the General Plan, [Chapter IV, Plan for Active Living](#) and [Chapter V, Plan for Physical Mobility](#), further specify how Lancaster will enable more trips to be made by foot or bicycle.

- > [Chapter IV, Plan for Active Living](#) calls for the adoption and implementation of the MPTB to create a safe and integrated system of bicycle, pedestrian, and equestrian trails.
- > [Chapter V, Plan for Physical Mobility](#) specifies several actions and policies related to improving the safety of all modes. This may include implementing streetscape enhancements, balancing vehicular travel with pedestrian access, providing bicycle parking, and requiring pedestrian access to new developments.

Notably, “where conflicts arise between motorist convenience and the livability and well-being of neighborhoods, the latter concerns shall have priority” (Specific Action 14.2.3(a)).

GENERAL PLAN AMENDMENT NO. 17-04 AND SUBDIVISION ORDINANCE AMENDMENT OF CHAPTER 16.20

An amendment of portions of the City’s General Plan was adopted in conjunction with the approval of the MPCs to support the proposed complete streets design approach. These changes are reflected within [Chapter V, Plan for Physical Mobility](#), and others.

One of the key changes is the revisions to street performance evaluation metrics, outlined in [Chapter V Specific Action 14.1.1\(c\)](#), which eliminates vehicle delay—measured as level of service (LOS)—as a significant effect under the California Environmental Quality Act.

According to the staff report dated August 8, 2017, the revision to the City’s general plan based on the MPCs created the following metrics:

- > Within the City’s “infill area”, which is currently defined in the Lancaster Municipal Code as the area bounded by Avenue I, 20th Street East, Avenue L, and 30th Street West, peak hour LOS “D” may be acceptable and is weighed against other indicators. Mitigation of strictly vehicular-based LOS effects will not be required simply based on the LOS measurement.
- > In other areas of the City, peak hour LOS “D” remains the general objective, but the language allows the City to evaluate the effects of mitigating vehicular-based impacts against other City goals and objectives.

As the General Plan is a policy framework, no traffic safety analyses or specific projects were identified to

inform the development of the SSARP. However, the General Plan highlights key policies and objectives related to roadway safety in the Public Health and Safety, Mobility, and Active Living plan elements, including a focus on the importance of resident participation in community safety, and providing safe and convenient opportunities for recreation.

CITYWIDE TRAFFIC CALMING POLICY, 2008

The Lancaster Traffic Calming Policy aims to slow traffic on neighborhood streets and along arterial streets. It provides constituents who raise concerns of traffic impacts in their neighborhoods with a process to mitigate those impacts with traffic calming measures. The policy provides the City with a methodology for implementing traffic calming treatments on City arterials, and provides petitioning neighborhoods with a Traffic Calming Toolkit. The Traffic Calming Toolkit includes the following traffic calming measures:

- > Education and enforcement strategies
- > Radar speed monitoring trailers
- > Speed feedback signs
- > Roadway narrowing
 - *Chokers*
 - *Bulb-outs*
- > Lane narrowing through striping
- > Raised medians
- > Gateway treatments
- > Mini-roundabouts
- > Speed humps
- > Speed tables
- > Raised crosswalks
- > Diagonal diverters
- > Partial street closures
 - *Semi-diverters*
 - *Forced turn barriers*
- > Full street closures with culs-de-sac

Many of the tools listed here provide specific safety benefits and have an associated Crash Reduction Factor. This toolbox also includes several education and enforcement traffic calming measures, including educational workshops, speed trailers, speed feedback signs, and traditional enforcement by the sheriff's department.

LANCASTER MASTER PLAN OF TRAILS & BIKEWAYS, 2012

The Lancaster Master Plan of Trails & Bikeways envisions a well-connected network of on- and off-road bikeways, trails and enhanced pedestrian facilities to accommodate users of all ages and abilities, including equestrians. It also includes recommendations to comply with Americans with Disability Act requirements.

The Plan specifies several actions the City can take to attain the goal of reducing the number of pedestrian- and bicycle-involved crashes (see Chapter 4, Goals, Policies, and Actions, Policy 3). These include implementing a citywide network of trails, bikeways and walkways; reducing conflict points between the different modes; calming vehicular traffic on appropriate streets; implementing education, encouragement, and enforcement strategies; and providing signage for routes, wayfinding, and safety tips at trailheads.

CRASH ANALYSES

The Lancaster Master Plan of Trails and Bikeways provides a crash analysis of bicycle- and pedestrian-involved crashes from 2005 through 2009. It displays these crashes on two maps, one for bicycle-involved crashes and the other for pedestrian-involved crashes. The maps show the location of each crash and whether it was an injury crash or a fatality.

The analysis compares the number of bicycle- and pedestrian-involved crashes with statewide statistics on a per-capita basis. The analysis also describes the primary crash factors for bicycle- and pedestrian-involved crashes in the aggregate, and not for each crash.

COMMUNITY OUTREACH

Development of the Lancaster Master Plan of Trails and Bikeways involved public outreach to various stakeholder groups at several stages of the planning process. A combination of community-wide workshops, targeted workshops, a questionnaire and City receipt of general comments were used. The survey revealed that the most common deterrent to bicycling in Lancaster is, "lack of safe streets to ride on." "Lack of safe streets to walk along," is the second most common deterrent to walking, behind "destinations are too far."

A series of walk audits were conducted, each of which included a discussion of different devices to slow and calm traffic, the importance of land use mixes, network connectivity, and how to retrofit incrementally. Attendees were then led on a brief walk in each location to observe the street environment and identify safety concerns, and potential solutions to make the surrounding neighborhood a more friendly environment for pedestrians and bicyclists. Challenges including speeding and pedestrian crossings were identified as general problems at all three walk audits.

COUNTERMEASURES & RECOMMENDATIONS

In the Plan recommendations, the bikeway portion proposes bike lanes, signed bike routes, buffered bike lanes, and colored bike lanes based on what would physically fit on existing streets. It also includes planned bikeways on new or expanded

roads as they are built. Lane reductions are proposed where the streets have excess capacity to reallocate space for bicycle improvements. Bike paths and paved multipurpose paths are recommended on rights-of-way such as along waterways, utility corridors, and gaps of existing streets. While crash analysis was only one part of the Plan development, creating defined and protected spaces for bicycles to operate within the roadway creates a safer environment for all modes.

The trails component recommends a citywide network of trails for pedestrians, joggers, bicyclists, and equestrians. Some of these trails are planned to be shared by different modal users. Trail facilities include:

- > Paved bike paths
- > Paved multipurpose paths
- > Earthen multipurpose paths
- > Earthen equestrian trails
- > Earthen jogging trails and rubber sidewalks
- > Pedestrian trails

Pedestrian improvements are recommended at 60 intersections. These improvements include countermeasures such as, but not limited to:

- > High-visibility crosswalks
- > Advance stop/yield lines
- > Signs
- > Signal modifications
- > Crossing islands
- > Reduced curb radii
- > Curb extensions
- > Rectangular rapid-flash beacons

Missing sidewalks are also identified, as well as improvements at railroad crossings.

SAFETY PROGRAMS (EDUCATION & ENFORCEMENT)

Ongoing and proposed education and enforcement programs to improve active transportation are listed in the Lancaster Master Plan of Trails and Bikeways to improve the safety of those walking and bicycling. Though these programmatic strategies do not need to be incorporated into the SSARP, City staff may choose to conduct more detailed studies on what programs are currently effective and could be implemented to possibly improve traffic safety.

REPRESENTATIVE PROJECT LIST

The proposed projects came directly from community input, City staff preferences, and consultant expertise on appropriate facilities and countermeasures. These projects were separated into on- and off-street facilities and divided into short-, medium-, and long-term implementable projects. Criteria for prioritization included safety considerations, along with input from stakeholder workshops, preferences by City staff and the technical advisory committee, land use and geographical characteristics, user-friendliness, and cost effectiveness.

Through the SSARP process, the City has an opportunity to revisit the Representative Project List and conduct additional analysis on existing safety issues along the corridors that have been identified for improvements. Conducting this additional safety analysis will also allow the City to revisit the project recommendations and may provide further supporting evidence for high-risk locations. With this additional safety analysis, some Lancaster Master Plan of Trails and Bikeways projects may rise to the top of the SSARP prioritized project list, and still others may be more competitive for funding due to the additional safety analysis conducted.

LANCASTER SAFE ROUTES TO SCHOOL PLAN, 2016

The Lancaster Safe Routes to School (SRTS) Plan provides recommendations to make walking and bicycling safer to all 30 public schools in Lancaster.

CRASH ANALYSES

Five-year crash analyses (2009-2013) for bicycle- and pedestrian-related crashes were mapped within each school's enrollment boundary. The maps defined the location of the crashes, and whether they were injury- or fatality-crashes. Further details about the crash statistics were not studied. These crash maps served to inform existing conditions, and were not explicitly referenced in the development of the representative projects list.

COMMUNITY OUTREACH

The effort commenced with public workshops for stakeholders at each school that presented on why SRTS is important, along with a sampling of the "5E" approach—education, encouragement, enforcement, engineering, and evaluation strategies—to make walking and bicycling safer and more attractive for Lancaster's students and parents. After the presentation, stakeholders participated in walk audits around their school sites and a mapping exercise that identified locations where safety issues and other barriers discourage walking and bicycling along common routes to each of the schools.

RECOMMENDATIONS & COUNTERMEASURES

The SRTS Plan recommends pedestrian countermeasures at each identified intersection, new sidewalks where they are missing, and new bikeways. The recommended list of projects was developed based on community input and in-field observations. Recommended bikeways for school-specific

improvements are generally consistent with the MPTB. However, as the SRTS Plan was completed later than the MPTB, some modifications are recommended.

SAFETY PROGRAMS (EDUCATION & ENFORCEMENT)

The SRTS Plan applied the “5E” approach to make walking and bicycling to school safer for students, and encourage more students to do so. Potential education and enforcement programs were identified by stakeholders, such as more pedestrian and bicycle education training and increased enforcement during school pick-up/drop-off times. Input was collected from the SRTS workshops as to what the stakeholders wanted to see enacted at their schools.

PRIORITIZED PROJECT LIST

The projects from the SRTS Plan came directly from the locations identified in the stakeholder workshops. The consultants recommended countermeasures based on issues (speeding, not stopping at stop signs, etc.) that stakeholders noted for each location. Between four to ten projects were proposed at each of the 30 schools. There was no safety analysis conducted of each location.

As with the Master Plan of Trails and Bikeways, the City has an opportunity to revisit the SRTS Prioritized Project List and conduct additional analysis on existing safety issues at locations that have been identified for improvements. Conducting this additional safety analysis will also allow the City to revisit the project recommendations and may provide further supporting evidence for high-risk locations.

LANCASTER MASTER PLAN OF COMPLETE STREETS (2017)

Lancaster recognizes the importance of improving the safety and accessibility of all people, making the street more comfortable and enjoyable for walking and bicycling, improving the connectivity of the

street network, and balancing the transportation system of all users. The Master Plan of Complete Streets (MPCS) provides guidance on future development of Complete Streets through flexible development standards and design guidelines to enable safe, comfortable, and convenient travel to the greatest extent possible for users of all ages and abilities.

CRASH ANALYSES

No crash analyses were conducted to inform the projects in the MPCS.

COMMUNITY OUTREACH

For the MPCS, one public outreach event was conducted to give input on transportation issues and where stakeholders would like to see complete streets principles implemented.

SAFETY PROGRAMS (EDUCATION & ENFORCEMENT)

No programmatic strategies were recommended as part of the MPCS.

RECOMMENDATIONS & DESIGN GUIDANCE

Design guidance covered in the MPCS includes sidewalks, roadways, intersections and crossings. Complete street cross sections for each street classification are provided to illustrate what could be applied to roadways in respect to lane widths, number of lanes, on-street parking, and bike lanes. For each street type, multiple configurations are suggested to provide design flexibility based on the local context and the priorities of the adjacent communities. More generally, the proposed cross sections include two travel lanes (one lane in each direction) and a center turn lane for streets with fewer than 20,000 vehicles a day, and four travel lanes (two lanes in each direction) and a center turn lane

for streets with between 20,000 and 40,000 daily vehicles. Typical roadway widths recommended in the MPCS are shown in Figure 1 - Complete Streets Typical Widths. Though not explicitly recommended as safety countermeasures, the design guidance for slowing speeds and promoting active modes of transportation have the effect of promoting roadway safety for all modes. Additionally, the MPCS provides the City with simple and intuitive multi-modal level of service (MMLOS) tools to undertake qualitative assessments of local street conditions for different modes.

PRIORITIZED PROJECT LIST

Potential Complete Streets in Lancaster have also been identified as part of the MPCS, as shown in Table 2 - City of Lancaster Complete Streets Candidate Corridors. These street segments were chosen based on existing street classifications, adjacent land-uses, projected ADT volumes, community concerns, and in-field observations. The recommended corridor treatments include reducing the number of travel lanes, installing medians, widening walkways to provide meandering sidewalks, and incorporating buffered bike lanes.

The MPCS is complementary to, and supportive of, other plans adopted by the City of Lancaster to promote safety and active transportation, including the Lancaster MPTB and the SRTS Master Plan.

As with the Master Plan of Trails and Bikeways and Safe Routes to School Plan, the City has an opportunity to revisit the Complete Streets Candidate Corridors and conduct additional analysis on existing safety issues along corridors that have been identified for improvements. Conducting this additional safety analysis will also allow the City to revisit the project recommendations and may provide further supporting evidence for high-risk locations.

FIGURE 1 COMPLETE STREETS TYPICAL WIDTHS

SYMBOL	XX' (XX')	Typical Width (Suggested Minimum Width)
	10' (9') 14' (12')	Center Turn Lane Raised Median with Turn Lanes
	11' (10')	Through Travel Lane
	11' (10')	Class III Shared Bike-Travel Lane
	6' (5')	Class II Bike Lane
	5' (1.5')	Painted or Raised Buffer
	6' (7')	Parallel Parking with Landscaping
	6' (5')	Sidewalk with 4' Clear Path
	VARIABLES	City to decide type of street elements to be incorporated

Source: Lancaster Master Plan of Complete Streets, 2017

TABLE 2 CITY OF LANCASTER COMPLETE STREETS CANDIDATE CORRIDORS

CORRIDOR NUMBER	STUDY CORRIDOR	FROM	TO
1	30th Street W	Avenue J	Avenue L
2	10th Street W	Avenue J	Avenue K
3	Sierra Highway	Avenue I	Avenue K
4	Division Street	Avenue I	Avenue J
5	Challenger Way	Lancaster Boulevard	Avenue K-8
6	20th Street E	Lancaster Boulevard	Avenue K
7	30th Street E	Avenue J-8	Avenue L
8	Avenue I	30th Street W	15th Street W
9	Avenue J	Division St	20th Street E
10	Avenue K	20th Street W	Sierra Highway
11	25th Street W	Lancaster Boulevard	Avenue J
12	Valley Central Way	Avenue I	Avenue J
13	15th Street W	Avenue J	Avenue K
14	Yucca Avenue	Avenue I	Milling St
15	15th Street E	Avenue I	Avenue K
16	Lancaster Blvd	30th Street W	20th Street W
17	Avenue J-8	30th Street W	20th Street W
18	Avenue K-8	35th Street W	10th Street W
19	Avenue L	Business Center Parkway	10th Street W

Source: Lancaster Master Plan of Complete Streets, 2017

CITY OF LANCASTER COMPLETE STREETS SAFETY ASSESSMENT, 2018

The Complete Streets Safety Assessment (CSSA) was prepared to support the development of the SSARP. The primary objective of the CSSA is to improve traffic safety in Lancaster at identified locations within the document.

CRASH ANALYSES

The CSSA provides the most comprehensive aggregate crash analysis prior to the SSAR. It includes an overview of pedestrian- and bicycle-related crash data over a 4-year period (2014-2017), summarizing characteristics of the traffic crashes based on frequency by day of the week and hours of the day, primary crash factors, and most prevalent locations of crashes. Projects identified in the CSSA, however, were primarily selected based on City staff preferences, and no safety analysis was conducted specific to each project location.

COMMUNITY OUTREACH

Community outreach was not a component in the development of the CSSA.

RECOMMENDATIONS & COUNTERMEASURES

The assessment examines four intersections (includes the roundabout at Challenger Way and Avenue L) and three street segments that were selected by City staff. These locations are:

- > Intersections
 - 10th Street West & Avenue K-4
 - Challenger Way & Avenue K
 - 27th Street East & Avenue K
 - Challenger Way & Avenue L roundabout (recently completed)

- > Street Segments
 - Avenue L – 32nd Street West to 37th Street West
 - Challenger Way – Avenue J to Avenue J-5
 - Avenue K – Gadsden Avenue to 10th Street West

Countermeasures to address the safety challenges at these locations were recommended. The toolbox includes countermeasures to focus on:

- > Motor-vehicle crashes (i.e., signs, markings and enhancements)
- > Intersection design (i.e., traffic signal design, roadway operations, engineering design)
- > Law enforcement efforts on prevention
- > Driver awareness campaigns on local patterns (i.e., distracting driving)
- > Traffic control devices updates
- > Design of pedestrian facilities
- > Adequacy of bicycle facilities
- > New bicycle-friendly infrastructure (i.e., shared-use paths, bike racks on buses)
- > Bicycle assess to schools and transit
- > Promotion of bicycle safety awareness campaigns

SAFETY PROGRAMS (EDUCATION & ENFORCEMENT)

The CSSA provides a detailed review of past and present enforcement efforts provided by the Los Angeles County Sheriff's Department. It details the Department's current traffic crash reporting process, training, and database management and recording systems. Pedestrian and bicycle safety education and sheriff enforcement strategies are recommended. Automated enforcement measures on traffic signals, such as red light cameras and 'rat boxes' are also suggested.

PRIORITIZED PROJECT LISTS

The CSSA provided recommendations for four intersections and three street segments in Lancaster that were selected by City staff. For each location, short-, medium-, and long-term improvements were recommended. Short-term improvements generally include resurfacing and restriping, while long-term improvements involve curb and median construction.

The SSARP will build on the work completed in the CSSA plan by expanding the geographic area analyzed for safety issues, and by incorporating a systemic and proactive approach to safety analysis. The SSARP process focuses not only on historically high-crash locations, but also incorporates analysis of high-risk roadway characteristics and contextual factors to identify safety solutions that can be implemented throughout the roadway network and, in many locations, before crashes occur. For the intersections and street segments with recommended projects in the CSSA plan, the SSARP process allows for an opportunity to validate those projects with additional data and expand the geographic scope of safety countermeasure implementation to other locations.

CALIFORNIA STRATEGIC HIGHWAY SAFETY PLAN (SHSP) AND IMPLEMENTATION PLAN, 2015-2019 (2015)

California adopted a two-plan approach that includes the SHSP and the Implementation Plan. The SHSP is statewide coordinated safety plan that provides a framework for reducing highway fatalities and severe injuries on public roads. The Implementation Plan includes strategies to implement the SHSP and achieve the overall vision and objectives in reductions to traffic-related fatalities and severe injuries.

The SHSP aims to achieve a safe and sustainable transportation system by utilizing a data-driven “4E” approach: engineering, enforcement, education, and emergency medical services. This approach serves to improve roadway infrastructure and assist with behavioral change by focusing on areas with the greatest opportunity for reductions in preventable traffic-related fatalities and severe injuries. A fifth E—evaluation—will be added into a companioning Evaluation Plan that will assess both the process and performance of the SHSP. The Evaluation Plan will be completed after the five-year life of the SHSP.

The SSARP report is designed to prepare studies that specifically evaluate SHSP’s 15 Challenge Areas. Challenge areas include:

- > Roadway Departure and Head-On Crashes
- > Intersections, Interchanges, and Other Roadway Access
- > Work Zones
- > Alcohol and Drug Impairment
- > Occupant Protection
- > Speeding and Aggressive Driving
- > Distracted Driving
- > Driver Licensing and Competency
- > Pedestrians
- > Bicycling
- > Young Drivers
- > Aging Road Users
- > Motorcycles
- > Commercial Vehicles
- > Emergency Medical Services

OTHER RELEVANT PLANS

The Downtown Specific Plan (2008) recommends a combination of land use regulations and development guidelines to create a walkable downtown area. This Plan is meant to provide a high-level strategy for the downtown area. Promoting a walkable environment increases roadway safety by providing infrastructure to not only support walking, but also to calm vehicular traffic, improve pedestrian safety, and promote a greater sense of place.

The Lancaster Transit-Oriented Development Zones (2015) promotes high-quality, walkable, mixed-use, and transit-oriented neighborhoods surrounding the Lancaster Boulevard core and the Metrolink station. Similar to the Downtown Specific Plan, defining TOD zones provides a clear direction for how pedestrian-oriented streets, public open spaces, and the built environment interact with one another to foster a strong sense of community security while encouraging pedestrian activity.



CHAPTER 2

CRASH ANALYSIS SUMMARY

The crash analysis process focused on identifying locations with elevated risk of crashes either through their crash histories or their similarities to other locations that have more active crash patterns. A detailed analysis and results section is included in Appendix A, and includes the sources used to analyze historical crash data, rankings of intersections and segments within the City based on historic crash data, as well as a variety of detailed maps showing the location of crashes based on certain characteristics (e.g. crashes involving pedestrians).

In addition to this historic data analysis, a Critical Crash Rate was developed for each location using systemic analysis processes laid out in the *Highway Safety Manual*. The Critical Crash Rate indicates if there is an overrepresentation of crashes, compared to other

similar locations throughout the City. An overview of the systemic analysis process, as well as the results, can also be found in Appendix A.

Within the dataset provided by the City, 9,742 crashes occurred within public property during the study period. Figure 2 – Crashes by Type indicates that broadside is consistently the most common crash type within the City between 2013 and 2017. Over the period observed, there was a total of 79 fatal crashes and 146 crashes resulting in severe injury. The majority of fatal crashes occurred on major east-west arterials. Additionally, over this span, there were 269 pedestrian-involved crashes and 211 bicycle-involved crashes. Figure 3 – All Crashes displays all crash activity occurring in the City during the study period from January 1, 2013 through December 31, 2017.

FIGURE 2 CRASHES BY TYPE (JANUARY 2013 - DECEMBER 2017)

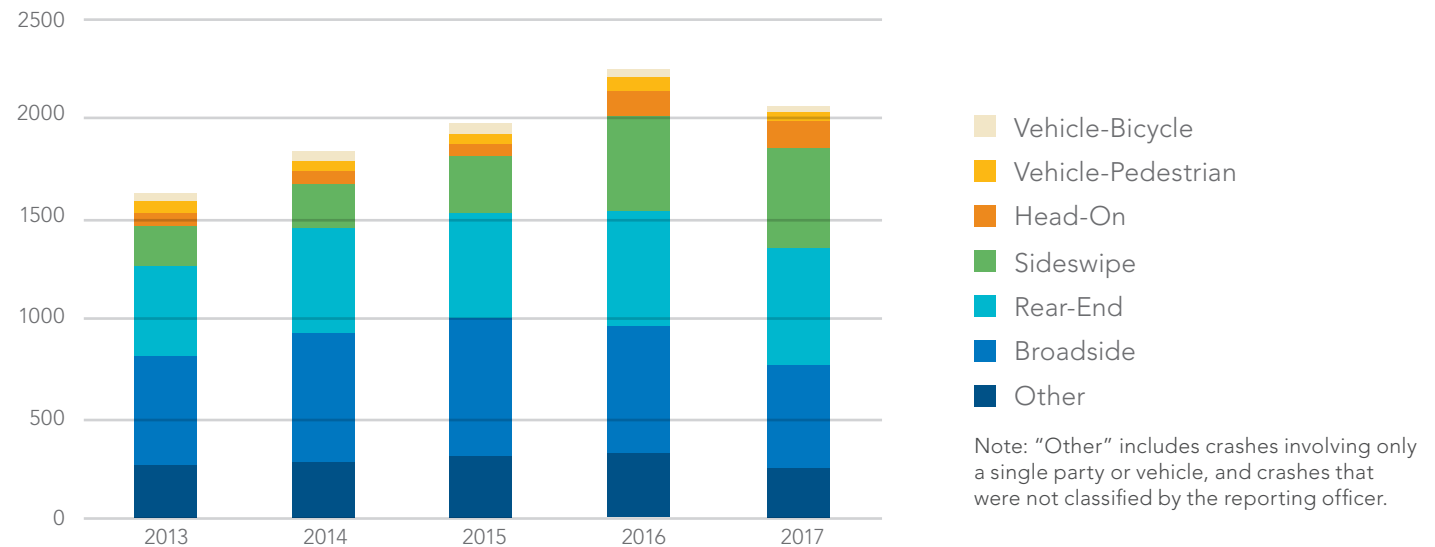
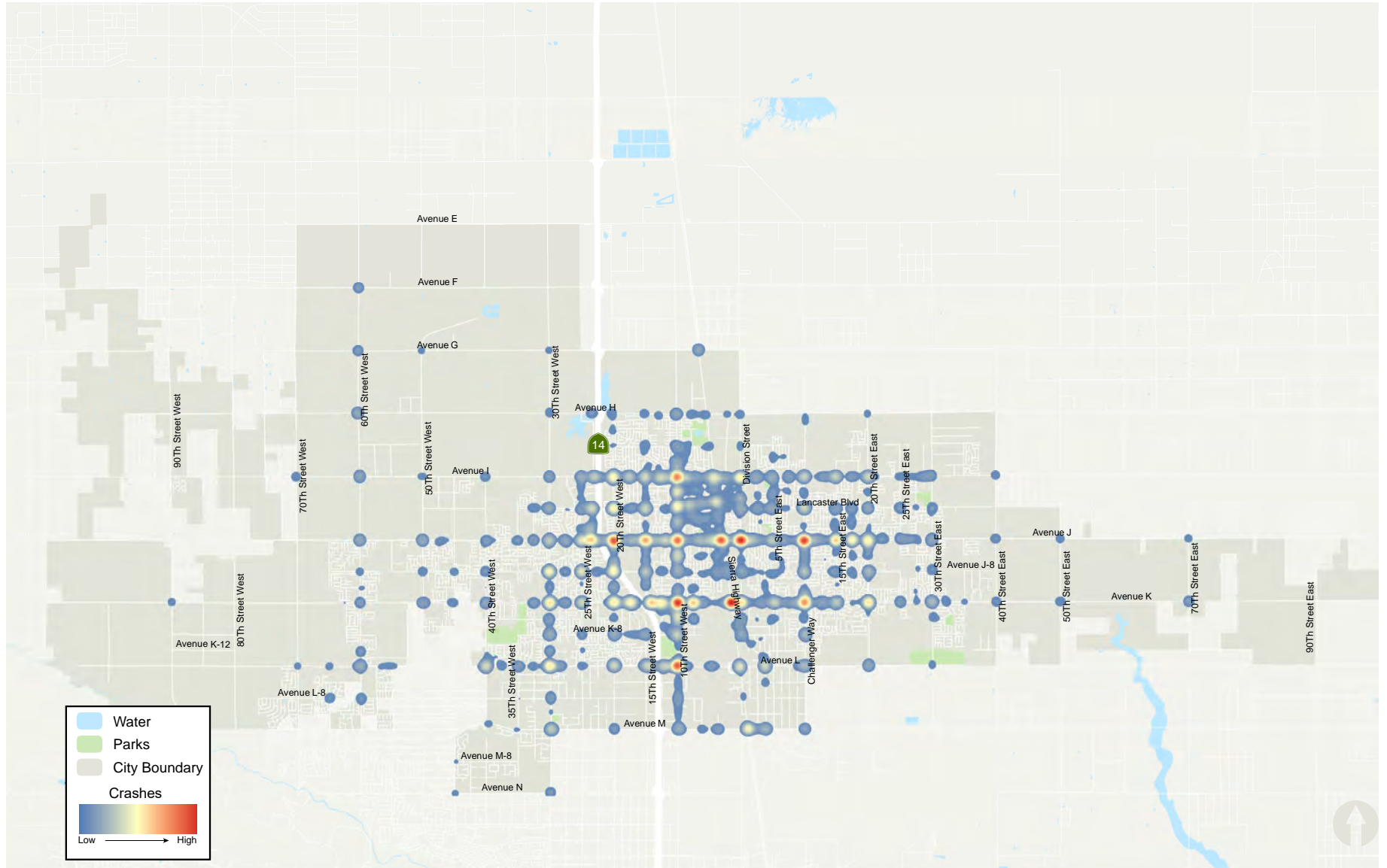


FIGURE 3 ALL CRASHES (JANUARY 2013 - DECEMBER 2017)



CHAPTER 3

PROJECT RECOMMENDATIONS

LOCATION IDENTIFICATION

These 12 Representative Locations were chosen to be representative of several different elements of the crash analysis:

- > Locations with a history of severe and fatal crashes
- > Locations where a certain crash type (e.g. broadside) is overrepresented
- > Locations that represent a variety of the geographic, roadway and land use contexts present throughout the City, to allow for systemic application of countermeasures
- > Locations with a high critical crash rate differential, meaning the location has a higher safety risk than other similar locations

1. Challenger Way & Avenue K (intersection)
2. 10th Street West & Avenue K (intersection)
3. Division Street & Avenue I (intersection)
4. Division Street & Avenue H (intersection)
5. 30th Street West & Avenue F (intersection)
6. Beech Avenue & Avenue I (intersection)
7. Avenue H-14 & Genoa Avenue (intersection)
8. 20th Street West between RT 14 NB Off-Ramp and Avenue J, and Avenue J between 20th Street West and RT 14 NB On-Ramp (corridor)
9. 15th Street West between Avenue K-8 and Avenue K-2 (corridor)
10. Business Center Parkway between Avenue K-15 and Federal Drive (corridor)
11. Gadsden Avenue & Avenue K (intersection)
12. 15th Street West & Avenue J (intersection)

RECOMMENDED SAFETY PROJECTS

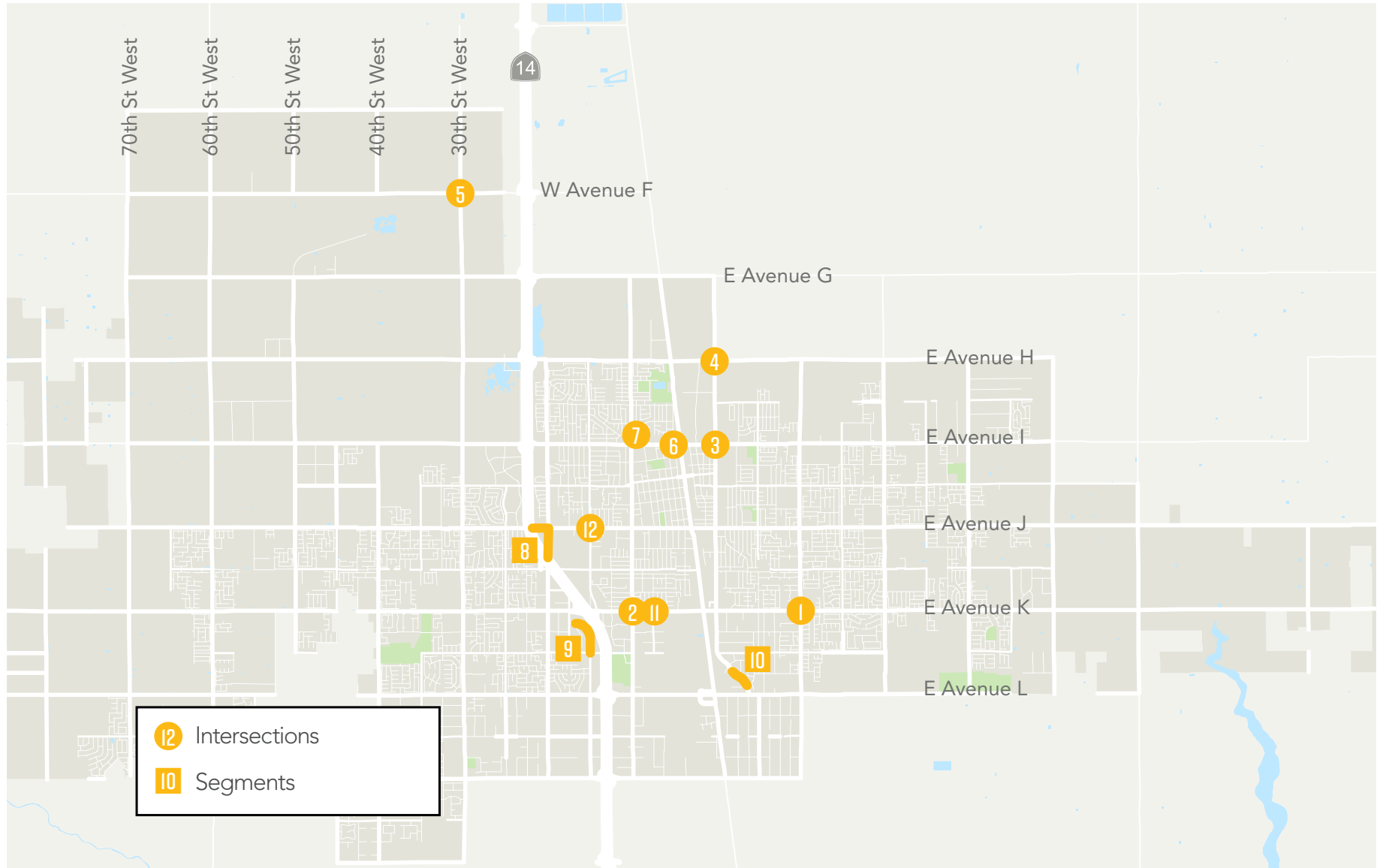
Projects have been developed so as to balance location-specific recommendations with project elements that can be applied systemically across numerous locations with similar crash history or contextual factors.

The following pages summarize the existing conditions, and project recommendations for each location. Recommendations are grouped by potential implementation timeframe (short, medium, or long-term). Recommendations also fall into one of three categories, which are color-coded as follows:

- > **Systemic Improvement:** These projects can be considered for implementation at many locations across the Lancaster roadway network, and have broad applicability to mitigating specific crash types common at multiple locations, such as left turn, broadside, or rear-end crashes.
- > **Location-specific Improvement:** These projects are recommended based on a holistic approach to improving safety within the specific context of the location where the project is recommended.
- > **Evaluate Proposed Improvement for Implementation:** These projects require further analysis or engineering studies to determine suitability at recommended locations.

Project cost estimates, expected project benefit, and the resulting benefit/cost ratio, developed using the HSIP Cycle 9 HSIP Analyzer, are also shown. Per unit construction costs are based on the most recent available estimates for Southern California, and include contingency and other soft cost assumptions. For the purposes of calculating benefit/cost ratios, project locations have been grouped together based on similar characteristics or recommendations. As a result, multiple locations share a common benefit/cost ratio. This grouping allows the City to meet HSIP minimum project size requirements. Grouping projects together also supports a proactive approach, by pairing locations with a high number of historic collisions together with locations that may have high risk characteristics, but a lower number of collisions.

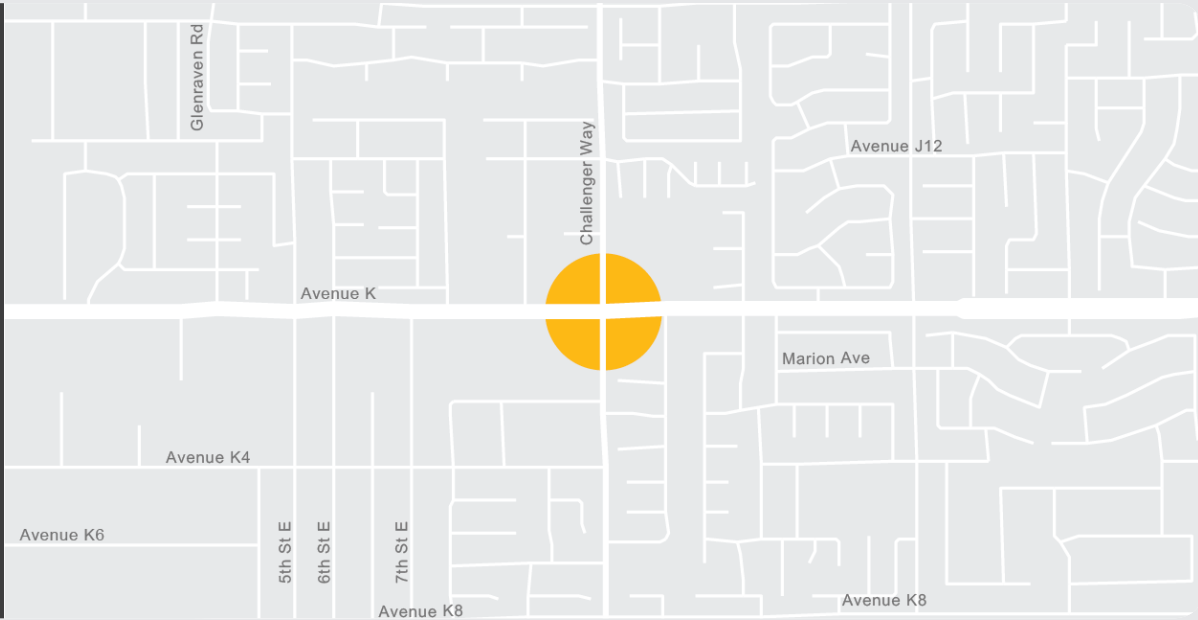
FIGURE 4 REPRESENTATIVE LOCATIONS



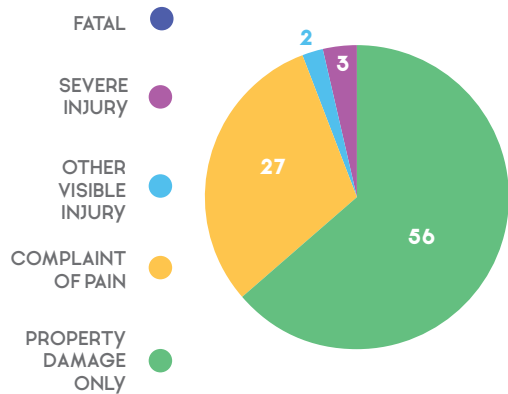
I CHALLENGER WAY AND AVENUE K

EXISTING CONDITIONS

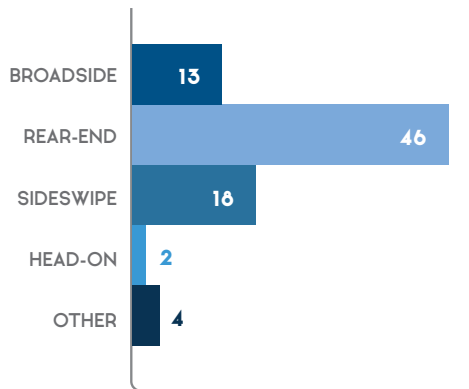
- SIGNALIZED INTERSECTION
- AVENUE K HAS 6 LANES PLUS TURN LANES
- CHALLENGER WAY HAS 4 LANES PLUS TURN LANES
- YELLOW CONTINENTAL CROSSWALKS ON ALL LEGS
- ADVANCE STOP LINES ON ALL LEGS
- COUNTDOWN SIGNALS
- PROTECTED LEFT TURNS



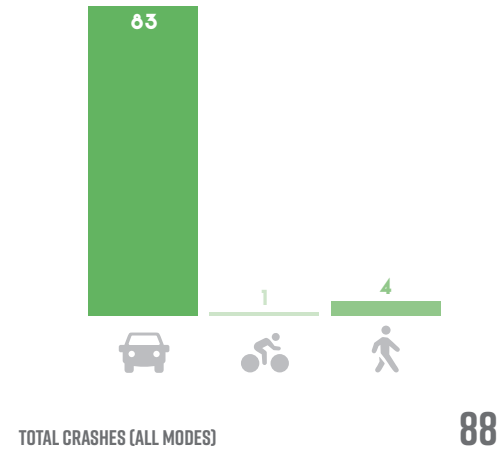
CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE ALCOHOL/DRUG RELATED CRASHES
- REDUCE REAR-END CRASHES
- REDUCE BROADSIDE CRASHES
- REDUCE PEDESTRIAN CRASHES
- REDUCE UNSAFE SPEED CRASHES



SHORT-TERM

CMID	Project Description	Cost
N/A	Targeted Enforcement for Alcohol-Related Violations	N/A
S3	Improve Signal Timing with Leading Pedestrian Interval (This option will be considered, but must be verified that coordinated signal timing can accommodate)	\$500
S3	Improve Signal Timing with Extended Clearance Time (Based on MUTCD Guidelines and roadway speed)	\$600
S3	Improve Signal Timing with Extended Pedestrian Crossing Times (Based on MUTCD Guidelines and crossing distance)	(incl. above)

MID-TERM

CMID	Project Description	Cost
S2	Improve signal hardware: lenses, back-plates, mounting, size, or number	\$21,860

LONG-TERM

CMID	Project Description	Cost
N/A		

OTHER COSTS

Project Description	Cost
Mobilization	\$2,296
Traffic Control	\$2,296
Contingency	\$5,510
Environmental	\$2,300
PS&E	\$3,500
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$3,500

COST ESTIMATES

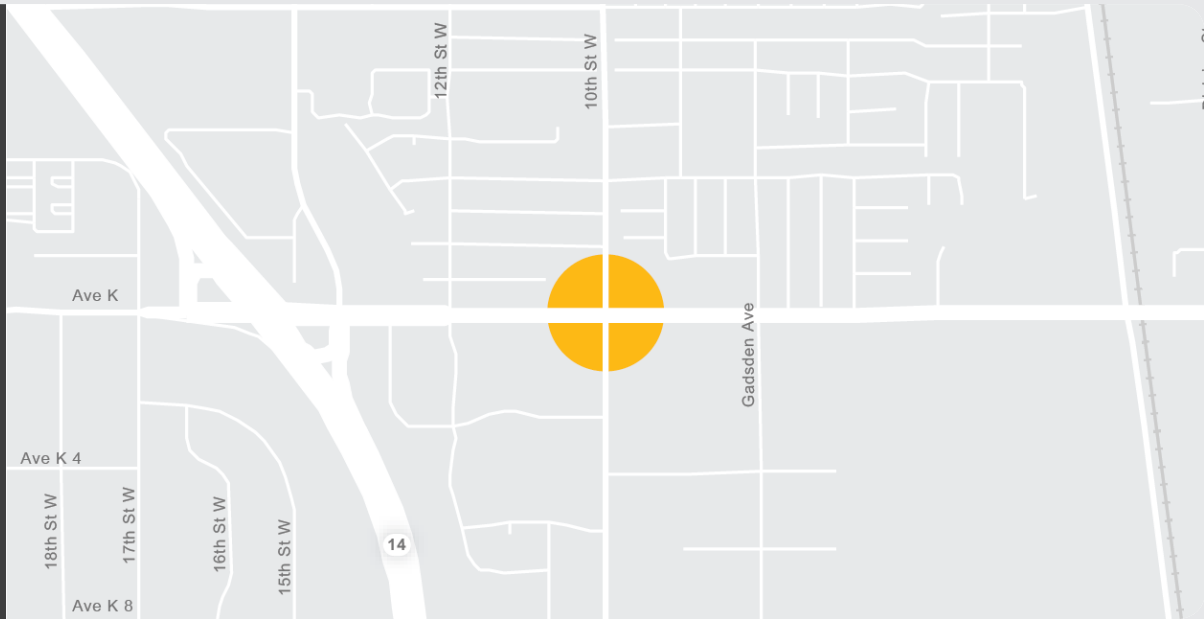
\$42,362

EXPECTED BENEFIT/COST RATIO*

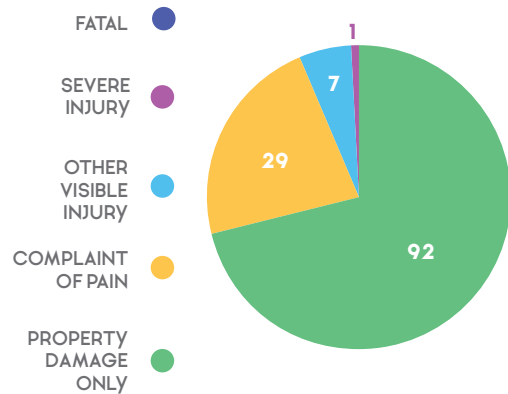
27.3

EXISTING CONDITIONS

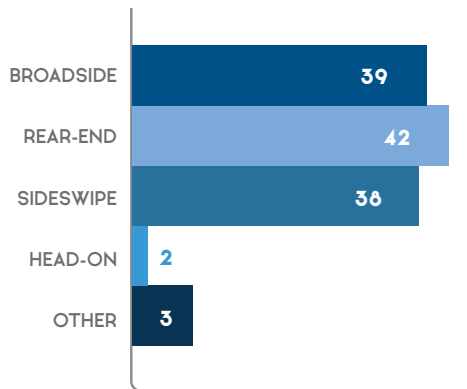
- SIGNALIZED INTERSECTION
- AVENUE K HAS 6 LANES PLUS TURN LANES
- 10TH STREET WEST HAS 6 LANES PLUS TURN LANES
- TRANSVERSE-LINE CROSSWALKS ON ALL LEGS
- COUNTDOWN SIGNALS
- PROTECTED LEFT TURNS



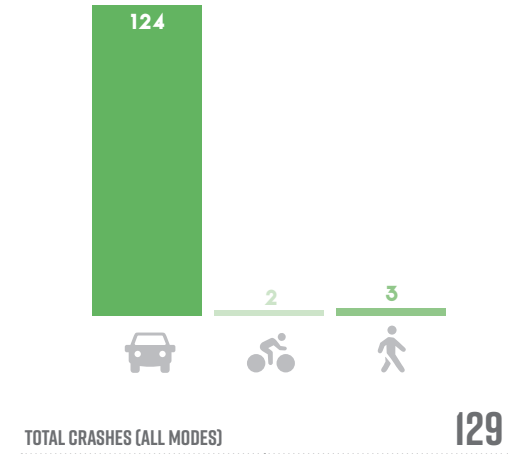
CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE SIDESWIPE CRASHES
- REDUCE BICYCLE AND PEDESTRIAN CRASHES
- REDUCE REAR-END CRASHES
- REDUCE LEFT TURN CRASHES
- REDUCE BROADSIDE CRASHES
- REDUCE UNSAFE SPEED CRASHES
- REDUCE NIGHTTIME CRASHES



SIGNAL IMPROVEMENTS

- LPI
- Extend clearance time
- Improve signal hardware
- Extend pedestrian crossing time

SHORT-TERM

CMID	Project Description	Cost
S3	Improve Signal Timing with Leading Pedestrian Interval (This option will be considered, but must be verified that coordinated signal timing can accommodate)	\$500
S3	Improve Signal Timing with Extended Clearance Time (Based on MUTCD Guidelines and roadway speed)	\$600
S3	Improve Signal Timing with Extended Pedestrian Crossing Times (Based on MUTCD Guidelines and crossing distance)	(incl. above)

