

# City of Isleton

## City Council Staff Report

DATE: April 26, 2022

ITEM#: 4.A

CATEGORY: Communications

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### CITY COUNCIL COMMUNICATIONS

#### SUMMARY

City has received the following communications:

- A. Contractor and Grantee Compliance with Economic Sanctions Imposed in Response to Russia's Actions in Ukraine.
- B. 2 Planning Commissioner's letter of Resignation.

#### FISCAL IMPACT

None


#### RECOMMENDATION

Information only.

#### ATTACHMENT

- Contractor and Grantee Compliance with Economic Sanctions Imposed in Response to Russia's Actions in Ukraine.
- 2 Planning Commissioner's letter of Resignation.

Prepared and Submitted by: Yvonne Zepeda, Deputy City Clerk \_\_\_\_\_  
Reviewed by: Charles Bergson, City Manager \_\_\_\_\_







# SACRAMENTO COUNTY SHERIFF'S OFFICE

SCOTT R. JONES

*Sheriff*

04/11/2022

City Manager  
City of Isleton  
P.O. Box 716  
Isleton, CA 95641-0716

RECEIVED  
04/21/22

RE: Contractor and Grantee Compliance with Economic Sanctions Imposed in Response to Russia's Actions in Ukraine

Dear City Manager:

On March 4, 2022, Governor Gavin Newsom issued Executive Order N-6-22 (EO) regarding sanctions in response to Russian aggression in Ukraine. The EO is located at <https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf>.

The EO directs all agencies and departments that are subject to the Governor's authority to take certain immediate steps, including notifying all contractors, vendors and grantees of their obligations to comply with existing economic sanctions imposed by the U.S. government in response to Russia's actions in Ukraine, as well as any sanctions imposed under state law.

This correspondence serves as a notice under the EO that as a contractor, vendor or grantee, compliance with the economic sanctions imposed in response to Russia's actions in Ukraine is required, including with respect to, but not limited to, the federal executive orders identified in the EO and the sanctions identified on the U.S. Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>). Failure to comply may result in the termination of contracts or grants, as applicable.

Sincerely,

SCOTT R. JONES, SHERIFF

A handwritten signature in blue ink that reads "Debbie Holoubek".

Debbie Holoubek  
Administrative Services Officer III





RECEIVED  
4-7-22

**Yvonne Zepeda**

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**From:** Robert Jankovitz <[rob.jankovitz@cityofisleton.com](mailto:rob.jankovitz@cityofisleton.com)>  
**Sent:** Thursday, April 07, 2022 4:44 PM  
**To:** Yvonne Zepeda  
**Subject:** Re: Emailing: SPC Agenda\_4-13-2022

Hi Yvonne, I'm resigning from the Planning Commission effective immediately. Thanks Robert

On Thu, Apr 7, 2022 at 4:19 PM Yvonne Zepeda <[yvonne.zepeda@cityofisleton.com](mailto:yvonne.zepeda@cityofisleton.com)> wrote:

Your message is ready to be sent with the following file or link attachments:

SPC Agenda\_4-13-2022

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.



RECEIVED  
4-12-22

April 12, 2022

Mayor Eric Pene  
Isleton City Council  
City of Isleton  
101 2<sup>nd</sup> Street  
Isleton, CA 95641

RE: Chris Jones's Resignation

Dear Mayor Pene and Members of the City Council;

Please accept this letter as notice of my resignation from the City of Isleton Planning Commission, Historic Review Board, and Measure B Oversight Committee. I have sold my house and will be relocating out of the area. My final Measure B Oversight Committee meeting will be on April 20, 2022 and my final Planning Commission meeting will be on May 5, 2022. Thank you for the opportunity to serve the City of Isleton over the last few years and best of luck to you.

Sincerely,



Chris Jones

cc: Chuck Bergson, City Manager;  
Yvonne Zepeda, City Clerk

RECEIVED

# City of Isleton

City Council  
Staff Report

DATE: April 26, 2022

ITEM#: 5.A

CATEGORY: Consent Calendar

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**MINUTES OF THE REGULAR CITY COUNCIL MEETINGS OF FEBRUARY 22, 2022, MARCH 8, 2022 AND APRIL 12, 2022.**

## **SUMMARY**

A. Review of the Regular City Council Meetings of February 22, 2022, March 8, 2022 and April 12, 2022.

## **FISCAL IMPACT**


There is no fiscal impact associated with this action.

## **RECOMMENDATION**

A. City Council review and approve the draft minutes of the Regular City Council Meeting on February 22, 2022, March 8, 2022 and April 12, 2022.

## **ATTACHMENTS**

- Minutes of February 22, 2022 and March 8, 2022 and April 12, 2022.

Reviewed by: Charles Bergson, City Manager   
Submitted and prepared by: Yvonne Zepeda, Deputy City Clerk \_\_\_\_\_



## CITY OF ISLETON

### Regular City Council Meeting Minutes

Tuesday, February 22, 2022 at 6:30pm

208 Jackson Boulevard

Isleton, California 95641

You can call in to join our public meeting

**TELECONFERENCE OR IN PERSON MEETING**

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#### 1. OPENING CEREMONIES

A. Welcome & Call to Order – Mayor Eric Pene called to order 6:30pm.

B. Pledge of Allegiance

C. Roll Call

PRESENT: Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. City Manager Charles Bergson, Andreas Booher-City Attorney, Deputy City Clerk Yvonne Zepeda.

#### 2. AGENDA CHANGES OR DELETIONS

ACTION: None.