MID-TERM

CMID	Project Description	Cost
S20	Install pedestrian crossing - Upgrade to Continental Crosswalks	\$11,760
S21	Install advance stop bar before crosswalk	\$1,440
S8	Install raised pavement markers and striping through intersection - Replace raised pavement markings with thermoplastic striping for cat-tracking	\$1,200
S2	Improve signal hardware: lenses, back-plates, mounting, size, and number	\$24,046

LONG-TERM

CMID	Project Description	Cost
N/A		

OTHER COSTS

Project Description	Cost
Mobilization	\$3,955
Traffic Control	\$3,955
Contingency	\$9,491
Environmental	\$4,000
PS&E	\$6,000
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$6,000

COST ESTIMATES

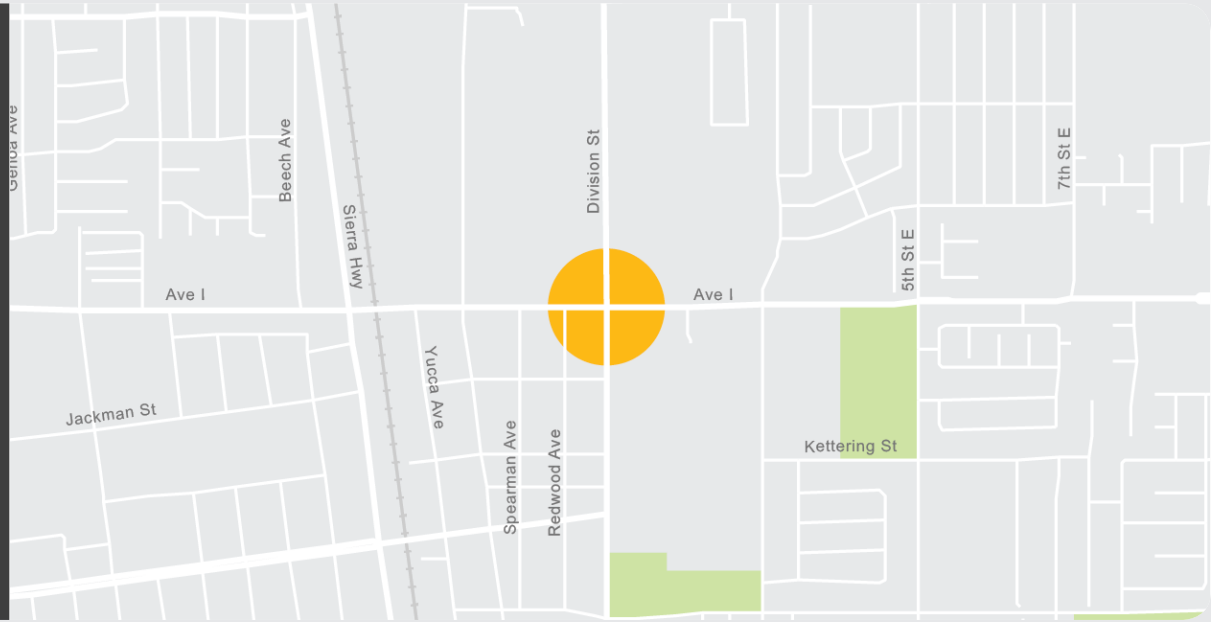
\$72,946

EXPECTED BENEFIT/COST RATIO*

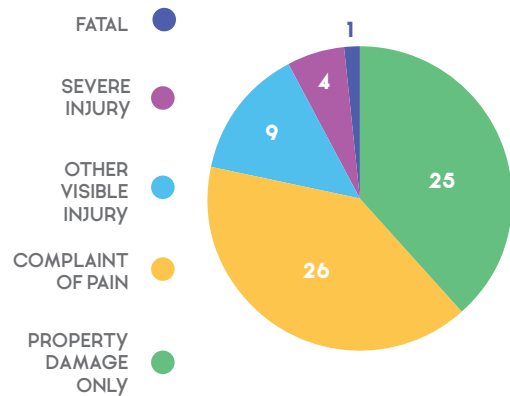
27.3

EXISTING CONDITIONS

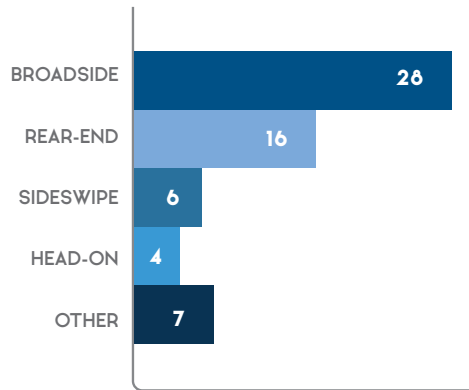
- SIGNALIZED INTERSECTION
- AVENUE I HAS 6 LANES, BIKE LANES PLUS TURN LANES
- DIVISION STREET HAS 4 LANES PLUS TURN LANES
- TRANSVERSE-LINE CROSSWALKS ON ALL LEGS
- COUNTDOWN SIGNALS
- PROTECTED-PERMISSIVE LEFT TURNS ON AVENUE I



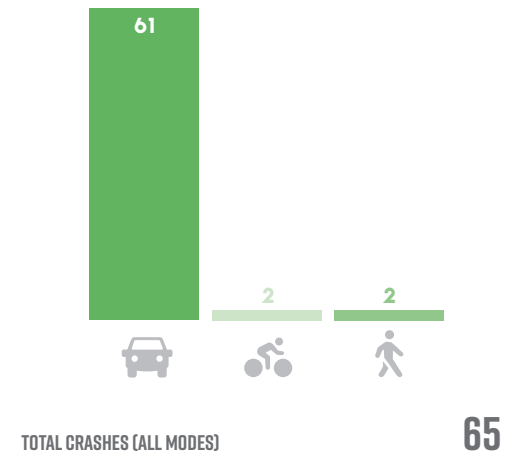
CRASH SEVERITY



VEHICLE CRASH TYPES



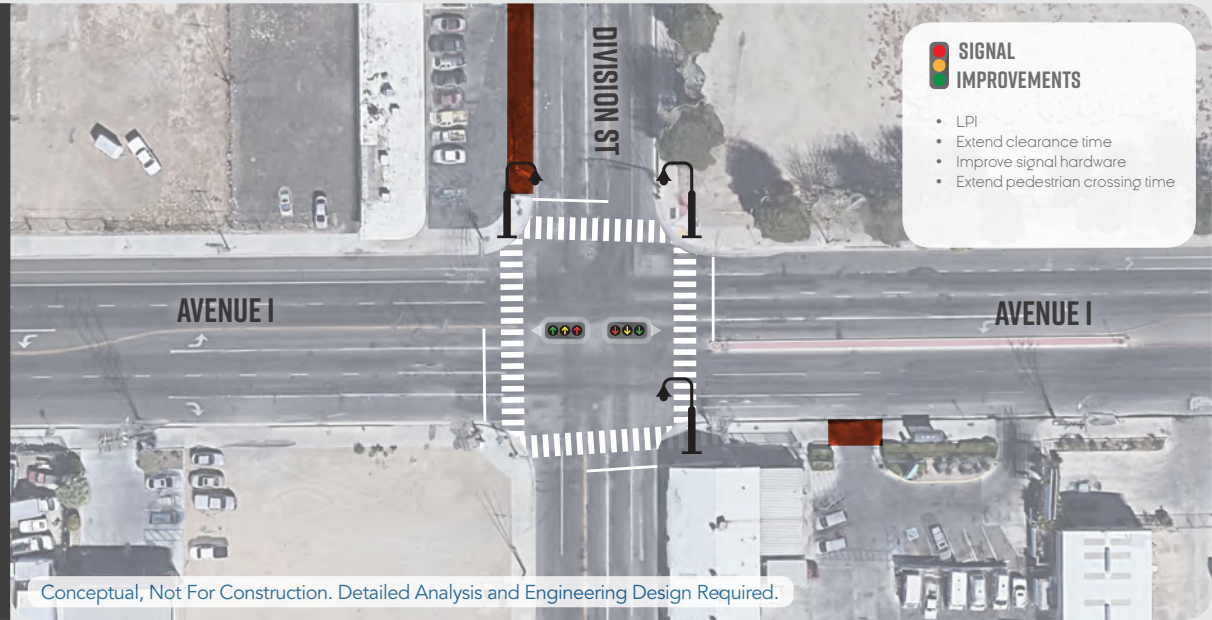
CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE PEDESTRIAN CRASHES
- REDUCE BROADSIDE CRASHES
- REDUCE REAR-END CRASHES
- REDUCE LEFT TURN CRASHES
- REDUCE NIGHTTIME CRASHES



SHORT-TERM

CMID	Project Description	Cost
S3	Improve Signal Timing with Leading Pedestrian Interval (This option will be considered, but must be verified that coordinated signal timing can accommodate)	\$500
S3	Improve Signal Timing with Extended Clearance Time (Based on MUTCD Guidelines and roadway speed)	\$600
S3	Improve Signal Timing with Extended Pedestrian Crossing Times (Based on MUTCD Guidelines and crossing distance)	(incl. above)

MID-TERM

CMID	Project Description	Cost
S20	Install pedestrian crossing - Upgrade to Continental Crosswalks	\$9,660
S21	Install advance stop bar before crosswalk	\$1,440
S6	Provide protected left turn phase (left turn lane already exists) - Convert from permissive/protected to protected on Avenue I	\$150,000
S2	Improve signal hardware: lenses, back-plates, mounting, size, and number	\$17,488
S1	Add intersection lighting - Add light pole to SE, NW, NE corners	\$36,000

LONG-TERM

CMID	Project Description	Cost
N/A	Close driveways closest to the intersection as part of design review when new development or redevelopment occurs	N/A

OTHER COSTS

Project Description	Cost
Mobilization	\$21,569
Traffic Control	\$21,569
Contingency	\$51,765
Environmental	\$21,600
PS&E	\$32,400
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$32,400

COST ESTIMATES

\$396,991

EXPECTED BENEFIT/COST RATIO*

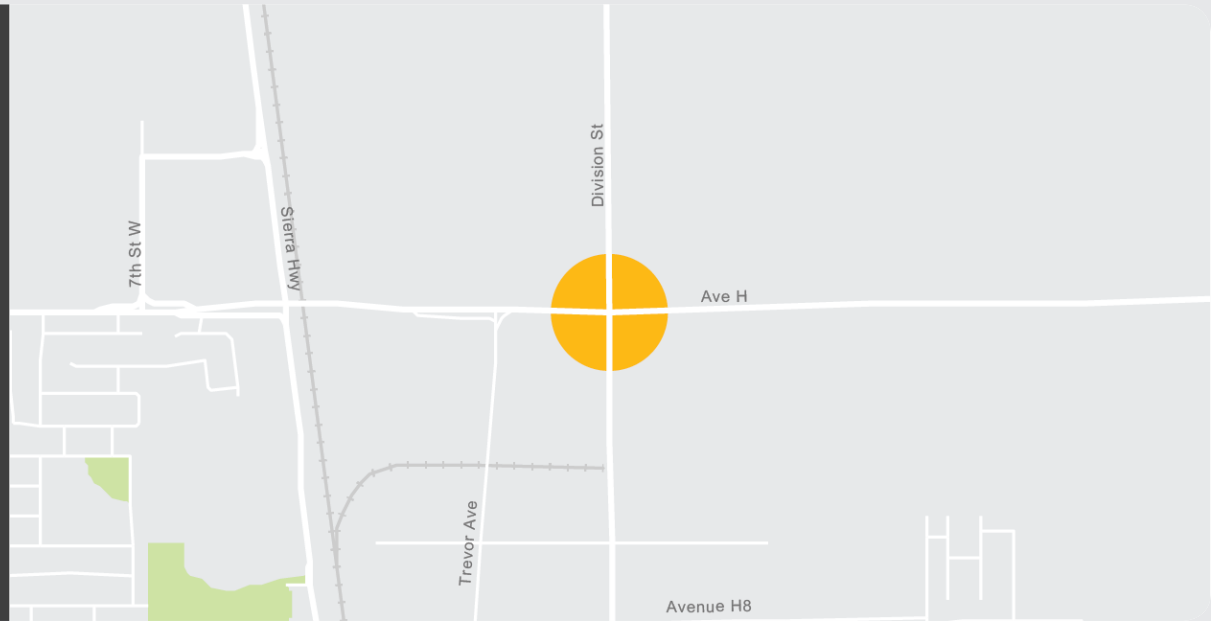
25.9

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

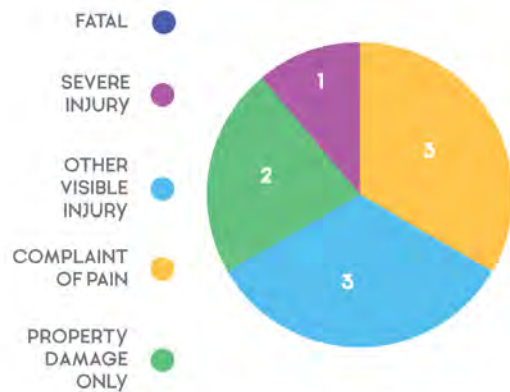
*B/C ratio reflects projects for Locations 3.11 and 12

EXISTING CONDITIONS

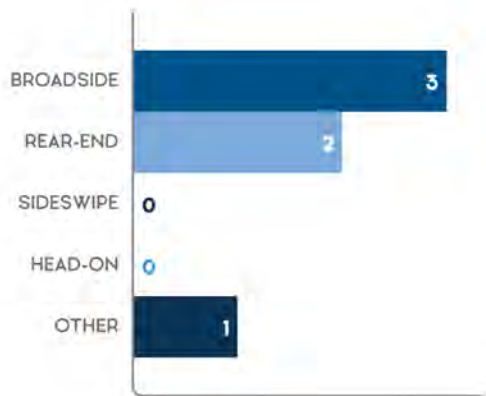
- 4-WAY STOP INTERSECTION
- AVENUE I HAS 4 LANES AND BIKE LANES PLUS TURN LANES WEST OF THE INTERSECTION; 2 LANES AND A TURN LANE EAST OF THE INTERSECTION
- DIVISION STREET HAS 2 LANES PLUS A TURN LANE



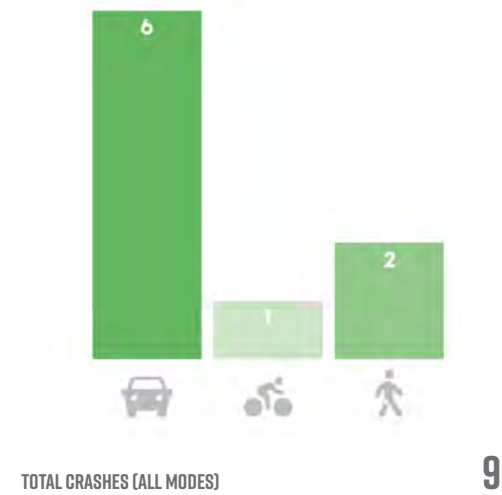
CRASH SEVERITY



VEHICLE CRASH TYPES



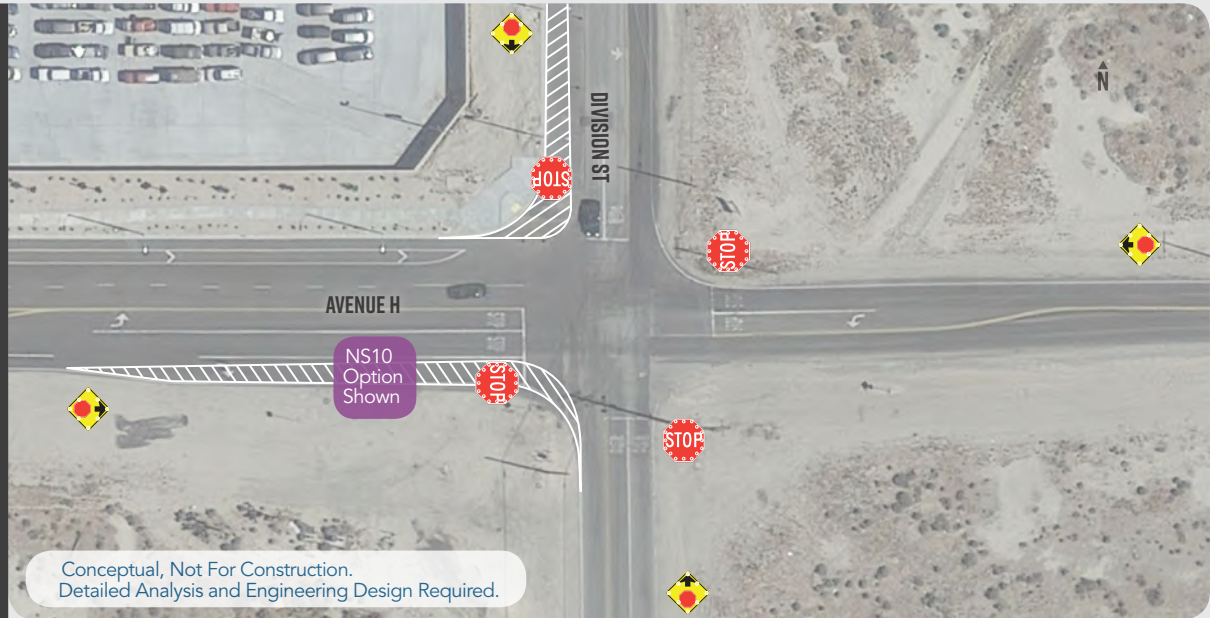
CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE PEDESTRIAN CRASHES
- REDUCE BROADSIDE CRASHES
- REDUCE REAR-END CRASHES



SHORT-TERM

CMID	Project Description	Cost
NS5	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs - Add "Stop Ahead" signs to all approaches	\$4,400
NS8	Install flashing beacons as advance warning - LED flashing "Stop Ahead" signs on all approaches to be evaluated per City's guidelines	\$12,000

MID-TERM

CMID	Project Description	Cost
NS5	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs - Evaluate existing signage for possible relocation	\$1,400
NS10	Improve sight distance to intersection (Clear Sight Triangles) - Evaluate existing striping and signage for possible improvements to traffic circulation	\$6,840
NS7	Install Flashing Beacons at Stop-Controlled Intersections - LED flashing stop sign to be evaluated per City's guidelines for LED stop signs	\$12,000

LONG-TERM

CMID	Project Description	Cost
R37	Install sidewalk/pathway (to avoid walking along roadway) - Install sidewalks as adjacent parcels are developed (not shown)	\$270,900

OTHER COSTS

Project Description	Cost
Mobilization	\$30,754
Traffic Control	\$30,754
Contingency	\$73,810
Environmental	\$30,800
PS&E	\$46,200
Appraisals, Acquisitions, and Utilities	\$30,800
Construction Engineering	\$46,200

COST ESTIMATES

\$596,858

EXPECTED BENEFIT/COST RATIO*

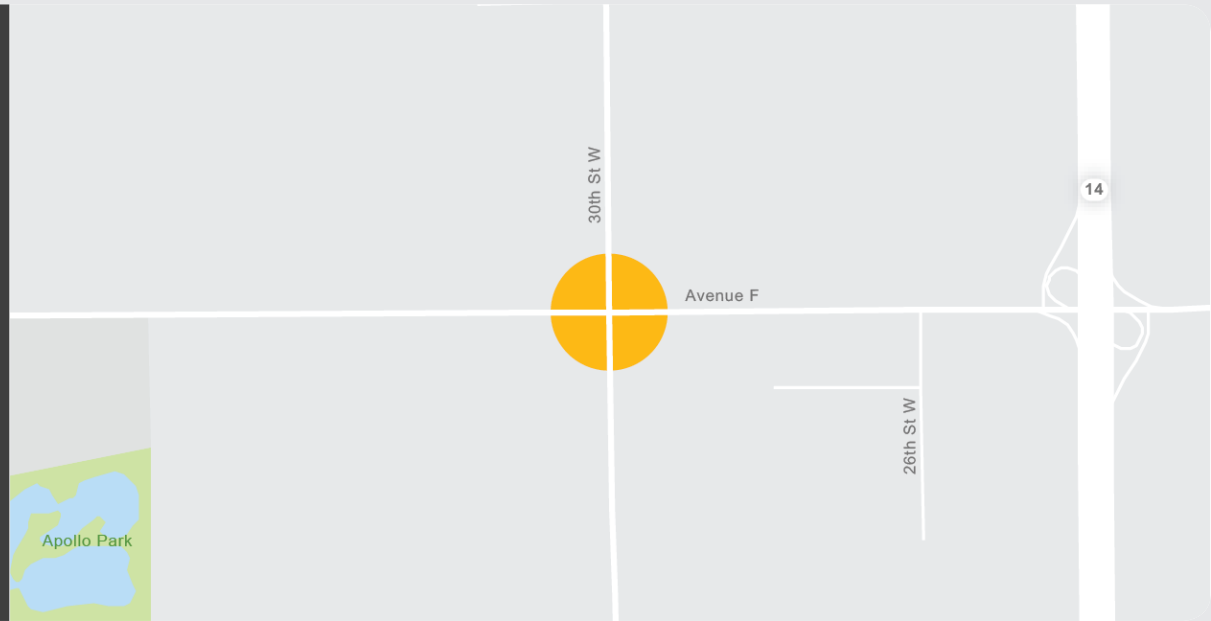
25.9

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

*B/C ratio reflects projects for Locations 4, 5 and 7

EXISTING CONDITIONS

- 2-WAY STOP FOR 30TH STREET WEST
- AVENUE F HAS 2 LANES
- 30TH STREET WEST HAS 2 LANES

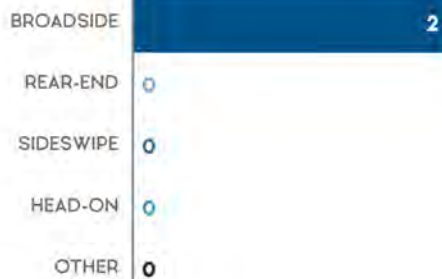


CRASH SEVERITY

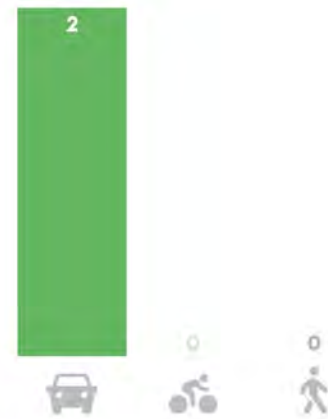
- FATAL ●
- SEVERE INJURY ●
- OTHER VISIBLE INJURY ●
- COMPLAINT OF PAIN ●
- PROPERTY DAMAGE ONLY ●



VEHICLE CRASH TYPES



CRASHES BY MODE

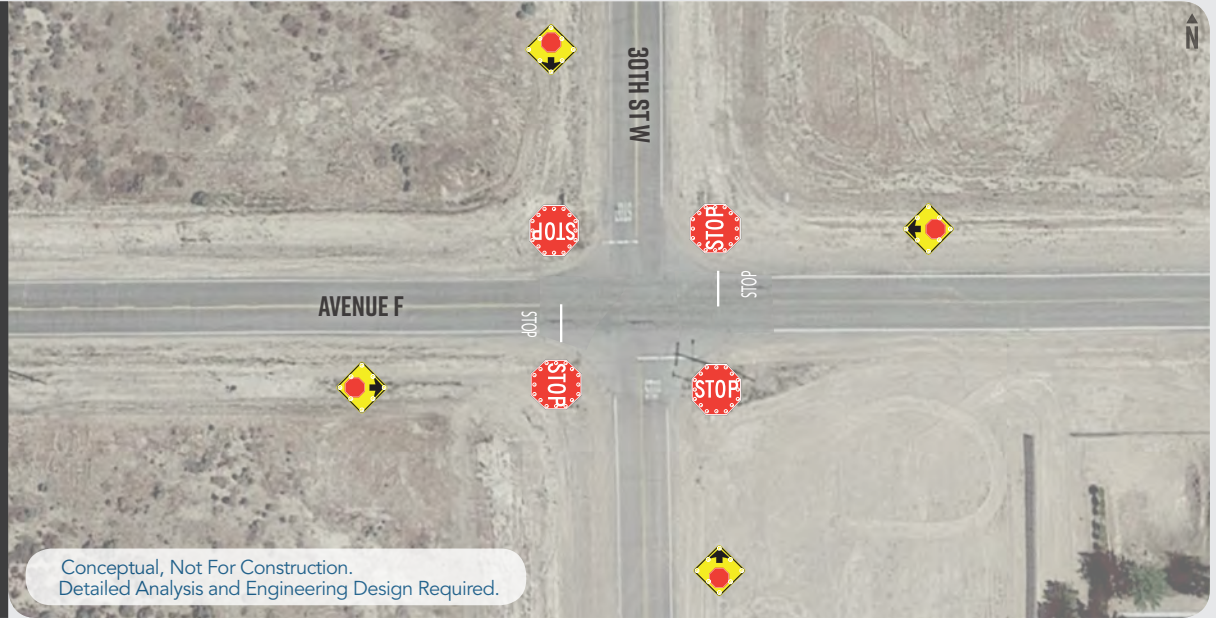


TOTAL CRASHES (ALL MODES) 2

Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE BROADSIDE CRASHES



SHORT-TERM

CMID	Project Description	Cost
N/A		

MID-TERM

CMID	Project Description	Cost
NS6	Upgrade intersection pavement markings - Upgrade existing markings	\$3,640
NS5	Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs - Upgrade signs and install "Stop Ahead" signs	\$5,100
FHWA	Signage and Striping Upgrades at Stop Controlled Intersections (retroreflective sheeting, oversized signs, duplicative signs)	(incl. above)
NS2	Convert to all-way STOP control (from 2-way or Yield control) - To be evaluated per City's guidelines for All-Way Stops	\$1,340
NS7	Install Flashing Beacons at Stop-Controlled Intersections - LED flashing stop sign to be evaluated per City's guidelines for LED stop signs	\$12,000
NS8	Install flashing beacons as advance warning - LED flashing "Stop Ahead" signs on all approaches to be evaluated per City's guidelines	\$12,000

LONG-TERM

CMID	Project Description	Cost
N/A		

OTHER COSTS

Project Description	Cost
Mobilization	\$3,408
Traffic Control	\$3,408
Contingency	\$8,179
Environmental	\$3,500
PS&E	\$5,200
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$5,200

COST ESTIMATES

\$62,975

EXPECTED BENEFIT/COST RATIO*

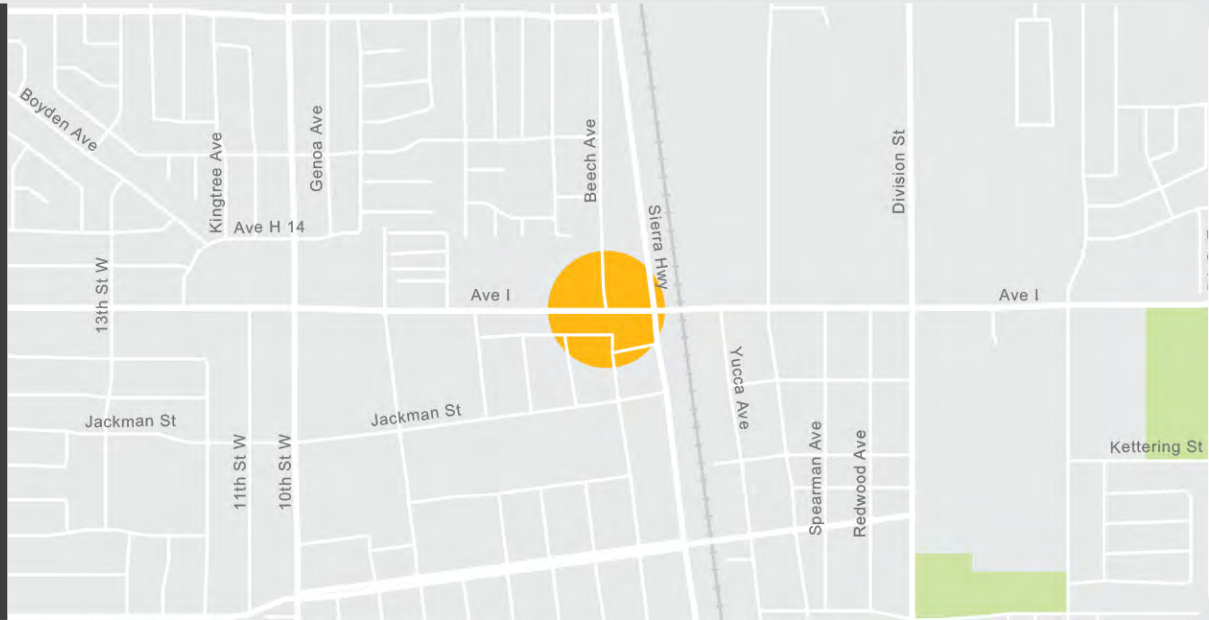
25.9

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

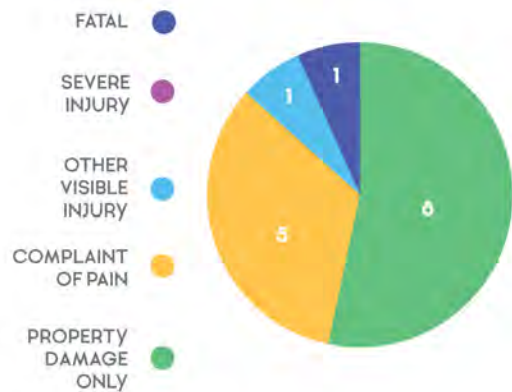
*B/C ratio reflects projects for Locations 4, 5 and 7

EXISTING CONDITIONS

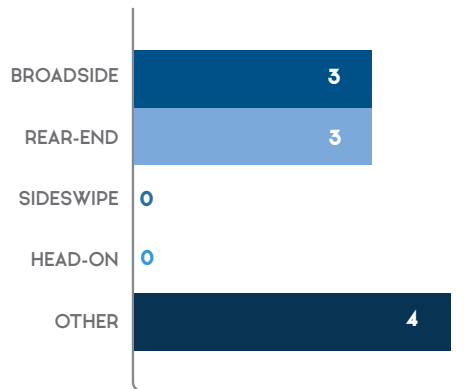
- T-INTERSECTION
- 1-WAY STOP FOR BEECH AVENUE
- AVENUE I HAS 6 LANES PLUS A TURN LANE WEST OF THE INTERSECTION; 4 LANES AND BIKE LANES PLUS A TURN LANE EAST OF THE INTERSECTION
- BEECH AVENUE HAS 2 LANES
- AVENUE I TRANSITIONS FROM 4 LANES WITH BIKE LANES EAST OF THE INTERSECTION TO 6 LANES WEST OF THE INTERSECTION



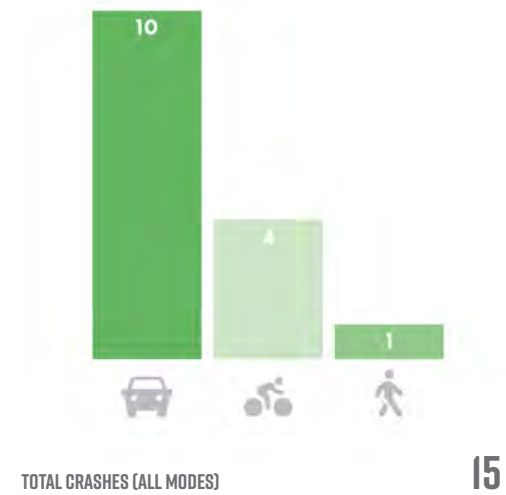
CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE BICYCLE AND PEDESTRIAN CRASHES



SHORT-TERM

CMID	Project Description	Cost
N/A	Targeted enforcement for pedestrian activity	N/A

MID-TERM

CMID	Project Description	Cost
NS18	Install pedestrian crossing at uncontrolled locations (with enhanced safety features) - RRFB option shown	\$50,448
R26	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning) - New pedestrian warning signs	\$4,400
R36	Install bike lanes	\$52,320

LONG-TERM

CMID	Project Description	Cost
OTHER COSTS		
	Mobilization	\$10,717
	Traffic Control	\$10,717
	Contingency	\$25,720
	Environmental	\$10,800
	PS&E	\$16,100
	Appraisals, Acquisitions, and Utilities	\$0
	Construction Engineering	\$16,100
COST ESTIMATES		\$197,322

EXPECTED BENEFIT/COST RATIO*

6.5

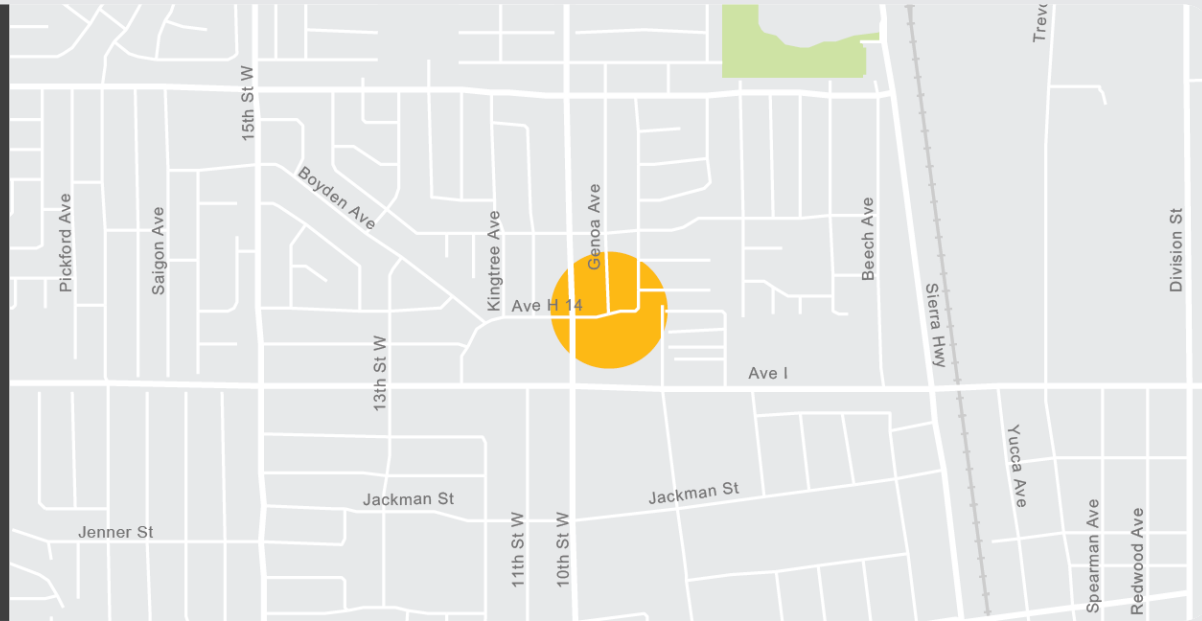
● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

*B/C ratio reflects projects for Location 6, 9 & 10

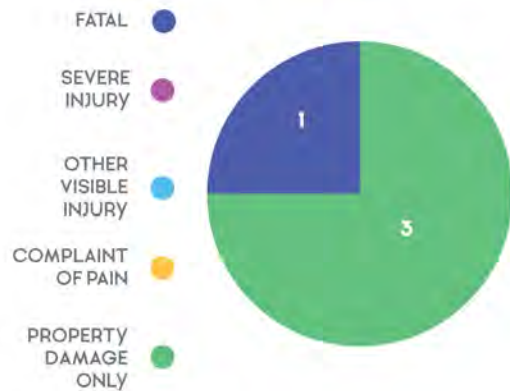
7 GENOA AVENUE AND AVENUE H-14

EXISTING CONDITIONS

- T-INTERSECTION
- NO CONTROLS
- GENOA AVENUE HAS 2 LANES
- AVENUE H-14 HAS 2 LANES
- NO SIDEWALKS
- NO ADA ACCESS
- BOTH STREETS ARE 36' CURB-TO-CURB



CRASH SEVERITY



VEHICLE CRASH TYPES



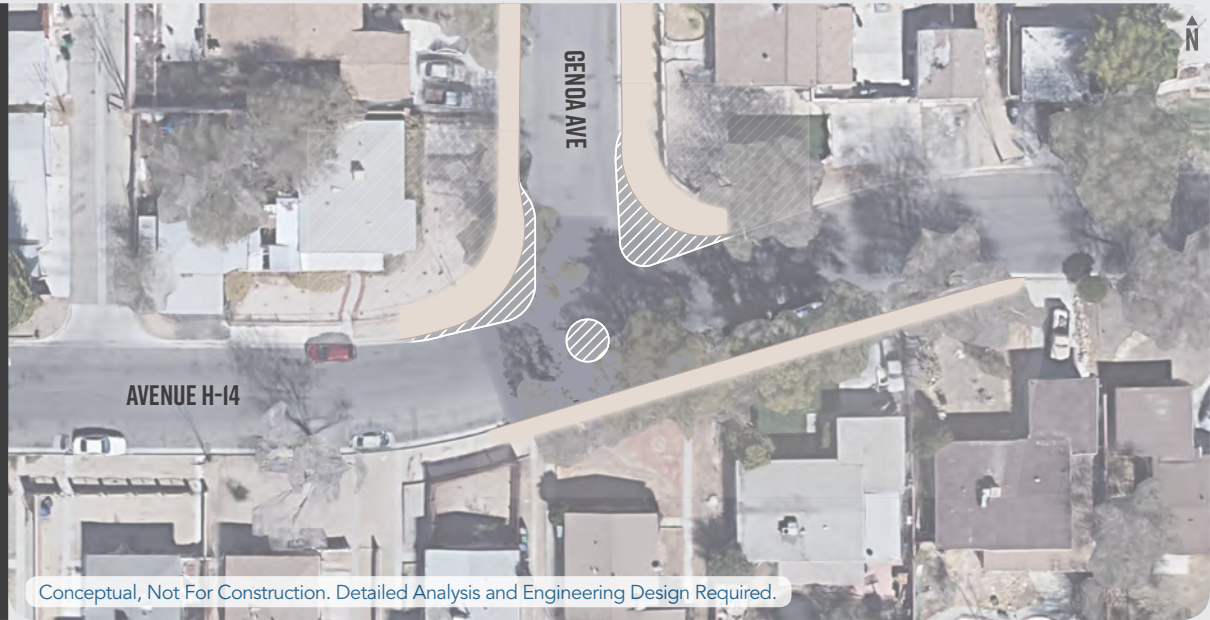
CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE PEDESTRIAN CRASHES
- REDUCE SIDESWIPE CRASHES



Conceptual, Not For Construction. Detailed Analysis and Engineering Design Required.

SHORT-TERM

CMID	Project Description	Cost
N/A	Evaluate corner sight-distance for possible stop sign	N/A

MID-TERM

CMID	Project Description	Cost
N/A	Short-term neighborhood traffic circle - Must be evaluated to determine need	\$1,577
NS10	Improve sight distance to intersection (Clear Sight Triangles) - Intersection choke-down; Must be evaluated to determine need	\$2,820

LONG-TERM

CMID	Project Description	Cost
R37	Install sidewalk/pathway (to avoid walking along roadway)	\$76,325

OTHER COSTS

Project Description	Cost
Mobilization	\$8,072
Traffic Control	\$8,072
Contingency	\$19,373
Environmental	\$8,100
PS&E	\$12,200
Appraisals, Acquisitions, and Utilities	\$8,100
Construction Engineering	\$12,200

COST ESTIMATES **\$156,839**

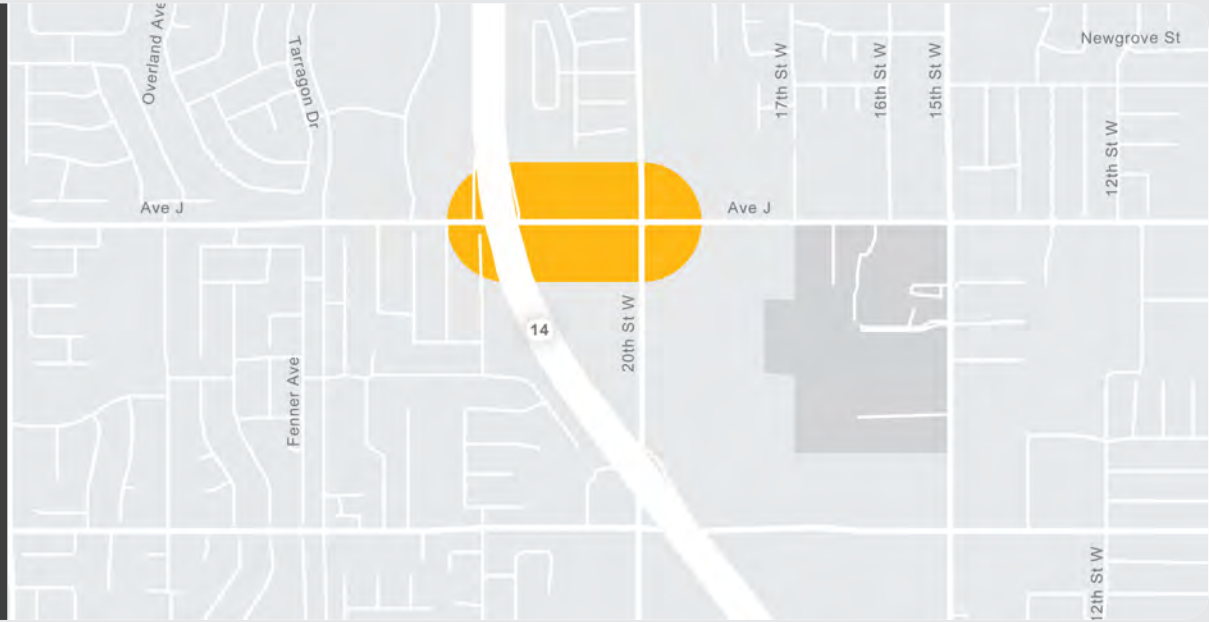
EXPECTED BENEFIT/COST RATIO* **25.9**

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

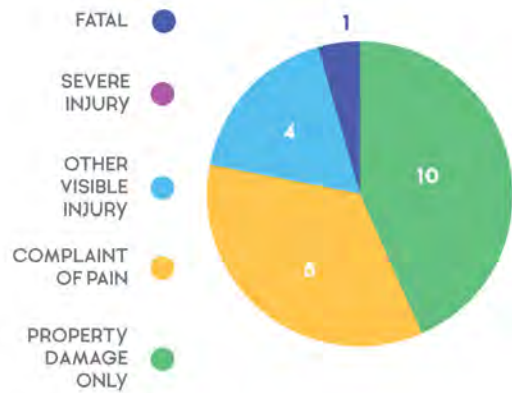
*B/C ratio reflects projects for Locations 4, 5 and 7

EXISTING CONDITIONS

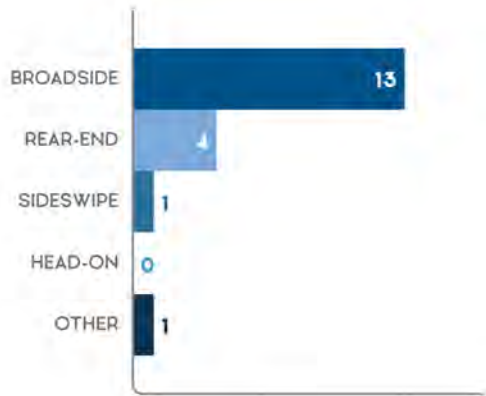
- LENGTH: 0.2 MILES ON AVENUE J
- STREET TYPE: MAJOR ARTERIAL
- ADT: 26,450
- 6 LANES, A TWO-WAY CENTER-TURN LANE AND MEDIAN ISLANDS
- POSTED SPEED LIMIT: 45 MPH
- TRANSIT: ANTELOPE VALLEY TRANSIT AUTHORITY ROUTE 7



CRASH SEVERITY



VEHICLE CRASH TYPES



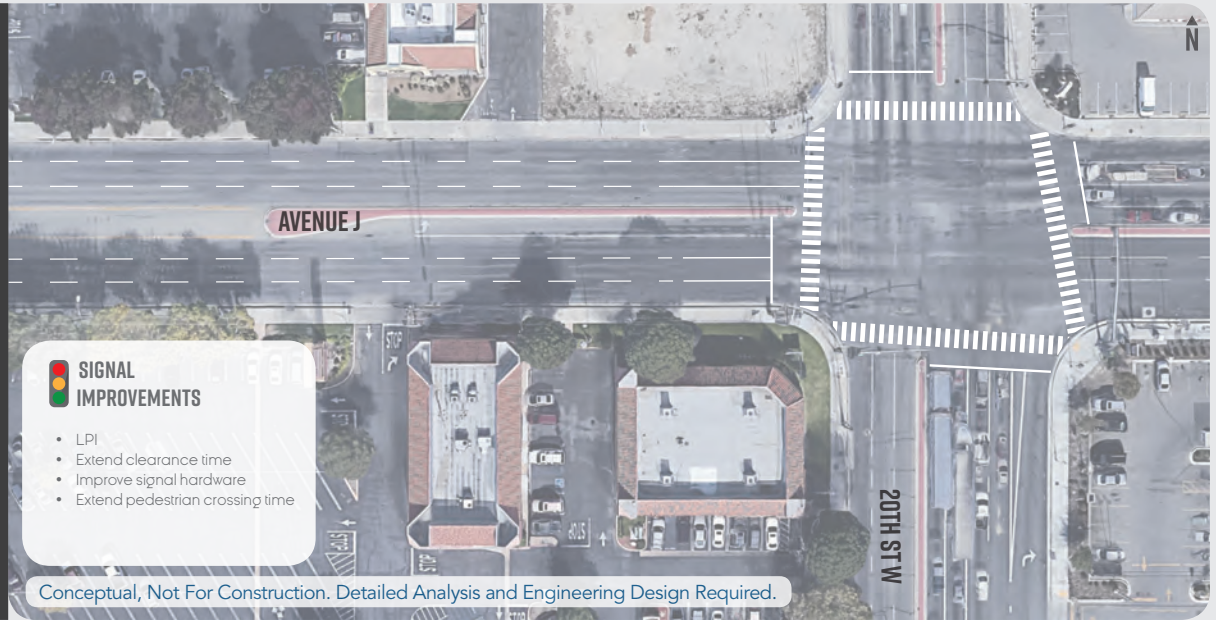
CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE BROADSIDE CRASHES
- REDUCE LEFT TURN CRASHES
- REDUCE UNSAFE SPEED CRASHES
- REDUCE BICYCLE AND PEDESTRIAN CRASHES



Conceptual, Not For Construction. Detailed Analysis and Engineering Design Required.

SHORT-TERM

CMID	Project Description	Cost
S3	Improve Signal Timing with Leading Pedestrian Interval (This option will be considered, but must be verified that coordinated signal timing can accommodate)	\$500
S3	Improve Signal Timing with Extended Clearance Time (Based on MUTCD Guidelines and roadway speed); Evaluate signal timing at Avenue J & 20th Street West for possible improvements to coordination	\$600
S3	Improve Signal Timing with Extended Pedestrian Crossing Times (Based on MUTCD Guidelines and crossing distance)	(incl. above)

MID-TERM

CMID	Project Description	Cost
S2	Improve signal hardware: lenses, back-plates, mounting, size, and number	\$21,860
S20	Install pedestrian crossing (S.I.) - Upgrade to Continental Crosswalks	\$11,760
S21	Install advance stop bar before crosswalk	\$2,880

LONG-TERM

Project Description
 Location will be evaluated after the completion of the Measure R project involving Avenue J interchange as there are expected to be significant changes in traffic patterns and volumes. Coordinate to implement ITE-recommended best practices for pedestrian and bicycle crossings at ramps.

OTHER COSTS

Project Description	Cost
Mobilization	\$3,760
Traffic Control	\$3,760
Contingency	\$9,024
Environmental	\$3,800
PS&E	\$5,700
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$5,700

COST ESTIMATES

\$69,344

EXPECTED BENEFIT/COST RATIO*

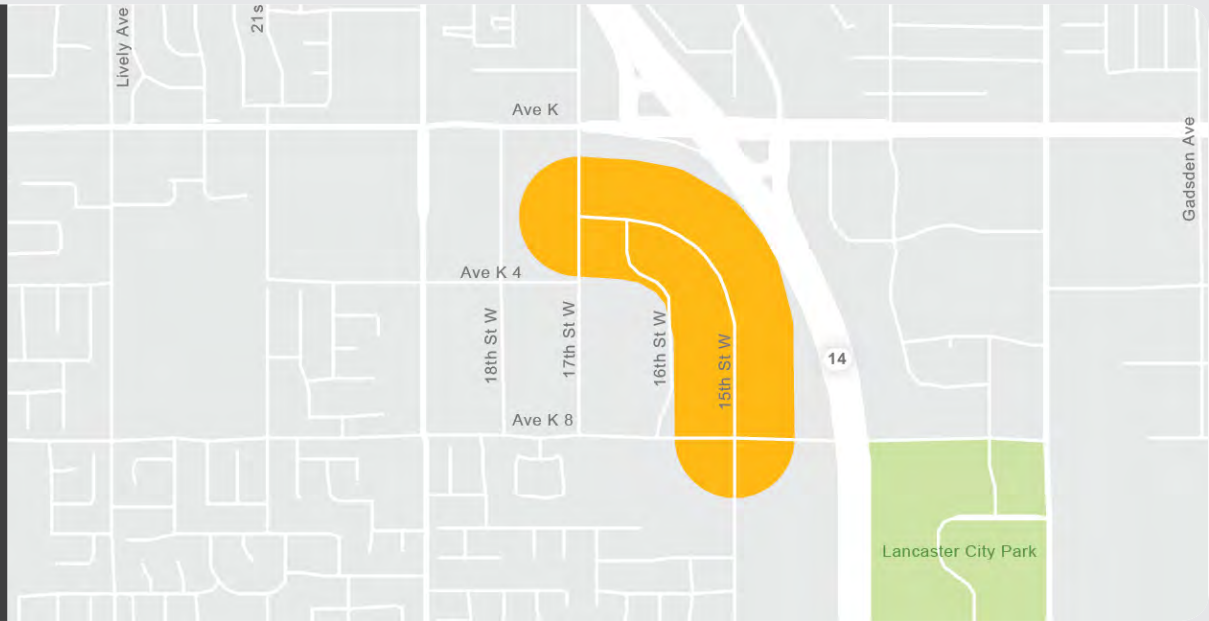
27.3

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

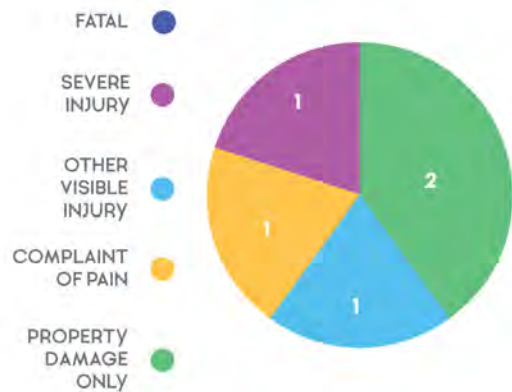
*B/C ratio reflects projects for Locations 1, 2 and 6

EXISTING CONDITIONS

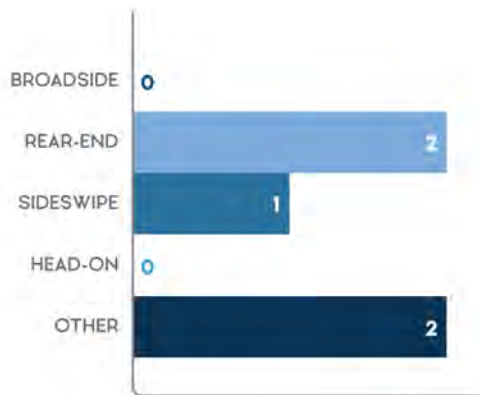
- LENGTH: 0.5 MILES
- STREET TYPE: SECONDARY ARTERIAL
- ADT: 765
- # OF LANES: 2 LANES AND A TWO-WAY CENTER-TURN LANE
- POSTED SPEED LIMIT: 45 MPH
- BIKEWAYS: BUFFERED BIKE LANES FROM AVENUE K-2 (17TH STREET WEST) TO APPROXIMATELY HALFWAY TO AVENUE K-6; A BUFFERED BIKE LANE ON THE WEST SIDE, AND A BIKE LANE ON THE EAST SIDE THE REMAINDER OF THE LENGTH
- TRANSIT: NONE



CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE HIT OBJECT CRASHES
- REDUCE NIGHTTIME CRASHES



SHORT-TERM

CMID	Project Description	Cost
R28	Install curve advance warning signs	\$2,200

MID-TERM

CMID	Project Description	Cost
N/A	Add a buffer to the bike lane on the east side of the street from approximately halfway between 17th Street West and Avenue K-8 to Avenue K-8 (0.2 mi.)	\$15,840

LONG-TERM

CMID	Project Description	Cost
N/A		

OTHER COSTS

Project Description	Cost
Mobilization	\$1,804
Traffic Control	\$1,804
Contingency	\$4,330
Environmental	\$1,900
PS&E	\$2,800
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$2,800

COST ESTIMATES

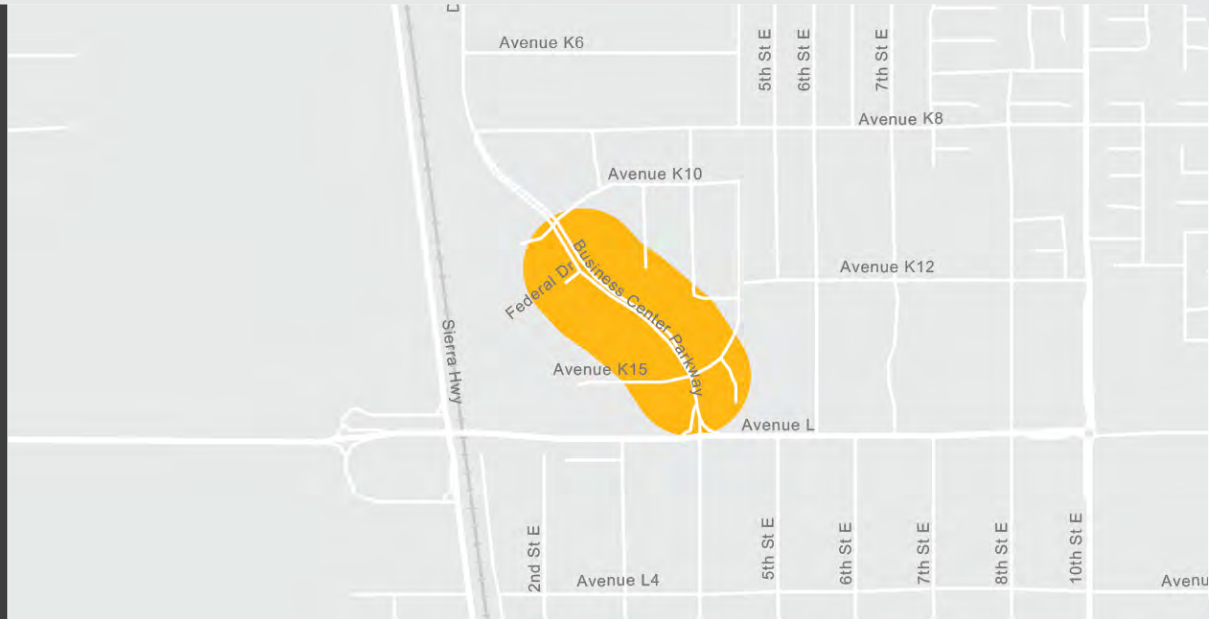
\$33,478

EXPECTED BENEFIT/COST RATIO*

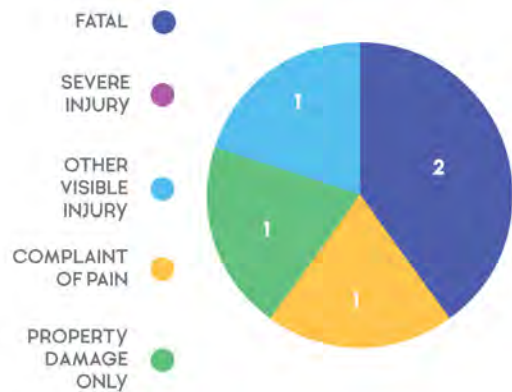
6.5

EXISTING CONDITIONS

- LENGTH: 0.25 MILES
- STREET TYPE: MAJOR ARTERIAL
- ADT: 12,650
- # OF LANES: 4 LANES AND MEDIAN
- POSTED SPEED LIMIT: 45 MPH
- BIKEWAYS: BUFFERED BIKE LANES
- TRANSIT: NONE



CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE HIT OBJECT CRASHES
- REDUCE NIGHTTIME CRASHES
- REDUCE ALCOHOL/DRUG RELATED CRASHES



SHORT-TERM

CMID	Project Description	Cost
N/A	Targeted Enforcement	N/A
R28	Install curve advance warning signs	\$2,200
R2	Remove or relocate fixed objects outside of Clear Recovery Zone - Remove/trim some trees to improve sight lines for signs and flashing beacons	\$6,650

MID-TERM

CMID	Project Description	Cost
R31	Install delineators, reflectors and/or object markers (Detail 25)	\$1,320
R32	Install edge-lines and centerlines (Detail 25)	\$3,960

LONG-TERM

CMID	Project Description	Cost
OTHER COSTS		
	Project Description	Cost
	Mobilization	\$1,413
	Traffic Control	\$1,413
	Contingency	\$3,391
	Environmental	\$1,500
	PS&E	\$2,200
	Appraisals, Acquisitions, and Utilities	\$0
	Construction Engineering	\$2,200

COST ESTIMATES

\$26,247

EXPECTED BENEFIT/COST RATIO*

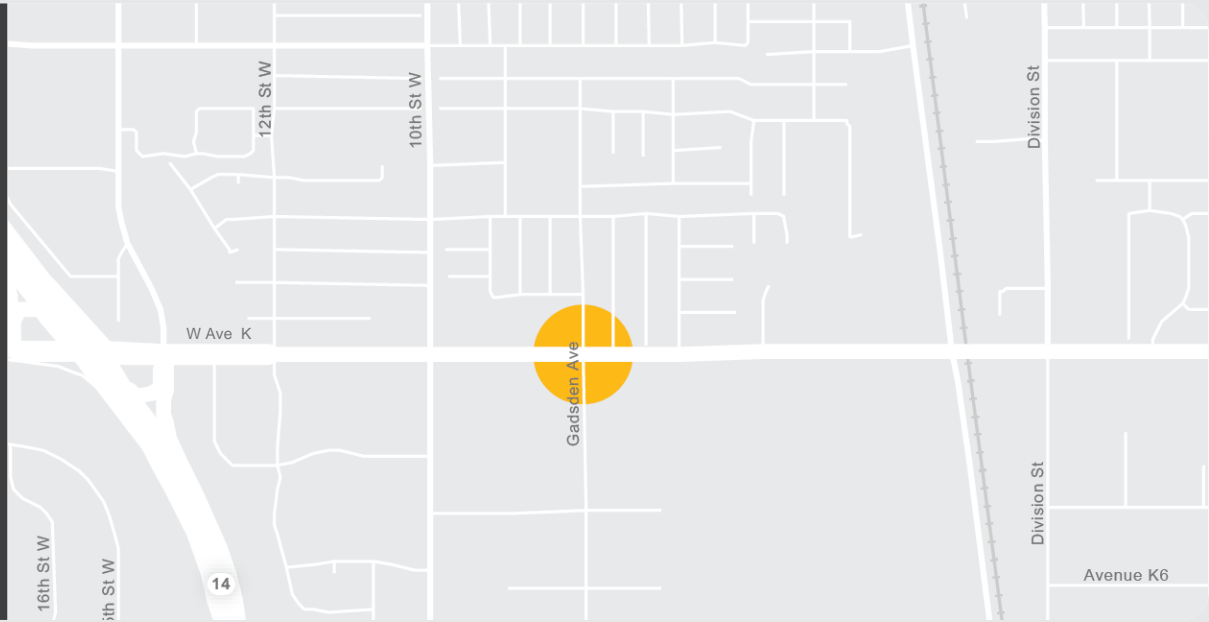
6.5

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

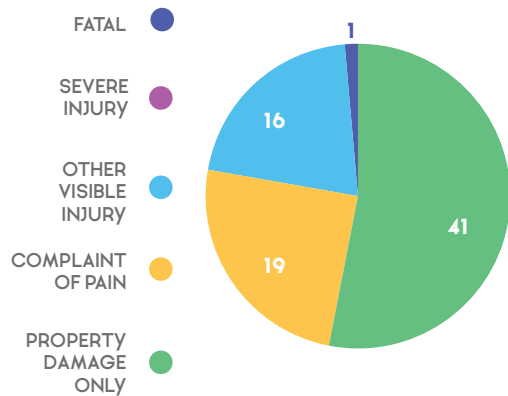
*B/C ratio reflects projects for Locations 6, 9 & 10

EXISTING CONDITIONS

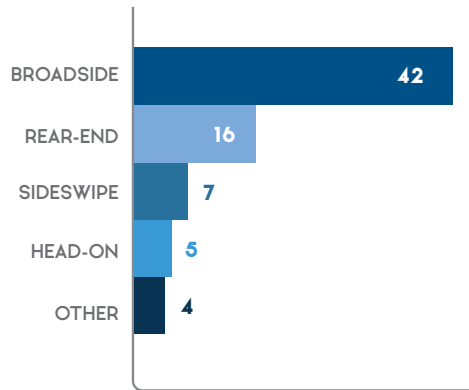
- SIGNALIZED INTERSECTION
- AVENUE K HAS 6 LANES PLUS TURN LANES
- GADSDEN AVENUE HAS 2 LANES, WITH A TURN LANE ON ONE APPROACH
- A FRONTAGE ROAD PARALLELS AVENUE K, INTERSECTION GADSDEN AVENUE IMMEDIATELY NORTH OF THIS INTERSECTION
- YELLOW SCHOOL CONTINENTAL CROSSWALKS
- COUNTDOWN SIGNALS
- PROTECTED/PERMISSIVE LEFT TURNS ON AVENUE K



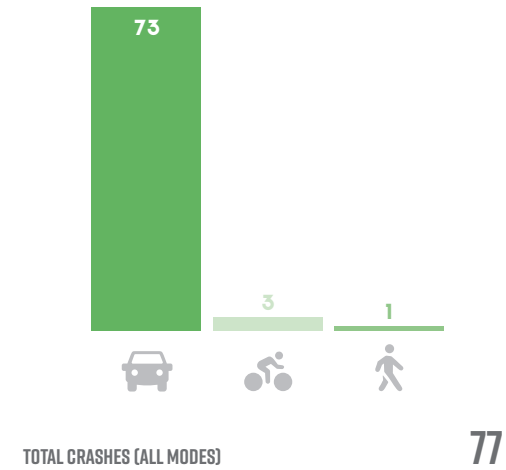
CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE BROADSIDE CRASHES
- REDUCE LEFT TURN CRASHES



SHORT-TERM

CMID	Project Description	Cost
S3	Improve Signal Timing with Extended Clearance Time (Based on MUTCD Guidelines and roadway speed)	\$600

MID-TERM

CMID	Project Description	Cost
S2	Improve signal hardware: lenses, back-plates, mounting, size, and number	\$15,302
S6	Provide protected left turn phase (left turn lane already exists) - Convert from protected/permmissive to protected on Avenue K	\$150,000

LONG-TERM

CMID	Project Description	Cost
N/A		

OTHER COSTS

Project Description	Cost
Mobilization	\$16,590
Traffic Control	\$16,590
Contingency	\$39,816
Environmental	\$16,600
PS&E	\$24,900
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$24,900

COST ESTIMATES

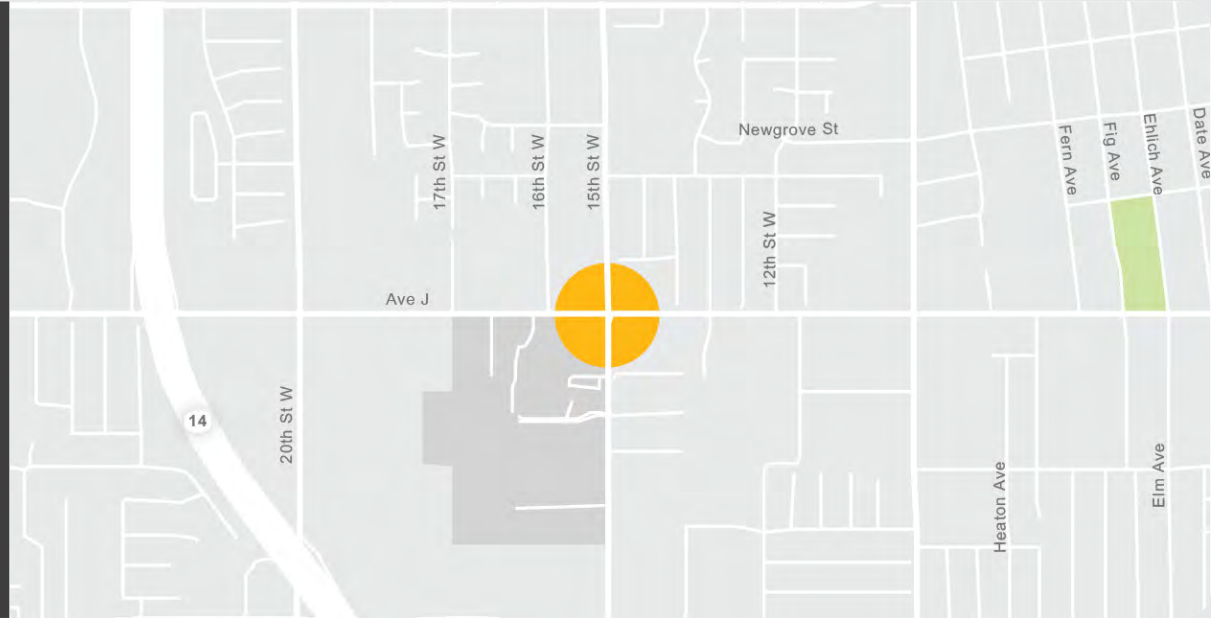
\$305,299

EXPECTED BENEFIT/COST RATIO*

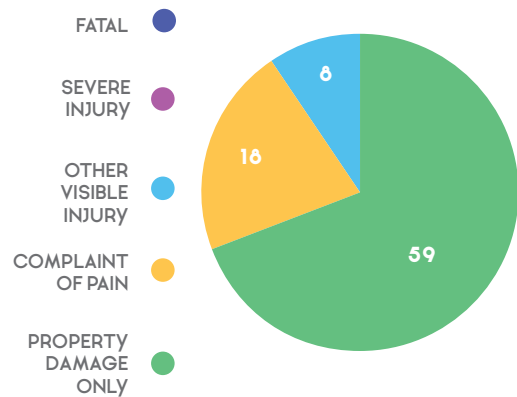
25.9

EXISTING CONDITIONS

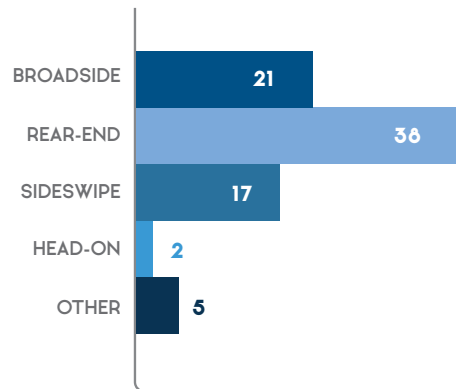
- SIGNALIZED INTERSECTION
- AVENUE J HAS 4 LANES PLUS TURN LANES
- 15TH STREET WEST HAS 2 LANES PLUS TURN LANES TO THE NORTH, AND 3 LANES PLUS TURN LANES TO THE SOUTH
- A BUFFERED BIKE FACILITY RUNS ON 15TH STREET WEST NORTH OF THIS INTERSECTION
- STANDARD CROSSWALKS
- PROTECTED LEFTS ON AVENUE J
- PROTECTED/PERMISSIVE LEFT TURNS ON 15TH STREET WEST



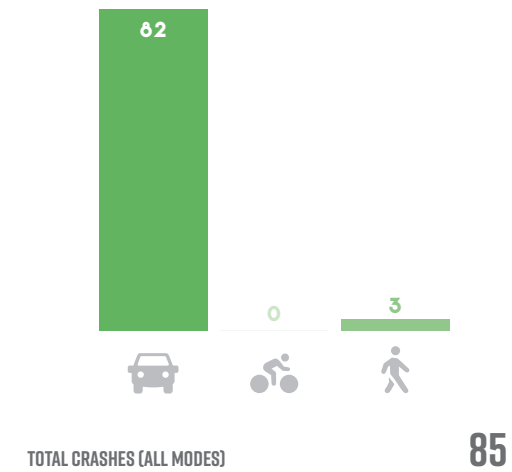
CRASH SEVERITY



VEHICLE CRASH TYPES



CRASHES BY MODE



Crash data analysis years: 2013-2017

COUNTERMEASURE OBJECTIVES

- REDUCE REAR-END CRASHES
- REDUCE PEDESTRIAN CRASHES
- REDUCE LEFT TURN CRASHES
- REDUCE UNSAFE SPEED CRASHES



SHORT-TERM

CMID	Project Description	Cost
S3	Improve Signal Timing with Leading Pedestrian Interval (This option will be considered, but must be verified that coordinated signal timing can accommodate)	\$500
S3	Improve Signal Timing with Extended Clearance Time (Based on MUTCD Guidelines and roadway speed)	\$600
S3	Improve Signal Timing with Extended Pedestrian Crossing Times (Based on MUTCD Guidelines and crossing distance)	(incl. above)

MID-TERM

CMID	Project Description	Cost
S2	Improve signal hardware: lenses, back-plates, mounting, size, and number	\$16,395
S20	Install pedestrian crossing - Upgrade to Continental Crosswalks	\$9,240
S21	Install advance stop bar before crosswalk	\$1,440
S6	Provide protected left turn phase (left turn lane already exists) - Convert from protected/permissive to protected on 15th Street West	\$150,000

LONG-TERM

CMID	Project Description	Cost
N/A		

OTHER COSTS

Project Description	Cost
Mobilization	\$17,818
Traffic Control	\$17,818
Contingency	\$42,762
Environmental	\$17,900
PS&E	\$26,800
Appraisals, Acquisitions, and Utilities	\$0
Construction Engineering	\$26,800

COST ESTIMATES

\$328,072

EXPECTED BENEFIT/COST RATIO*

25.9

● Systemic Improvement ● Location-specific Improvement ● Evaluate Proposed Improvement for Implementation

*B/C ratio reflects projects for Locations 3, 11 and 12

CHAPTER 4

FUNDING SOURCES

While the primary purpose of this study is to prepare the City of Lancaster to submit successful HSIP applications, safety projects can be funded through a wide range of additional sources at the regional, state, and federal levels. HSIP funds are largely awarded on the basis of a benefit/cost analysis based on a set of Caltrans-approved countermeasures with documented crash reduction factors and historic crash data. While many safety projects

will perform well through the HSIP process, others may be successfully funded through other sources, such as the Active Transportation Program (ATP), that consider additional factors. Importantly, the sources below may be used to fund a broad scope of projects encapsulating air quality and sustainability, affordable housing, and transportation. Successful projects often entail creative solutions that address impact areas beyond transportation safety alone.

TABLE 3 TOP CRASH LOCATIONS - SEGMENTS

FUNDING SOURCE	PROGRAM PURPOSE	NEXT FUNDING OPPORTUNITY
LOCAL AND REGIONAL SOURCES		
Southern California Association of Governments (SCAG) Sustainability Program	The program addresses local growth challenges by funding plans that promote sustainability through the integration of transportation and land use.	TBD
STATE SOURCES		
California Strategic Growth Council (SGC) Transformative Climate Communities (TCC) Program	The Transformative Climate Communities (TCC) Program empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to reduce greenhouse gas emissions and local air pollution.	TBD
SGC Affordable Housing and Sustainable Communities (AHSC) Program	The Affordable Housing and Sustainable Communities (AHSC) Program makes it easier for Californians to drive less by making sure housing, jobs, and key destinations are accessible by walking, biking, and transit.	Applications due February 11, 2019
Active Transportation Program (ATP)	ATP is a statewide competitive grant application process with the goal of encouraging increased use of active modes of transportation. The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. The ATP administered by the Division of Local Assistance, Office of State Programs.	Cycle 4 Call for Projects Anticipated May 2019

TABLE 3 TOP CRASH LOCATIONS - SEGMENTS

FUNDING SOURCE	PROGRAM PURPOSE	NEXT FUNDING OPPORTUNITY
SB 1 Local Streets and Roads Program (LSRP)	SB 1 dedicated approximately \$1.5 billion per year in new formula revenues apportioned by the State Controller (Controller) to cities and counties for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads system.	Project Lists due to California Transportation Commission May 1, 2019
Caltrans Sustainable Communities Grants (Planning Grant Program)	The Planning Grant Program encourages local and regional planning that furthers state goals, including, but not limited to, the goals and best practices cited in the Regional Transportation Plan Guidelines adopted by the California Transportation Commission.	TBD
Highway Safety Improvement Program (HSIP)	California's Local HSIP focuses on infrastructure projects with nationally recognized crash reduction factors (CRFs). Local HSIP projects must be identified on the basis of crash experience, crash potential, crash rate, or other data-supported means.	Cycle 10
California Office of Traffic Safety (OTS) Grant Programs	OTS administers traffic safety grants in the following areas: Alcohol Impaired Driving, Distracted Driving, Drug-Impaired Driving, Emergency Medical Services, Motorcycle Safety, Occupant Protection, Pedestrian and Bicycle Safety, Police Traffic Services, Public Relations, Advertising, Roadway Safety and Traffic Records.	Applications will be Available December 2019
SB 1 Solutions for Congested Corridors Program (SCCP)	The Solutions for Congested Corridors Program funds projects designed to reduce congestion in highly traveled and highly congested corridors. This statewide, competitive program makes \$250 million available annually for projects that implement specific transportation performance improvements and are part of a comprehensive corridor plan by providing more transportation choices while preserving the character of local communities and creating opportunities for neighborhood enhancement.	Cycle 2 (2019)
SB1 Local Partnership Program (LPP)	The purpose of this program is to provide local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees with a continuous appropriation of \$200 million annually from the Road Maintenance and Rehabilitation Account to fund road maintenance and rehabilitation, sound walls, and active transportation projects. There is also a competitive grant portion of this project.	Cycle 2 (2019)

TABLE 3 TOP CRASH LOCATIONS - SEGMENTS

FUNDING SOURCE	PROGRAM PURPOSE	NEXT FUNDING OPPORTUNITY
SB 1 State Transportation Improvement Program (STIP)	The State Transportation Improvement Program (STIP) is the biennial five-year plan for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements.	2020
Caltrans Strategic Partnerships grants	This program provide support to identify and address statewide, interregional, or regional transportation deficiencies on the State highway system in partnership with Caltrans. The transit component will fund planning projects that address multimodal transportation deficiencies with a focus on transit.	TBD
Caltrans Adaptation Planning grants	These grants support planning actions at local and regional levels that advance climate change efforts on the transportation system.	TBD
California Natural Resources Agency Environmental Enhancement and Mitigation Program	This program supports projects that "contribute to mitigation of the environmental effects of transportation facilities." According to the program guidelines, projects that fall under the following category can apply: "Mitigation Projects Beyond the Scope of the Lead Agency responsible for assessing the environmental impact of the proposed transportation improvement."	April 2019
California Natural Resources Agency Urban Greening Program	This program supports projects that "use natural systems or systems that mimic natural systems to achieve multiple benefits." Eligible projects include "non-motorized urban trails that provide safe routes for travel between residences, workplaces, commercial centers, and schools."	Concept Proposals Due January 8 – February 28, 2019
FEDERAL SOURCES		
Community Development Block Grant (CDBG) Program	The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs.	Applications Due February 26, 2019
Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant program	This program supports projects that are "road or bridge projects eligible under title 23, United States Code;" and "intermodal projects." This program replaces the TIGER program.	TBD



APPENDIX A

DETAILED CRASH ANALYSIS



APPENDIX A

DETAILED CRASH ANALYSIS

A component of the Systemic Safety Analysis Report (SSAR) is to identify locations with elevated risk of crashes either through their crash histories or their similarities to other locations that have more active crash patterns. The initial step in analyzing this information is to spatially reference crashes that occurred within the study area from January 1, 2013 through December 31, 2017. Figure A1 - Crashes by Type (2013 - 2017) displays all crash activity for this period using data processed through Crossroads Collision Software. Additionally, Crossroads has access to the latest police reports, allowing validation of the City’s data with Transportation

Injury Mapping System (TIMS) data. TIMS provides access to California crash data using the Statewide Integrated Traffic Records System (SWITRS) for injury and fatal crashes. Together, these sources ensure that all relevant data is included.

Within the dataset provided by the City, 9,742 crashes occurred within public property property between January 1, 2013 and December 31, 2017. Figure A2 - All Crashes (2013 - 2017) (which includes property damage crashes in the “Other” category) indicates that broadside is consistently the most common crash type within the City.

FIGURE A1 CRASHES BY TYPE (2013 - 2017)

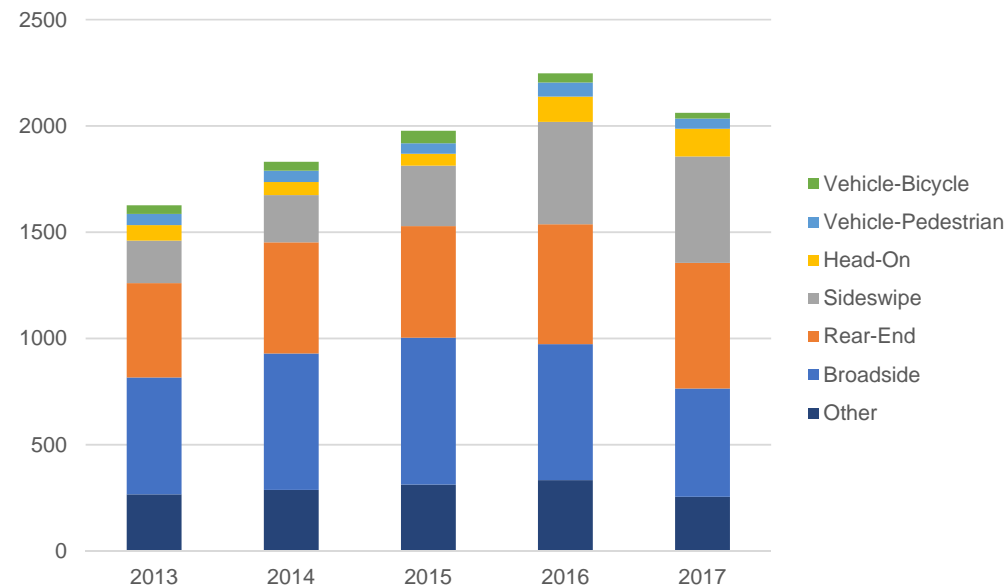
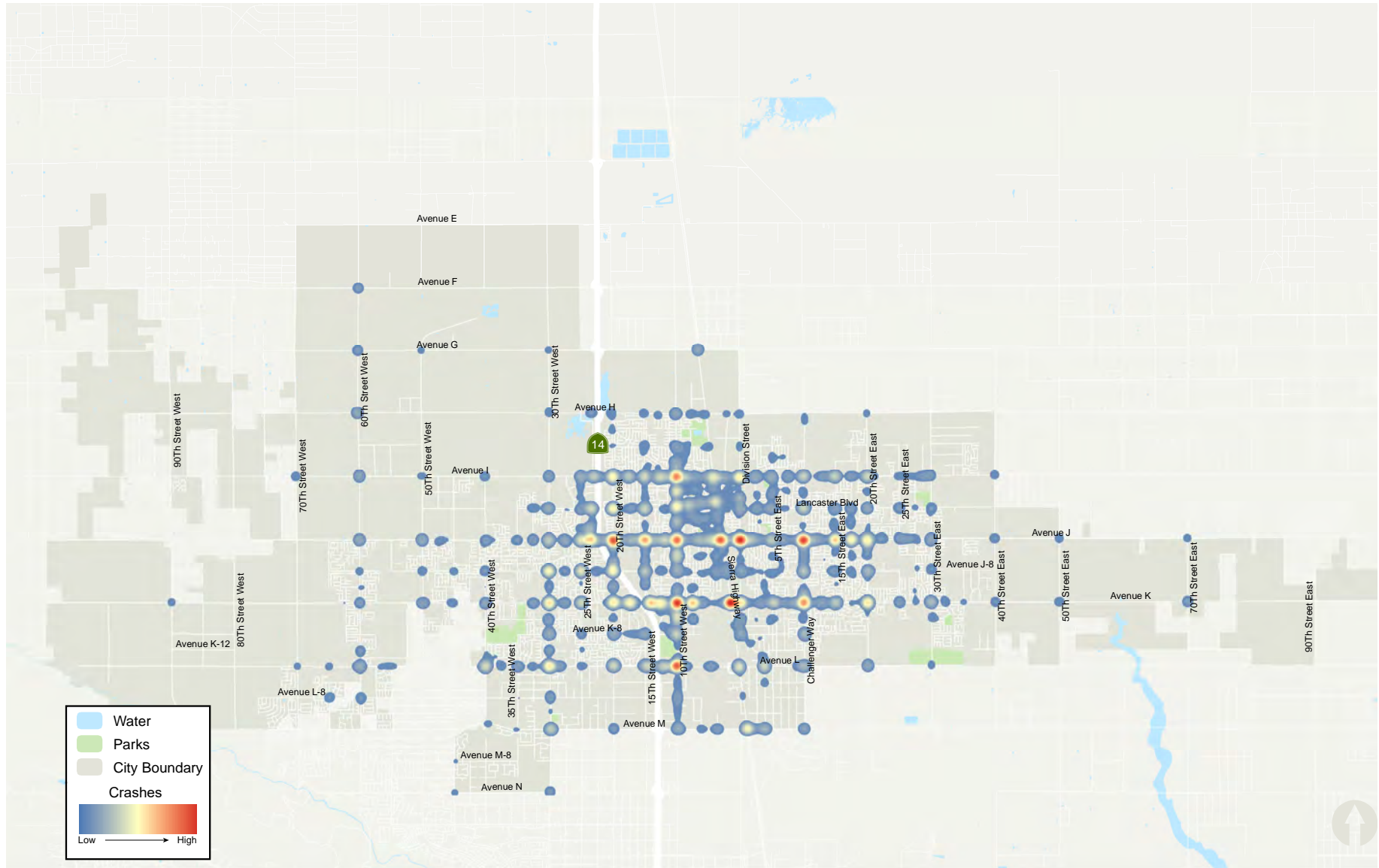


FIGURE A2 ALL CRASHES (2013 - 2017)



Knowing the impacts of the crash (the injuries or type of damage which occurred) is a key part of assessing the environment and safety factors around the site of the crash. Figure A3 - Count of Injury/Damage by Type (2013 - 2017) displays the count of each type by year. Over the period observed, there was a total of 79 fatal crashes and 146 crashes resulting in severe injury.

Knowing the recorded causes of crashes can help identify safety factors systemwide that may contribute to crashes. Figure A4 - Percentage by Cause of All Crashes (2013 - 2017) provides a breakdown of causality for all recorded crashes.

FIGURE A4 PERCENTAGE BY CAUSE OF ALL CRASHES (2013 - 2017)

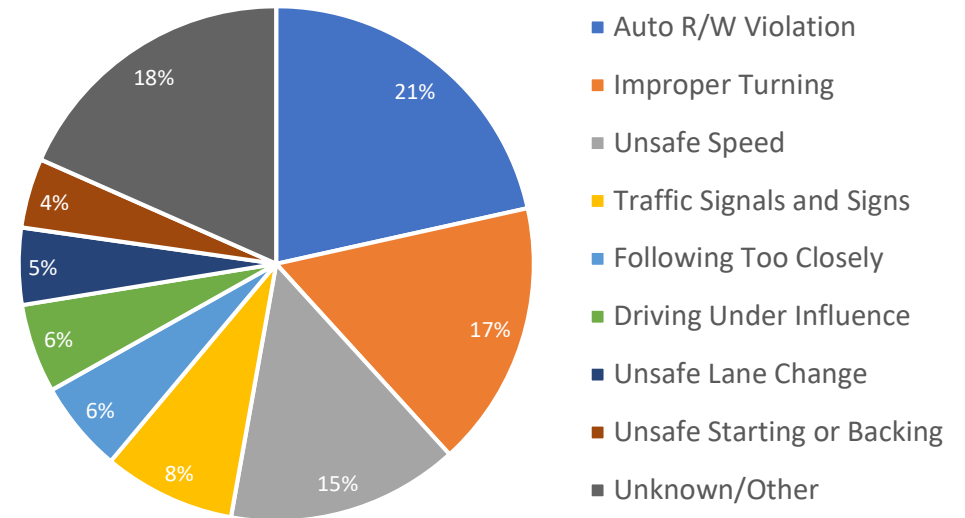
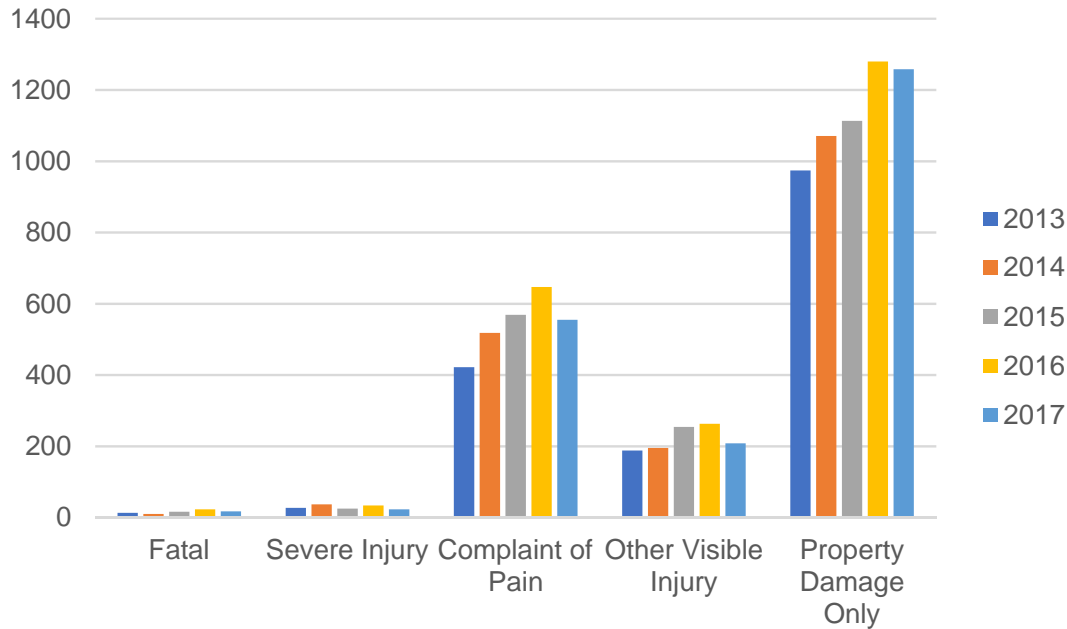


FIGURE A3 COUNT OF INJURY/DAMAGE BY TYPE (2013 - 2017)



FATAL CRASHES

Identifying locations of fatal crashes is a key step in detecting any patterns in location or design of the roadway/intersection that are potentially impacting the occurrence. Figure A5 - Percentage by Cause of Fatal Crash (2013 - 2017) displays the percentage of fatal crashes by their cause. As seen in Figure A6 - Fatal Crash Locations (2013 - 2017), the majority of fatal crashes occurred on major east-west arterials.

FIGURE A5 PERCENTAGE BY CAUSE OF FATAL CRASH (2013 - 2017)

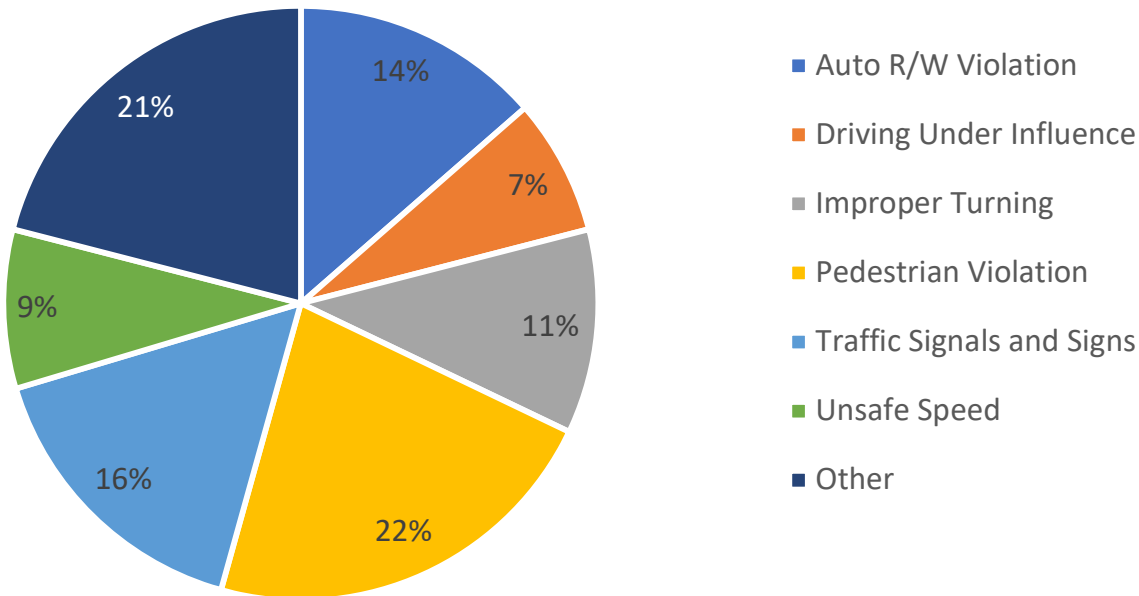
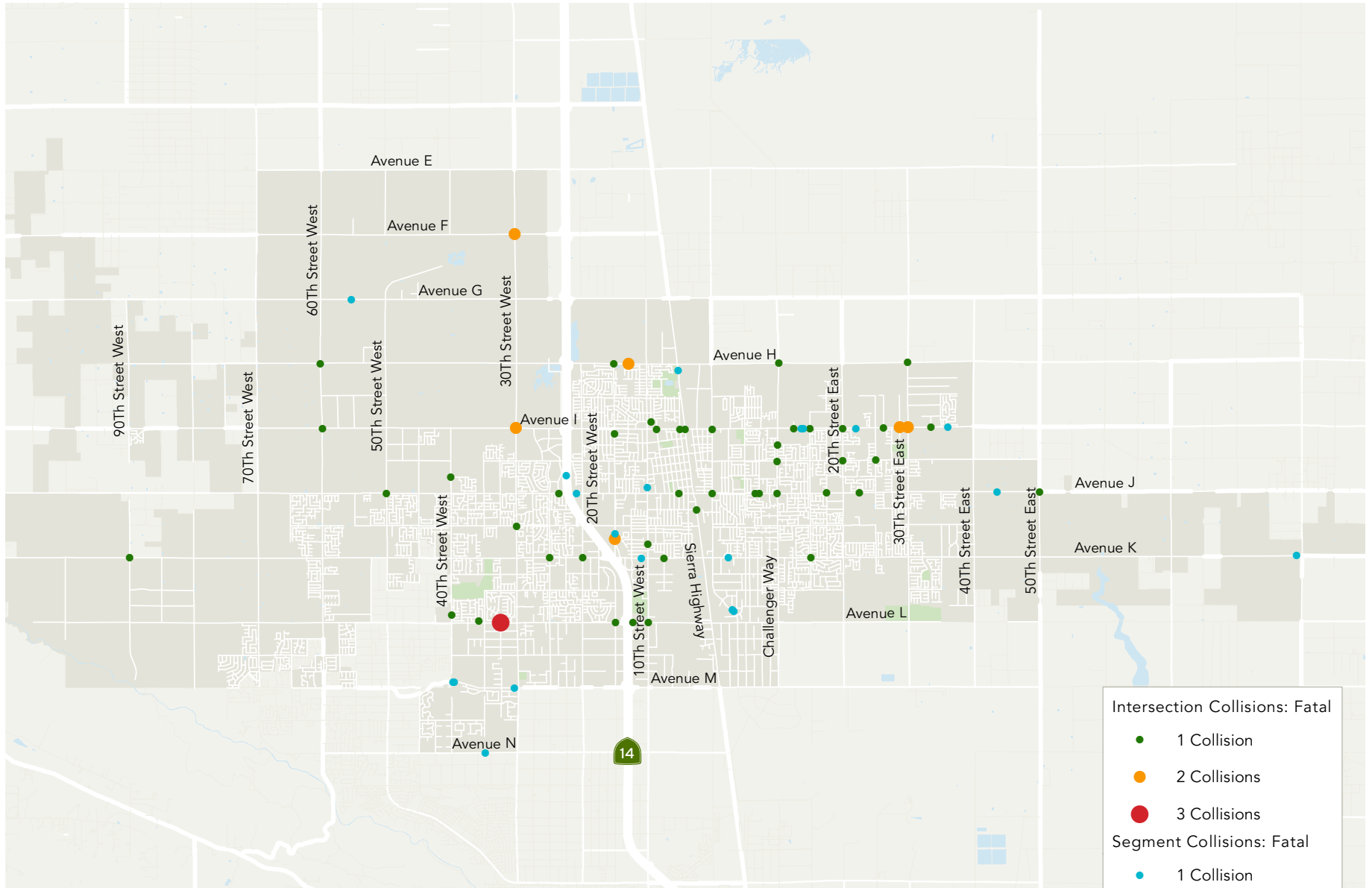


FIGURE A6 FATAL CRASH LOCATIONS (2013 - 2017)



CRASHES BY INVOLVEMENT

Crashes occur for a variety of reasons ranging from driver behavior, inclement weather, traffic control features, and a myriad of other causes. The following sections discuss the past five years of crashes within Lancaster based on the types of vessels involved. This includes:

- > Cars and trucks
 - *Single Vehicle Crashes/Off-Road Crashes*
 - *Vehicular Night-Time Crashes (with and without street lights)*
 - *Parked Vehicle Crashes*
- > Bicycles
- > Pedestrians

CARS AND TRUCKS

Vehicular crashes are reported by their involvement with other modes. Understanding the types and locations of these crashes is an important part of analyzing the safety conditions of the transportation network.

SINGLE VEHICLE CRASHES/OFF-ROAD CRASHES

A reported vehicular crash with fixed objects typically indicates that the vehicle collided with immobile objects outside of the travel lanes. These are often crashes with light poles, signage, personal property, etc. The type of crash with a fixed object includes head-on, sideswipe, broadside, and overturned vehicles. Figure A7 - Vehicular Crashes with Fixed Objects (2013 - 2017) represents the locations of crashes of vehicles.

VEHICULAR NIGHT-TIME CRASHES

Crashes occurring during periods of darkness (typically at night) are often categorized by whether or not street lights are present. Figure A8 - Crashes at Dark without Street Lights (2013 - 2017) and Figure A9 - Crashes at Dark with Street Lights (2013 - 2017) visually display the locations of vehicular crashes over the past three years during dark periods where street lights are and are not located.

PARKED VEHICLE CRASHES

Crashes of vehicles with parked cars display another form of potential interaction between vehicles within the travel-way and on-street parked vehicles. The design of on-street parking, its location, and visibility along the roadway and near the intersection are key elements that influence the safety of the area. Figure A10 - Vehicular Crashes with Parked Vehicles (2013 - 2017) displays the locations of these types of crashes.

FIGURE A7 VEHICULAR CRASHES WITH FIXED OBJECTS (2013 - 2017)

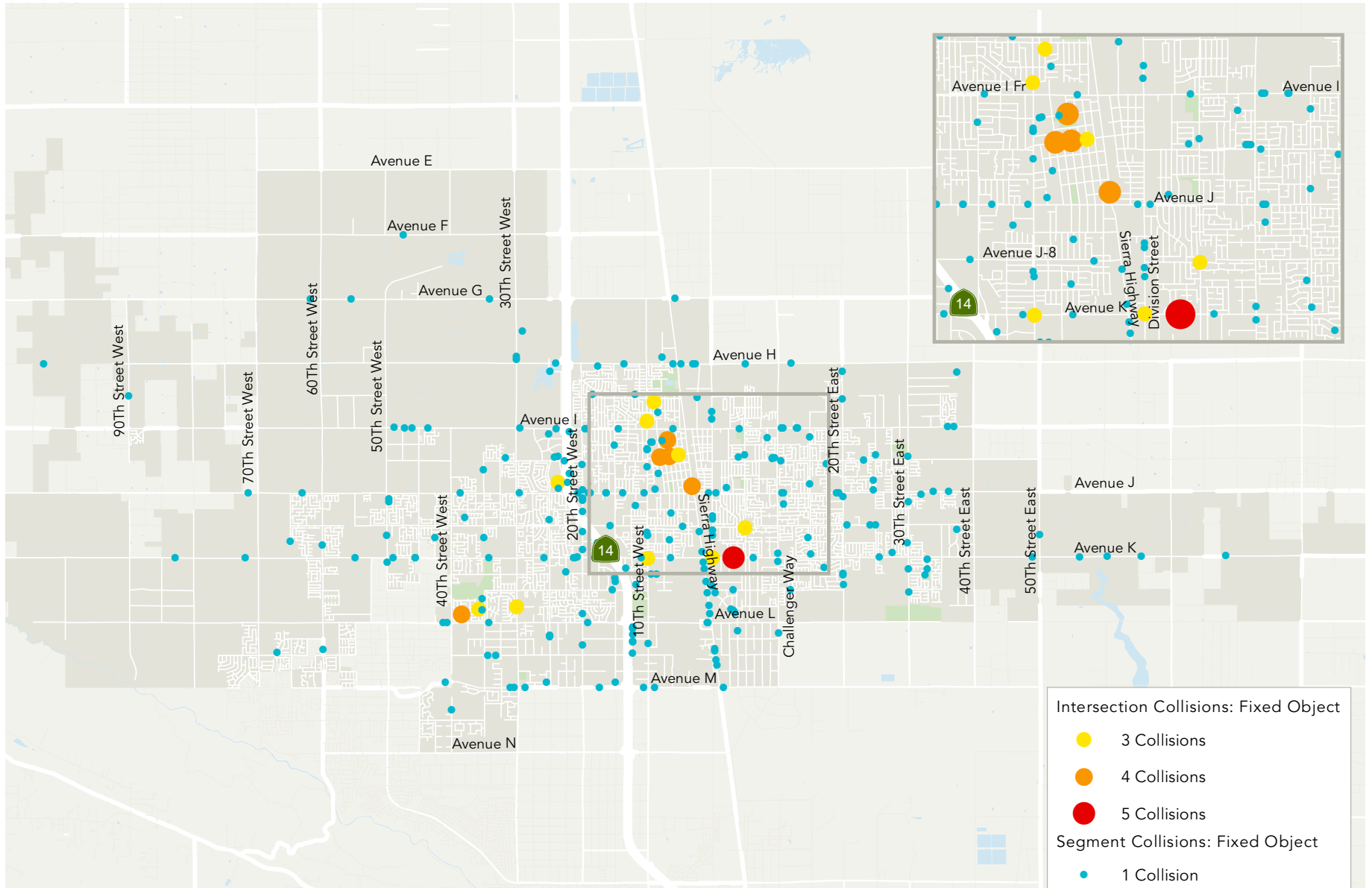


FIGURE A6 CRASHES AT DARK WITHOUT STREET LIGHTS (2013 - 2017)

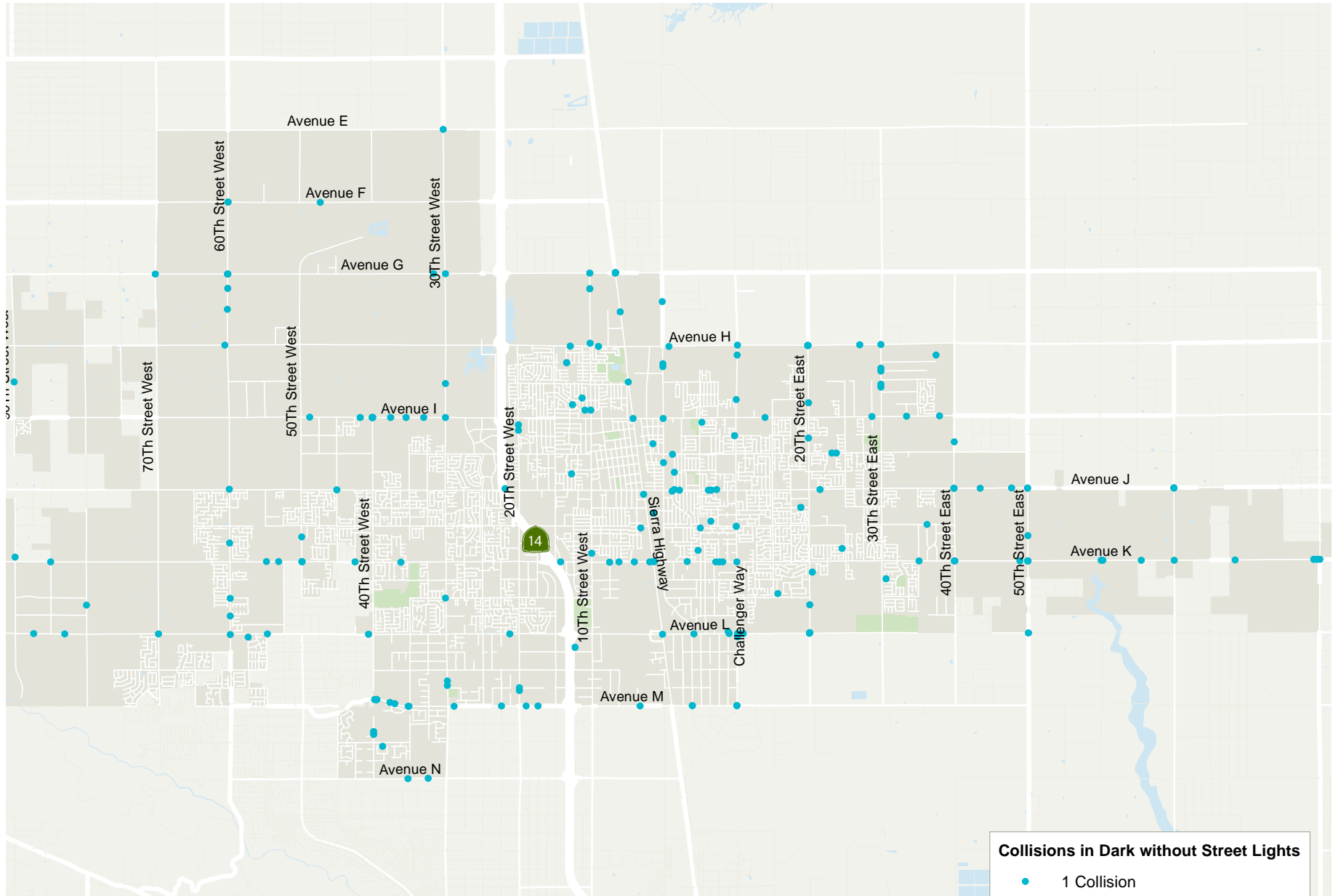


FIGURE A9 CRASHES AT DARK WITH STREET LIGHTS (2013 - 2017)

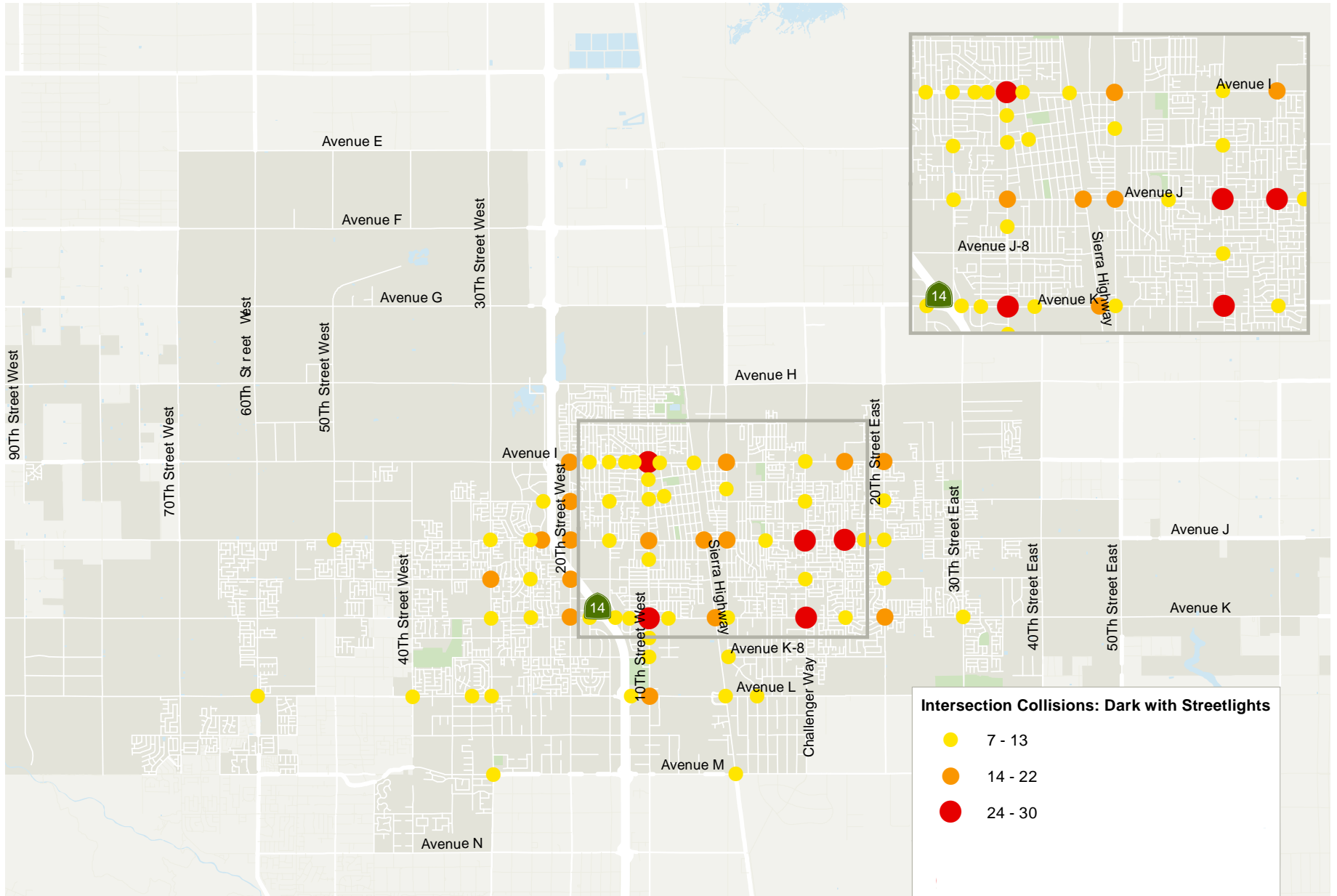
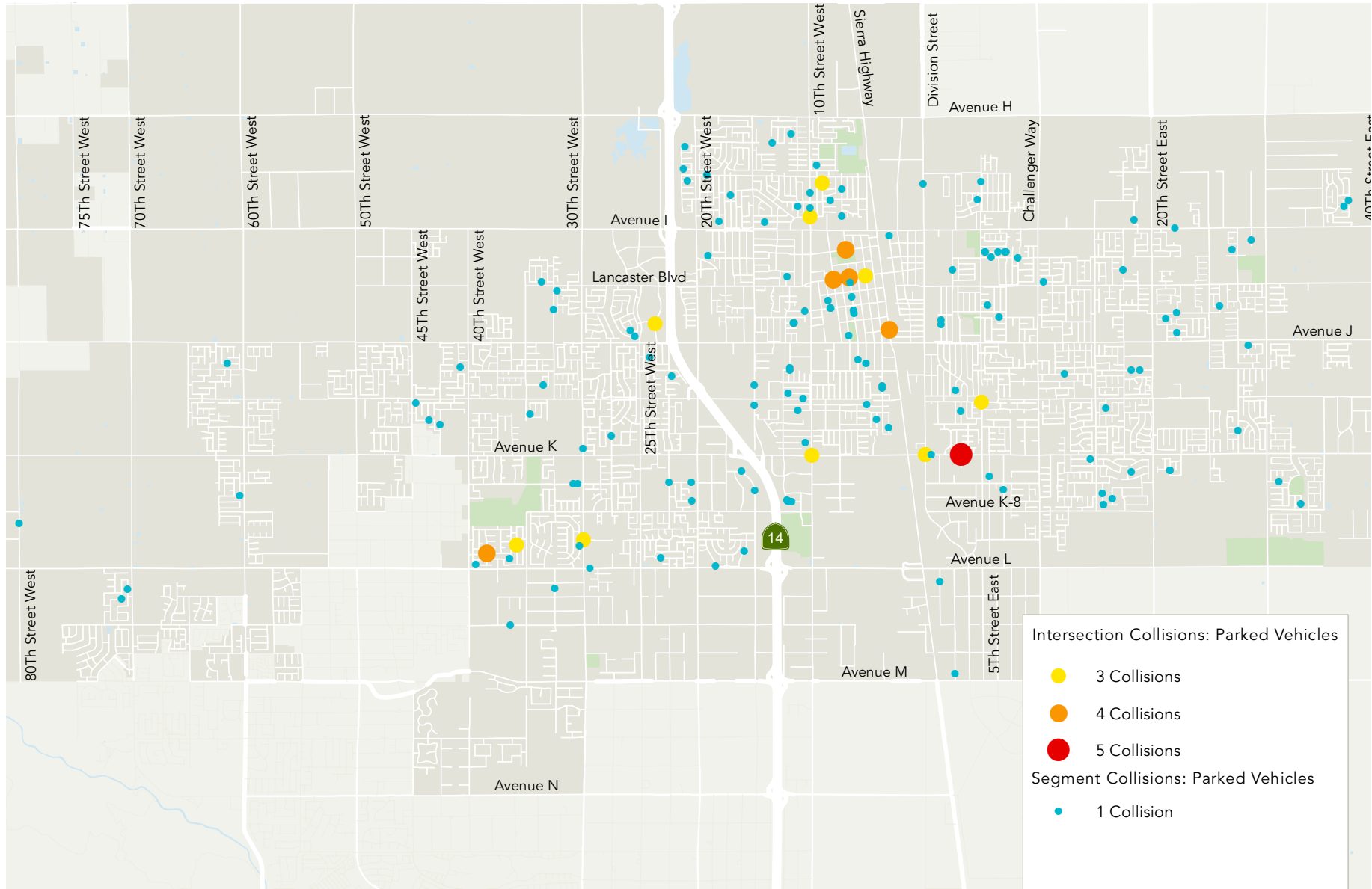


FIGURE A10 VEHICULAR CRASHES WITH PARKED VEHICLES (2013 - 2017)



PEDESTRIAN

Often, crashes between vehicles and pedestrians end in severe injury or fatality. Identifying the historical patterns of these crashes is a large component in the analysis process. Over the span of 2013 – 2017, a total of 269 pedestrian-involved crashes occurred. Of the 269 crashes, 26 were reported with severe injury, 90 with visible injuries, and 108 with complaints of pain. Twenty-three pedestrian crashes were fatal. Figure A11 - Pedestrian-Involved Crashes (2013 - 2017) displays the locations of these crashes and Table A1 - Action of Pedestrian in Crash (2013 - 2017) identified what action the pedestrian was taking at the time of crash.

BICYCLE

Similarly to pedestrian-involved crashes, the identification of vehicle-bicycle crashes is important in understanding areas of the network where there

are factors that may be impacting the safety of these travel modes. Of the 211 bicycle-involved crashes, 168 resulted in either visible injury or complaint of pain by the involved parties. Thirteen crashes resulted in severe injury and one resulted in a fatality. These crashes are visually represented in Figure A12 - Bicycle-Involved Crashes (2013 - 2017).

DRIVING UNDER THE INFLUENCE

Crashes related to impaired driving are also reviewed to determine the level of severity and location. Of the 645 crashes in which at least one driver was impaired, 26 resulted in severe injuries and 7 resulted in a fatality. Of these crashes, 240 resulted in either visible injury or complaint of pain by the involved parties. These crashes are visually represented in Figure A13 - Driver-Impaired Crashes (2013 - 2017).

TABLE A1 ACTION OF PEDESTRIAN IN CRASH (2013 - 2017)

YEAR	PEDESTRIAN ACTION						TOTAL
	CROSSING IN CROSSWALK AT INTERSECTION	CROSSING IN CROSSWALK NOT AT INTERSECTION	CROSSING NOT IN CROSSWALK	IN ROAD	NOT IN ROAD (E.G. ON SIDEWALK)	NOT STATED	
2013	20	1	18	6	4	4	53
2014	26	0	15	8	1	3	53
2015	17	0	20	10	2	0	49
2016	14	3	27	13	3	6	66
2017	20	1	14	8	3	2	48

FIGURE A11 PEDESTRIAN-INVOLVED CRASHES (2013 - 2017)

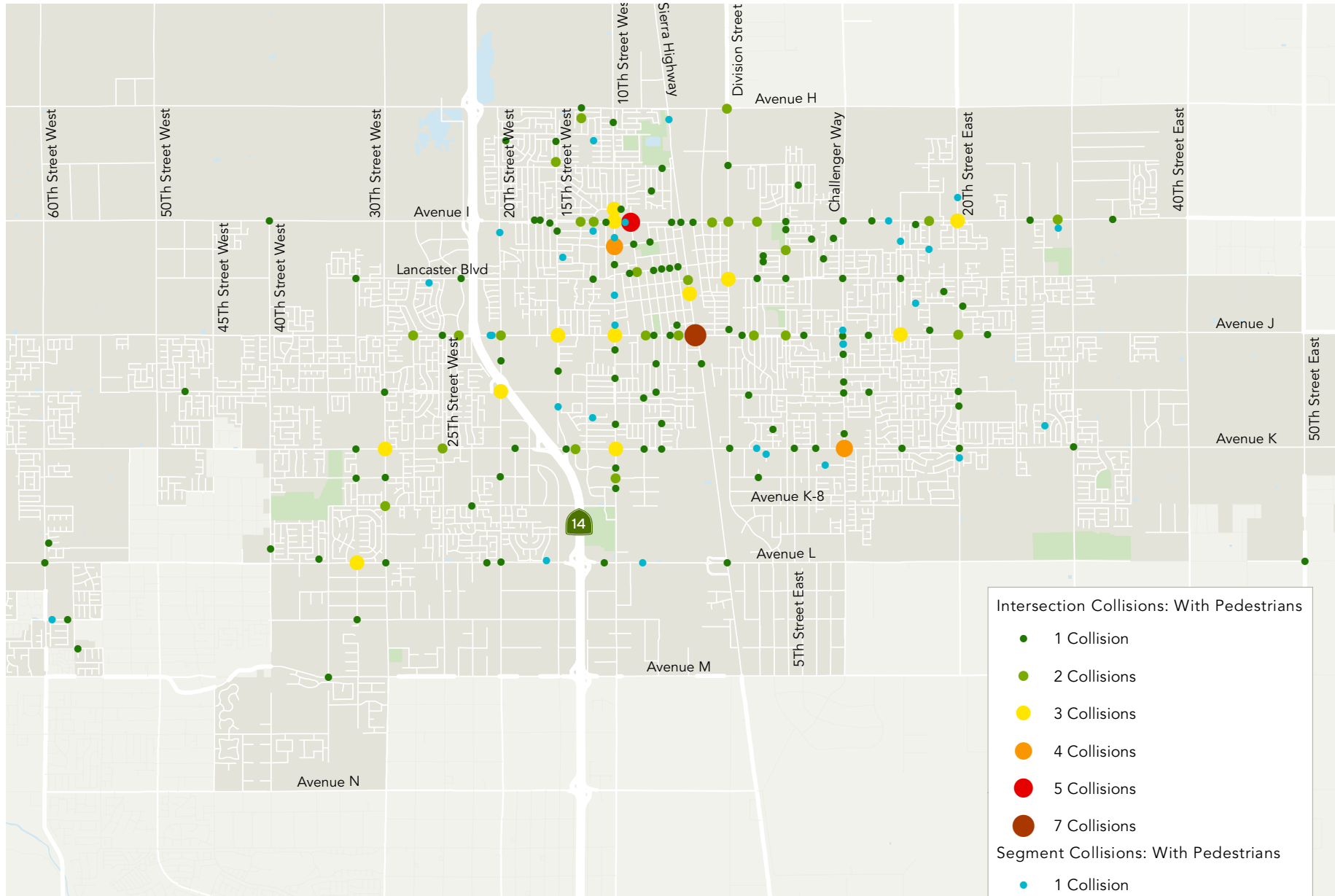


FIGURE A12 BICYCLE-INVOLVED CRASHES (2013 - 2017)

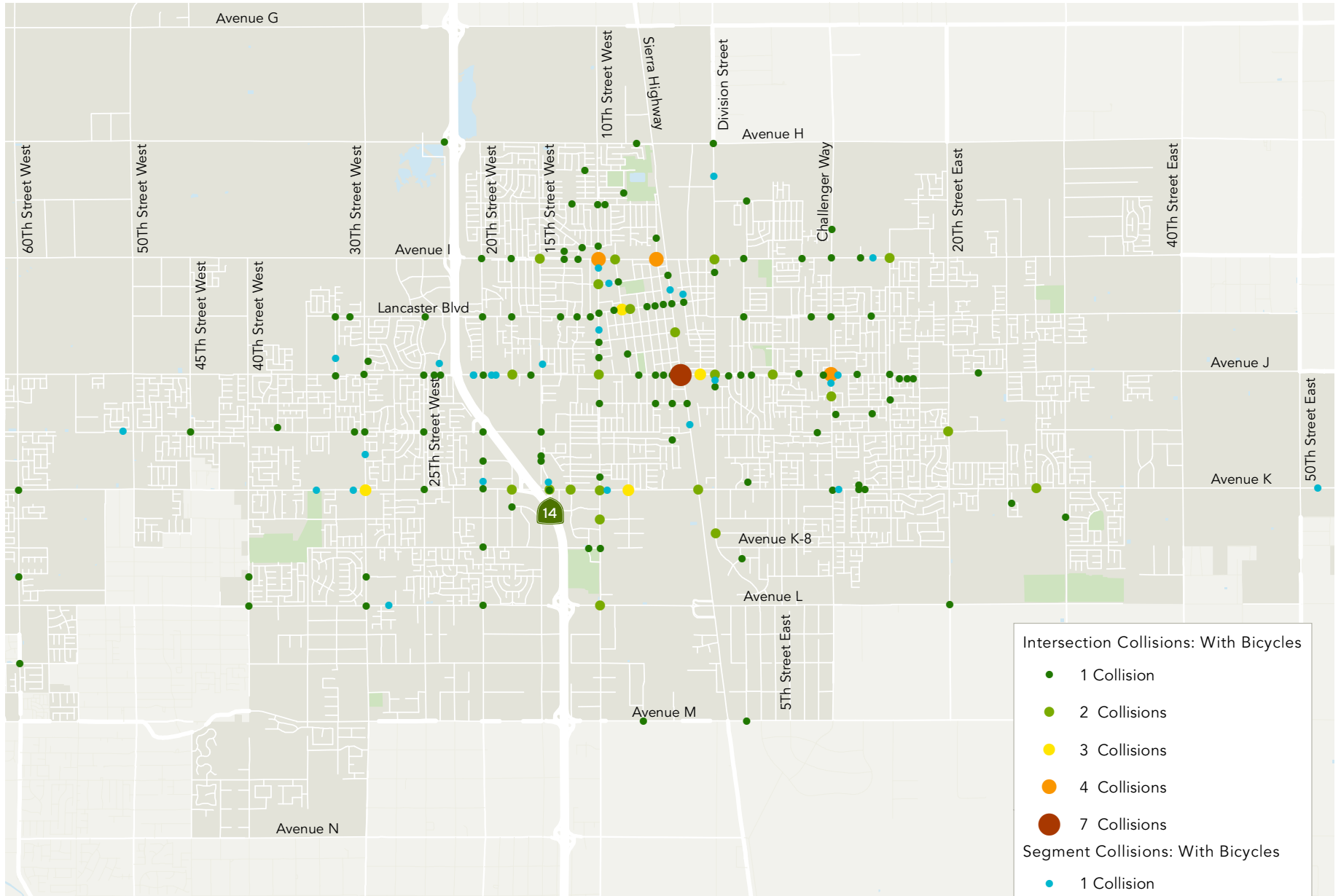
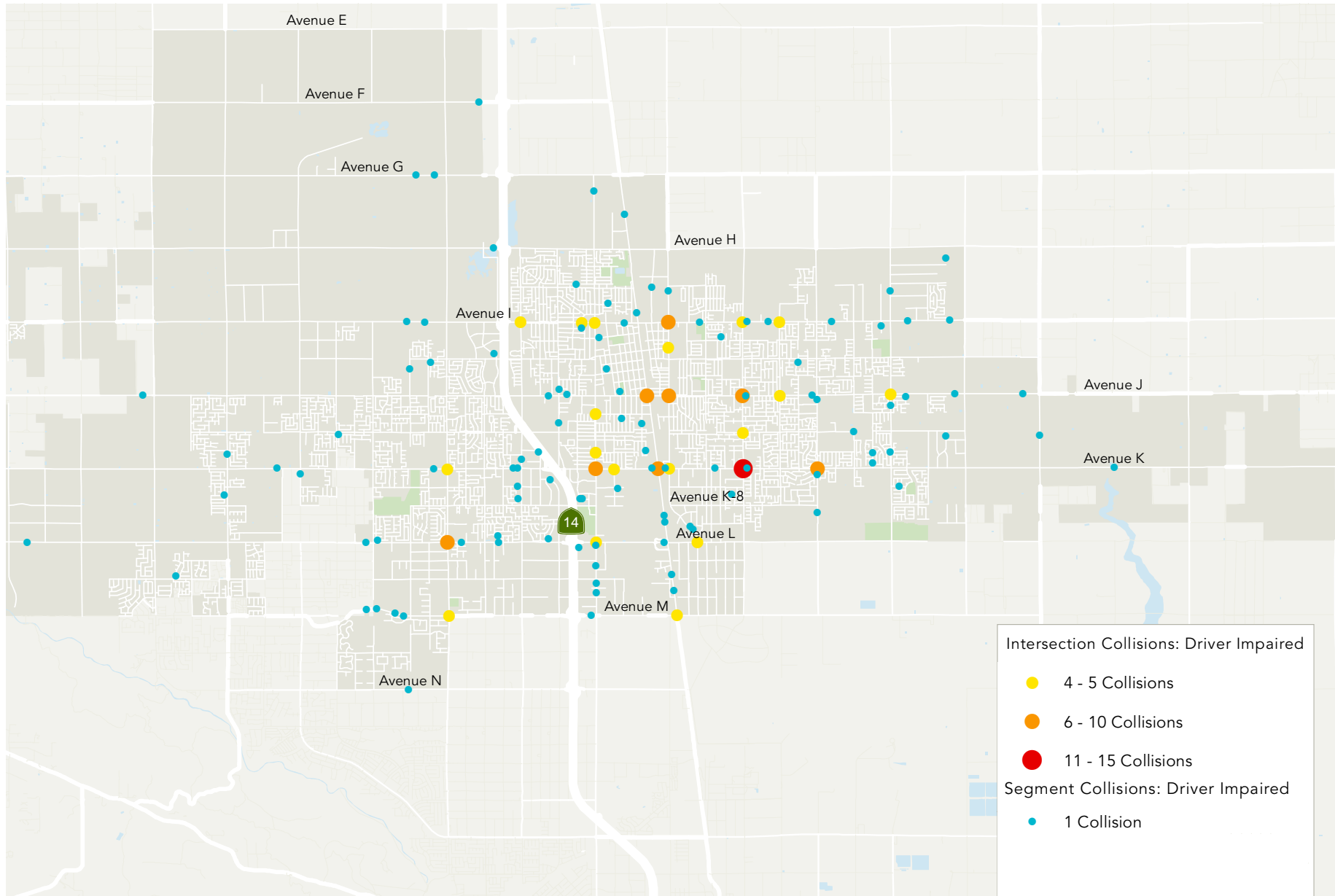


FIGURE A13 DRIVER-IMPAIRED CRASHES (2013 - 2017)



COUNTS

Vehicular count data for this transportation network was taken from multiple sources. Data was primarily sourced from the City travel demand model and counts collected by the City to validate this model; additional counts were also sourced from other studies conducted in the area. Figure A14 - Vehicle Counts visually represents that the corridors with the highest volumes in Lancaster are the east-west corridors of Avenues I, J, K, and L, and the north-south corridor of 10th and 20th Streets.

ANALYSIS

The following section describes the analysis process undertaken to evaluate safety within Lancaster at a systemic level. Using a network screening process, locations within the City that will most likely benefit from safety enhancements were identified. Using historic crash data, crash risk factors for the entire network are then derived. The outcomes inform the identification and prioritization of engineering and non-infrastructure safety measures that address certain roadway characteristics and related behaviors that contribute to motor vehicle crashes with active transportation users.

LOCAL ROADS SAFETY MANUAL

The purpose of the *Local Roadway Safety Manual: A Manual for California's Local Road Owners* (Version 1.3, April 2016) is to encourage local agencies to pursue a proactive approach to identifying and analyzing safety issues, while preparing to compete for project funding opportunities. A proactive approach is defined as analyzing the safety of the

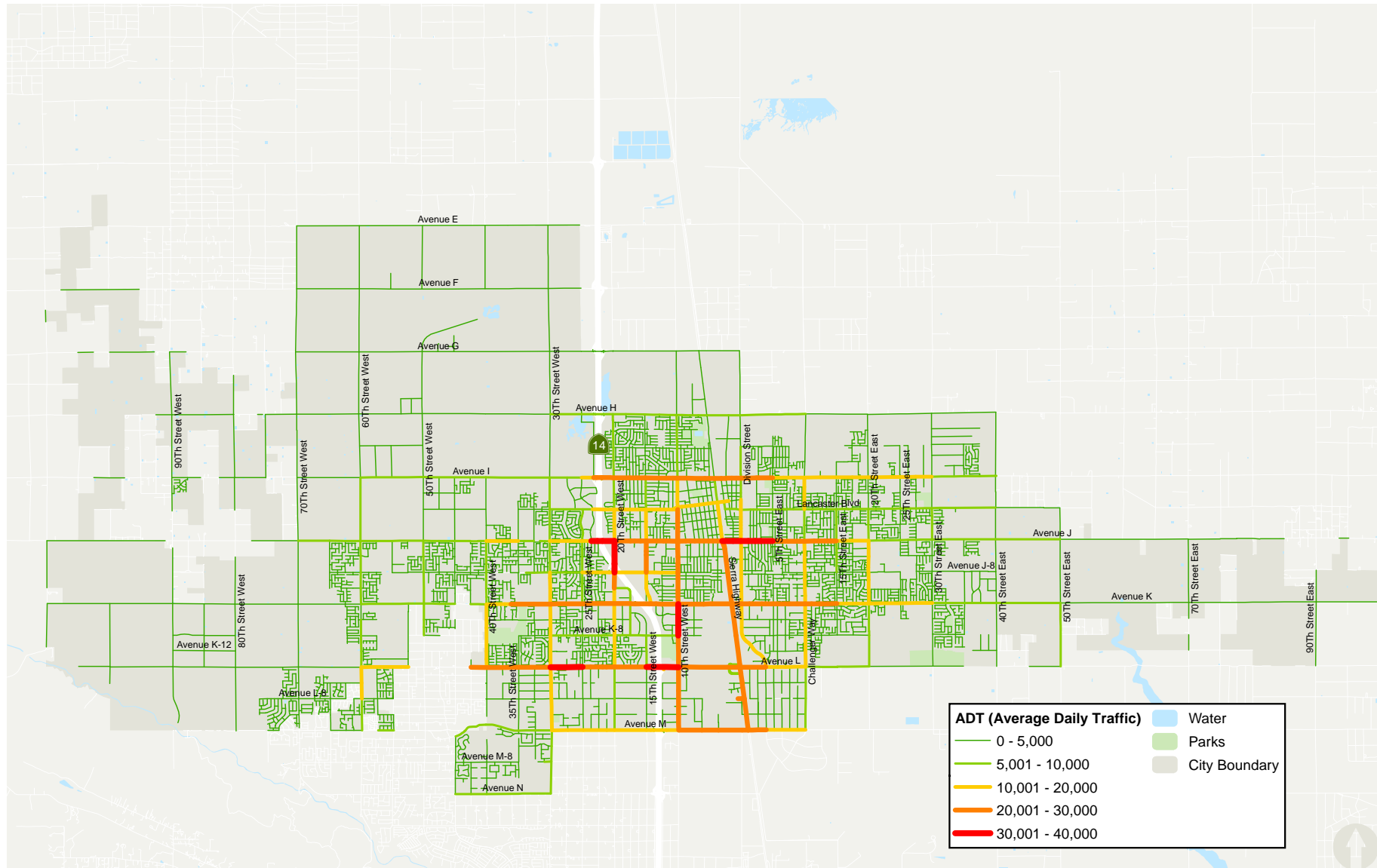
entire roadway network through either a one-time, network wide analysis, or by routine analyses of the roadway network.

According to the *Local Roadway Safety Manual* (LRSM), "The California Department of Transportation (Caltrans) – Division of Local Assistance is responsible for administering California's federal safety funding intended for local safety improvements."

To provide the most benefit and to be competitive for funding, the analysis leading to countermeasure selection should focus on both intersections and roadway segments and be considerate of roadway characteristics and traffic volumes. The result should be a list of locations that are most likely to benefit from cost-effective countermeasures, preferably prioritized by benefit/cost ratio. The LRSM suggests using a mixture of quantitative and qualitative measures to identify and rank locations that consider both crash frequency and crash rates. These findings should then be screened for patterns such as crash types and severity to aid in the determination of issues causing higher numbers or greater severity of crashes and the potential countermeasures that could be most effective. Qualitative analysis should include field visits and a review of existing roadway characteristics and devices. The specific roadway context can then be used to assess what conditions may increase safety risk at the site and systematic level.

Countermeasure selection should be supported using Crash Modification Factors (CMFs). These factors are the peer-reviewed product of before and after research that quantifies the expected rate of crash reduction from a given countermeasure. If more than one countermeasure is under consideration, the LRSM provides guidance on how to apply CMFs appropriately.

FIGURE A14 VEHICLE COUNTS



HIGHWAY SAFETY MANUAL

The AASHTO *Highway Safety Manual* (HSM), published in 2010, presents a variety of methods for quantitatively estimating crash frequency or severity at a variety of locations. This four-part manual is divided into: A) Introduction, Human Factors, and Fundamentals, B) Roadway Safety Management Process, C) Predictive Method, and D) Crash Modification Factors.

Chapter 4 of Part B of the HSM discusses the Network Screening process. The Network Screening Process is a tool for an agency to analyze their entire network, and identify/rank locations that (based on the implementation of a countermeasure) are most likely to least likely to realize a reduction in the frequency of crashes.

The HSM identifies five steps in this process:

1. **Establish Focus:** Identify the purpose or intended outcome of the network screening analysis. This decision will influence data needs, the selection of performance measures, and the screening method that can be applied.
2. **Identify Network and Establish Reference Populations:** Specify the types of sites or facilities being screened (i.e., segments, intersections, geometrics), and identify groupings of similar sites or facilities.
3. **Select Performance Measures:** There are a variety of performance measures available to evaluate the potential to reduce crash frequency at a site. In this step, the performance measure is selected as a function of the screening focus, and the data and analytical tools available.
4. **Select Screening Method:** There are three principle screening methods described in this chapter, including ranking, sliding window, peak

searching. Each method has advantages and disadvantages; the most appropriate method for a given situation should be selected.

5. **Screen and Evaluate Results:** The final step in the process is to conduct the screening and analysis and evaluate the results.

The HSM provides a number of statistical methods for screening roadway networks to identify high risk locations based on overall crash histories. In addition to flat crash quantities, the method used in this study is referred to as Critical Crash Rate (CCR).

SITE VISITS

This study included a field visit to intersections and roadway segments with high or unusual crash activity. To identify locations for site visits, the team first identified a set of candidate locations for each intersection and segment type; these were primarily locations with a high number of crashes (either overall or for a specific crash type) or locations with a high proportion of one type of crash. The team then selected a set of 12 locations for site visits from these candidate locations. Selection focused on locations with a high number of fatal crashes and a diversity of location and crash types.

PERFORMANCE MEASURES

HIGH CRASH LOCATIONS

Crash records were mapped in ArcGIS. Each crash was assigned to the nearest intersection within 300 feet, or the nearest roadway segment if no intersection was within range. A raw count of crashes was calculated for each intersection and roadway segment.

The top five intersections and roadway segments by sub-population (where there were more than five crashes) have been identified in Table A2 - Top Crash Locations - Intersections (2013 - 2017) and Table A3 - Top Crash Locations - Segments (2013 - 2017), respectively.

TABLE A2 TOP CRASH LOCATIONS - INTERSECTIONS (2013 - 2017)

LOCATION	CRASHES	LEADING CRASH TYPE
SIGNALIZED INTERSECTIONS		
Sierra Hwy & Avenue K	140	Rear-End
10th St W & Avenue K	129	Sideswipe
Challenger Way & Avenue J	113	Rear-End
Division St & Avenue J	112	Rear-End
10th St W & Avenue L	108	Rear-End
ALL-WAY STOP-CONTROLLED INTERSECTIONS		
60th St W & Avenue H	22	Broadside
15th St E & Lancaster Blvd	15	Broadside
50th St W & Avenue K	16	Broadside
70th St E & Avenue K	14	Broadside
40th St W & Avenue J-8	12	Broadside
SIDE-STREET STOP-CONTROLLED INTERSECTIONS		
Beech Ave & Avenue J	32	Broadside
13th St W & Avenue K	29	Broadside
10th St E & Avenue K-8	27	Broadside
10th St E & Avenue J-14	24	Broadside
Fern Ave & Lancaster Blvd	24	Broadside
UNCONTROLLED INTERSECTIONS		
27th St E & Via Romana	9	Rear-End
5th St E & Avenue J-9	8	Broadside
10th St W & Avenue L-4	7	Rear-End

TABLE A3 TOP CRASH LOCATIONS - SEGMENTS (2013 - 2017)

SEGMENT	FROM	TO	CRASHES	DAILY VOLUME
PRINCIPAL ARTERIALS				
20th Street West	Rt 14 NB Off-Ramp	Avenue J	31	32,700
Avenue K	Sierra Highway	Park Avenue	24	28,300
Avenue J	20th Street West	Rt 14 NB On-Ramp	23	32,300
Avenue J	17th Street West	20th Street West	21	25,900
Avenue J	Challenger Way	11th Street East	14	23,200
COLLECTORS				
15th Street West	Meadow View Lane	Avenue J-8	8	19,600
5th Street East	Lancaster Blvd	Kettering Street	7	4,300
RESIDENTIAL				
Valley Central Way	Central Court	Lancaster Blvd	15	2,500
Valley Central Way	Avenue J	Central Court	12	2,500
Jenner Street	Sancroft Avenue	Andale Avenue	6	2,000
Motor Lane	Drivers Way	12th Street West	6	1,000
12th Street West	Commerce Center Drive	Avenue K	6	1,000

CRITICAL CRASH RATE (CCR)

Reviewing the number of crashes at a location is a good way to understand the cost to society incurred at the local level, but does not give a complete indication of the level of risk for those who use that intersection or roadway segment on a daily basis. The *Highway Safety Manual* describes the Critical Crash Rate (CCR) method which provides a statistical review of locations to determine where risk is higher than that experienced in other similar locations. It is also the first step in analyzing for patterns that may suggest systemic issues that can be addressed at that location, and proactively at others to prevent new safety challenges from emerging.

The CCR compares the observed crash rate to the expected crash rate at a particular location based on facility type and volume using a locally calculated average crash rate for the specific type of intersection or roadway segment being analyzed. Based on traffic volumes and a weighted citywide crash rate for each facility type, a critical crash rate threshold is established at the 95% confidence level to determine locations with higher crash rates that are unlikely to be random. The threshold is calculated for each location individually based on its traffic volume and the crash profile of similar facilities.

FIGURE A15 CRITICAL CRASH RATE FORMULA

$$R_{c,i} = R_a + \left[P \times \sqrt{\frac{R_a}{MEV_i}} \right] + \left[\frac{1}{(2 \times (MEV_i))} \right]$$

Where,

$R_{c,i}$ = Critical crash rate for intersection i

R_a = Weighted average crash rate for reference population

P = P -value for corresponding confidence level

MEV_i = Million entering vehicles for intersection i

Source: Highway Safety Manual

DATA NEEDS

CCR can be calculated using:

- > Daily entering volume for intersections, or VMT for roadway segments
- > Intersection control types to separate them into like populations
- > Roadway functional classification to separate them into like populations
- > Crash records in GIS or tabular form including coordinates or linear measures

CCR's strengths are that it:

- > Reduces low volume exaggeration
- > Considers variance
- > Establishes comparison threshold

CCR METHODOLOGY

The process of analyzing the CCR and comparing locations (separately by intersections and segments) is a multi-step process. The following is a high-level description of the process undertaken to develop the initial ranking of locations.

The first step in the process was to establish a city-wide crash rate for each facility population. These populations are broken into two categories with sub-categories:

- > Intersection:
 - *Signalized*
 - *All-Way Stop-Controlled*
 - *Side-Street Stop-Controlled*
 - *Uncontrolled*
- > Roadway Classification:
 - *Arterial*
 - *Collector*
 - *Residential*

The individual crash rate for each location was then calculated based on the associated traffic volume. This volume was either collected through data count resources or calculated based on the roadway classification. The next step was to establish a Significance Threshold. This Threshold was used to determine what level of exceedance (how much the crash rate exceeded the critical crash rate) a location has to have based on traffic volume in order to provide a high level of confidence that the crash occurring at the location was not random. For this study, a confidence level of 95% was used. The local crash rates were then compared to the Significance Threshold to see if each location exceeded the expected CCR and if so, by how much.

After this analysis was completed, the locations were ranked by their categories according to that level of exceedance. The CCR analysis identified locations that have statistically higher crash rates than other similar locations as shown in Table A4 - Analysis Rankings - Intersections (2013 - 2017) and Table A5 - Analysis Rankings - Segments (2013 - 2017).

PROBABILITY OF SPECIFIC CRASH TYPES EXCEEDING THRESHOLD PROPORTION

The Highway Safety Manual describes the methodology for determining the probability that particular crash type is greater than an identified threshold proportion. This helps to identify locations where a particular crash type is more likely to occur.

DATA NEEDS

The probability of a specific crash type can be determined using crash records with location data, and classifications of the locations (intersections or segments) studied.

HSM's strength are that its:

- > Can be used as a diagnostic tool
- > Considers variance in data
- > Is not affected by selection bias

The HSM methodology first determines the frequency of a specific crash type at an individual location, then determines the observed proportion of that crash type relative to all crash types at that location. A threshold proportion is then determined for the specific crash type; HSM suggests utilizing the proportion of the crash type observed in the entire reference population (e.g. throughout the entire City of Lancaster).

These proportions are then utilized to determine the probability that the proportion of a specific crash type is greater than the long-term expected proportion of that crash type, using the formula shown in Figure A16.

FIGURE A16 PROBABILITY OF SPECIFIC CRASH TYPES EXCEEDING THRESHOLD PROPORTION

$$P(p_i > \overline{p}_i / N_{observed,i} / N_{observed(TOTAL)}) = 1 - \text{betadist}(\overline{p}_i, \alpha = N_{observed,i}, \beta = N_{observed(TOTAL)} - N_{observed,i}) \quad (4-23)$$

Where:

- \overline{p}_i = Threshold proportion
- p_i = Observed proportion
- $N_{observed,i}$ = Observed target crashes for a site *i*
- $N_{observed,i(TOTAL)}$ = Total number of crashes for a site *i*

Source: Highway Safety Manual

Table A4 - Analysis Rankings - Intersections (2013 - 2017) and Table A5 - Analysis Rankings - Segments (2013 - 2017) show the number of crashes occurring at locations in Lancaster by crash type, and highlights locations in which the probability of those crash types exceeding the threshold proportion is greater than 0, with higher probabilities noted (see Table A4 and Table A5 legend). The rankings are ordered by the number of total crashes. The tables include a breakdown of crash type, including vehicle crash types (broadside, rear-end, sideswipe, head-on, other), as well as bicycle and pedestrian crashes. These crash type categories are mutually exclusive and, taken together, total the number of crashes at a given location.

Also included in the table are the numbers of fatal and severe injury crashes at each location, as well as crashes occurring in the dark, in wet conditions, or with an impaired driver. These fields are not mutually exclusive. Causality types were not included in this analysis, as there are often inconsistencies in recorded causality data which limit the accuracy of intersection or segment-level analysis. Figure A17 - Top Ten Crash Segments and Intersections (2013 - 2017) shows the ten intersections and ten roadway segments which had the highest number of crashes.

TABLE A4 ANALYSIS RANKINGS - INTERSECTIONS (2013 - 2017)

Intersection	Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
Signalized Intersections														
17th St E & Avenue J	0.92	56	1	1	32	4	13	3	4	-	-	12	-	1
20th St E & Avenue K	0.86	64	3	-	29	17	7	6	4	1	-	18	2	8
Challenger Way & Avenue J	0.83	113	3	1	31	50	16	7	4	1	4	29	5	9
15th St E & Avenue J	0.74	76	1	-	36	14	7	8	7	3	1	30	1	5
Sierra Hwy & Avenue K	0.71	140	1	-	15	91	25	-	7	-	2	22	4	9
30th St W & Avenue J-8	0.67	57	3	1	35	4	7	6	3	1	1	15	2	3
25th St W & Avenue J-8	0.57	49	1	-	20	11	11	3	3	-	1	10	2	2
Valley Central Way & Avenue J	0.51	72	1	1	39	15	9	2	4	2	1	15	2	2
Division St & Avenue J	0.5	112	2	1	29	47	25	7	2	-	2	19	5	8
Gadsden Ave & Avenue K	0.47	77	1	1	42	16	7	5	4	-	3	11	5	4
10th St W & Avenue I	0.41	95	1	-	28	31	18	7	4	3	4	24	5	6
Challenger Way & Avenue K	0.41	88	3	-	13	46	18	2	4	4	1	28	3	17
10th St W & Avenue K	0.36	129	1	-	39	42	38	2	3	3	2	28	7	8
Sierra Hwy & Avenue J	0.35	97	2	-	10	53	15	-	5	7	7	21	3	7
Division St & Avenue I	0.29	65	4	1	28	16	6	4	7	2	2	19	2	7
20th St E & Avenue J	0.29	52	1	-	13	21	11	1	4	2	-	12	3	2
10th St W & Avenue J	0.28	102	1	-	28	37	29	3	2	1	2	14	2	4
15th St W & Avenue J	0.28	85	-	-	21	38	17	2	5	2	-	13	2	5
10th St W & Jackman St	0.18	46	1	-	21	10	7	-	2	4	2	12	1	1
20th St W & Lancaster Blvd	0.17	58	2	-	26	12	7	8	4	-	1	20	-	2
10th St W & Avenue L	0.15	108	2	1	37	37	23	2	6	1	2	22	4	5
12th St W & Avenue K	0.14	59	-	-	15	27	10	1	4	-	2	9	2	1
20th St W & Avenue J	0.13	101	-	-	22	43	25	2	7	1	1	19	8	1
25th St W & Avenue J	0.12	45	1	-	20	11	8	2	2	1	1	9	-	1
Division St & Avenue K	0.11	70	1	-	10	36	16	2	5	1	-	9	5	2
30th St W & Avenue K	0.09	67	-	-	16	32	6	1	6	3	3	8	1	5
20th St W & Avenue I	0.06	59	-	-	8	25	19	1	5	-	1	19	2	4
15th St W & Avenue K	0.02	63	1	-	16	26	13	2	3	-	3	16	4	2
30th St W & Avenue L	-0.07	60	1	-	7	36	10	2	3	1	1	12	2	7
20th St W & Avenue K	-0.1	60	2	1	23	18	13	1	3	1	1	15	2	1
17th St W & Avenue K	-0.1	50	-	-	13	21	9	-	5	-	2	10	-	2

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >1 Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Intersection	Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
20th St W & Avenue J-8	-0.12	56	2	-	20	17	12	1	2	3	1	15	2	3
15th St W & Lancaster Blvd	-0.12	40	1	-	24	7	5	3	1	-	-	7	-	-
Sierra Hwy & Columbia Way	-0.15	50	-	-	7	22	11	1	9	-	-	13	1	4
Sierra Hwy & Avenue I	-0.16	44	1	1	8	24	10	-	1	1	-	8	-	4
10th St W & Avenue J-4	-0.17	42	-	-	10	18	9	-	4	-	1	8	2	5
25th St W & Avenue K	-0.17	42	2	1	14	15	4	2	4	2	1	10	-	2
20th St W & Avenue L	-0.33	39	1	-	6	24	4	4	-	-	1	5	2	2
Sierra Hwy & Avenue L	-0.41	43	-	-	9	19	8	-	6	1	-	9	2	3
Fern Ave & Avenue I	-0.43	28	1	1	11	7	2	-	2	4	2	7	1	2
10th St W & Lancaster Blvd	-0.84	55	-	-	22	19	7	4	2	-	1	12	2	3
Side-Street Stop-Controlled Intersections														
Valley Central Way & Central Ct	2.17	16	-	-	6	3	5	-	2	-	-	1	1	-
60th St W & Avenue F	2.01	11	-	-	8	1	-	-	2	-	-	4	-	-
60th St W & Avenue G	1.98	12	-	-	8	-	4	-	-	-	-	6	2	-
Sierra Hwy & Avenue G	1.89	19	-	-	16	-	1	1	1	-	-	9	-	3
10th St E & Avenue K-8	0.77	26	2	-	21	-	3	1	1	-	-	5	1	3
10th St W & Avenue H-14	0.61	18	1	-	4	3	1	4	2	3	1	5	-	2
10th St W & Avenue H-12	0.61	17	-	-	6	5	1	3	2	-	-	3	-	1
Challenger Way & Avenue M	0.58	18	1	-	8	6	3	1	-	-	-	6	-	1
Beech Ave & Avenue J	0.52	32	-	-	18	2	6	1	4	-	1	3	1	-
Sierra Hwy & Jackman St	0.52	12	-	-	1	2	5	1	2	-	1	2	2	-
110th St W & Avenue K	0.41	2	-	-	-	-	-	-	2	-	-	-	-	-
Challenger Way & Avenue J-14	0.4	24	1	-	10	3	5	3	2	1	-	5	2	4
10th St W & Avenue H-8	0.4	13	-	-	7	1	2	-	2	-	1	4	-	-
25th St E & Avenue K	0.37	12	-	-	4	1	1	1	5	-	-	5	-	2
25th St E & Avenue J	0.35	10	1	-	6	-	4	-	-	-	-	1	1	-
Division St & Avenue K-8	0.33	17	-	-	10	2	2	1	2	-	-	8	2	3
26th St E & Avenue J	0.33	11	-	-	9	1	-	-	1	-	-	1	-	-
13th St W & Avenue K	0.32	29	1	-	9	7	6	1	4	2	-	6	-	2
Fern Ave & Lancaster Blvd	0.32	24	-	-	8	-	7	-	4	2	3	8	1	1
7th St E & Avenue I	0.25	14	1	-	7	-	4	1	1	-	1	4	1	1
Cedar Ave & Avenue J	0.24	18	-	-	4	3	5	1	2	2	1	5	3	3

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Intersection	Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
17th St E & Avenue I	0.24	13	1	-	2	2	2	1	5	1	-	5	-	-
30th St W & Avenue K-12	0.19	13	-	-	6	2	1	1	2	-	1	5	1	1
Kingtree Ave & Avenue I	0.17	22	1	-	9	3	4	1	2	2	1	7	-	4
16th St W & Avenue J	0.16	20	-	-	4	8	5	1	1	-	1	1	-	-
8th St E & Avenue K	0.16	17	2	-	2	2	9	1	3	-	-	6	-	1
17th St W & Avenue J	0.1	16	1	-	2	4	3	1	4	-	2	1	1	1
Date Ave & Avenue J	0.1	15	1	1	2	5	5	-	1	1	1	4	-	-
6th St E & Avenue K	0.1	15	-	-	7	2	3	-	2	1	-	1	-	-
4th St W & Avenue M	0.1	12	-	-	3	1	2	-	6	-	-	1	1	-
40th St W & Avenue L-2	0.09	2	-	-	-	-	-	1	1	-	-	1	-	1
11th St W & Avenue I	0.08	17	-	-	2	6	3	2	3	1	-	1	-	1
Elm Ave & Lancaster Blvd	0.08	14	-	-	3	3	3	-	4	1	-	5	-	-
30th St W & Avenue K-4	0.08	13	-	-	3	6	1	1	1	1	-	4	-	2
27th St W & Avenue K	0.07	14	-	-	4	5	2	-	3	-	-	4	1	2
11th St E & Avenue J	0.07	12	-	-	6	-	2	-	4	-	-	3	-	2
Trevor Ave & Avenue J	0.06	18	-	-	2	10	1	-	2	-	3	1	1	1
10th St W & Avenue J-12	0.06	14	1	1	6	3	3	-	1	1	-	6	-	4
Beech Ave & Lancaster Blvd	0.06	13	-	-	3	-	4	1	3	1	1	4	1	1
10th St W & Avenue J-2	0.05	16	-	-	7	5	2	-	1	1	-	4	-	1
Beech Ave & Avenue I	0.05	15	-	1	3	3	-	-	4	1	4	5	1	-
Genoa Ave & Avenue J	0.05	13	-	-	7	4	1	-	1	-	-	1	1	-
30th St W & Avenue F	0.05	2	-	2	2	-	-	-	-	-	-	-	-	-
Elm Ave & Avenue J	0.04	13	-	-	5	1	6	-	1	-	-	1	-	-
3rd St E & Avenue J	0.02	15	-	-	7	1	2	1	1	2	1	3	-	1
Glenraven Rd & Avenue J	0.02	15	-	-	2	8	3	-	1	1	-	2	-	-
Kirckland Ave & Avenue K	0.02	12	-	-	4	-	5	1	2	-	-	6	1	1
Yucca Ave & Avenue I	0.01	13	-	-	1	6	2	-	3	1	-	4	-	-
18th St W & Avenue K	0.01	13	-	-	4	6	1	-	1	1	-	-	-	1
Rodin Ave & Avenue J	-0.01	12	1	1	3	3	-	-	5	1	-	5	-	3
SR 14 NB On Ramp & Avenue J	-0.04	11	-	-	6	2	-	1	2	-	-	1	-	-
50th St E & Avenue L	-0.18	2	-	-	1	-	-	-	1	-	-	1	1	-

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >1 Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Intersection	Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
All-Way Stop-Controlled Intersections														
60th St W & Avenue H	3.3	22	1	1	15	1	1	1	4	-	-	4	2	1
70th St E & Avenue K	1.76	14	-	-	12	1	-	-	1	-	-	3	1	1
5th St E & Kettering St	0.92	9	1	-	2	1	1	-	3	2	-	-	-	-
15th St E & Lancaster Blvd	0.38	15	-	-	6	3	3	-	2	1	-	6	-	-
40th St W & Avenue J-8	0.28	12	-	-	5	3	2	-	2	-	-	3	-	-
50th St W & Avenue K	0.24	16	-	-	8	7	1	-	-	-	-	5	1	2
40th St E & Avenue K	0.19	10	-	-	3	5	1	-	1	-	-	3	2	1
50th St E & Avenue K	0.16	10	1	-	2	5	1	1	1	-	-	4	-	-
27th St E & Lancaster Blvd	0.16	6	-	-	1	2	-	1	2	-	-	1	1	1
32nd St W & Lancaster Blvd	0.14	6	-	-	-	2	2	-	-	1	1	-	-	-
70th St W & Avenue L	0.11	7	-	-	3	-	-	1	3	-	-	1	-	1
Gadsden Ave & Avenue J-12	0.1	5	-	-	2	2	1	-	-	-	-	3	-	2
40th St E & Avenue J	0.07	10	-	-	7	3	-	-	-	-	-	5	2	2
25th St W & Avenue K-8	0.06	9	-	-	4	1	1	1	2	-	-	1	1	-
Fern Ave & Milling St	0.05	9	-	-	7	1	-	-	1	-	-	2	-	-
15th St E & Avenue J-8	0.05	8	-	-	4	3	-	-	1	-	-	-	-	1
12th St W & Commerce Center Drive	0.05	3	-	-	1	-	-	-	2	-	-	-	1	-
Division St & Avenue H	0.01	9	1	-	3	2	-	-	1	2	1	3	-	1
Fern Ave & Jackman St	0	8	-	-	2	-	1	1	2	1	1	1	-	-
30th St E & Avenue H	-0.05	4	1	1	2	1	-	-	1	-	-	1	-	2
30th St E & Lancaster Blvd	-0.06	7	-	-	4	3	-	-	-	-	-	-	-	1
90th St E & Avenue K	-0.07	3	-	-	-	1	-	1	1	-	-	2	-	1
Gingham Ave & Avenue J-11	-0.11	3	-	-	-	2	-	1	-	-	-	1	-	-
17th St E & Avenue J-4	-0.11	3	-	-	1	-	1	-	1	-	-	1	1	-
35th St W & Avenue L-8	-0.12	4	-	-	2	-	2	-	-	-	-	1	-	-
5th St E & Avenue H-8	-0.12	3	-	-	-	1	-	-	2	-	-	-	-	-
35th St E & Avenue K	-0.15	5	-	-	3	1	-	-	1	-	-	2	1	-
70th St W & Avenue K	-0.15	3	-	-	2	-	1	-	-	-	-	-	-	-
90th St W & Avenue H	-0.15	2	-	-	2	-	-	-	-	-	-	-	1	-
Challenger Way & Avenue H	-0.16	4	1	1	2	1	1	-	-	-	-	1	-	-

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Intersection	Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
Elm Ave & Avenue J-4	-0.18	3	-	-	1	1	-	-	1	-	-	2	-	-
Beech Ave & Newgrove St	-0.27	3	-	-	3	-	-	-	-	-	-	-	-	-
12th St W & Avenue J-7	-0.29	2	-	-	-	-	1	1	-	-	-	1	-	-
55th St W & Avenue L-8	-0.3	2	-	-	1	-	-	-	1	-	-	1	-	-
32nd St W & Avenue K-4	-0.31	2	-	-	-	-	1	-	-	1	-	-	-	-
55th St W & Avenue M	-0.31	2	-	-	1	-	-	-	1	-	-	1	-	-
12th St W & Avenue J-12	-0.31	2	-	-	-	-	2	-	-	-	-	-	-	-
3rd St E & Glenraven Road	-0.31	2	-	-	-	2	-	-	-	-	-	-	-	-
Fern Ave & Newgrove St	-0.33	2	-	-	-	-	2	-	-	-	-	-	-	-
57th St W & Avenue L-8	-0.33	2	-	-	1	-	1	-	-	-	-	-	-	-
Beech Ave & Milling St	-0.33	1	-	-	-	-	-	-	1	-	-	-	-	-
Uncontrolled Intersections														
27th St E & Via Romana	2.61	9	-	-	2	4	1	1	1	-	-	2	-	-
Robinson Drive & Drysdale Drive	1.19	2	-	-	-	-	1	-	1	-	-	2	1	-
5th St E & Avenue J-9	0.98	8	-	-	3	2	1	1	1	-	-	5	1	2
Aspen St & Nugent St	0.79	4	-	-	2	1	-	-	-	1	-	1	-	-
Gillan Ave & Avenue J-6	0.67	5	-	-	2	-	-	1	1	-	1	1	-	-
Picaso St & Lincoln Ave	0.67	5	1	-	3	-	2	-	-	-	-	2	1	1
17th St E & Mesa Dr	0.67	5	-	-	4	-	-	-	1	-	-	2	1	1
Ivyton St & Sancroft Ave	0.44	5	-	-	-	-	2	-	2	1	-	3	-	1
Brentwood Ave & Archwood Way	0.44	4	-	-	1	-	-	-	3	-	-	2	-	-
Sunmist Court & Roywood Drive	0.43	4	-	-	1	2	-	-	-	-	1	-	-	-
27th St E & Regal Court	0.42	3	-	-	1	1	1	-	-	-	-	-	-	-
27th St E & Nugent St	0.42	2	-	-	-	-	-	-	2	-	-	1	-	1
38th St W & Avenue K-14	0.25	4	-	-	-	1	2	-	1	-	-	3	-	-
15th St Fr W & Norberry St	0.25	4	-	-	-	2	2	-	-	-	-	1	-	1
39th St W & Avenue K-15	0.25	1	-	-	1	-	-	-	-	-	-	-	-	-
57th St W & Lyric Ave	0.24	2	-	-	-	1	-	-	1	-	-	1	1	-
Silver Bow Road & Avenue J-12	0.18	3	-	-	-	2	1	-	-	-	-	-	-	-
Timothy Ct & Sierra View Ave	0.18	3	-	-	-	1	-	1	1	-	-	3	1	-
17th St E & Sierra View Ave	0.18	3	-	-	1	-	1	-	1	-	-	3	-	-

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >1 Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Intersection	Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
11th St E & Landsford St	0.18	3	-	-	2	1	-	-	-	-	-	2	-	-
18th St E & Jenner St	0.18	3	-	-	-	-	-	1	2	-	-	2	-	-
Avenue H-14 & Genoa Ave	0.15	4	-	1	-	-	2	-	1	1	-	-	-	1
13th St W & Boyden Ave	0.15	4	-	-	-	-	3	-	1	-	-	1	-	-
Gadsden Ave & Avenue H-9	0.15	4	-	-	1	-	1	-	2	-	-	1	-	-
Glenraven Rd & Avenue J Fr	0.07	3	-	-	-	-	1	-	1	1	-	1	-	1
Summer Lane & Avenue L-12	0.07	3	-	-	-	2	-	-	1	-	-	-	-	-
57th St W & Avenue L-2	0.07	3	1	-	-	1	-	-	2	-	-	2	-	-
Fairlee Dr & Avenue K-15	0.07	3	-	-	2	-	-	-	-	-	-	1	-	1
Alep St & Avenue K-13	0.07	3	-	-	-	1	2	-	-	-	-	2	-	-
Gadsden Ave & Avenue J-11	0.07	3	-	-	-	-	1	1	1	-	-	2	1	-
4th St E & Avenue J-12	0.07	3	-	-	1	-	2	-	-	-	-	1	-	1
Elm Ave & Avenue J-9	0.07	3	-	-	1	-	2	-	-	-	-	2	-	1
Adler Ave & Avenue J-8	0.07	3	-	-	1	1	1	-	-	-	-	1	-	-
10th St Fr W & Avenue J-7	0.07	3	-	-	1	1	1	-	-	-	-	-	-	-
Rodin Ave & Avenue J-7	0.07	3	-	-	-	1	2	-	-	-	-	2	-	1
Rodin Ave & Avenue J-5	0.07	3	-	-	1	-	-	1	1	-	-	2	-	1
47th St W & Jade Court	0.07	3	-	-	-	-	2	-	1	-	-	1	-	-
4th St E & Avenue J Fr	0.07	3	-	-	1	-	2	-	-	-	-	2	-	-
4th St E & Nugent St	0.07	3	-	-	-	-	1	-	2	-	-	2	-	1
21st St W & Lancaster Blvd Fr	0.07	3	-	-	2	-	-	-	1	-	-	1	-	-
10th St W & Avenue L-4	0.06	7	-	-	1	3	1	1	1	-	-	2	-	-
Lostwood Ave & Avenue H-14	0.01	3	-	-	-	1	-	-	2	-	-	1	-	-
Gadsden Ave & Avenue H-8	0.01	3	-	-	-	1	1	-	1	-	-	3	-	2
36th St W & Avenue N	-0.04	3	-	-	-	3	-	-	-	-	-	-	-	1
17th St W & Avenue J-15	-0.08	3	-	-	1	1	1	-	-	-	-	-	-	-
Cedar Ave & Gilley Way	-0.11	3	-	-	1	-	1	-	1	-	-	-	-	-
Benald St & Avenue J Fr Rd	-0.12	5	-	-	-	2	2	-	1	-	-	-	-	-
13th St E & Avenue J	-0.16	3	-	-	-	2	-	-	1	-	-	-	-	-
Rt 14 NB On Ramp & Avenue K	-0.17	3	-	-	-	2	1	-	-	-	-	-	-	-

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

TABLE A5 ANALYSIS RANKINGS - SEGMENTS (2013 - 2017)

Roadway Segment			Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
Street	Cross Street 1	Cross Street 2														
Arterials																
20Th Street East	Avenue J-2	Avenue J	55.22	14			12		1		1			3	1	1
Avenue J	Challenger Way	11th Street East	34.08	14			4		4	1	4		1	3		
Avenue J	Division Street	Glenraven Road	31.96	12			5	3	2	1	1			2		
Avenue I	12th Street East	Via Quintana	25.89	15		2	8	1	1		3	1	1	6		1
Challenger Way	Avenue J-3	Avenue J	25.67	13	1		9	1				2	1			
10Th Street West	Newgrove Street	Lancaster Way	21.11	9				5	1		1	1	1	1		1
Avenue K	Sierra Highway	Park Avenue	18.53	24				21	3					7	2	1
Avenue K	10th Street West	12th Street West	16.81	13	1	1	6	4	2		1			3	2	1
20Th Street West	Rt 14 NB Off/R	Avenue J	16.48	31			14	10	3		4			3		
Avenue J	17th Street West	20th Street West	15.67	21			8	4	5		2		2	2	1	
Avenue K	8th Street East	Challenger Way	15.39	9			6	3							2	
Avenue K	Division Street	Sierra Highway	12.25	9				7	1	1				2		1
Avenue I	Fern Avenue	10th Street West	11.53	10			3	4	1	1		1		2		
Avenue I	Via Quintana	15th Street East	11.25	7	2	2	4	1				1	1	2		
Avenue J	Lowtree Avenue	15th Street West	10.9	7			3	2	1		1					1
Avenue M	Sierra Highway	3rd Street East	10.38	10			2	6		1	1			2	2	
Avenue J	10th Street West	Kingtree Avenue	9.91	9				6	2		1			2		
20Th Street East	Avenue K-4	Avenue K	9.03	6			2	2	1			1		3	1	1
Avenue L	27th Street West	28th Street West	8.7	6			5						1	2		1
Avenue J	20th Street West	Rt 14 NB On/R	8.26	23		1	13	4	1		1	2	2	3		
Avenue I	3rd Street East	5th Street East	8.22	8				4	2		2			3	1	1
Avenue J	Division Street	Trevor Avenue	7.94	12			7	4			1			2		
10Th Street West	Avenue J	Oldfield Street	6.92	7	1	1	1	5				1				
Avenue M	37th Street West	40th Street West	6.25	7	3	2				1	6			4		1
Avenue K	20th Street West	21st Street West	5.11	9			2	1	3		3			1		2
20Th Street West	Avenue J	Newgrove Street	4.83	7			3	1	2		1			3		
Avenue M	6th Street West	10th Street West	4.12	7			1	5			1			3	1	
Avenue K	Lowes Driveway	10th Street West	3.84	12			4	3	4				1	1		
Avenue L	40th Street West	42nd Street West	3.68	6			2	1	1		2			2		2
Avenue J	Genoa Avenue	10th Street West	3.33	7			3	1	2	1				2		

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >1 Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Roadway Segment			Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
Street	Cross Street 1	Cross Street 2														
Avenue J	17th Street East	20th Street East	2.64	11			3	1	4		3			3		1
Avenue L	5th Street West	8th Street West	1.9	6			1	2	2			1		1		
Challenger Way	Avenue H-12	Avenue H	1.75	8	1		1	5		1	1			1		
Avenue K	30th Street West	32nd Street West	1.58	5			1	1		1	1		1	2		2
Division Street	Avenue I	Avenue H-8	0.59	6			2		2		2			1		1
Avenue L	Avenue L To Sierra Hwy Eb/R	5th Street West	0.42	9			2	6	1						1	
Avenue L	60th Street West	65th Street West	0.28	7			2	2	2			1				
20Th Street West	Linda Avenue	Avenue I	-0.09	8			4	2	1			1		6	1	1
10Th Street West	Kildare Street	Jackman Street	-0.19	6			2	1			3			1		
Avenue I	17th Street West	20th Street West	-0.88	5			1	1	1		2			2	1	1
Collectors																
15Th Street West	Meadow View Lane	Avenue J-8	11.57	8	1	1	4	2		1		1		2		
Avenue J-8	20th Street East	22nd Street East	7.88	5			2		2		1					
5Th Street East	Lancaster Blvd	Kettering Street	5.54	7			1	3	1	1	1			2		
15Th Street Fr West	Pillsbury Street	Norberry Street	5.13	4			1		1		1		1	2		1
Avenue J-8	22nd Street East	25th Street East	3.3	3				1			2			2	1	1
Lancaster Blvd	Foxtan Avenue	5th Street East	3	2			1	1								
15Th Street West	Avenue J	Pillsbury Street	1.88	4			1		1		1		1	2		1
25Th Street East	Avenida Del Brisa	Nugent Street	1.84	2			1		1						1	
17Th Street West	Avenue J-15	Avenue J-12	1.68	2			1				1			1		1
Avenue J-8	10th Street Fr West	12th Street West	1.23	2				1	1					2		
15Th Street West	Avenue L	Park Somerset Street	1.17	3			2		1					2		
15Th Street East	Kettering Street	Linda Vista Avenue	0.73	2							1	1		1		
Avenue J-8	15th Street West	20th Street West	0.66	4			2	1			1			2		
25Th Street East	Nugent Street	Newgrove Street	0.66	2			1		1						1	
15Th Street East	Avenue J	Nugent Street	0.5	4			2	1		1				2		
Avenue J-8	30th Street East	35th Street East	0.44	3			2		1							
Lancaster Blvd	5th Street East	Andale Avenue	0.18	2				2								
15Th Street West	Avenue J-8	Avenue J-5	0.15	2					1	1						

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
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Fatalities
 ■ >1 Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

Roadway Segment			Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
Street	Cross Street 1	Cross Street 2														
Lancaster Blvd	32nd Street West	35th Street West	0.06	2				1	1					1		
Avenue J-12	17th Street West	20th Street West	-0.1	2			1				1			1		1
Avenue L-8	32nd Street West	35th Street West	-0.28	3					1		2			1	1	
15Th Street West	Avenue K-8	Avenue K-2	-0.37	5	1			2	1		2			3		1
35Th Street West	Avenue J	Lancaster Blvd	-0.42	2			1				1			1		1
Residential																
Kingtree Avenue	Avenue J-4	Avenue J-2	29.61	4				1	2		1			1	1	1
Business Center Parkway	Avenue K-15	Federal Drive	18.15	5		2					5			2		2
Valley Central Way	Avenue J	Central Court	13.45	12			6	2	2		1		1	2	1	
12Th Street West	Avenue L-8	Avenue L-4	13.43	4	1			1			3			1		
Lightcap Street	Hanstead Avenue	Denmore Avenue	12.35	4							4			1		
Motor Lane	Drivers Way	12th Street West	11.26	6				4			2			4		2
13Th Street West	Commerce Center Drive	Avenue K	10.18	4			2		1		1			1		
12Th Street West	Commerce Center Drive	Avenue K	9.7	6			5			1				1		
Valley Central Way	Lancaster Blvd	Amoy Street	9.04	3			2				1					1
Avenue M	40th Street West	Avenue M	8.54	7	3	2				1	6			2		1
Valley Central Way	Central Court	Lancaster Blvd	8.35	15			13	1	1					2	1	
4Th Street East	Avenue M	Avenue L-12	4.67	3			2	1							1	
Avenue L-9	East End	10th Street West	4.26	3			1		2							1
Avenue J-4	17th Street East	20th Street East	4.04	2					2					1		
Avenue J-6	Mariposa Drive	35th Street West	3.65	4			1	2	1					2		
Newgrove Street	Fern Avenue	Genoa Avenue	3.63	3					1		2					
Nugent Street	Aspen Street	East End	3.61	3				1	2					1		
Avenue I	13th Street West	15th Street West	3.46	4				1	1		2				1	
Beech Avenue	Avenue J-7	Avenue J-5	3.06	3				3						3		1
Avenue K-4	Gadsden Avenue	10th Street West	2.73	4			1	1			2			2		
Avenue K-4	30th Street West	32nd Street West	2.72	4			2	1		1				1		
Avenue L Fr	Cinema Avenue	17th Street West	2.2	2				1	1							
Jackman Street	Fern Avenue	10th Street West	2.08	3							2		1	2		1
Jenner Street	Jackman Street	15th Street West	1.84	3			1	1			1				1	

LEGEND

CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
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Fatalities
 ■ >1 Fatality

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Roadway Segment			Local CCR Differential	Crashes	Severe Injury	Fatality	Broadside	Rear-End	Sideswipe	Head On	Other	Pedestrian	Bicycle	Dark	Wet	Impaired Driver
Street	Cross Street 1	Cross Street 2														
22Nd Street West	Avenue K-4	Avenue K	1.72	3					2		1				1	
Avenue J-14	10th Street West	12th Street West	1.68	2				1	1					1		
Ivesbrook Street	Kingtree Avenue	13th Street West	1.41	1								1		1	1	1
Yucca Avenue	Lancaster Blvd	Kettering Street	1.35	2			1						1			
4Th Street East	Avenue L-4	Avenue L	1.24	3			2				1					
32Nd Street West	Avenue J	Lancaster Blvd	1.1	4			1		2				1			
Avenue J-10	10th Street Fr West	12th Street West	0.65	2	1				1		1			2		
Avenue J Fr	Palo Verde Street	Sedona Way	0.45	5				4			1			1		
Cinema Avenue	Avenue L Fr	Park Somerset Street	0.29	3				1	2					2		1
Avenue J-2	Lowtree Avenue	15th Street Fr West	0.26	1					1							
Jenner Street	Sancroft Avenue	Andale Avenue	0.24	6				1	3	1	1			3	2	1
28Th Street East	28th Street East	Avenue I	0.15	2							1	1		1		2
Genoa Avenue	Avenue J	Oldfield Street	0.15	2			1				1					
35Th Street East	Avenue J-2	Avenue J	0	3			1	2								
Avenue J-8	12th Street West	13th Street West	-0.18	2					1		1					
Elm Avenue	Oldfield Street	Newgrove Street	-0.29	2					1		1			1		

LEGEND

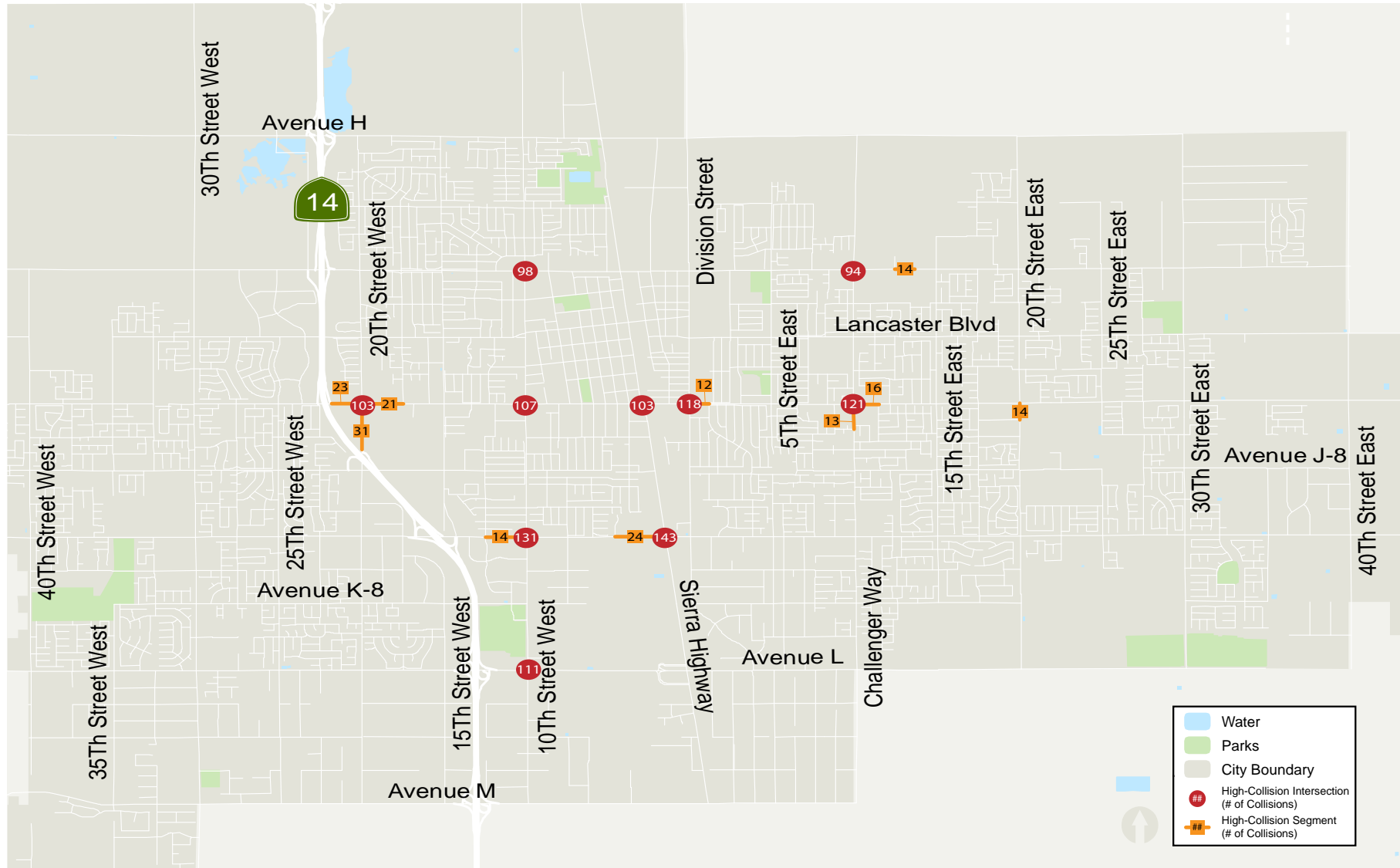
CCR Differential
 ■ >1.0 ■ 0.33-1.0 ■ <0.33

Probability of Crash Type Exceeding Threshold Proportion
 ■ 90-100% ■ 80-90% ■ 70-80%

Fatalities
 ■ >1 Fatality

Local CCR Differential is the difference between an intersection's Observed Crash Rate and its Critical Crash Rate. Positive values mean more crashes than expected.

FIGURE A17 TOP TEN CRASH SEGMENTS AND INTERSECTIONS (2013 - 2017)



APPENDIX B

COUNTERMEASURE TOOLBOX

APPENDIX B

COUNTERMEASURE TOOLBOX

ABOUT THIS TOOLBOX

This toolbox presents safety countermeasures applicable in different roadway contexts across Lancaster. Many of these countermeasures are recommended as part of the Representative Location Projects included in this report. Many of the countermeasures included in the Caltrans Local Roadway Safety Manual (LRSM) and can be advantageous for use in Caltrans Highway Safety Improvement Program (HSIP) grant funding applications. In the toolbox, these countermeasures are noted with an HSIP icon. There are many effective safety countermeasures beyond those listed in the LRSM, and several are included in this toolbox. Safety benefits, key design features, and application considerations are included in the countermeasure descriptions.

BIKEWAY COUNTERMEASURES

CLASS I BIKE PATHS ▶▶▶



TYPICAL APPLICATIONS

Facility Design

Class I bike paths should generally be designed as separated facilities away from parallel streets. They are commonly planned along rights-of-way such as waterways, utility corridors, railroads, and the like that offer continuous separated riding opportunities.

Adherence to Design Guidelines

All Class I bike paths should conform to the design guidelines set forth by Caltrans. Sidewalk paths and unpaved facilities that are not funded with federal transportation dollars and that are not designated as Class I bike paths do not need to be designed to Caltrans standards.

Where Possible, Separate from Sidewalks

Both AASHTO and Caltrans recommend against using most sidewalks for bike paths. This is due to conflicts with driveways and intersections. Where sidewalks are used as bike paths, they should

be placed along routes with few driveways and intersections, be properly separated from the roadway, not contain obstructions (bus stops, signs, trees, trash receptacles, etc.), and have carefully designed intersection crossings.

Recommended Widths

Bike paths should have a minimum of eight feet of pavement, with at least two feet of unpaved shoulders for pedestrians/runners, or a separate pathway for pedestrians/runners where feasible. A pavement width of 12 feet is preferred.

Roadway Crossings Design

Class I bike path roadway crossings should be carefully engineered to accommodate safe and visible crossing for users. The design needs to consider the width of the roadway, whether it has a median, and the roadway's average daily and peak-hour traffic volumes. Crossings of low-volume streets may require simple stop signs. Crossings of streets

with Average Daily Traffic (ADT) of over 15,000 vehicles per hour should be assessed for signalized crossing, flashing LED beacons, crossing islands, or other devices. Roundabouts may be a desirable treatment for a bike path intersecting with roadways where the bike path is not next to a parallel street.

Lighting

Lighting should be provided where bicyclists will likely use the bike path in the late evening, such as along commuter routes.

Physical Barriers & Signs

Barriers at path entrances to prevent motorized vehicles from entering, such as obstacle posts and gates, can obstruct bicyclists and should be avoided when possible. Typically, barriers should not be considered until after it has been determined that other measures to prevent motor vehicles from entering have failed, and where the safety and other issues posed by unauthorized vehicles are more serious than the safety and access issues posed to path users. Signs and other design solutions are preferred.

Maintenance & Emergency Vehicle Access

Bike path construction should take into account vertical requirements and the impacts of maintenance and emergency vehicles on shoulders.



CLASS II BIKE LANES ▶▶▶



TYPICAL APPLICATIONS

Facility Design

Class II bike lanes are a portion of the roadway designated for preferential use by bicyclists; they have been designated by striping, signage, and pavement markings.

Bike lanes run adjacent to the travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane.

Adherence to Design Guidelines

The following guidelines should be used when designing Class II bikeway facilities. The Caltrans HDM Chapter 1000, AASHTO, the CA MUTCD, and the Caltrans Traffic Manual provide these guidelines.

Recommended Widths

Class II bike lane facilities should conform to the minimum design standard of five feet in width in the direction of vehicle travel adjacent to the curb lane. Where space is available, a width of six feet to eight

feet is preferred, especially on busy arterial streets, on grades, and adjacent to parallel parking.

Under certain circumstances, bike lanes may be four feet in width. Situations where this is permitted include:

- > Bike lanes located between through traffic lanes and right turn pockets at intersection approaches
- > Where there is no parking, the gutter pan is no more than 12 inches wide, and the pavement is smooth and flush with the gutter pan
- > Where there is no curb and the pavement is smooth to the edge

Signs

"Bike Lane" (R81) and "Bike Route" (D11-1) Signage shall be posted after every significant intersection along the route of the bike lane facility. "Begin" and "End" plaques (R81A or R81B) should accompany the "Bike Lane" sign when appropriate. The route number shown on the Bike Route Identification sign should correspond to the latest City Bicycle Routes and Facilities Map. The Bike Route Identification sign can also be used in conjunction with an arrow plaque



(M6 series) in advance of another approaching bike lane or route to direct bicyclists. If a bike lane exists where parking is prohibited, “no parking” signage may accompany bike lane signage.

Striping

Bike lanes should be striped with a six-inch wide solid white stripe (CA MUTCD Detail 39) and should be dashed (Detail 39A) at an intersection approach. The length of Detail 39A shall be 100 feet when the block is short (less than 400 feet) and 200 feet where the block is longer or vehicle speeds are high (greater than 35 mph). The dashed bike lane stripe allows for use of the bike lane as a right-turn pocket for motor vehicles.

Bike lanes with two stripes are more visible than those with one and are preferred. The second inside stripe (4-inch solid white) would differentiate the bike lane from the parking lane where appropriate.

Markings

At the beginning and end of each block and at approximately 150-foot to 250-foot intervals, pavement stencils of a bicycle and arrow shall be used to show the direction of travel. The stencils at the end of the block should be placed just before the dashed bike lane stripe (Detail 39B).

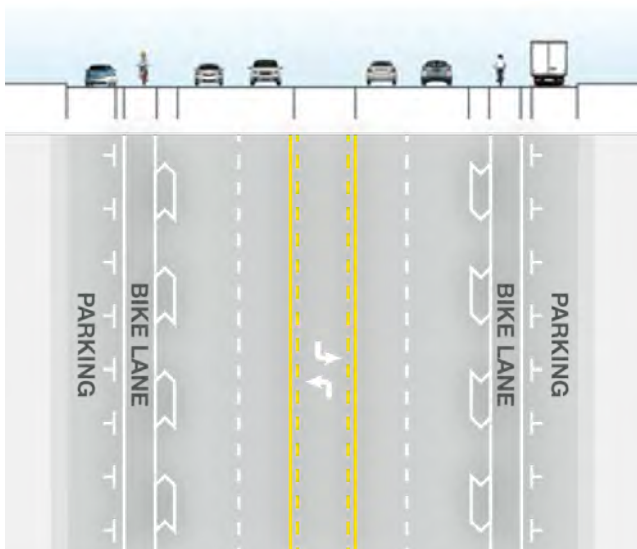


Intersection Treatments

Where space permits, intersection treatments should include bike lane 'pockets'. At signalized intersections, loops or other means of bicycle detection should be installed near the limit line in the bike lane and all vehicle lanes that have detection. Signal timing and phasing should be set to accommodate bicycle acceleration speeds. Painted bicycle detector stencils may be placed at detection zones located within the bike lane to notify bicyclists where they can actuate the signal. Traffic signals can be timed and coordinated for cyclists (where appropriate).

Transitions from Class II Bike Lanes to Class III Bike Routes

Where bike lanes terminate, they typically should transition to a Class III bike route when possible. Cyclists should be notified through a sign that includes the Bike Lane sign (R81) with End plaque (R81B). Shared lane markings (sharrows) should be placed in the transition zone to help guide cyclists



to the proper place to ride in the lane. Class III bike route time, distance and destination signs should help provide continuity.

Roadway Conditions

When bike lanes are to be implemented on existing roadway surfaces, it is important to identify and remediate any longitudinal cracking greater than one half-inch wide, vertical deformations such as utility covers that are not flush, and other conditions that may affect rideability.

Buffered Bike Lanes

Buffered bike lanes provide a painted divider between the bike lane and the adjacent travel lane. This additional space can improve the comfort of cyclists, as they don't have to ride as close to motor vehicles. Buffered bike lanes can also be used to narrow travel lanes, which slows traffic. Buffered bike lanes are most appropriate on wide, busy streets. They can be used on streets where physically separating the bike lanes with protected bike lanes is undesirable for cost, operational, or maintenance reasons.

CLASS III BIKE ROUTES ▶▶▶



TYPICAL APPLICATIONS

Facility Design

Class III bike routes are typically simple-signed routes along corridors, usually local streets and collectors. With proper route signage, design, and maintenance, bike routes can be effective in guiding bicyclists along a route suited for bicycling that does not have enough roadway space for a dedicated Class II bike lane. Class III bike routes can be designed in a manner that encourages bicycle usage, convenience, and safety.

Bike routes can become more useful when coupled with the following techniques:

- > Route, directional, and distance signage
- > Wide curb lanes
- > Shared lane marking stencils painted in the traffic lane along the appropriate path of where a bicyclist would ride in the lane
- > Accelerated pavement maintenance schedules
- > Traffic signals timed and coordinated for cyclists (where appropriate)
- > At signalized intersections, loop detectors

or other means of bicycle detection should be installed near the limit lane in all vehicle lanes that have vehicle detection.

- > Traffic signals can be timed and coordinated for cyclists (where appropriate); signal timing and phasing should be set to accommodate bicycle acceleration speeds
- > Traffic calming measures
- > Remediation of longitudinal cracking greater than one half-inch wide, utility covers that are not flush, vertical deformations, and other conditions that may affect rideability

Signs

“Bike Route” (D11-1) signage should be posted after every intersection along the route to inform bicyclists that the bikeway facility continues and alert motorists to the presence of bicyclists. “Begin” and “End” plaques (M4-14 and M4-6) should accompany the Bike Route sign when appropriate. The route number shown on the Bike Route Identification sign should correspond to the latest City Bicycle Routes and Facilities Map. The Bike Route sign can also be used in conjunction with an arrow plaque (M6 series) in advance of another approaching bike route or



lane to direct bicyclists. If a bike route exists where parking is prohibited, “no parking” signage may accompany bike lane signage.

SHARROWS

TYPICAL APPLICATIONS

Facility Design

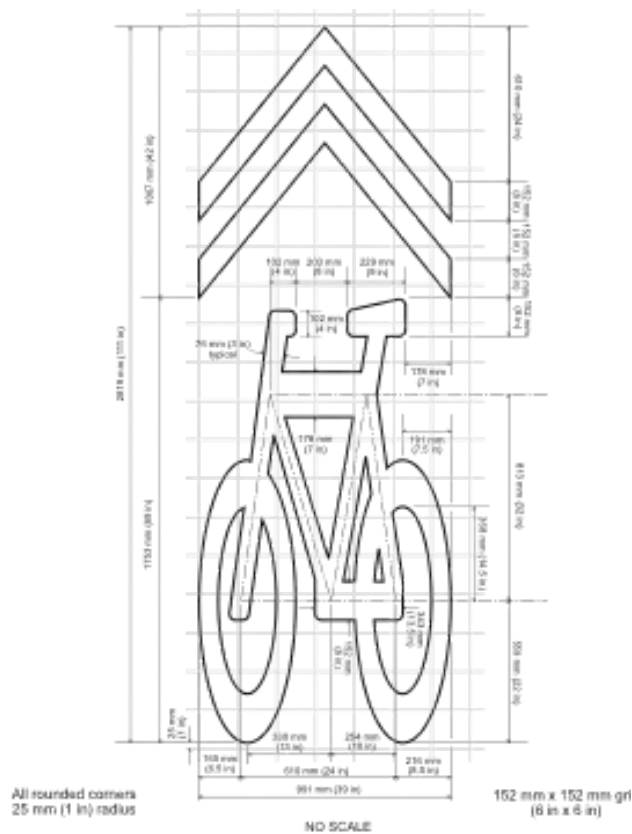
Sharrow stencils are recommended as a way to enhance the visibility and safety of Class III bike routes. Sharrows (officially known as “shared lane markings”) indicate to cyclists the proper position to ride within the travel lane and assist with wayfinding. They also alert motorists that the travel lane is to be shared with bicyclists.

Adherence to Design Guidelines

CA MUTCD, Section 9C.103(CA) Shared Roadway Bicycle Markings states: “The shared roadway bicycle marking shall only be used on a roadway (Class III Bikeway (Bike Route) or Shared Roadway (No Bikeway Designation)).”

Placement & Spacing of Sharrows

When used on streets with on-street parking, sharrows are to be placed such that the centers of the markings are a minimum of 11 feet from the curb face or edge of paved shoulder on streets with on-street parallel parking. Where space is available, 12 feet or more from the curb is preferred. On streets without on-street parking that have an outside travel

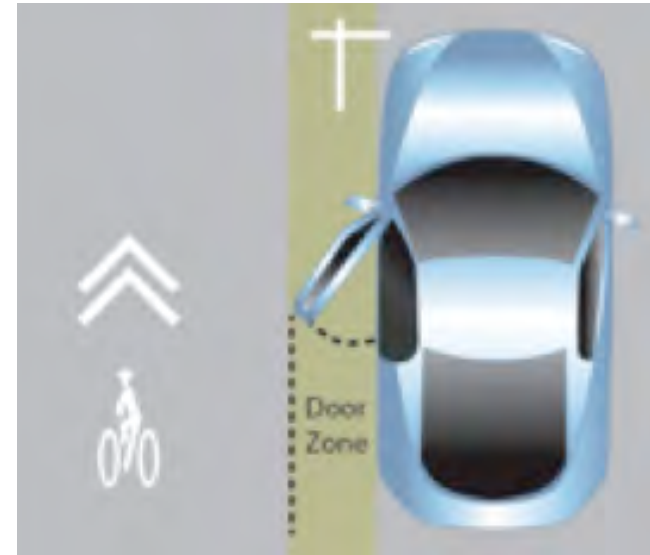


lane that is less than 14 feet wide, the centers of the sharrows should be at least four feet from the face of the curb.

On two-lane roadways, these minimum distances allow vehicles to pass bicyclists on the left within the same lane without encroaching into the opposite lane of traffic. On multi-lane roadways, motorists must change lanes to pass a cyclist.

On streets with on-street parking, installing sharrows more than 11 feet from the curb will also move the bicyclist farther from the "door zone" (approximately four feet).

Sharrows should be placed in straight lines to encourage the bicyclist to travel in a straight line. This often means the sharrows are in the center of the lane, greater than the minimum guideline of four feet or 11 feet from the curb. Sharrows should always be placed outside the "door zone" where on-street parking is provided.



CLASS IV SEPARATED BIKE LANES ▶▶▶



TYPICAL APPLICATIONS

Facility Design

Separated bike lanes, sometimes called “protected bike lanes” or “cycle tracks”, provide a physical barrier between the bike lane and the adjacent travel lanes, parking lanes, and sidewalks. They are most effective in attracting users who are concerned about conflicts with motorized traffic.

Separated bike lanes may be one-way or two-way. They may also be at the level of the street, at the level of the sidewalk, or between the two. If they are at the sidewalk level, different pavement colors and textures separate the bike lanes from the sidewalks. If at the street level, they can be separated from the travel lanes by physical barriers. If there is on-street parking, they are placed between the sidewalk and parking.

Adherence to Design Guidelines

The design guidelines issued by Caltrans for Class IV separated bike lanes are compliant with HDM Chapter 1000 and the CA MUTCD.

Types of Separation

The methods of vertical separation can be implemented with a variety of design approaches. Separated bike lanes can be separated from motor traffic by raised medians, concrete curbs, landscaping, on-street parking, bollards, flexible delineator posts, or by a change in elevation between the bike lane and the travel lane.

Intersection Design

Separated bike lanes tend to work most effectively where there are few uncontrolled crossing points with unexpected traffic conflicts. These concerns include treatment at intersections, uncontrolled midblock driveways and crossings, and difficulty accessing or exiting the facility at midblock locations.

If the separated bike lanes are protected by parking, parking should be prohibited near the intersection to improve visibility. The recommended no-parking zone is 30 feet from each side of the intersection crossing.

Two-stage turn queue boxes should be provided to assist in making turns from the separated bike lane facility.

A dedicated bicycle signal phase can prevent conflicts at intersections between turning vehicles and bicyclists.

Markings

Pavement stencils of a bicycle and arrow markings shall be placed at the beginning of a separated bike lane facility and at periodic intervals along the facility to define the bike lane direction and designate that portion of the street for preferential use by bicyclists.

Maintenance

The separated bike lane area to be used by bicycles should be designed with adequate width for street sweeping to ensure that debris will not accumulate.

Adherence to ADA Considerations

When providing accessible parking spaces along separated bike lanes, the following design considerations are recommended to accommodate persons with disabilities in the design of one-way and two-way separated bike lanes:

- > Widened buffer space to accommodate a side mounted vehicle ramp or lift
- > Mid-block curb ramps and tactile surfaces may be provided near accessible parking spaces
- > Roadway cross-slopes that do not exceed a 2% grade
- > If bollards are used, to consider placement of bollards that avoid impeding access by disabled users



ONE-WAY PROTECTED BIKE LANES

One-way separated bike lanes are bikeways that are at street level and use a variety of methods for physical protection from motor traffic. They are generally placed on both sides of the street.

Recommended Widths

The minimum recommended width for a one-way separated bike lane is five feet, although six feet is preferred. In areas with high bicyclist volumes or uphill sections, the recommended minimum width is seven feet to allow for bicyclists passing each other.

At least three feet is recommended for a parking buffer to allow for passenger loading and to prevent “dooring” crashes. Without a parking buffer, two feet is preferred.

BIKEWAY INTERSECTIONS ►►►



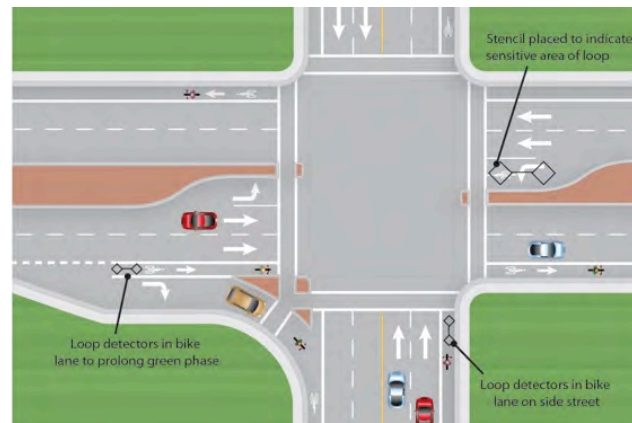
Intersections are junctions at which different modes of transportation meet and facilities overlap. A well-designed intersection facilitates the interchange between bicyclists, pedestrians, motorists, and transit so traffic flows in a safe and efficient manner. Designs for intersections with bicycle facilities should reduce conflicts between bicyclists (and other vulnerable road users) and vehicles by heightening visibility, denoting a clear right of way, and ensuring that the various users are aware of each other. Intersection treatments can resolve both queuing and merging maneuvers for bicyclists, and are often coordinated with timed or specialized signals.

The configuration of a safe intersection for bicyclists may include additional elements such as color, signs, medians, signal detection, and pavement markings. Intersection design should take into consideration existing and anticipated bicyclist, pedestrian, and motorist movements. In all cases, the degree of mixing or separation between bicyclists and other modes is intended to reduce the risk of crashes and increase bicyclist comfort. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, whether bicycle

facilities are intersecting, the adjacent street function, and the adjacent land use.

BIKEWAY MARKINGS AT INTERSECTIONS

Continuing marked bicycle facilities at intersections (up to the crosswalk) ensures that separation, guidance on proper positioning, and awareness by motorists are maintained through these potential conflict areas. The appropriate treatment for

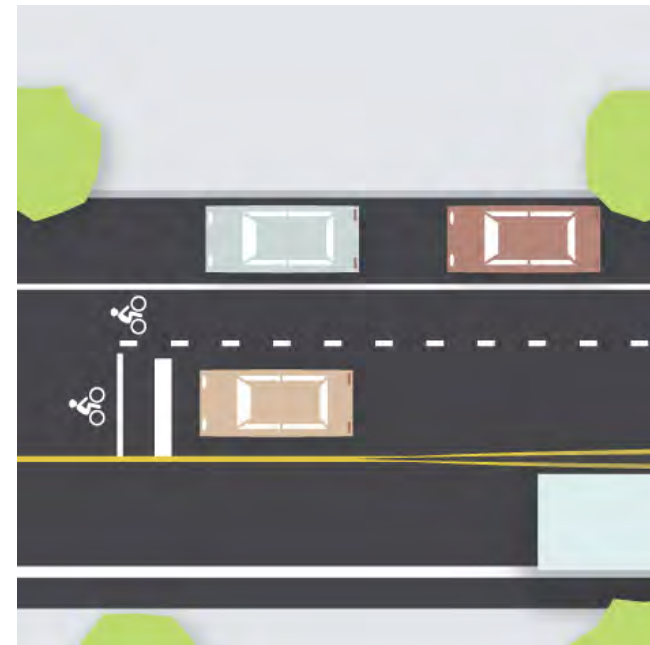
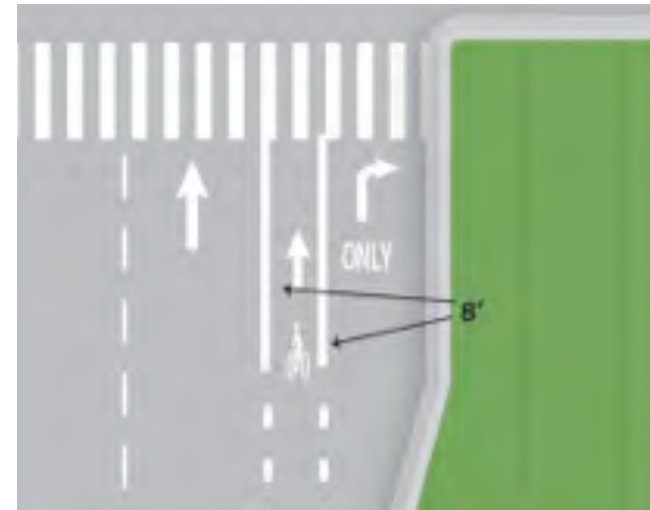


right-turn only lanes is to place a bike lane pocket between the right-turn lane and the right-most through lane. If a full bike lane pocket cannot be accommodated, a shared bicycle/right-turn lane can be installed that places a standard-width bike lane on the left side of a dedicated right-turn lane. A dashed strip delineates the space for bicyclists and motorists within the shared lane. This treatment includes signs advising motorists and bicyclists of proper positioning within the lane. Sharrows are another option for marking a bikeway through an intersection where a bike lane pocket cannot be accommodated.

BIKE BOXES

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase. Appropriate locations include:

- > At signalized intersections with high volumes of bicycles and/or motor vehicles, especially those with frequent bicyclist left-turns and/or motorist right-turns
- > Where there may be right or left-turning conflicts between bicyclists and motorists
- > Where there is a desire to better accommodate left-turning bicycle traffic
- > Where a left turn is required to follow a designated bike route or boulevard or access a shared-use path, or when the bicycle lane moves to the left side of the street
- > When the dominant motor vehicle traffic flows right and bicycle traffic continues through (such as at a Y intersection or access ramp)



PEDESTRIAN COUNTERMEASURES

INTERSECTION TYPE GUIDANCE

Every location needs tailored design and engineering judgment. That judgment should follow the guidelines described in each of the following device sheets, as well as other guidance from the CA MUTCD and other documents. We can, however, identify the treatments that are commonly used at different types of intersections. They are as listed below.

UNCONTROLLED CROSSINGS (NO SIGNAL OR STOP SIGN)

- > High-visibility continental crosswalks
- > Advance yield lines
- > Signs
- > Crossing islands (the most important device at multi-lane crossings)
- > Rectangular rapid-flash beacons
- > Hybrid beacons

As the number of travel lanes, traffic volume, street width and speed increases, more devices are needed. Pedestrians need signals to cross four-lane crossings with ADTs between 20,000 and 30,000 (or greater); the exact threshold depends on the number of lanes, speeds, and roadway width.

STOP-CONTROL CROSSINGS

- > Marked crosswalks (high-visibility continental crosswalks depending on traffic volumes, number of lanes, street width, number of pedestrians, presence of schools nearby)
- > Advance stop bars
- > Perpendicular curb ramps with tactile warning devices
- > Curb extensions where on-street parking exists (depending on traffic volumes, number of lanes, street width, number of pedestrians, presence of schools nearby)
- > Crossing islands (depending on number of travel lanes, street width, traffic volumes)

SIGNALIZED CROSSINGS

- > Countdown pedestrian signal heads
- > Advance stop bars
- > High-visibility continental crosswalks
- > Accessible pedestrian signals
- > Curb extensions where on-street parking exists
- > Crossing islands (depending on available space, traffic volumes, number of lanes, street width, number of pedestrians, presence of schools nearby)

ACCESSIBLE PEDESTRIAN SIGNALS ▶▶▶



DESCRIPTION

An accessible pedestrian signal is a device that communicates information to pedestrians in a non-visual format such as audible tones, verbal messages, and/or vibrating surfaces. These signals provide accessibility to those who have visual impairments. Verbal messages are generally preferred to tones.

KEY DESIGN FEATURES

- > Provide pedestrian signal information to those who cannot see the pedestrian signal head across the street
- > Provide information to pedestrians about the presence and location of pushbuttons, if pressing a button is required to actuate pedestrian timing
- > Provide unambiguous information about the WALK indication and which crossing is being signaled
- > Use audible beaconing only where necessary
- > Two poles should be installed for APS speakers, located close to departure location and crosswalk
- > Ensure accessibility to for pushbutton placement

BENEFITS

- > Create a more accessible pedestrian network
- > Assist those who are visually impaired
- > Can contain additional wayfinding information in messages
- > More accurate judgments of the onset of the WALK interval
- > Reduction in crossings begun during DON'T WALK
- > Reduced delay
- > Significantly more crossings completed before the signal changed

APPLICATIONS

- > ADA requires newly constructed or altered public facilities to be accessible, regardless of the funding source
- > Installed by request along a specific route of travel for a particular individual, or group of individuals who are blind or visually impaired

ADVANCE STOP BARS ▶▶▶



DESCRIPTION

A placing of the stop limit line for vehicle traffic at a traffic signal behind the crosswalk for the added safety of crossing pedestrians.

KEY DESIGN FEATURES

- > Vehicle stop line moved four to six feet further back from the pedestrian crossing

BENEFITS

- > Keep cars from encroaching on crosswalk
- > Low cost, effective device
- > Improve visibility of through cyclists and crossing pedestrians for motorists
- > Allow pedestrians and motorists more time to assess each other's intentions when the signal phase changes

APPLICATIONS

- > Can be used at any signalized or stop-controlled intersection
- > Presence of advanced stop bar is more important on roadways with higher speeds (30 mph and greater)
- > Should be included at all crossings of road with four or more lanes without a raised median or crossing island that has an ADT of 12,000

ADVANCE YIELD LINES ▶▶▶



DESCRIPTION

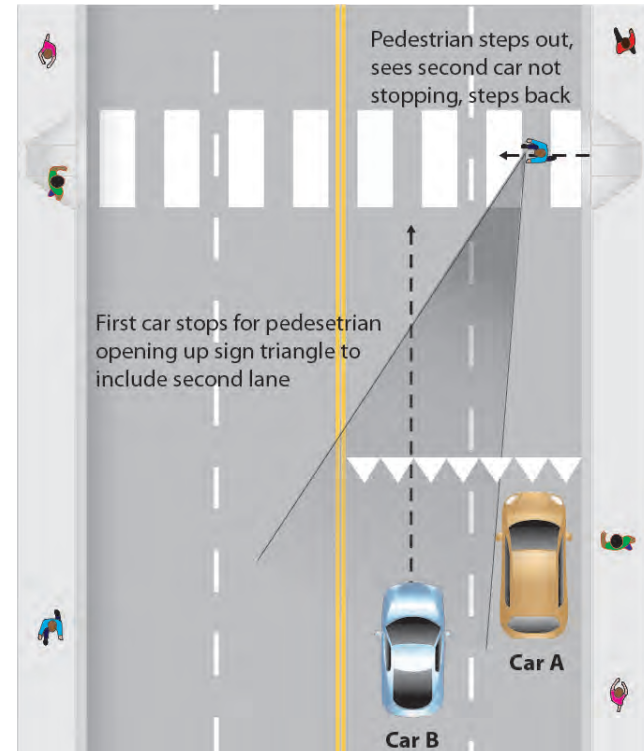
A placing of the yield line (shark's teeth) for vehicle traffic in advance of a crosswalk at uncontrolled locations.

KEY DESIGN FEATURES

- > Advance yield lines should be placed 20 to 50 feet in advance of crosswalks along with "Yield here to pedestrians" sign placed adjacent to the markings

BENEFITS

- > Inexpensive treatment
- > Improve sight visibility of pedestrians and motorists when used correctly
- > Help reduce potential of multiple-threat crashes
- > Yielding vehicle does not screen the view of motorists in the pedestrian's next lane of travel
- > Reduce likelihood that vehicle traveling behind yielding vehicle will cross centerline and strike pedestrian



APPLICATIONS

- > Crosswalks on streets with uncontrolled approaches
- > Right-turn slip lane crossings
- > Midblock marked crosswalks
- > Presence of advanced yield line are most important on multi-lane streets

COUNTDOWN SIGNALS ▶▶▶



DESCRIPTION

A walk signal that provides a countdown to the next solid “don’t walk” signal phase in order to provide pedestrians with information on how much time they have to cross.

KEY DESIGN FEATURES

- > Ensure that signals are visible to pedestrians
- > When possible, provide a walk interval for every cycle
- > Pedestrian push buttons must be well positioned and within easy reach for all approaching pedestrians

BENEFITS

- > Indicate appropriate time for pedestrians to cross
- > Provide pedestrian clearance interval



APPLICATIONS

- > Should be placed for each crossing leg at signalized intersections

CROSSWALK MARKINGS ▶▶▶



DESCRIPTION

High-visibility crosswalks — continental, zebra-stripe, piano key, or ladder style, should be provided at any intersection where a significant number of pedestrians cross. They are most important at uncontrolled crossings of multi-lane streets.

APPLICATIONS

- > Enhance all marked crossings
- > Necessary at marked midblock and uncontrolled crossing locations

KEY DESIGN FEATURES

- > Locations should be convenient for pedestrian access
- > Used in conjunction with other measures such as advance warning signs, markings, crossing islands, and curb extensions
- > Place to avoid wear due to tires

BENEFITS

- > Indicate preferred pedestrian crossings
- > Warn motorists to expect pedestrians crossing
- > Higher visibility than typical lateral-line marked crosswalks
- > Can be placed to minimize wear and tear (between tire tracks)

CURB EXTENSIONS ▶▶▶



DESCRIPTION

A curb extension is a segment of sidewalk, landscaping, or curb that is extended into the street at the corner, and usually associated with crosswalks. A curb extension typically extends out to align with the edge of the parking lane. They can be placed at locations where there is no on-street parking by tapering the extensions to the approach.

KEY DESIGN FEATURES

- > Curb extensions sited at corners or midblock
- > Extends out to approximately align with parking (typically one foot to two feet less than parking lane width)
- > Reduced effective curb radius
- > Can be tapered at approach in cases where there is no on-street parking
- > Should not block travel or bicycle lanes
- > Paired with bicycle lanes, curb extensions can increase the effective curb radius for larger vehicles
- > Bulb-outs are a type of curb extension that has a distinct bulb-shape that extends into the on-street parking lane (see graphic)

BENEFITS

- > Shorten pedestrian crossing
- > Reduce curb radius, slowing turning vehicles
- > Provide traffic calming
- > Improve sight visibility for pedestrians and motorists
- > Provide space for landscaping, beautification, water treatment, furnishings, signs, etc.
- > Often can provide space for perpendicular curb ramps

APPLICATIONS

- > Areas with high pedestrian traffic (downtown, mixed-use areas) where traffic calming is desired
- > Jurisdiction must evaluate placement on case-by-case basis, taking into account drainage, signal pole modification, lane widths, driveways, and bus stops

CURB RAMPS ▶▶▶



DESCRIPTION

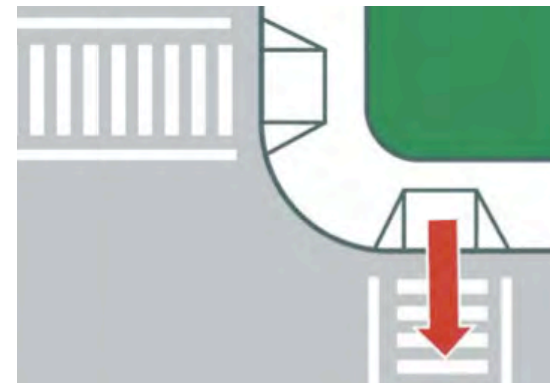
A curb ramp is a ramp and landing that allows for a smooth transition between sidewalk and street via a moderate slope. The Americans with Disabilities Act requires wheelchair access at every street corner. On streets with low traffic volumes and short crossing distances, diagonal ramps may be acceptable.

KEY DESIGN FEATURES

- > Where feasible, ramps for each crosswalk at an intersection are preferable
- > Tactile warnings will alert pedestrians to the sidewalk/street edge
- > Curb ramps must have a slope of no more than 1:12 (must not exceed 25.4 mm/0.3 m (1 in/ft) or a maximum grade of 8.33 percent), and a maximum slope on any side flares of 1:10

BENEFITS

- > Double curb ramps make the trip across the street shorter and more direct than diagonal ramps
- > Provide compliance with ADA



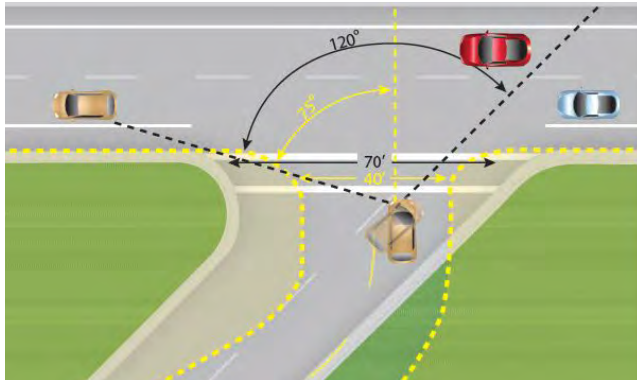
when designed correctly

- > Improve pedestrian accessibility for those in wheelchairs, with strollers, and for children

APPLICATIONS

- > Curb ramps must be installed at all intersections and midblock locations where pedestrian crossings exist, as mandated by federal legislation (1973 Rehabilitation Act and 1990 Americans with Disabilities Act)
- > Priority locations for curb ramps are in Downtown, near transit stops, schools, parks, medical facilities, and near residences with people who use wheelchairs

INTERSECTION GEOMETRY MODIFICATION ▶▶▶



DESCRIPTION

Geometry sets the basis for how all users traverse intersections and interact with each other. Intersection skew can create an unfriendly environment for pedestrians. Skewed intersections are those where two streets intersect at angles other than right angles. Intersection geometry should be as close to 90 degrees as possible.

KEY DESIGN FEATURES

- > Consider removing one or more legs from the major intersection and creating a minor intersection further up or downstream (if there are more than two streets intersecting)
- > Close one or more of the approach lanes to motor vehicle traffic, while still allowing access for pedestrians and bicyclists
- > Introduce pedestrian islands if the crossing distance exceeds three lanes (approximately 44 feet)
- > General use, travel lanes, and bike lanes may be striped with dashes to guide bicyclists and motorists through a long undefined area

BENEFITS

- > Skewed intersections are undesirable
- > Slow turning vehicles by making angles more acute
- > Shorten pedestrian crossing distances
- > Improve sight visibility

APPLICATIONS

- > Every reasonable effort should be made to design or redesign the intersection closer to a right angle

MEDIAN NOSES ▶▶▶



DESCRIPTION

A median nose, which extends past the crosswalk, protects people waiting on the median and slows turning drivers.

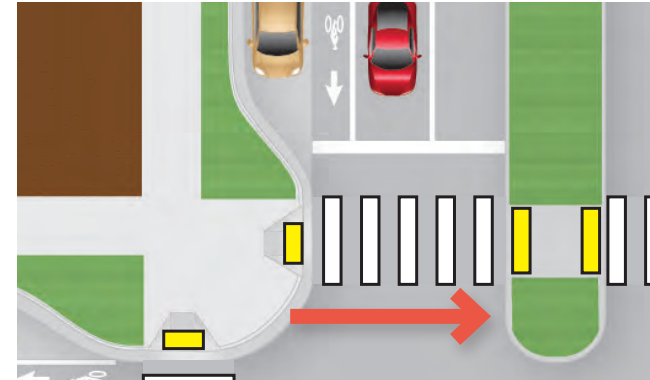
Median noses, which create refuge areas, are a FHWA Proven Safety Countermeasure.

KEY DESIGN FEATURES

- > Should be as wide as the existing median but preferably a minimum of six feet wide
- > Do not block through path for pedestrians and turning movements for vehicles
- > Separate directions of vehicle travel

BENEFITS

- > Allow pedestrians to cross one direction of traffic at a time
- > Slow vehicles
- > Provide refuge if crossing time is insufficient



APPLICATIONS

- > Any bi-directional street with adequate width, typically where a raised median exists
- > Especially important on multi-lane streets
- > Intersections where there are mixtures of significant pedestrian and vehicle traffic (typically with more than 12,000 ADT and intermediate or high travel speeds)

MIDBLOCK CROSSINGS ▶▶▶



DESCRIPTION

A crosswalk designed at a mid-point between intersections. These are best suited where there is a long distance (greater than 400 feet) between crosswalks on retail streets, in front of schools, etc. Intersections without traffic signals or STOP signs are considered uncontrolled intersections.

KEY DESIGN FEATURES

- > High-visibility crosswalk marking
- > Crossing islands, median gap, or short crossing
- > Advanced crossing and crossing signs
- > Advanced yield markings and signs
- > Signs
- > Rapid-flash beacons where traffic volumes and street width merit
- > Pedestrian activated signals should be used for streets with high speeds and volumes

BENEFITS

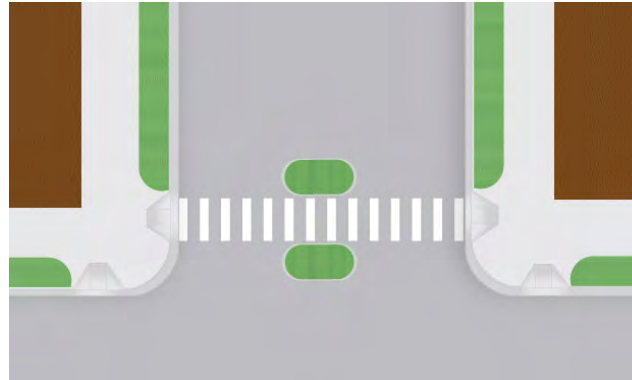
- > Bring both sides of the street closer for pedestrians

- > Enhance visibility of pedestrians
- > Informs drivers to expect pedestrians, and directs pedestrians to cross at specified locations
- > Deter pedestrians from dashing across street at random

APPLICATIONS

- > Decision to mark a crosswalk at an uncontrolled location should be guided by an engineering study
- > Consider vehicular volumes and speeds, roadway width and number of lanes, stopping sight distance and triangles, distance to the next controlled crossing, night time visibility, grade, origin-destination of trips, left turning conflicts, and pedestrian volumes.
- > On multi-lane roadways, marked crosswalks alone are not recommended under the following conditions: ADT > 12,000 without median; ADT > 15,000 with median; or speeds > 40 mph. Add devices such as advanced stop bar, crossing islands, etc.

PEDESTRIAN CROSSING ISLANDS ▶▶▶



DESCRIPTION

A defined area in the center of the street that is raised and provides a refuge area for pedestrians crossing a street. They can be used at any street crossing but are most important at uncontrolled crossings of multi-lane streets.

Pedestrian crossing islands are a FHWA Proven Safety Countermeasure.

KEY DESIGN FEATURES

- > Raised, curbed islands that flank marked crosswalk
- > Do not block through path
- > Separate directions of vehicle travel
- > Preferred width of at least six feet wide (minimum of at least four feet wide per FHWA)

BENEFITS

- > Allow pedestrians to cross one direction of traffic at a time
- > Slow vehicles
- > Provide refuge if crossing time is insufficient

APPLICATIONS

- > Any bi-directional street with adequate width
- > Especially important on uncontrolled multi-lane streets
- > Can be placed in between lanes, in slip lanes, and replace center turn lanes
- > Need to be designed to accommodate turning movements of large vehicles

PEDESTRIAN HYBRID BEACONS ▶▶▶



DESCRIPTION

A pedestrian hybrid beacon is used to warn and control traffic at an unsignalized location so as to help pedestrians cross a street or highway at a marked crosswalk.

The pedestrian hybrid beacon is an intermediate option between the operational requirements and effects of a rectangular rapid-flash beacon (RRFB) and a full pedestrian signal because it provides a positive stop control in areas without the high pedestrian traffic volumes that typically warrant the installation of a signal. Pedestrian Hybrid Beacons are a FHWA Proven Safety Countermeasure.

KEY DESIGN FEATURES

- > Minimum of 20 pedestrians per hour is needed to warrant installation
- > Should be placed in conjunction with signs, crosswalks, and advanced yield lines to warn and control traffic at locations where pedestrians enter or cross a street or highway
- > Should only be installed at a marked crosswalk



Drivers		Pedestrians	
... will see this	... will do this	... will see this	... will do this
	Proceed with Caution		Push the Button to Cross
	Slow Down (pPedestrian has activated the push button)		Wait
	Prepare to Stop		Continue to Wait
	STOP! (Pedestrian in Crosswalk)		Start Crossing
	STOP! Proceed with Caution if Clear		Continue Crossing (Countdown Signal)
	Proceed if Clear		Push the Button to Cross

BENEFITS

- > Installations should be done according to the Federal MUTCD and CA MUTCD Chapter 4F, "Pedestrian Hybrid Beacons."

APPLICATIONS

- > Can be used at a location that does not meet traffic signal warrants or at a location that meets traffic signal warrants but a decision has been made to not install a traffic control signal
- > Additional safety measure and warning device at uncontrolled location
- > Remain dark until activated

PEDESTRIAN-ACTIVATED PUSHBUTTONS ▶▶▶



DESCRIPTION

Pedestrian-activated traffic controls require pedestrians to push a button to activate a walk signal. Where significant pedestrian traffic is expected, pedestrian-activated signals are generally discouraged, and "WALK" signal should automatically come on.

KEY DESIGN FEATURES

- > Should be located as close as possible to top of curb ramps without reducing the width of the path
- > Buttons should be at a level that is easily reached by people in wheelchairs near the top of the ramp
- > U.S. Access Board guidelines recommend buttons raised above or flush with their housing and large enough (a minimum of two inches) for people with visual impairments to see them
- > Buttons should also be easy to push



BENEFITS

- > Provide for smoother traffic flow if there are few pedestrians, and no need to provide walk signal for every cycle

APPLICATIONS

- > Areas where there are few pedestrians
- > Midblock crossings at locations where signalized crossing is needed

RAILROAD PEDESTRIAN CROSSING TREATMENTS >>>

DESCRIPTION

Pedestrian crossings of railroads require special design approved by the California Public Utilities Commission to ensure that pedestrians cross only at the right time and along the correct path.

KEY DESIGN FEATURES

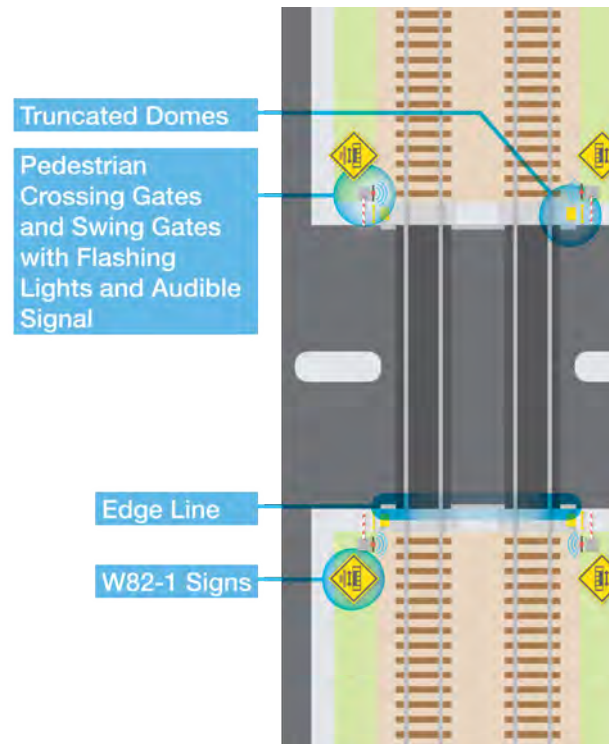
- > Sidewalks
- > Detectable warning tactile strips
- > Pedestrian flashers
- > Pedestrian gates
- > Swing gates
- > Channelization
- > Fencing
- > Signing and striping
- > Crossing surface extensions and gap fillers

BENEFITS

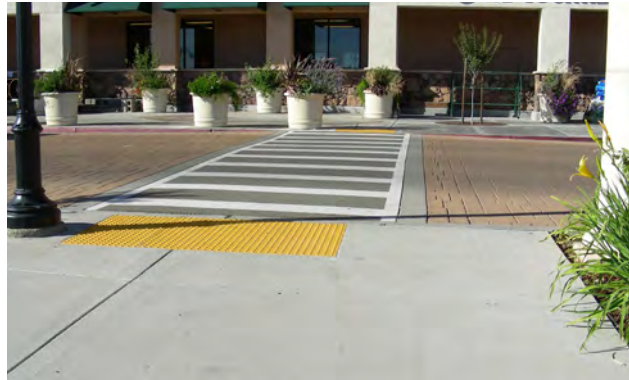
- > Design for safe pedestrian crossing
- > Prevent interference with trains
- > Channelize pedestrians away from motor vehicles

APPLICATIONS

- > Wherever there is a pedestrian crossing of a railroad that has gates or flashing beacons



RAISED CROSSWALKS ▶▶▶



DESCRIPTION

A crosswalk that has been raised in order to slow motor vehicles and to enhance the visibility of crossing pedestrians.

KEY DESIGN FEATURES

- > Trapezoidal in shape on both sides and have a flat top where the pedestrians cross
- > Level crosswalk area must be paved with smooth materials
- > Texture or special pavements used for aesthetics should be placed on the beveled slopes, where they will be seen by approaching motorists
- > Often require culverts or another means of drainage treatment

BENEFITS

- > Increase visibility of pedestrian, especially to motorists in large vehicles
- > Traffic calming
- > Continuous level for pedestrians

APPLICATIONS

- > Areas with significant pedestrian traffic and where motor vehicle traffic should move slowly, such as near schools, on college campuses, in Main Street retail environments, and in other similar places
- > Effective near elementary schools where they raise small children by a few inches and make them more visible

RECTANGULAR RAPID-FLASH BEACONS (RRFB) ▶▶▶



DESCRIPTION

The RRFB uses rectangular-shaped high-intensity LED-based indications, flashes rapidly in a wig-wag “flickering” flash pattern, and is mounted immediately between the crossing sign and the sign’s supplemental arrow plaque.

KEY DESIGN FEATURES

- > Placed at crosswalk and in center median / crossing island
- > Crosswalk sign with arrow
- > Wig-wag flickering flash pattern mounted between crossing sign and arrow pointing to crosswalk

BENEFITS

- > Increase motorist compliance to yield to pedestrians crossing at uncontrolled marked locations
- > Provide additional visibility to crosswalks
- > Visible at night and during the day

APPLICATIONS

- > Approved for interim use by the California Traffic Control Device Committee (CTCDC) and FHWA
- > City should go through appropriate CTCDC steps to use
- > Use of RRFBs should be limited to locations with the most critical safety concerns, such as pedestrian and school crosswalks at uncontrolled locations

REDUCED CURB RADIUS >>>

DESCRIPTION

The geometry of the corner radius impacts the feel and look of a street. Tight corner radii create shorter crossing distances, and provide a traffic calming effect.

KEY DESIGN FEATURES

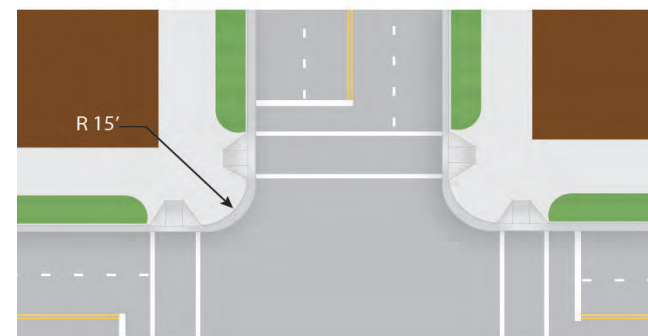
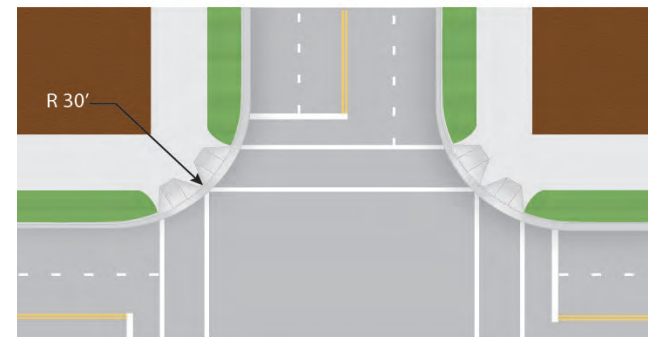
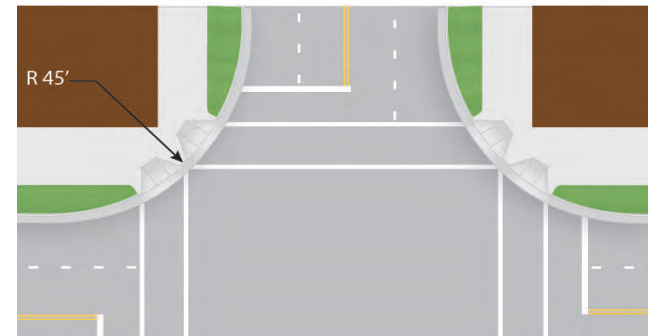
- > Default design vehicle should be the passenger (P) vehicle; initial corner radius is between 15 and 25 feet
- > Larger design vehicles should be used only where they are known to regularly make turns at the intersection (such as in the case of a truck or bus route)
- > Design based on the larger design vehicle traveling at near 5 mph or crawl speed
- > Consider the effect that bicycle lanes and on-street parking have on the effective radius, increasing the ease with which large vehicles can turn

BENEFITS

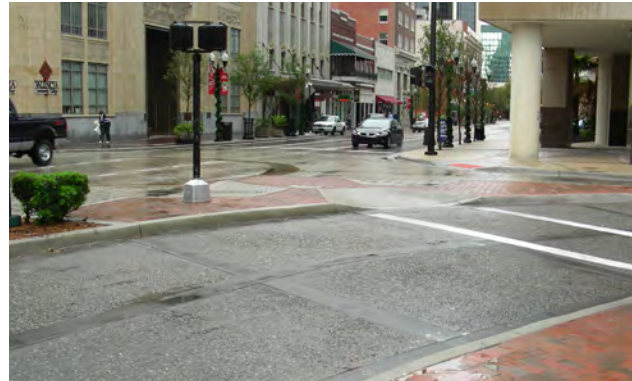
- > Slower vehicular turning speeds
- > Reduced pedestrian crossing distance and crossing time
- > Better geometry for installing perpendicular ramps for both crosswalks at each corner
- > Simpler and more appropriate crosswalk placement that aligns directly with sidewalks on the other side of the intersection

APPLICATIONS

- > All corners



RIGHT-TURN CHANNELIZATION ISLANDS ▶▶▶



DESCRIPTION

A raised channelization island between the through lanes and the right-turn lane is a good alternative to an overly large corner radius and enhances pedestrian safety and access. This countermeasure allows pedestrians to cross fewer lanes at a time.

KEY DESIGN FEATURES

- > Provide a yield sign for the slip lane
- > Provide at least a 60-degree angle between vehicle flows
- > Place the crosswalk across the right-turn lane about one car length back from where drivers yield to traffic on the other street
- > Typical layout involves creating an island that is roughly twice as long as it is wide. The corner radius will typically have a long radius (150 feet to 300 feet) followed by a short radius (20 feet to 50 feet)
- > Necessary to allow large trucks to turn into multiple receiving lanes

BENEFITS

- > Allow motorists and pedestrians to judge the right turn/pedestrian conflict separately
- > Reduce pedestrian crossing distance, which can improve signal timing for all users
- > Balance vehicle capacity and truck turning needs with pedestrian safety
- > Provide an opportunity for landscape and hardscape enhancement
- > Slow motorists

APPLICATIONS

- > Right-turn lanes should generally be avoided as they increase the size of the intersection, the pedestrian crossing distance, and the likelihood of right-turns-on-red by inattentive motorists who do not notice pedestrians on their right
- > Heavy volumes of right turns (approximately 200 vehicles per hour or more)

SCRAMBLE PHASES ▶▶▶



DESCRIPTION

A scramble phase provides a separate all-direction red phase in the traffic signal to allow pedestrians to cross linearly and diagonally. They are most appropriate in retail districts with heavy volumes of both pedestrians and motor vehicles, and/or many vehicle turning movements.

KEY DESIGN FEATURES

- > Signs indicating scramble is permitted
- > Countdown signals
- > Markings indicating diagonal cross
- > Allow pedestrians to cross straight and reduces delay

BENEFITS

- > Reduce pedestrian delay for those crossing both directions
- > Reduce pedestrian-vehicle conflicts by providing an all-pedestrian crossing phase
- > Does not necessarily eliminate regular walk phase



APPLICATIONS

- > Exclusive pedestrian phases may be used where turning vehicles conflict with very high pedestrian volumes and pedestrian crossing distances are short
- > Should be used in areas with high pedestrian volumes such as near shopping centers or downtowns

SIGNAL TIMING/PHASING ▶▶▶



DESCRIPTION

Signals provide control of pedestrians and motor vehicles. Signals can be used to control vehicle speeds by providing appropriate signal progression on a corridor. Traffic signals allow pedestrians and bicyclists to cross major streets with only minimal conflict with motor vehicle traffic. Signalized intersections often have significant turning volumes, which conflict with concurrent pedestrian and bicycle movements. Modifying signal timings and signal coordination along a corridor and providing additional signal phases for high volume movements, such as protected left-turn phasing, can improve safety.

KEY DESIGN FEATURES

- > Signal progression at speeds that support the target speed of a corridor
- > Short signal cycle lengths
- > Ensure signals detect bicycles
- > Place pedestrian signal heads in locations where they are visible
- > Time the pedestrian phase to be on automatic recall



- > Where few pedestrians are expected, place pedestrian pushbuttons in convenient locations, using separate pedestals if necessary
- > Include adequate pedestrian crossing time of 3.5 feet per seconds or more
- > Leading Pedestrian Intervals (LPI) allows pedestrians to begin crossing while all directions of traffic have red signal
- > Protected left-turn phases are preferable to permissive movements

BENEFITS

- > Reduces pedestrian-vehicle conflicts by providing separate phases for travel
- > Limiting permissive turning movements at signalized intersections improves safety for pedestrians
- > Walk signals timed at 3.5 feet per second reduce conflicts; less where large numbers of seniors or disabled pedestrians crossing

APPLICATIONS

- > City must follow standard warrants in the California MUTCD

SIGNS ▶▶▶



DESCRIPTION

Signs alert motorists to the presence of crosswalks and pedestrians. Center signs can help slow traffic. These are placed according to the CA MUTCD.

KEY DESIGN FEATURES

- > Placed with adequate sight distance and according to MUTCD standards
- > Should not block pedestrian view or obstruct pathways
- > Kept free of graffiti and in good condition
- > Should have adequate nighttime reflectivity

BENEFITS

- > Provide important information
- > Give motorists advance warning
- > Regulatory signs require certain driver actions and can be enforced



APPLICATIONS

- > Overuse of signs can create noncompliance and disrespect
- > Signs should be placed at locations where appropriate to enforce certain types of behavior
- > Uncontrolled crossings
- > Commonly used signs are advanced pedestrian crossing sign in advance of marked uncontrolled crossing; pedestrian crossing sign at uncontrolled crossing; and advanced yield signs
- > Advance warning for stop-controlled and signal-controlled intersections where people are failing to stop
- > Approaches to railroad crossings
- > Wherever MUTCD calls for them

ROADWAY COUNTERMEASURES

ACCESS MANAGEMENT ▶▶▶

DESCRIPTION

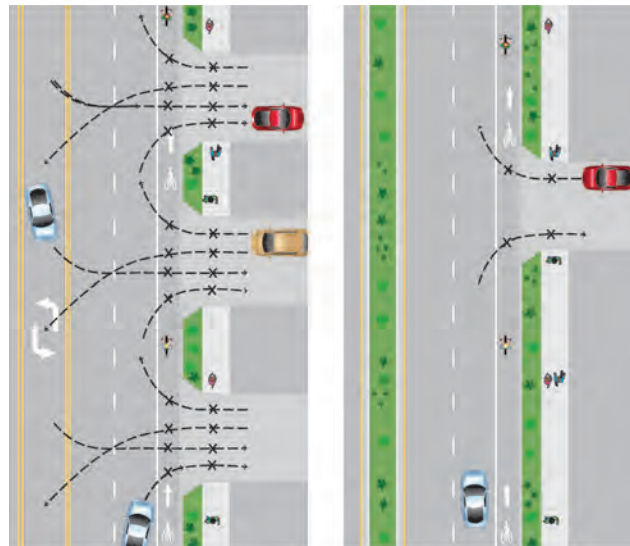
Most conflicts between users occur at intersections and driveways. The presence of many driveways in addition to the necessary intersections creates many conflicts between vehicles entering or leaving a street and bicyclists and pedestrians riding or walking along the street.

KEY DESIGN FEATURES

- > When possible, new driveways should be minimized and old driveways should be eliminated or consolidated
- > Raised medians should be placed to limit left turns into and out of driveways

BENEFITS

- > Number of conflict points is reduced
- > Pedestrian crossing opportunities are enhanced with a raised median
- > Universal access for pedestrians is easier, since the sidewalk is less frequently interrupted by driveway slopes
- > Result in more space available for higher and better uses
- > Improved traffic flow may reduce the need for road widening



APPLICATIONS

- > New development
- > Redevelopment
- > Where driveways make sidewalk inaccessible based on ADA guidelines

BUS LANES ▶▶▶



DESCRIPTION

Bus lanes are dedicated lanes for buses only.

KEY DESIGN FEATURES

- > “Bus Lane” pavement markings with a solid white stripe
- > Bus lane signs with instructions as to the days and times that apply
- > “Bikes OK” text on the signs

BENEFITS

- > Reduce side-swipe, rear-end and left-turn crashes (as with road diets)
- > Reduce speeding
- > Reduce aggressive acceleration
- > Reduce hard braking events
- > Speed up buses
- > Improve entry and exit from bus stops



APPLICATIONS

- > Along bus routes with frequent service
- > Along bus routes where buses are slowed by traffic

CENTERLINE RUMBLE STRIPS/EDGE LINE RUMBLE STRIPS ▶▶▶



DESCRIPTION

Center or edge line rumble strips are longitudinal safety features installed at or near the center line of a paved roadway. They are made of a series of milled or raised elements intended to alert inattentive drivers (through vibration and sound) that their vehicles have left the travel lane. In most cases, the center or edge line pavement marking is placed over the rumble strip.

KEY DESIGN FEATURES

- > Rumble strips could be milled-in, raised, rolled-in, and formed
- > Typically, only milled rumble strips are used in center line applications
- > Considerations to be given for road joints and crowns
- > Lateral width is six inches to 12 inches
Longitudinal milling pattern is five inches groove + or – one inch; depth should be no greater than 5/16-inch + or - 1/16-inch

BENEFITS

- > Effective for roads with head-on and opposite direction sideswipe crashes
- > Aid in navigation during inclement weather

APPLICATIONS

- > Consider corridor-wide or system-wide applications rather than spot applications in areas with where speeds are above 50 mph and lane plus shoulder width are above 14 feet
- > Consider all road users particularly bicyclists, motorcycles, and truck drivers

CONVERT TO ALL-WAY STOP CONTROL ▶▶▶



DESCRIPTION

All-way stop control is suitable only at intersections with moderate and relatively balanced volume levels on the intersection approaches. Under other conditions, the use of all-way stop control may create unnecessary delays and aggressive driver behavior (e.g., deliberate ignoring of the stop control).

KEY DESIGN FEATURES

- > Based on an engineering study that considers approach volumes (including pedestrians and bicyclists) as well as traffic patterns and sight distances
- > Use supplemental plaques such as "ALL WAY" Sign

BENEFITS

- > All-way stop control can reduce right-angle and turning crashes at unsignalized intersections
- > Can reduce through and turning speeds, and minimize the safety effect of any sight distance restrictions that may be present

APPLICATIONS

- > Locations with a need to control left-turn conflicts
- > Locations with a need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes
- > Locations with limited sight visibility for cross-traffic
- > Locations where an all-way stop could improve traffic operational characteristics of the intersection
- > Locations with high or severe crash history that could be mitigated by converting to an all-way stop control

FLASHING BEACONS AS WARNING TO AN INTERSECTION (SIGNALIZED AND NON-SIGNALIZED) ▶▶▶



DESCRIPTION

Flashing beacons can be used at both signalized or stop-controlled intersections. For signalized intersections, they provide advance warning of an upcoming signalized intersection especially in locations with sight distance restrictions (curves, hills, etc). For unsignalized intersections, flashing beacons reinforce the awareness of the STOP control.

KEY DESIGN FEATURES

- > Flashing beacons can be designed in such a way that they flash all the time or only when a sensor detects a vehicle approaching the intersection (an actuated beacon)
- > Beacons can be installed either overhead, or mounted directly onto a STOP sign (or on a pedestal for signalized intersections)
- > Some actuated overhead beacons are supplemented with a sign that indicates, "Vehicles Entering When Flashing"
- > Need to be placed far enough in advance of the intersection for motorists to react

BENEFITS

- > Enhance the visibility and awareness of intersections
- > Have the potential to reduce the number of crashes associated with drivers' lack of awareness

APPLICATIONS

- > At signalized intersections with crashes that are a result of drivers being unaware of the intersection or are unable to see the traffic control device or back of the queue in time to react and comply
- > At unsignalized intersections flashing beacons can help mitigate patterns of right-angle crashes related to stop sign violation. This is especially true in rural areas where there may be long stretches between intersections as well as locations where night-time visibility of intersections is an issue.

GUARDRAILS AND IMPACT ATTENUATORS ►►►



DESCRIPTION

Guardrails redirect errant vehicles away from embankment slopes or fixed objects and dissipate the energy.

Impact attenuators are typically used to shield rigid roadside objects such as concrete barrier ends, steel guardrail ends and bridge pillars from oncoming automobiles. Attenuators bring an errant vehicle to a more-controlled stop or redirect the vehicle away from a rigid object.

KEY DESIGN FEATURES

- > The guardrail itself, the posts, the soil that the posts are driven in, the connection of the guardrail to the posts, the end terminal, and the anchoring system at the end terminal impact the performance of the guardrail
- > Attenuators should only be installed where it is impractical for the objects to be removed. Consideration should be given to ongoing maintenance

BENEFITS

- > Guardrails and Impact attenuators are effective at absorbing impact energy and increasing occupant safety
- > They tend to draw attention to the fixed object, which helps drivers steer clear of the fixed objects

APPLICATIONS

- > On embankment slopes
- > To protect fixed objects

HIGH-FRICTION SURFACE TREATMENTS ▶▶▶



DESCRIPTION

High friction surface treatments (HFST) are pavement treatments that mitigate the reduction in pavement friction during wet conditions or due to vehicle speeds or roadway geometrics. HFST involve the application of very high-quality aggregate to the pavement using a polymer binder to restore and/or maintain pavement friction at existing or potentially high crash areas.

KEY DESIGN FEATURES

- > HFST can be applied by machine or with hand tools, but the road surface must be durable with few to no cracks and crumbling
- > While the initial costs are usually higher than conventional pavement, the long-lasting durability of and their limited use in critical locations makes HFST a low-cost option over its life cycle

BENEFITS

- > The higher pavement friction helps motorists maintain better control in both dry and wet driving conditions

APPLICATIONS

- > Locations where drivers may brake excessively such as steep hills, curves, loop ramps, intersections, and areas with short stopping or weaving distances

IMPROVE SIGNAL HARDWARE ▶▶▶



DESCRIPTION

Signal hardware countermeasures include a variety of signal treatments such as adding yellow retroreflective borders to signal backplates, upgrading to 12-inch lenses, adding additional heads, converting signals from pedestal mounted to mast arms, supplemental pole-mounted signals on the near approach, as well as using visors and louvers among others.

KEY DESIGN FEATURES

- > Typically do not require significant labor material or design costs
- > Backplate retroreflective tapes are available with adhesive backing which enables retrofitting of existing backplates
- > Weight considerations are necessary when adding signals to existing mast arms or new longer reach structures
- > Adhere to MUTCD guidelines when upgrading or retrofitting

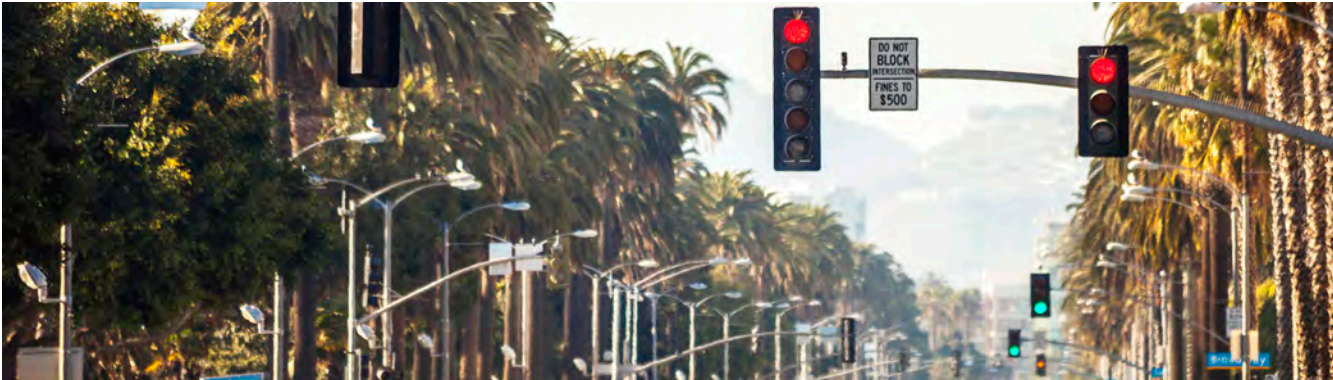
BENEFITS

- > Retroreflective borders enhance traffic signal visibility, conspicuity, and orientation; especially for both older and color-vision deficient drivers
- > During periods of power outages when the signals would otherwise be dark, retroreflective borders provide a visible cue for motorists
- > Larger lenses and signals for each approach lane provide for better visibility
- > Overhead signal displays provide better line-of-sights for motorists in mixed traffic
- > Louvers block the view of the signal from another approach to avoid the confusion

APPLICATIONS

- > Signalized intersections with visibility constraints due to natural conditions or presence of trucks that can block lines of sight
- > Intersections with a skewed approach angle can benefit from installation of louvers

TRAFFIC SIGNALS ▶▶▶



DESCRIPTION

Traffic signals are used to assign right-of-way to the various modes, including pedestrians, bicycles, and vehicles. Signals promote the orderly movement of traffic and prevent excessive delay to traffic.

KEY DESIGN FEATURES

- > Consideration to signalize an intersection should only be given after less restrictive forms of traffic control have been utilized as the installation of a traffic signal often leads to an increased frequency of crashes (rear-end) on major roadways and introduces congestion
- > The CA MUTCD lists nine warrants for the placement of traffic signals

BENEFITS

- > Traffic signals can be used to prevent the most severe type crashes (right-angle, left-turn)
- > Provide for orderly movement of traffic.
- > Increase traffic capacity of the intersection
- > Reduce the frequency of certain types of crashes (e.g. right-angle crashes)

- > Provide for continuous or nearly continuous movement of traffic along a given route
- > Interrupt heavy traffic to permit other traffic, vehicular or pedestrian, to cross

APPLICATIONS

- > At unsignalized junctions meeting signal warrants or where sound engineering judgment justifies signalization for safety and access management considerations as well as the spacing of signals on arterial roadways
- > At pedestrian crossings where traffic volumes, number of travel lanes and/or speed make it unsafe to cross without a signal
- > At locations where a trail crosses a street or road and where traffic volumes, number of travel lanes and/or speed make it unsafe to cross without a signal

INSTALL/UPGRADE LARGER OR ADDITIONAL STOP SIGNS OR OTHER SIGNS ►►►



DESCRIPTION

Installing larger (30-inch compared to the standard 24-inch) or additional stop signs are low-cost treatment enhancements that increase the visibility of stop signs and can improve driver compliance.

KEY DESIGN FEATURES

- > Larger (30-inch) stop signs with “Stop Ahead” advance traffic control sign and added pavement markings can help delineate traffic at the intersections

BENEFITS

- > Help reduce the number and severity of crashes

APPLICATIONS

- > Approaches to unsignalized intersections with patterns of rear-end, right-angle, or turning crashes related to lack of driver awareness of the presence of the intersection

LEADING PEDESTRIAN INTERVAL ▶▶▶



DESCRIPTION

Under a leading pedestrian interval, the “Walk” signal comes on before motorists receive a green signal.

KEY DESIGN FEATURES

- > The duration should be at least three to six seconds and should be timed to allow pedestrians to cross at least one lane of traffic, or where there is a large turning radius, to travel far enough into the intersection to establish their position before turning motorists receive a green light
- > Restrict right turns on red where needed
- > Audio signals

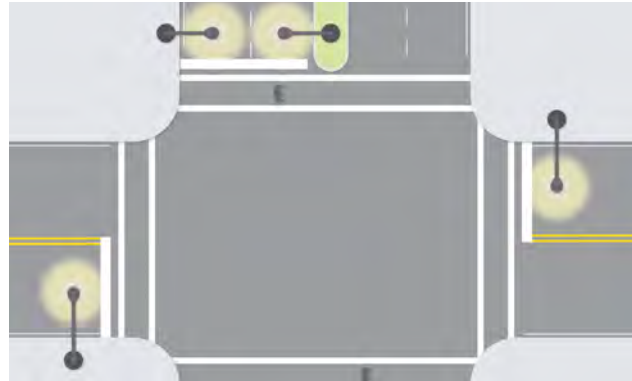
BENEFITS

- > Allows pedestrians to increase their chances of being seen
- > Allows pedestrians more time to cross wide streets
- > Allows pedestrians into an intersection where right-turning vehicles frequently block their path

APPLICATIONS

- > Where pedestrians have difficulty entering signalized intersections to cross due to heavy turning traffic
- > Where pedestrians have difficulty being seen in signalized intersections
- > Where pedestrians have difficulty crossing wide streets within the allotted time

LIGHTING ▶▶▶



DESCRIPTION

Intersection lighting illuminates the entire intersection well enough that approaching motorists can see all legs of the intersections sufficiently to avoid conflicts with other intersection users.

KEY DESIGN FEATURES

- > Wider streets and streets with higher classifications have higher light level requirements
- > There are many issues related to spacing, poles, number of luminaires, etc
- > It is important to select the appropriate lighting fixture for each application, fixtures vary greatly in style and function
- > Light before pedestrian crossings to avoid back lighting pedestrians
- > Refer to street light design standards to determine the lighting standards and select the appropriate make, wattage, lighting distribution, and mounting details

BENEFITS

- > Improves visibility for motorists
- > Improves personal safety for pedestrians
- > Improves visibility of pedestrians and bicyclists
- > Improves pedestrian comfort in commercial areas

APPLICATIONS

- > At all intersections, except in rural areas
- > At intersections in rural areas with a crash history, or a typology similar to where crashes have occurred
- > At mid-block crossings
- > At bus stops
- > At pedestrian, vehicle and bike conflict and shared use areas
- > School zones

LED-FLASHING STOP SIGN ►►►



DESCRIPTION

LED-Flashing Stop Signs heightens motorists' awareness and increases compliance.

KEY DESIGN FEATURES

- > LED units may be used individually within the face of a sign and in the border of a sign
- > LEDs units shall be red to go with stop signs; if flashed, all LED units shall flash simultaneously at a rate of between 50-60 times per minute
- > LEDs visible during daytime and nighttime
- > Commonly solar-powered and requires low power usage
- > May be set to flash throughout the day or be vehicle- or pedestrian-activated

BENEFITS

- > Increase motorists compliance with stop signs
- > Enhance visibility and recognition of regulatory and warning signs to drivers, especially under low-light or low-visibility conditions

APPLICATIONS

- > Apply at stop sign locations with sight visibility limitations (i.e. dusk/dawn glare) and documented problems of drivers failing to stop
- > LED flashing stop signs are covered in the FHWA MUTCD under Section 2A.08

MEDIANS ▶▶▶



DESCRIPTION

Raised medians are the most important, safest, and most adaptable engineering tool for improving many street crossings. A median is a continuous raised area separating opposite flows of traffic.

Medians are a FHWA Proven Safety Countermeasure.

KEY DESIGN FEATURES

- > Raised median with center area for landscaping
- > Provide frequent breaks in median to assist crossing pedestrians
- > Minimum of six-foot wide, but usually as wide as center-turn lane

BENEFITS

- > Separate traffic flows
- > Slow traffic
- > Break crossings into shorter segments
- > Provide space for landscaping and beautification
- > Make street feel narrower
- > Allow pedestrians to cross during a gap in one direction of traffic at a time

APPLICATIONS

- > Raised medians and crossing islands are commonly used between intersections when blocks are long (500 feet or more in downtowns) and in the following situations:
 - > Speeds are higher than desired
 - > Streets are wide
 - > Traffic volumes are high
 - > Sight distances are poor
- > Raised islands have nearly universal applications and should be placed where there is a need for people to cross the street
- > To slow traffic

NEIGHBORHOOD TRAFFIC CIRCLES ▶▶▶



DESCRIPTION

Neighborhood traffic circles, sometimes called “mini-circles”, are small circles that are retrofitted into local street intersections to control vehicle speeds within a neighborhood. Typically, a tree and/or landscaping are located within the central island to provide increased visibility of the roundabout and enhance the intersection.

KEY DESIGN FEATURES

- > The design of neighborhood traffic circles is primarily confined to selecting a central island size to achieve the appropriate design speed of around 15 to 20 mph
- > Neighborhood traffic circles should generally have similar features as roundabouts, including yield-on-entry and painted or mountable splitter islands
- > Can replace stop-controlled intersections in residential areas



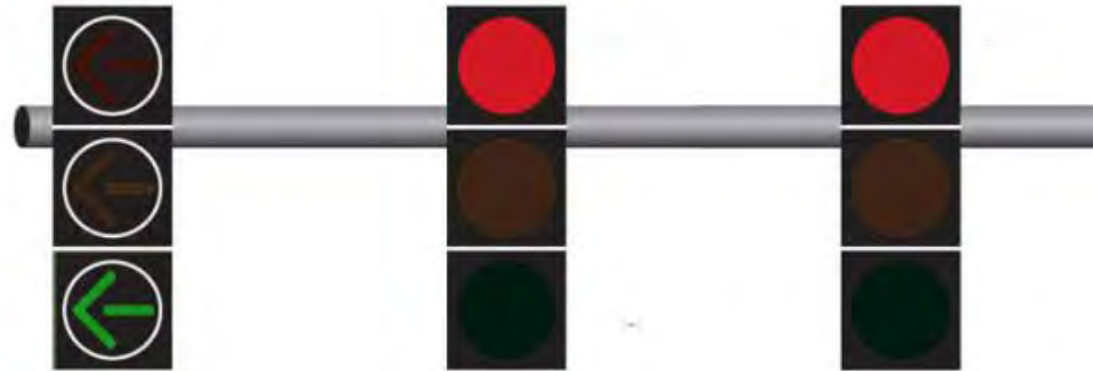
BENEFITS

- > Create continuous, slow vehicle speeds
- > Better for bicyclists than stop-controls
- > Improve traffic flow
- > Allow space for landscaping and beautification, as well as stormwater recapture
- > Reduce crashes

APPLICATIONS

- > Neighborhood traffic circles should be used on low-volume, neighborhood streets
- > Larger vehicles can turn left in front of the central island if necessary
- > Curb radius should be tight; may impede some large vehicles from turning
- > Landscaped circles often require agreements from adjacent residents and maintenance

PROTECTED LEFT-TURN PHASE ▶▶▶



DESCRIPTION

Protected left-turn phases provide a separate signal phase for left-turn movements.

KEY DESIGN FEATURES

- > The circular red for the protected must not be seen by the through traffic; as such use a "LEFT-TURN SIGNAL" or a visibility-limited (using hoods, shields, louvers, positioning, or design) circular red signal to provide additional information not given in the actual signal indication to the driver by specifying the control device for different intersection movements
- > Adhere to MUTCD guidelines
- > Consider signal retiming after conversion
- > Exclusive left-turn lanes minimize disruption of through traffic and decrease rear-end crash potential

BENEFITS

- > Vehicles making left-turn movements encounter potential conflicts from several sources including opposing through traffic, through traffic in the same direction, and crossing vehicular and pedestrian traffic. Protected (and sometimes protected/permissive) phases reduce left-turn crashes particularly left-turn/head-on crashes by eliminating these conflicts.
- > Reduces conflicts with pedestrians crossing parallel to vehicle traffic
- > Provides safer turns for bicyclists

APPLICATIONS

- > An exclusive left-turn lane is needed
- > Signalized intersections with left-turn/head-on crashes
- > Signalized intersections with significant pedestrian traffic

REMOVABLE PYLONS/DELINEATORS ▶▶▶



DESCRIPTION

Removable pylons, also known as flexible delineators, are intended not so much to obstruct traffic as to guide it. They alert motorists to changing road conditions and are especially useful in areas where side-swipe types of crashes are likely to occur.

Removable pylons can be used on wide streets where painted buffers have been used to delineate non-standard roadway shoulders. They are used to reduce the crossing distance for pedestrians and provide a physical buffer from vehicular traffic.

KEY DESIGN FEATURES

- > High degree of visibility as they rise vertically from the road surface and reflective at night
- > Typically used to alert motorists of changing road conditions



BENEFITS

- > Provide a physical buffer from the travel lanes to increase comfort for pedestrians and bicyclists
- > Narrow the streets to slow driver speeds

APPLICATIONS

- > May be used to create temporary curb extensions
- > May also be used delineate protected bike lanes
 - *Three-foot minimum buffer width preferred per FHWA or 18 inches per NACTO*
 - *10-foot to 40-foot spacing desired by FHWA*

ROAD DIETS ▶▶▶

DESCRIPTION

Road diets require restriping streets to reduce the number of travel lanes. Typically, streets are reduced from four lanes to two, or from six lanes to four.

KEY DESIGN FEATURES

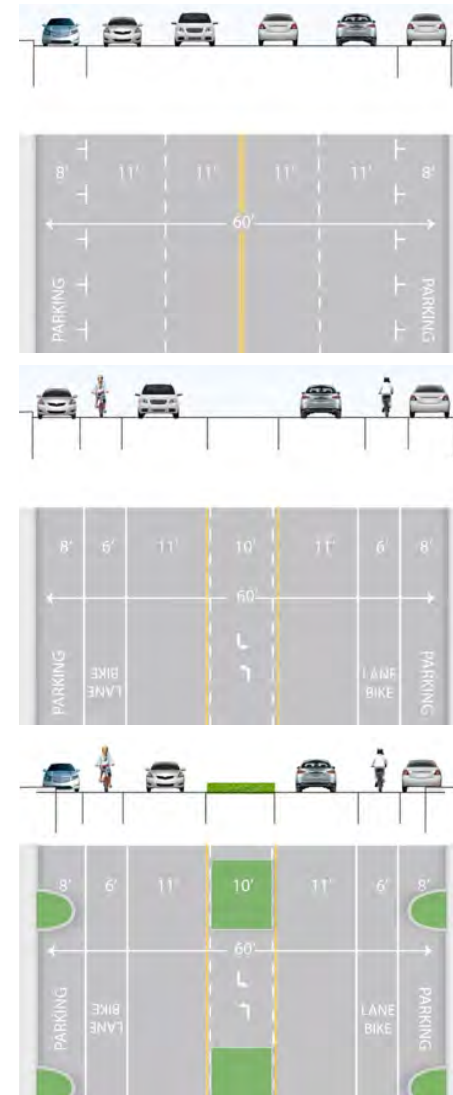
- > Reducing the number of lanes, usually by adding a center-turn lane, and/or bicycle lanes

BENEFITS

- > Reduce side-swipe, rear-end, and left-turning crashes
- > Slow traffic as the slowest vehicle sets the pace
- > Provide space for bicycle lanes
- > Makes it safer and easier for pedestrians to cross the street
- > Provide space for pedestrian crossing islands
- > Provide space for landscaping
- > Can provide space for wider sidewalks or planting strips

APPLICATIONS

- > Depending on peak hour traffic, can generally be implemented to reduce four-lane streets with 20,000 ADT to two lanes (with center-turn lane) without reducing capacity
- > Depending on peak hour traffic, can generally be implemented to reduce six-lane streets with approximately 40,000 ADT to four lanes (with center-turn lane) without reducing capacity
- > Where bike lanes are needed and the width isn't available within the existing street cross section
- > On a street that the City wishes to convert to a walkable "main street" environment



ROUNDBABOUTS ▶▶▶



DESCRIPTION

A roundabout is an intersection design that can replace stop signs and some traffic signals. Users approach the intersection, slow down, stop, and/or yield to pedestrians in a crosswalk, and then enter a circulating roadway, yielding to drivers already in the roundabout. The circulating roadway encircles a central island around which vehicles travel counterclockwise. Roundabouts are a FHWA Proven Safety Countermeasure.

KEY DESIGN FEATURES

- > Deflections and landscaped visual obstruction in the central island discourage users from entering the roundabout at high speeds
- > Central island should not contain attractions
- > Splitter islands narrow the approaches and exits
- > Truck aprons allow trucks, buses and large vehicles to mount where necessary
- > Designed to slow vehicles entering traffic yields
- > Approaches are channelized to deflect traffic
- > Pedestrian crossings are placed at a point along the splitter islands where the crossing is narrow, visible and motorists are slowed
- > Multi-lane roundabouts require accessible pedestrian signals at crosswalks



BENEFITS

- > Slow traffic, reduce the number of conflict points, and result in fewer crashes than signalized or stop-controlled intersections
- > Slow speeds reduce the severity of crashes
- > Have greater capacity than signalized or stop-controlled intersections
- > Allow more road diets as capacity increases at the intersection; simplify intersections
- > Reduce crossing distance and delay for pedestrians
- > Allow bicycles to proceed without stopping

APPLICATIONS

- > Can replace most single-lane signalized and stop-controlled intersections
- > Require a minimum of approximately 75 feet diagonal corner-to-corner for single-lane roundabouts
- > Require a minimum of approximately 150 feet diagonal corner-to-corner for multi-lane roundabouts
- > Along streets with road diets
- > Intersections with high crash rates
- > Intersections with a large number of turning movements
- > Complex intersections

RUMBLE BARS ▶▶▶



DESCRIPTION

Rumble bars, or transverse rumble strips, are used to alert drivers of an unexpected change in the roadway, such as the need to slow down or stop, or changes in the roadway alignment. They are a warning device used to supplement signing and alert drivers of the need to reduce speed.

Rumble bars are a FHWA Proven Safety Countermeasure.

KEY DESIGN FEATURES

- > Can be raised bars or grooves placed across the travel lane
- > If grooved rumble bars, limit maximum height or depth of 1/2-inch to minimize the jarring action to vehicles; if thermoplastic materials are used to created raised bars, the material should be white

BENEFITS

- > Provide visual and aural cues to alert motorists to slow down and pay attention to changes in the roadway
- > Delineate and create awareness of a pedestrian crosswalk

APPLICATIONS

- > Apply on approaches leading up to a pedestrian crosswalk or changing roadway conditions

SPEED FEEDBACK SIGNS ►►►



DESCRIPTION

Alerts motorists when they are going over the speed limit. They are most appropriate where motor vehicles commonly speed and there are pedestrians or bicyclists.

KEY DESIGN FEATURES

- > Must be placed in conjunction with speed limit sign
- > Should flash "SLOW DOWN" message if driver is going above speed limit

BENEFITS

- > Heighten awareness of speed limits
- > Can be used to specify lower speed limit during school crossing times
- > Alert drivers of their actual speed and posted speed
- > Can record traffic counts and speeds



APPLICATIONS

- > Place in school zones or corridors where speeding is a known issue

UPGRADE PAVEMENT MARKINGS THROUGH ROADWAY SAFETY PAVEMENT MARKING AUDIT ▶▶▶



DESCRIPTION

This consists of auditing the current pavement markings. The audit will gather information such as locations, types, and conditions of pavement markings. The pavement markings will be analyzed, and recommendations produced to keep, remove, or replace.

KEY DESIGN FEATURES

- > Identification of locations with pavement marking safety deficiencies
- > Identification of pavement markings not effective for the conditions present
- > Identification of old pavement markings that affect the safety of the roadway

BENEFITS

- > Allows the identification of areas that could benefit from increased or changed pavement marking, in addition to identifying pavement markings that do not meet current standards

APPLICATIONS

- > Network-wide, which provides the opportunity to avoid spot-treatments and thereby missing similar conditions elsewhere in the network

UPGRADE SIGNING THROUGH ROADWAY SAFETY SIGNING AUDIT



DESCRIPTION

This consists of auditing the current regulatory and warning signs. The audit will gather information such as locations, types, sizes, and conditions of signs. The signs will be analyzed, and recommendations produced to keep, remove, or replace.

KEY DESIGN FEATURES

- > The signing audit will gather information such as locations, types, sizes, and conditions of signs. The signs will be analyzed, and non-compliant signs removed or replaced to ensure that they are in compliance with the California MUTCD

BENEFITS

- > Allows the identification of areas that could benefit from increased or changed signing, in addition to identifying signs that do not meet current standards

APPLICATIONS

- > Network-wide, which provides the opportunity to avoid spot-treatments and thereby missing similar conditions elsewhere in the network

ADDITIONAL COUNTERMEASURES

CAT TRACKS ▶▶▶



DESCRIPTION

Cat tracks are pavement markings in the form of dotted lines used for guiding or delineating traffic, typically when turning traffic at an intersection.

KEY DESIGN FEATURES

- > Cat tracks can follow Caltrans Standard Detail 40 for lane line extensions or 40 A for left or right turns

BENEFITS

- > Correct lane encroachment issues especially in cases of dual or triple turn movements

APPLICATIONS

- > Locations where side-swipes are observed during turning movements at intersections

EXTEND SOLID LANE LINE ▶▶▶

DESCRIPTION

This creates or lengthens solid lane lines near intersections instead of dashed lane lines with the purpose of preventing motorists from changing lanes.

KEY DESIGN FEATURES

- > Stripe lane lines solid on the far side of the intersection

BENEFITS

- > Prevents crashes from lane changes

APPLICATIONS

- > Upstream of multi-lane intersections where a history exists of lane changing crashes

HIGHWAY SPEED DILEMMA ZONE ►►►



DESCRIPTION

Motorists approaching a signal on high-speed approaches can face a dilemma (stop or proceed through the intersection) when the downstream signal turns yellow.

Crashes that may occur in such cases result in high property damage and personal injury due to the high speeds involved.

KEY DESIGN FEATURES

- > Treatments for dilemma zones historically included advance warning signs or flashing beacons for end-of-green. More recently CA MUTCD advises on fully actuated high-speed signal approaches to allow for advance dilemma zone detection. Full actuation is designed to reduce the frequency with which the onset of the yellow change interval is displayed when high-speed approaching vehicles are in the "dilemma zone."

BENEFITS

- > Reduces number of drivers running red lights
- > Adjusts signal timing

APPLICATIONS

- > Intersections with high speed approaches



REDUCED SPEED ZONE ►►►

DESCRIPTION

When an Engineering & Traffic Survey (E&TS) indicates the statutory or prima facie speed limits are not applicable for the existing conditions, the maximum speed limits should be adjusted according to the E&TS findings. Any changes to the statutory or prima facie speed limits will result in a speed zone posted with signs showing the speed that applies in that zone.

KEY DESIGN FEATURES

- > Reduced speed zones currently require an E&TS Study to establish as defined in the CA MUTCD and California Manual for Speed Setting (Caltrans, 2014)

BENEFITS

- > Adjusts (typically reduces) speed limits to account for existing conditions
- > Reduced speeds have shown to reduce the severity of crashes
- > Warns drivers of changing conditions

APPLICATIONS

- > School Zones
- > Construction Zones
- > Special Weather Conditions
- > Crash history within a zone
- > Hidden driveways or high driveway density
- > Special road conditions (e.g. grades impacting trucks)



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ADDITIONAL SAFETY CONSIDERATIONS

Bus Stops

An important component of roadway safety is ensuring safe access to transit. As the Antelope Valley Transit Authority invests in service, the City of Lancaster can make parallel investments in safe bus stops and on-street transit facilities. The American Public Transportation Association (APTA) report: *Design of On-street Transit Stops and Access for Surrounding Areas* highlights the importance of locating bus stops proximate to pedestrian crossings to create safe environments. When accessing a bus stop, particularly if in a rush to catch the bus, people walking may not always divert their path to use a crosswalk if there is a more expedient path. The NACTO Urban Street Design Guide, the FHWA Pedestrian Safety Guide and Countermeasure Selection System asserts that far-side bus stops, where a bus stops after it crosses an intersection rather than before, are safer because the pedestrian crosses behind the bus. Where bus stops and bike lanes occur at the same location, there is a potential safety risk for cyclists and pedestrians. The literature recommends floating bus boarding islands as the preferred design in these situations.

Key resources:

- > *Pedestrian Safety Guide for Transit Agencies*, Federal Highway Administration (FHWA)
- > *Transit Street Design Guide*, National Association of City Transportation Officials (NACTO)
- > *Design of On-street Transit Stops and Access for Surrounding Areas*, American Public Transportation Association (APTA)

Maintenance

When considering the installation of safety countermeasures, ongoing maintenance and replacement costs should be taken into account. The U.S. Department of Transportation estimates that poor road conditions and obsolete road designs contribute to approximately 14,000 highway deaths each year. In the absence of a long-term federal transportation bill to fund needed roadway improvements throughout the country, a backlog of transportation maintenance and repair needs has accumulated, leaving much of our transportation infrastructure in disrepair and creating the conditions for traffic injuries and fatalities.

The FHWA notes that approximately one-half of traffic fatalities occur during nighttime hours. Because pavement markings have repeatedly been shown to reduce crashes, this suggests that the proactive maintenance of pavement markings to ensure their visibility may play a crucial role in reducing the number of crashes and the number of fatalities.

Roadway safety improvements are not limited to those that primarily benefit motor vehicle users. A 2016 study of pedestrian safety by Corazza et al. found that the presence of distressed sidewalks – or the complete lack of them – encourages pedestrians to walk in places that increase their vulnerability and jeopardize their safety. This often results from a lack of timely maintenance to repair problematic sections of the sidewalk infrastructure. Implementation of a sidewalk management system could help ensure that safe infrastructure is available for pedestrians to use, lowering the number of injuries and fatalities.

Curbside Management

Transportation Network Companies (TNCs) such as Uber and Lyft have catalyzed significant changes in the way people travel in recent years. They have increased the number of choices that travelers have with respect to when and how they travel, but they have also generated additional vehicle trips, vehicle miles traveled, and passenger loading activity at the curb and in the street, potentially impacting street safety.

Given the increased curbside activity that has largely been spurred by TNCs, pedestrian safety experts recommend a portfolio of measures to address all the potential risk factors that affect street safety. These measures are grouped into four categories: technology, curb management, education, and enforcement. Examples include geo-fencing high-conflict areas and guiding drivers and passengers to safer loading locations, pricing on-street parking spaces to create more vacant curb space to allow more loading to occur at the curb, requiring for-hire drivers to be trained on where to pick up and drop off passengers, and installing automated enforcement technology to guide behavior.

Key resources:

- > *Curbside Management Practitioner's Guide*, Institute of Transportation Engineers (ITE)
- > *Curb Appeal: Curbside Management Strategies for Improving Transit Reliability*, National Association of City Transportation Officials (NACTO)
- > Best practices from other cities, such as *Right-of-Way Allocation Decision Framework*, City of Seattle

Future Fleets

Autonomous vehicles (AVs) promise to revolutionize transportation safety through such improvements as reducing human error and eliminating high-risk driving behavior. The National Highway Traffic Safety Administration (NHTSA) estimates that 94-percent of severe crashes are due to human error; shifting to AV technology could significantly reduce such crashes. However, AVs may pose challenges that could negatively impact safety. Overall crash risk could ultimately be heightened by such factors as hardware and software failures, malicious hacking, increased total vehicle travel, and increased vehicle platooning. AVs also pose unique risks for people walking and biking. Currently, many AV technologies that are being tested have low detection of bicyclists and pedestrians because they rely primarily on cues from the built environment. These technologies excel at detecting other vehicles and roadway infrastructure, but until they are able to detect bicyclists and pedestrians with equal accuracy, AVs will not increase safety for people traveling by bike or on foot.

Key resources:

- > *Blueprint for Autonomous Urbanism*, National Association of City Transportation Officials (NACTO)
- > *Discussion Guide for Automated and Connected Vehicles, Pedestrians, and Bicyclists*, Pedestrian and Bicycle Information Center
- > *Preparing for the Future of Transportation: Automated Vehicle 3.0*, U.S. Department of Transportation

NON-ENGINEERING SAFETY STRATEGIES

Education

Education pertains to programs that seek to educate roadway users of all types about the rules that govern the roadway and how to prevent crashes. Such programs can be structured classes such as road school for cyclists, or outreach campaigns such as signs that discourage distracted driving.

There are existing regional and statewide programs that Lancaster can deploy locally such as the Southern California Association of Governments (SCAG) and Caltrans campaigns listed below.

- > SCAG Go Human is an outreach and advertising campaign that aims to reduce crashes and promote walking and biking. Individual cities can participate in this effort by working with SCAG to deploy co-branded signs, banners and postcards within their jurisdiction. SCAG also makes available a media kit and radio ads for local use.
- > Caltrans partnered with local agencies in Southern California to deploy “Look Both Way” billboards in response to an increase in pedestrian crashes.

Furthermore, Lancaster can develop targeted outreach education campaigns that focus on the common violations that lead to fatalities and severe injuries in Lancaster. Based on common crash types over the past five years in Lancaster, education and outreach campaigns may include the programs listed here.

For drivers this may include:

- > Signs that emphasize that speeding is deadly because unsafe speeding caused 15% of crashes and 9% of fatal crashes.
- > Signs reinforcing which road user has the right-of-way in different scenarios because improper turning caused 17% and vehicle right-of-way violation caused 21% of total crashes.

For people biking:

- > Class that teaches bicyclists how to use on-street bike facilities, especially for facility types that are new to the City.

For people walking:

- > Education in schools about crossing the street because pedestrian violations caused 22% of fatal crashes.
- > Signs that encourage crossing in crosswalks because during the analysis period, 99 pedestrian crashes occurred when a pedestrian was crossing not in a crosswalk. Although, other approaches are also needed to mitigate pedestrian crash because as many pedestrian crashes occurred when a pedestrian was crossing in a crosswalk.

Enforcement

Data-driven enforcement is an important safety strategy, allowing the City to focus existing resources on locations with a history of severe crashes and the highest risk behaviors leading to severe crashes.

Appendix D contains cut sheets recommending two potential targeted enforcement scenarios to promote roadway safety in Lancaster. Each scenario highlights the top locations where crashes caused by certain roadway violations occurred. The locations identified in these scenarios overlap with many KSI crashes in Lancaster and recommend targeting enforcement at violations that will mitigate those severe and fatal crashes. This approach takes the focus away from expanding police presence and instead recommends targeting existing law enforcement resources at the most frequent locations and behavioral causes of severe crashes instead.

Equity

Equity applies to each component of a holistic safety approach: engineering, education, and enforcement. Equity is an important consideration for engineering improvements as it relates to site selection for the improvements. With limited resources to fund roadway changes, it is important not to perpetuate a pattern of historic disinvestment by focusing improvements in neighborhoods which have received more investment in the past. Often, more fatal and severe crashes occur in disadvantaged neighborhoods, so targeting engineering investment into these neighborhoods can improve travel safety.

Education and outreach should also be infused with principles of equity. As the City seeks to communicate with the public about roadway safety, it should be in a meaningful and culturally-relevant manner. Beyond simply providing resources in the languages that constituencies speak, educational campaigns should meet communities where they are at. Working educational efforts into existing community events and partnering with trusted community organizations and leaders can improve efficacy and promote an equitable approach to roadway safety education.

Finally, while enforcement is part of a holistic approach to roadway safety, this consideration must be balanced against the risk of over-policing already vulnerable communities. The intention of the enforcement component of roadway safety is not to promote profiling or over policing. Rather, the intention is to target particularly dangerous behaviors that will have the most benefit to overall safety.

APPENDIX C

SUMMARY OF OUTREACH EVENTS



Comment Summary

June 14, 2018

The first effort to solicit information from the general public took place on June 14 at the Thursday evening Farmers' Market on Lancaster Boulevard. Project team members set up a table with information boards that displayed an overall goal to make streets safer through countermeasures, along with boards that illustrated common countermeasures that could be used for both pedestrian and bicycle safety. Team members talked to passersby and asked them about traffic safety issues, and particular locations where those issues take place. They received both general safety comments as well as comments about specific locations. Comments about traffic safety issues at specific locations were recorded on street maps of Lancaster. Photos of the marked-up maps are shown in Appendix -. Comments are shown below.

It should be noted that those who commented seemed to identify issues near where they live. While team members randomly talked to passersby, we have no assurance that they represent all areas of Lancaster evenly. Thus, the results shouldn't be perceived as statistically significant.

General Comments

- Motorists speeding (many times)
- Motorists don't look for pedestrians in crosswalks when turning right
- The City should lower the speed limits
- Motorists don't always stop for stop signs
- Like the roundabouts (2)
- There are many potholes and debris in the streets (3)
- Like the bike paths
- Like the bike lanes the City has put out, especially the buffered bike lanes (2)
- People drive in the bike lanes on Lancaster Boulevard to go around traffic (2)
- People drive in other bike lanes to go around traffic
- Most bicyclists ride on sidewalks (3)
- The streets are too fast to bicycle on
- We need more bike lanes

Location-Specific Comments

Intersections

East-West Street	North-South Street	Comments
Ave. I	20 th St. W	Difficult for pedestrians to cross
Jackman St.	10 th St. W	Westbound motorists turning northbound can't see pedestrians on the sidewalk
Lancaster Blvd.	Sierra Hwy.	Difficult for pedestrians to cross Sierra Hwy.
Newgrove St.	16 th St. W	Sightline issues
Ave. J	Sierra Hwy.	Difficult for pedestrians to cross
Ave. J	20 th St. E	Bad intersection
Ave. J-4	15 th St. E	Left turns are difficult to make
Ave. J-8	Division St.	Speeding
Ave. J-8	20 th St. E	Left turns
Ave. K	Near Yew St.	Need a pedestrian crossing from Rawley Duntley Park to the north side
Ave. K	20 th St. W, 17 th St. W	Pedestrian crossing need improvement
Ave. K	10 th St. W	Turning issues
Ave. K	25 th St. W	Southbound motorists turning west bound can't see pedestrians
Ave. K-8	Challenger Way	Difficult for pedestrians to cross
Ave. L	37 th St. W	Westbound motorists turning southbound don't stop for pedestrians

Linear Street Segments

Street	From	To	Comments
Lancaster Blvd.	20 th St. W	10 th St. W	Need wider sidewalks
Ave. J	110 th St. W	30 th St. W	Need bike lanes
Ave. J	All		Speeding
Ave. J-8	15 th St. E	20 th St. E	Speeding
Ave. K-8	5 th St. E	Challenger Way	Potholes
20 th St. W	Ave. H-4	Lancaster Blvd.	Racing
Sierra Hwy.	Ave. I	Ave. J-8	Speeding, bad pavement
Division St.	All		Speeding
12 th St. W	Ave. J-4	Ave. J-12	Speeding
30 th St. W	Ave. L	Ave. M	Speeding
Area near 50 th St. W to and 65 th St. W, and south of Ave. K			No sidewalks, no street lights



Comment Summary

September 27, 2018 | 3:30 PM

Countermeasure Board Post-It Comments:

Bicycle Safety Countermeasures Board

- Families need a safe place designated for bicycles only to ride.
- Protected bike lanes are necessary! Adding substantial protection, curbing, islands and other permanent measures to existing bicycles lanes is needed.
- Plastic barrier cones are not enough protection from traffic.
- Prefer buffered/separated bike lanes with continuous landscaping and trees for visual narrowing, or planters like Santa Monica.
- Prefer 3' wide buffer from traffic. (on "buffered bike lanes")

Pedestrian Safety Countermeasures Board

- Make safe planter adjacent to sidewalk. (planter strip)
- In commercial areas add raised pedestrian crossing in front of driveways and drive thrus.
- Prefer landscaping in median – planters or continuous. (on "pedestrian crossing islands")
- Smiley faces (likes) on:
 - Advance yield lines
 - Curb ramps
 - Curb extensions

Other Roadway Safety Countermeasures

- Access issues at driveways where medians have gone in. (on "medians")
- Smiley faces (likes) on:
 - Neighborhood traffic circles
 - Road diets ("safety" written)
 - Roundabouts

Map Comments:

- Collisions at K-8/Challenger
 - Need to slow cars on challenger
 - Maybe an all-way stop
 - Area for submitted HSIP grant by City
- Signal at 15th St W/Ave K is causing congestion

- Examine signal timing?

Meeting Comments:

- Roundabouts
 - Opinion is dependent on education, experience with them
 - People's opinions have changed positively over time
 - Proper signage should accompany roundabouts
 - Roundabouts in the City currently planned for several locations throughout the City
- Education workshop in conjunction with opening of project
 - Roundabouts, bike lanes
 - Opportunities for dry runs or demonstrations before a project opens
 - Resources/staff available within the first few weeks of new project opening
- Issue with aggressive driving
- Opportunities to reduce speed limit?
- Benefits of implementing Master Plan of Trails and Bikeways
 - Safety/crash reduction benefits
 - Filling gaps in the network to make it easier to get around by bike
 - Traffic calming benefits
- Protected bike lanes would provide more opportunities for people of varying interest, age, and ability to ride
- Elementary school district representative:
 - LED light stop signs near schools have been installed in some places and have been popular
 - Could LED light school crossing signs also be installed?
 - Analysis of crashes by time of day, time of year could help determine good candidate locations
 - Issues with trees/bushes covering signage (especially at night)
 - Opportunity to mark school bus stops?
 - Increase enforcement for stopping behind buses
 - Opportunities for enhanced pedestrian crossings (eg. in-roadway reflectors on crosswalks)
 - ADA considerations and would need to work with city to designate so that investment in stops infrastructure isn't lost if bus stop location needs to change
- Opportunities for City to be more communicative with community about strategies, why they are being pursued, and what the benefits are to the city residents

APPENDIX D

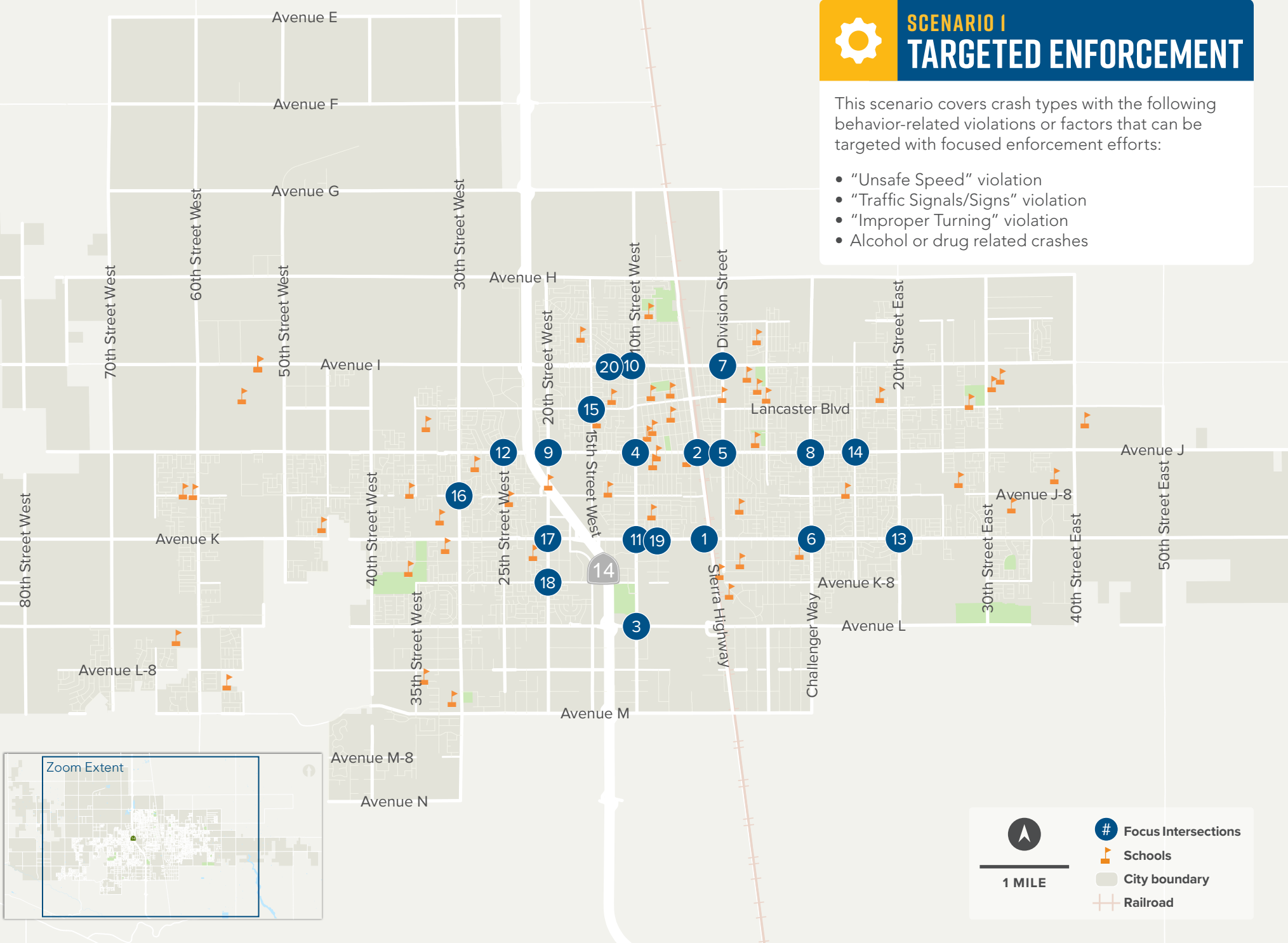
SCENARIO PLANNING CUT-SHEETS



SCENARIO I TARGETED ENFORCEMENT

This scenario covers crash types with the following behavior-related violations or factors that can be targeted with focused enforcement efforts:

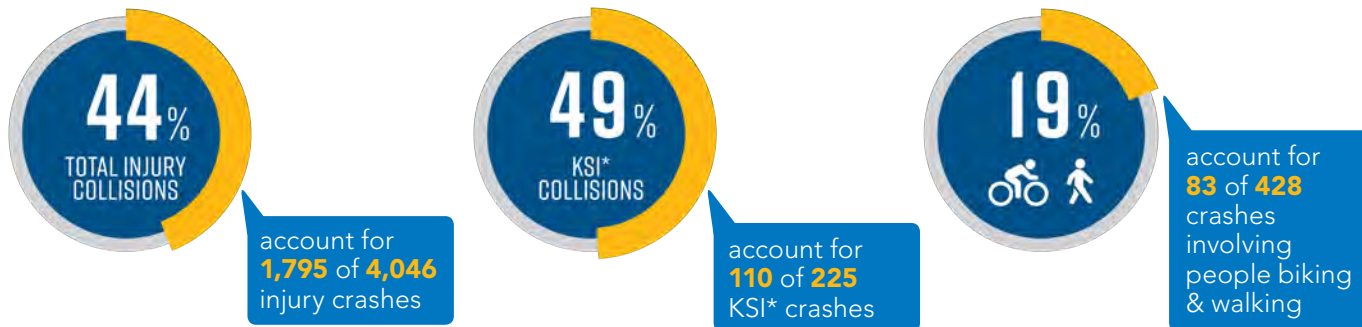
- "Unsafe Speed" violation
- "Traffic Signals/Signs" violation
- "Improper Turning" violation
- Alcohol or drug related crashes



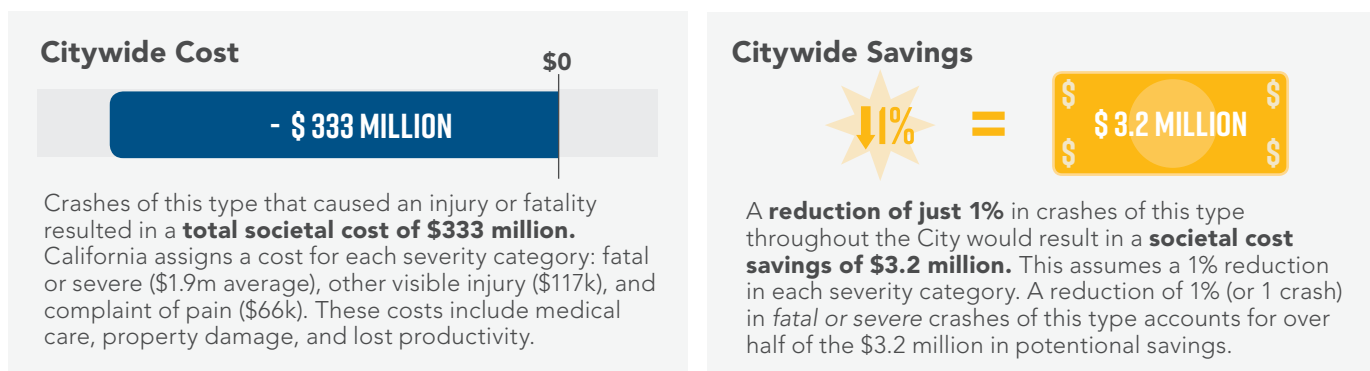
Focus Intersections
 Schools
 City boundary
 Railroad
 1 MILE

WHAT DO WE KNOW ABOUT THESE CRASHES?

January 1, 2013 - December 31, 2017



WHAT IS THE SOCIETAL COST OF THESE CRASHES?



WHAT CAN WE DO TO MAKE OUR STREETS SAFER?

TARGETED ENFORCEMENT



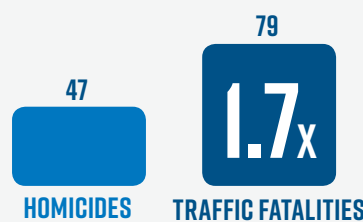
Refocus traffic enforcement efforts on violations resulting in the greatest number of severe and fatal crashes in the areas where crashes caused by those violations occur most often.

EDUCATION & OUTREACH



Partner with law enforcement to develop education and outreach programs and campaigns aimed at raising awareness around traffic violations resulting in the greatest number of severe and fatal crashes.

Traffic fatalities greatly outnumbered homicides in Lancaster between 2013 and 2017.



Los Angeles Times Homicide Report, accessed October 2018.

TOP 20 INTERSECTIONS

- 1 Sierra Hwy & Avenue K
- 2 Sierra Hwy & Avenue J
- 3 10th St W & Avenue L
- 4 10th St W & Avenue J
- 5 Divison St & Avenue J
- 6 Challenger Way & Avenue K
- 7 Divison St & Avenue I
- 8 Challenger Way & Avenue J
- 9 20th St W & Avenue J
- 10 10th St W & Avenue I
- 11 10th St W & Avenue K
- 12 25th St W & Avenue J
- 13 20th St E & Avenue K
- 14 15th St E & Avenue J
- 15 15th St W & Lancaster Blvd
- 16 30th St W & Avenue J-8
- 17 20th St W & Avenue K
- 18 20th St W & Avenue K-8
- 19 Gadsden Ave & Avenue K
- 20 13th St W & Avenue I

*KSI = crashes where someone was killed or severely injured.

Statistics based on City's database of collisions from January 1, 2013 through December 31, 2017. This analysis includes only collisions that resulted in an injury or fatality. Collisions resulting only in property damage are excluded from this analysis.

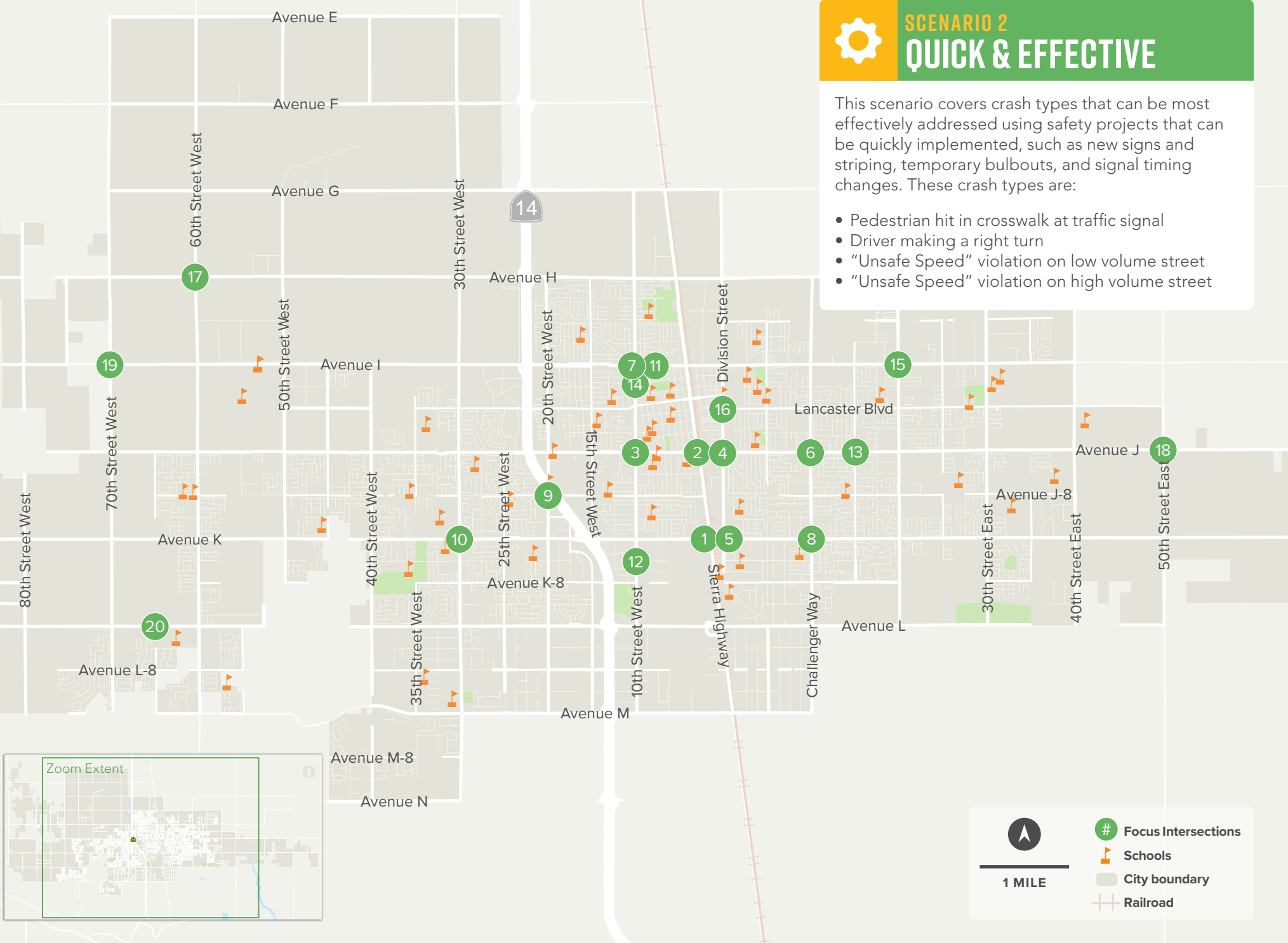
Cost calculations based on the 2016 California Local Roadway Safety Manual. Fatal and Severe Injury crash cost averaged across the three location types. All costs adjusted for inflation and shown in 2019 dollars.



SCENARIO 2 QUICK & EFFECTIVE

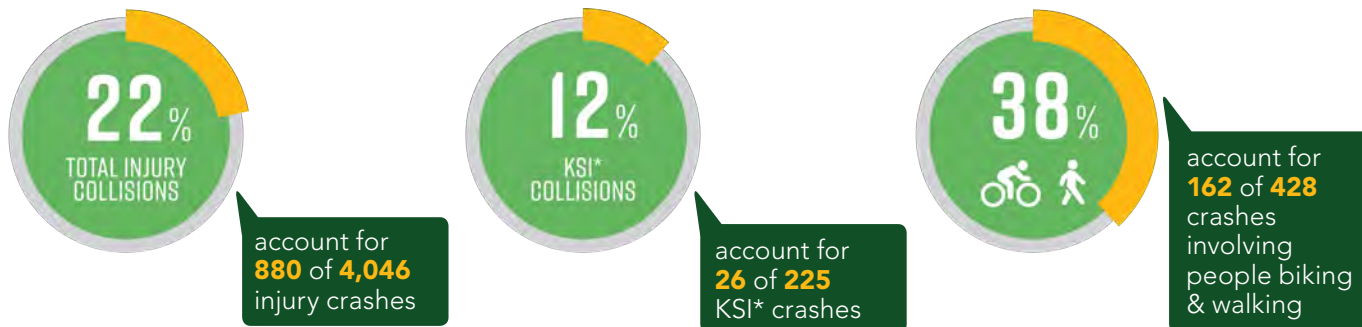
This scenario covers crash types that can be most effectively addressed using safety projects that can be quickly implemented, such as new signs and striping, temporary bulbouts, and signal timing changes. These crash types are:

- Pedestrian hit in crosswalk at traffic signal
- Driver making a right turn
- "Unsafe Speed" violation on low volume street
- "Unsafe Speed" violation on high volume street

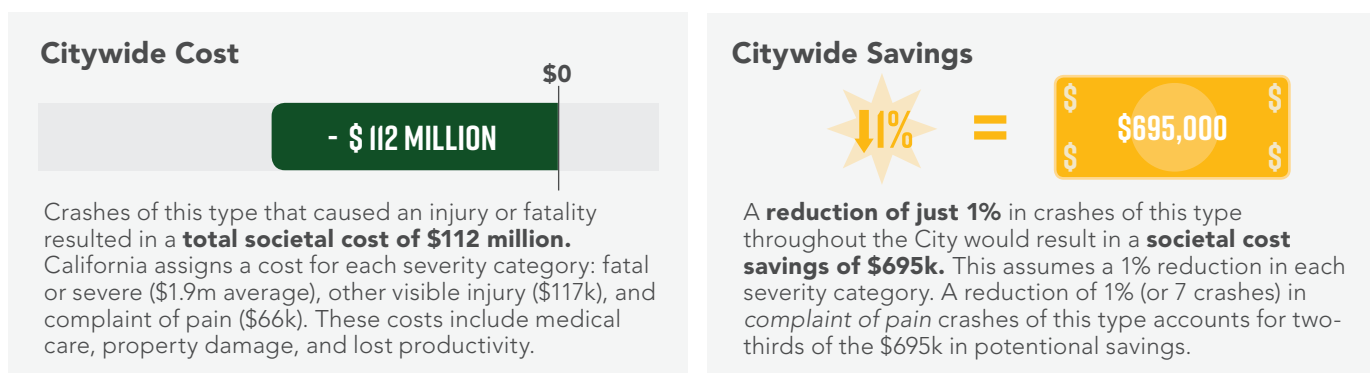


WHAT DO WE KNOW ABOUT THESE CRASHES?

January 1, 2013 - December 31, 2017



WHAT IS THE SOCIETAL COST OF THESE CRASHES?



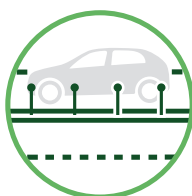
WHAT CAN WE DO TO MAKE OUR STREETS SAFER?

LEADING PEDESTRIAN INTERVAL



Gives people walking a head start, making them more visible to drivers turning right or left. "WALK" signal comes on a few seconds before the cars get their green light. May be used in combination with No Right Turn on Red restrictions.

QUICK BUILD TRAFFIC CALMING



Using low-cost materials to build projects aimed at reducing travel and turning speed that provide additional safety benefits for people biking and walking. Projects could include curb extensions, medians, traffic circles, or traffic diverters.

SPEED FEEDBACK SIGN



Speed feedback signs use radar to show drivers their speeds in real-time, serving as a reminder to slow down and drive within the speed limit.

TOP 20 INTERSECTIONS

- 1 Sierra Hwy & Avenue K
- 2 Sierra Hwy & Avenue J
- 3 10th St W & Avenue J
- 4 Divison St & Avenue J
- 5 Divison St & Avenue K
- 6 Challenger Way & Avenue J
- 7 10th St W & Avenue I
- 8 Challenger Way & Avenue K
- 9 20th St W & Avenue J-8
- 10 30th St W & Avenue K
- 11 Fern Ave & Avenue I
- 12 10th St W & Avenue K-4
- 13 15th St E & Avenue J
- 14 10th St W & Jackman St
- 15 20th St E & Avenue I
- 16 Divison St & Milling St
- 17 60th St West & Avenue H
- 18 50th St East & Avenue J
- 19 70th St West & Avenue I
- 20 65th St W & Avenue L

*KSI = crashes where someone was killed or severely injured.

APPENDIX E

**HSIP
ANALYZER
TOOLS**



HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Loc1_2_8

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:

(limited to 250 characters)

Project Description:

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1:	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
CM No. 2:	S20: Install pedestrian crossing (S.I.)
CM No. 3:	

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (S2)	% for CM#2 (S20)	% for CM#3 (NA)	% for OS*	% for NS**
+ -	1	Signal hardware upgrades	ea	62	\$1093.00	67,766	100%	0%	0%	0%	0
+ -	2	New continental crosswalks	ea	8	\$2940.00	23,520	0%	100%	0%	0%	0
+ -	3	All other construction items	ls	1	\$8820.00	8,820	%	%	%	100%	0
+ -	4	Mobilization	ls	1	\$10011.00	10,011	33%	33%	0%	34%	0
+ -	5	Traffic control	ls	1	\$10011.00	10,011	33%	33%	0%	34%	0
		Weighted Average (%)					62%	25%		13%	
		Total (\$)				\$120,128					

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:
(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies):
(Rounded up to the nearest hundreds)

I.3 Summary

2 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
S2	100%	61.91%	Yes (>=15% cost)	<input type="checkbox"/>
S20	100%	25.08%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. if an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 100.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. **This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).**

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. **"Total Cost"**: Round all costs up to the nearest hundred dollars.
- ii. **"HSIP/Total (%)"**: The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. **"HSIP Funds"** and **"Local/Other Funds"** are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

100 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Set

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$10,100	100 %	\$10,100	\$0
PS&E	\$15,200	100 %	\$15,200	\$0
Subtotal - PE	\$25,300	100 %	\$25,300	\$0
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	100 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	100 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$15,200	100 %	\$15,200	\$0
Construction Items	\$144,200 <small>(Read only - from Section I)</small>	100 %	\$144,200	\$0
Subtotal - Construction	\$159,400	100 %	\$159,400	\$0
PROJECT TOTAL	\$184,700	100 %	\$184,700	\$0

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
	GROUP 1		Select Location Type:	S (Signalized Intersections)
<input type="button" value="+"/> <input type="button" value="-"/>	1	G1-1	Locations 2, 8	
	GROUP 2		Select Location Type:	S (Signalized Intersections)
<input type="button" value="+"/> <input type="button" value="-"/>	2	G2-1	Locations 1, 2, 8	

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 2

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: S (Signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input type="checkbox"/>	1	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S	0.15	10	All	100%
<input checked="" type="checkbox"/>	2	S20: Install pedestrian crossing (S.I.)	S	0.25	20	Ped & Bike	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) Ped & Bike

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

No.	Location (from Table III.1)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	Locations 2, 8	0	0	1	4	1	6
	Total	0	0	1	4	1	6

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 2 of 2

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: S (Signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S	0.15	10	All	100%
<input type="checkbox"/>	2	S20: Install pedestrian crossing (S.I.)	S	0.25	20	Ped & Bike	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Locations 1, 2, 8	1	4	13	64	158	240
	Total	1	4	13	64	158	240

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 184700

2 countermeasures are eligible in benefit calculation. (S2 S20)

Project location(s) are divided into 2 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: S (Signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (S20) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: Ped & Bike: 0,0,1,4,1	\$0	\$425,900	\$0	\$425,900
2	Location type: S (Signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (S2) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 1,4,13,64,158	\$4,623,151	\$0	\$0	\$4,623,151
Sum		\$4,623,151	\$425,900	\$0	\$5,049,051

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	S2	\$4,623,151	\$131,451	35.2
2	S20	\$425,900	\$53,249	8
3		\$0	\$0	0
	Entire Project	\$5,049,051	\$184,700	27.3

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 2

S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

S20: Install pedestrian crossing (S.I.)

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$184,700
HSIP Funds Requested:	\$184,700
Max. Federal Reimbursement Ratio (FRR):	100%
Total Expected Benefit:	\$5,049,051
Benefit Cost Ratio:	27.34

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Loc3_11_12

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:

(limited to 250 characters)

Project Description:

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- o Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- o Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- o Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1:	S6: Provide protected left turn phase (left turn lane already exists)
CM No. 2:	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number
CM No. 3:	

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (S6)	% for CM#2 (S2)	% for CM#3 (NA)	% for OS*	% for NS**
+ -	1	Signal modification to convert protected/permissive to protected lefts on two approaches	ea	3	150,000	450,000	100%	%	%	%	0
+ -	2	Signal hardware upgrades	ea	45	\$1093.00	49,185	%	100%	%	%	0
+ -	3	All other construction items	ls	1	\$60580.00	60,580	%	%	%	100%	0
+ -	4	Mobilization	ls	1	\$55977.00	55,977	33%	33%	0%	34%	0
+ -	5	Traffic Control	ls	1	\$55977.00	55,977	33%	33%	0%	34%	0
		Weighted Average (%)					72%	13%		15%	
		Total (\$)				\$671,719					

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

I.3 Summary

2 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
S6	100%	72.49%	Yes (>=15% cost)	<input type="checkbox"/>
S2	100%	12.82%	Yes (<15% cost) (Exception being requested)	<input checked="" type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. If an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 100.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. "**Total Cost**": Round all costs up to the nearest hundred dollars.
- ii. "**HSIP/Total (%)**": The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. "**HSIP Funds**" and "**Local/Other Funds**" are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$56,100	100 %	\$56,100	\$0
PS&E	\$84,100	100 %	\$84,100	\$0
Subtotal - PE	\$140,200	100 %	\$140,200	\$0
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	100 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	100 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	%	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$84,100	100 %	\$84,100	\$0
Construction Items	\$806,100 <small>(Read only - from Section I)</small>	100 %	\$806,100	\$0
Subtotal - Construction	\$890,200	100 %	\$890,200	\$0
PROJECT TOTAL	\$1,030,400	100 %	\$1,030,400	\$0

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+" / "-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
GROUP 1			Select Location Type:	S (Signalized Intersections)
+	1	G1-1	Locations 3, 12, 13	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 1

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: S (Signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	S6: Provide protected left turn phase (left turn lane already exists)	S	0.3	20	All	100%
<input checked="" type="checkbox"/>	2	S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	S	0.15	10	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Locations 3, 12, 13	2	4	33	63	125	227
	Total	2	4	33	63	125	227

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 1030400

2 countermeasures are eligible in benefit calculation. (S6 S2)

Project location(s) are divided into 1 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: S (Signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 2 (S6 S2) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 2,4,33,63,125	\$21,590,689	\$5,113,585	\$0	\$26,704,274
Sum		\$21,590,689	\$5,113,585	\$0	\$26,704,274

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	S6	21,590,689	\$875,537	24.7
2	S2	\$5,113,585	\$154,863	33
3		\$0	\$0	0
	Entire Project	26,704,274	\$1,030,400	25.9

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 2

S6: Provide protected left turn phase (left turn lane already exists)

S2: Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$1,030,400
HSIP Funds Requested:	\$1,030,400
Max. Federal Reimbursement Ratio (FRR):	100%
Total Expected Benefit:	26,704,274
Benefit Cost Ratio:	25.92

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Loc4_5_7

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:

(limited to 250 characters)

Project Description:

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
- Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- o Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- o Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- o Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1:	NS8: Install flashing beacons as advance warning (NS.I.)
CM No. 2:	NS10: Improve sight distance to intersection (Clear Sight Triangles)
CM No. 3:	R37: Install sidewalk/pathway (to avoid walking along roadway)

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (NS8)	% for CM#2 (NS10)	% for CM#3 (R37)	% for OS*	% for NS**
+ -	1	NS8 - Add LED lights to stop signs with solar power	ea	8	\$3000.00	24,000	100%	%	%	%	0
+ -	2	Striping curb extensions to improve sight lines	lf	3,220	\$3.00	9,660	%	100%	%	%	0
+ -	3	New sidewalk	sf	8,075	\$43.00	347,225	%	%	100%	%	0
+ -	4	All other construction items	ls	1	\$41457.00	41,457	%	%	%	100%	0
+ -	5	Mobilization	ls	1	\$42234.00	42,234	25%	25%	25%	25%	0
+ -	6	Traffic control	ls	1	\$42234.00	42,234	25%	25%	25%	25%	0
		Weighted Average (%)					9%	6%	73%	12%	
		Total (\$)				\$506,810					

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

I.3 Summary

3 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
NS8	100%	8.90%	Yes (<15% cost) (Exception being requested)	<input checked="" type="checkbox"/>
NS10	90%	6.07%	Yes (<15% cost) (Exception being requested)	<input checked="" type="checkbox"/>
R37	90%	72.68%	Yes (>=15% cost)	<input type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. if an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 90.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. **"Total Cost"**: Round all costs up to the nearest hundred dollars.
- ii. **"HSIP/Total (%)"**: The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. **"HSIP Funds"** and **"Local/Other Funds"** are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

90 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Set

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$42,400	90 %	\$38,160	\$4,240
PS&E	\$63,600	90 %	\$57,240	\$6,360
Subtotal - PE	\$106,000	90 %	\$95,400	\$10,600
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	90 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$38,900	90 %	\$35,010	\$3,890
Subtotal - Right of Way (ROW)	\$38,900	90 %	\$35,010	\$3,890
Construction (CON) Phase				
Construction Engineering (CE)	\$63,600	90 %	\$57,240	\$6,360
Construction Items	\$608,200 <small>(Read only - from Section I)</small>	90 %	\$547,380	\$60,820
Subtotal - Construction	\$671,800	90 %	\$604,620	\$67,180
PROJECT TOTAL	\$816,700	90 %	\$735,030	\$81,670

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into 4 groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
	GROUP 1		Select Location Type:	NS (Non-signalized Intersections)
+	1	G1-1	Location 4	
-				
	GROUP 2		Select Location Type:	NS (Non-signalized Intersections)
+	2	G2-1	Location 5	
-				
	GROUP 3		Select Location Type:	NS (Non-signalized Intersections)
+	3	G3-1	Location 7	
-				
	GROUP 4		Select Location Type:	R (Roadways)
+	4	G4-1	Locations 4 and 7	
-				

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 4

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS8: Install flashing beacons as advance warning (NS.I)	NS	0.3	10	All	100%
<input checked="" type="checkbox"/>	2	NS10: Improve sight distance to intersection (Clear Sight Triangles)	NS	0.2	10	All	90%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Location 4	0	1	3	3	2	9
	Total	0	1	3	3	2	9

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 2 of 4

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS8: Install flashing beacons as advance warning (NS.I.)	NS	0.3	10	All	100%
<input type="checkbox"/>	2	NS10: Improve sight distance to intersection (Clear Sight Triangles)	NS	0.2	10	All	90%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Location 5	2	0	0	0	0	2
	Total	2	0	0	0	0	2

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 3 of 4

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input type="checkbox"/>	1	NS8: Install flashing beacons as advance warning (NS.I)	NS	0.3	10	All	100%
<input checked="" type="checkbox"/>	2	NS10: Improve sight distance to intersection (Clear Sight Triangles)	NS	0.2	10	All	90%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Location 7	1	0	0	0	3	4
	Total	1	0	0	0	3	4

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 4 of 4

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: R (Roadways)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	R37: Install sidewalk/pathway (to avoid walking along roadway)	R	0.8	20	Ped & Bike	90%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) Ped & Bike

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

No.	Location (from Table III.1)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	Locations 4 and 7	1	1	3	3	5	13
	Total	1	1	3	3	5	13

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 816700

3 countermeasures are eligible in benefit calculation. (NS8 NS10 R37)

Project location(s) are divided into 4 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 2 (NS8 NS10) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 0,1,3,3,2	\$1,546,407	\$1,030,938	\$0	\$2,577,345
2	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (NS8) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 2,0,0,0,0	\$2,772,001	\$0	\$0	\$2,772,001
3	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 1 (NS10) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 1,0,0,0,3	\$0	\$938,160	\$0	\$938,160
4	Location type: R (Roadways) Number of location(s): 1 Number of selected countermeasure(s): 1 (R37) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: Ped & Bike: 1,1,3,3,5	\$0	\$0	\$14,893,440	\$14,893,440
Sum		\$4,318,408	\$1,969,098	\$14,893,440	\$21,180,946

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	NS8	\$4,318,408	\$82,945	52.1
2	NS10	\$1,969,098	\$56,582	34.8
3	R37	14,893,440	\$677,174	22
	Entire Project	21,180,946	\$816,700	25.9

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 3

NS8: Install flashing beacons as advance warning (NS.I.)

NS10: Improve sight distance to intersection (Clear Sight Triangles)

R37: Install sidewalk/pathway (to avoid walking along roadway)

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$816,700
HSIP Funds Requested:	\$735,030
Max. Federal Reimbursement Ratio (FRR):	90%
Total Expected Benefit:	21,180,946
Benefit Cost Ratio:	25.93

HSIP ANALYZER

Cost Estimate, Crash Data and Benefit Cost Ratio (BCR) Calculation for Highway Safety Improvement Program (HSIP) Application

Important: Review and follow the step-by-step instructions in "[Manual for HSIP Analyzer](#)". Completing the HSIP Analyzer without referencing to the manual may result in an application with fatal flaws that will be disqualified from the ranking and selection process.

All yellow highlighted fields must be filled in. The gray fields are calculated and read-only. This is a dynamic form (later steps vary depending on the data entered in earlier steps). If any error messages in red appear, fix the errors prior to proceeding to the next steps.

1. Application ID, Project Location and Project Description (copy from the HSIP Application Form):

Application ID:

Loc6_9_10

Save this file using the Application ID plus "Calc" as the file name (e.g. "07-Los Angeles-01Calc.pdf").

Project Location:

(limited to 250 characters)

Project Description:

(limited to 250 characters)

2. Application Category (Check one):

Application Categories that require a Benefit Cost Ratio (BCR):

- Common BCR Application Set-aside for High Friction Surface Treatment

Application Categories that do NOT require a Benefit Cost Ratio (BCR):

- Set-aside for Guardrail Upgrades Set-aside for Horizontal Curve Signing
 Set-aside for Pedestrian Crossing Enhancements Set-aside for Tribes

Dual consideration?

- If an Application Category that does not require a BCR is selected above, check this box to indicate your desire that this application will be considered as a Common BCR Application as well in case it does not get selected for funding under the set-aside category. If this box is checked, a benefit cost analysis is required so the project will have a BCR.

A safety benefit cost analysis is required for this application. This tool will guide through cost estimate, safety benefit evaluation and Benefit Cost Ratio (BCR) calculation.

Section I. Construction Cost Estimate and Cost Breakdown

The purpose of this section is to:

- o Provide detailed engineer's estimate (for construction items only). The costs for other phases (PE, ROW, and CE) will be included in Section II.
- o Test if countermeasures (CMs) (up to 3) are eligible for being used in the project benefit calculation. For a CM to be used in the project benefit calculation, the construction cost of the CM must be at least 15% of the project's total construction cost, unless an exception is requested. And
- o Determine the project's maximum Federal Reimbursement Ratio (FRR).

I.1 Select up to 3 countermeasures (CMs) to be tested in the Engineer's Estimate:

Number of CMs to be used in this project:

CM No. 1:	NS18: Install pedestrian crossing at uncontrolled locations (with enhanced safety features)
CM No. 2:	R36: Install bike lanes
CM No. 3:	NS5: Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs

I.2 Detailed Engineer's Estimate for Construction Items:

Cost breakdown by CMs. For each item, enter a cost percentage for each of the CMs and "Other Safety-Related" (OS) components. (e.g. enter 10 for 10%). The cost % for "Non-Safety-Related" (NS) components is calculated.

	No.	Item Description	Unit	Quantity	Unit Cost	Total	% for CM#1 (NS18)	% for CM#2 (R36)	% for CM#3 (NS5)	% for OS*	% for NS**
+ -	1	RRFB	ea	1	\$40000.00	40,000	100%	%	%	%	0
+ -	2	Bike lanes	lf	4,360	\$12.00	52,320	%	100%	%	%	0
+ -	3	Post mounted signs	ea	4	\$1100.00	4,400	%	%	100%	%	0
+ -	4	All other construction items	ls	1	\$42618.00	42,618	%	%	%	100%	0
+ -	5	Mobilization	ls	1	\$13934.00	13,934	25%	25%	25%	25%	0
+ -	6	Traffic control	ls	1	\$13934.00	13,934	25%	25%	25%	25%	0
		Weighted Average (%)					28%	35%	7%	30%	
		Total (\$)				\$167,206					

* % for OS: Cost % for Other Safety-Related components;

** % for NS: Cost % for Non Safety-Related components.

Contingencies, as % of the above "Total" of the construction items:

(e.g. enter 10 for 10%)

Total Construction Cost (Con Items & Contingencies):

(Rounded up to the nearest hundreds)

I.3 Summary

3 CM(s) are eligible to be used in the project benefit calculation.

Countermeasure ID	Federal Funding Eligibility (FFE)	Cost %	Eligible to be used in benefit calculation?	Request exception to the 15% rule*
NS18	100%	28.09%	Yes (>=15% cost)	<input type="checkbox"/>
R36	90%	35.46%	Yes (>=15% cost)	<input type="checkbox"/>
NS5	100%	6.80%	Yes (<15% cost) (Exception being requested)	<input checked="" type="checkbox"/>

*By requesting an exception to the 15% rule, the CM with less than 15% of the construction cost will then be eligible to be used in the benefit calculation. if an exception is requested for any CM(s) above, please provide the reason (low cost treatment with significant safety benefits, etc.):

Project's Maximum Federal Reimbursement Ratio = 90.0%

The project's Maximum Federal Reimbursement Ratio is calculated as the least of the FFEs of the above countermeasures, minus the percentage of the non-safety related costs in excess of 10%. This is the maximum value allowed to be entered in "HSIP/Total (%)" column in Section II (Project Cost Estimate).

Section II. Project Cost Estimate

All project costs, for all phases and by all funding sources, must be accounted for on this form.

- i. "**Total Cost**": Round all costs up to the nearest hundred dollars.
- ii. "**HSIP/Total (%)**": The maximum allowed is the project's Federal Reimbursement Ratio (FRR) as determined in Section I. Click the button to assign the maximum to all, OR enter if not the maximum.
- iii. "**HSIP Funds**" and "**Local/Other Funds**" are calculated.

Pay attention to the interactive warning/error messages below the table. The messages, if any, must be fixed, or exceptions should be justified in Question No. 5 in Section II of the HSIP Application Form.

Project's maximum Federal Reimbursement Ratio (FRR)
(from Section I, rounded up to integer)

90 %

To set all "HSIP/Total (%)" in the below table
to the above maximum FRR, click "Set":

Set

Description	Total Cost	HSIP/Total (%)	HSIP Funds	Local/Other Funds
Preliminary Engineering (PE) Phase				
Environmental	\$14,200	90 %	\$12,780	\$1,420
PS&E	\$21,100	90 %	\$18,990	\$2,110
Subtotal - PE	\$35,300	90 %	\$31,770	\$3,530
Right of Way (ROW) Phase				
Right of Way Engineering	\$0	90 %	\$0	\$0
Appraisals, Acquisitions & Utilities	\$0	90 %	\$0	\$0
Subtotal - Right of Way (ROW)	\$0	90 %	\$0	\$0
Construction (CON) Phase				
Construction Engineering (CE)	\$21,100	90 %	\$18,990	\$2,110
Construction Items	\$200,700 <small>(Read only - from Section I)</small>	90 %	\$180,630	\$20,070
Subtotal - Construction	\$221,800	90 %	\$199,620	\$22,180
PROJECT TOTAL	\$257,100	90 %	\$231,390	\$25,710

Agency does NOT request HSIP funds for PE Phase (automatically checked if PE - HSIP funds is \$0).

Interactive Warning/Error Messages:

If there are any messages in the below box, please fix OR explain justification for exceptions in Question No 5, Section II in the HSIP Application.

Section III. Project Location Groups, Countermeasures and Crash Data

The benefit of an HSIP safety project is achieved by reducing potential future crashes due to the application of the safety countermeasures (CMs). In this section, you will need to provide information regarding the project's safety CMs and historical crash data at the project sites. The data will be used to estimate the project benefit in Section IV.

1. Divide the project locations into groups.

It is quite often that an HSIP project has multiple locations. Theoretically the benefit for every single location may be calculated separately and then sum them up. However, that may be time consuming or almost impossible when there are a lot of locations. It is more efficient that the project locations with exactly the same safety countermeasures are combined into a group. The benefits of the locations in the same group can then be calculated at once.

When only one group is needed:

If your project consists of only one location or multiple locations that have similar features, address similar safety issues and utilize the same countermeasure(s). The crash data of all the locations can be combined and only one group is needed.

When multiple groups are needed:

If your project include multiple locations that have various safety issues and the proposed safety improvements (countermeasures) are not exactly the same for all the locations. The locations must be divided into different groups. The project benefits are then calculated multiple times, once for each location group. The project total benefit is the sum of the benefits from the different groups.

It should be noted that within a group, all locations should be of the same type: Signalized Intersection (S), Non-Signalized Intersection (NS), or Roadway (R).

If necessary, you may explain the location grouping for your project in details in Question No. 3 (Crash Data Evaluation), Section II in the HSIP Application Form.

2. After the number of location groups is entered, one subform will be populated for each location group. For each location group:

1) First, select the applicable CMs. *Note: If a Roundabout CM (S18 or NS4A or NS4B) is selected, additional information is required.*

For each group, only the CMs of the same type as the group location type can be used. For example, if a group consists of 5 signalized intersections, only "Signalized Intersection" CMs may be used for this group.

2) Based on the selected CMs, crash data tables of the required types are displayed for data entry.

Different CMs will reduce crashes of different types during the life of the safety improvements. Depending on the selected CMs for the group, you will be required to fill in one or more crash data tables, for any combination of the five crash types (datasets): "All" , "Night" , Ped & Bike" , "Emergency Vehicle" , and "Animal" (Each of the later four datasets is a sub-dataset of the "All" dataset.)

For more information regarding grouping project locations and examples, please refer to the Manual for HSIP Analyzer.

III.1 List of Project Locations and Location Groups

List all locations/sites included in this project by groups. The locations entered in Table III.1 below will be automatically populated in the crash data tables in III.2.

Based on the criteria described on the last page, the locations/sites need to be divided into groups.

Table III.1 List of Project Locations by Groups

Highlighted fields must be filled in. For each group:

- 1) Must select a Location Type;
- 2) Initially each group has one location line. Click "+"/"-" to add a new line/delete an existing line;
- 3) Enter location description for each line. The same descriptions will be auto-populated in III.2.

*Note: If your project has a large number of locations, please aggregate some locations into one description, e.g. 10 stop controlled intersections, 5 horizontal curves, etc., as long as they have similar features and the safety improvements to be implemented are the same.

	No.	No. in Group	Location Description (Intersection Name or Road Limit or General Description)	
	GROUP 1		Select Location Type:	NS (Non-signalized Intersections)
<input type="button" value="+"/> <input type="button" value="-"/>	1	G1-1	Location 6	
	GROUP 2		Select Location Type:	R (Roadways)
<input type="button" value="+"/> <input type="button" value="-"/>	2	G2-1	Location 6	

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 1 of 2

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: NS (Non-signalized Intersections)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	NS18: Install pedestrian crossing at uncontrolled locations (with enhanced safety features)	NS	0.35	20	Ped & Bike	100%
<input checked="" type="checkbox"/>	2	NS5: Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	NS	0.15	10	All	100%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) All (2) Ped & Bike

Crash Data Table for Crash Type: ALL

No.	Location (from Table III.1)	Fatal (ALL)	Severe Injury (ALL)	Other Visible Injury (ALL)	Complaint of Pain (ALL)	PDO (ALL)	Total
1	Location 6	1	0	1	5	8	15
	Total	1	0	1	5	8	15

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

No.	Location (from Table III.1)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	Location 6	0	0	0	4	1	5
	Total	0	0	0	4	1	5

III.2: Countermeasures and Crash Data

(Repeats for each location group)

Countermeasures and Crash Data -Location Group No. 2 of 2

[Hide Group Details](#)

Step 1: Select countermeasure(s) to be applied to this location group

This group's location type: R (Roadways)

Please check the CMs for this location group. All the CMs that have passed the test in Section I AND match the location type of this group are listed below.

	No.	Countermeasure (CM) Name	CM Type*	Crash Reduction Factor (CRF)	Expected Life (Years)	Crash Type	Federal Funding Eligibility
<input checked="" type="checkbox"/>	1	R36: Install bike lanes	R	0.35	20	Ped & Bike	90%
*CM Type: S-Signalized Intersection; NS-Non-Signalized Intersection; R-Roadway.							

Step 2: Provide crash data.

2.1 Crash Data Period: must be between 3 and 5 years.

from (MM/DD/YYYY): To (MM/DD/YYYY): Crash Data Period (years) = 5

2.2 Fill out the crash data table(s) for the crash type(s) as required by the selected countermeasure(s) in Step 1.

Based on the countermeasures selected in Step 1, the crash data types to be provided are:

(1) Ped & Bike

Crash Data Table for Crash Type: Pedestrians and Bicyclists Involved (P&B)

No.	Location (from Table III.1)	Fatal (P&B)	Severe Injury (P&B)	Other Visible Injury (P&B)	Complaint of Pain (P&B)	PDO (P&B)	Total
1	Location 6	0	0	0	4	1	5
	Total	0	0	0	4	1	5

Section IV. Calculation and Results

Click the "Calculate" button to calculate. The script will first check if there are any errors or inconsistencies in the countermeasure selections and crash data. If errors are detected and displayed below, the errors must be fixed first before you click the "Calculate" button again. If no errors are displayed, the calculation results are provided in this section. Please refer to the Manual for HSIP Analyzer for details regarding possible errors.

Calculate

Project Summary Information:

Project Total Cost: 257100

3 countermeasures are eligible in benefit calculation. (NS18 R36 NS5)

Project location(s) are divided into 2 group(s) for calculating the benefits.

IV.1 Benefit Summary by location groups

Group No.	Group Info/Data*	Benefit from CM #1	Benefit from CM #2	Benefit from CM #3	Total Benefit of the group
1	Location type: NS (Non-signalized Intersections) Number of location(s): 1 Number of selected countermeasure(s): 2 (NS18 NS5) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: All: 1,0,1,5,8 Ped & Bike: 0,0,0,4,1	\$387,723	\$0	\$867,121	\$1,254,844
2	Location type: R (Roadways) Number of location(s): 1 Number of selected countermeasure(s): 1 (R36) Crash Data Information: Crash data period (years): 5 Number of crashes(F/SI/OVI/I-CP/PDO)*: Ped & Bike: 0,0,0,4,1	\$0	\$419,161	\$0	\$419,161
Sum		\$387,723	\$419,161	\$867,121	\$1,674,005

*Number of crashes: five crash numbers are for Fatal (F), Severe Injury (SI), Other Visible Injury (OVI), Injury - Complaint of Pain (I-CP), and Property Damage Only (PDO), respectively.

IV.2. Project Benefit and BCR Summary

No.	Countermeasure Name	Benefit	Cost	Resulting B/C
1	NS18	\$387,723	\$102,662	3.8
2	R36	\$419,161	\$129,592	3.2
3	NS5	\$867,121	\$24,846	34.9
	Entire Project	\$1,674,005	\$257,100	6.5

Data to be transferred to the HSIP Application Form

This section is generated automatically once the data entry and calculation have been completed. Transfer the data on this page to Section III of the HSIP Application Form.

Safety Countermeasure Information

Number of countermeasures: 3

NS18: Install pedestrian crossing at uncontrolled locations (with enhanced safety features)

R36: Install bike lanes

NS5: Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs

Cost, FRR, Benefit and BCR:

Total Project Cost:	\$257,100
HSIP Funds Requested:	\$231,390
Max. Federal Reimbursement Ratio (FRR):	90%
Total Expected Benefit:	\$1,674,005
Benefit Cost Ratio:	6.51

**MEMORANDUM
CITY OF LANCASTER**

TO: Mayor Parris and City Council Members
FROM: Vice Mayor Marvin Crist
DATE: January 28, 2020
SUBJECT: **Report on the Activities of the Board of Directors for the Antelope Valley Transit Authority**

Recommendation:

Receive a report of the proceedings and issues discussed at the November regular Board of Directors meeting of the Antelope Valley Transit Authority (AVTA).

Background:

The Antelope Valley Transit Authority is a distinct government entity created under a joint powers authority agreement between the City of Lancaster, the City of Palmdale, and Los Angeles County that provides public transit services. Vice Mayor Marvin Crist serves as the Chairman, and former Council Member Angela Underwood-Jacobs served as a Director on the AVTA Board for the City of Lancaster. Council Member Raj Malhi serves as an Alternate Director.

The following significant events took place at the regular November Board meeting:

Present: Chairman Marvin Crist
Director Angela Underwood-Jacobs
Director Michelle Flanagan
Director Richard Loa
Alternate Director Kathryn Mac Laren

Amendment No. 2 to Contract #2015-03 with Transdev Services, Inc., For Dial-A-Ride Paratransit Services

Authorized the Executive Director/CEO to execute Amendment No. 2 to Contract #2015-03 with Transdev Services, Inc. for an additional amount of \$332,378 and a three-month time extension, which includes a value-added fee in the amount of \$5,000 per month for short-term agreement ending existing services on March 31, 2020.

Approved (5-0-0-1)

Contract #2020-05 to Taft Electric Company for Electric Bus Charging At 40th Street East and Palmdale Boulevard

Authorized the Executive Director/CEO to execute Contract #2020-05 with Taft Electric Company, Ventura, California, for electric bus charging at 40th Street East and Palmdale Boulevard for the amount of \$1,763,271, plus applicable permit fees and sales tax.

Approved (4-0-1-1)

CVH/sr