#### 3. PUBLIC COMMENT

This is an opportunity for the public to speak to the Council on any item other than those listed for public hearing on this Agenda. Speakers are requested to use the podium in front of the Council and to begin by stating their name, whether they reside in Isleton and the name of the organization they represent if any. The Mayor may impose a time limit on any speaker depending on the number of people wanting to speak and the time available for the rest of the Agenda. In the event comments are related to an item scheduled on the Agenda, speakers will be asked to wait to make their comments until that item is being considered.

ACTION: Public Comments: Jean Yokatobi regarding crosswalk at Main/F St. and Chamber of Commerce Isleton open house 3-5-2022, 1:00-5:00.

#### 4. COMMUNICATION

A. County of Sacramento, Order of Health Officer, Rescission of face coverings, February 16, 2022.

B. County of Sacramento, Order of Health Officer, Rescission of virtual public meetings, February 16, 2022.

C. Isleton Lions Club “reinstating” the annual Easter Egg Hunt.

D. Quong Wo Sing Building, Certified Historic Structure – 23 Main Street.

E. Grand Jury Report – Sacramento County Board of Supervisors abandoned responsibility for COVID-19 Cares Act Spending.

**AMERICANS WITH DISABILITIES ACT NOTICE:** In compliance with the Americans with Disabilities Act, persons needing a disability-related modification or accommodation, including auxiliary aids or services, to participate in this meeting, may contact Deputy City Clerk Yvonne Zepeda, at (916) 777-7770, by fax at (916) 777-7775 or by email to [Yvonne.zepeda@cityofisleton.com](mailto:Yvonne.zepeda@cityofisleton.com) at least 48 hours prior to the meeting.

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ACTION: Information only.

## 5. CONSENT CALENDAR

- A. **SUBJECT:** Approval of Minutes of the Regular City Council Meeting of January 25, 2022.

**RECOMMENDATION:** City Council review and approve draft minutes of the Regular City Council meeting of January 25, 2022. (Should state 1-11-22 and 1-27-22)

ACTION: Councilmember Iva Walton motion to approve draft minutes of the Regular City Council meeting of January 11, 2022 and the Special Meeting minutes of January 27, 2022. Vice Mayor Pamela Bulahan second the motion. PASSED 4-0. AYES: Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. NOES: None. ABSTAIN: None. ABSENT: None.

## 6. OLD BUSINESS

- A. **SUBJECT:** TJKM Presentation, Local Road Safety Plan (LRSP); report presentation.

**RECOMMENDATION:** Staff recommends City Council adopt the Draft Final City of Isleton LRSP Report February 2022.

ACTION: Council directed City Manager to meet with sub-committee.

- B. **SUBJECT:** Ordinance No. 2022-011, Cal-Recycle SB 1383 Implementation Tools Model Mandatory Organic Waste Disposal Reduction.

**RECOMMENDATION:** Staff is requesting City Council adopt Ordinance 2022-001 to comply with SB 1383 non-exempt components and to receive funding for the Edible Food Recovery Program and any future grant funds.

ACTION: Tabled.

- C. **SUBJECT:** 4<sup>th</sup> and A Street, 4-Way stop sign.

**RECOMMENDATION:** Staff recommends City Council to review and approve 4<sup>th</sup> and A Street, 4-Way Stop Sign.

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**ACTION:** Councilmember Paul Steele motion to approve 4<sup>th</sup> and A Street, 4-Way Stop Sign. Mayor Eric Pene second the motion. PASSED 4-0. **AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None.

- D. SUBJECT:** The Boat Launch Projects, Department of Boating and Waterways Design Grant.

**RECOMMENDATION:** Information only.

**ACTION:** Received Boat Launch Report, bring back to City Council.

## **7. NEW BUSINESS**

- A. SUBJECT:** Grand Jury Report, Fifth Councilmember.

**RECOMMENDATION:** Review and direction.

**ACTION:** Tabled.

## **8. COUNCIL REPORTS AND COMMITTEE UPDATES**

- A. Councilmember Vacant
- B. Councilmember Paul Steele – Delta PC meeting; March 12, 2022. Spam Festival went well.
- C. Councilmember Iva Walton – None.
- D. Vice Mayor Pamela Bulahan – SACOG meeting last Thursday. Isleton on consent calendar.
- E. Mayor Eric Pene – Law Enforcement in the works. Meeting in two weeks.

## **9. STAFF GENERAL REPORTS AND DISCUSSION**

- A. City Manager Report – None.
- B. Fire Chief Report – Had an emergency.

## **10. CLOSED SESSION**

### **A. Personnel appointment**

Code Enforcement Officer Review-Gov't Code§54957

**ACTION:** Report from closed session; appointed Dean Dockery Code Enforcement Office.

## **11. ADJOURNMENT**

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**AYES:**  
**NOES:**  
**ABSTAIN:**  
**ABSENT:**

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**MAYOR, Eric Pene**

**ATTEST:**

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**DEPUTY CITY CLERK, Yvonne Zepeda**

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**CITY OF ISLETON**

**Regular City Council Meeting Minutes**

Tuesday, March 8, 2022 at 6:30pm

208 Jackson Boulevard

Isleton, California 95641

You can call in to join our public meeting

**TELECONFERENCE OR IN PERSON MEETING**

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**1. OPENING CEREMONIES**

A. Welcome & Call to Order – Mayor Eric Pene called to order 6:30pm.

B. Pledge of Allegiance

C. Roll Call

PRESENT: Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Via zoom Mayor Eric Pene, City Manager Charles Bergson, Via Zoom City Attorney Andreas Booher and Deputy City Clerk Yvonne Zepeda.

**2. AGENDA CHANGES OR DELETIONS**

ACTION: None.

**3. PUBLIC COMMENT**

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ACTION: Don Cain – Law Enforcement.

**4. COMMUNICATION**

A. County of Sacramento, Order of Health Officer, Rescission of face coverings, February 16, 2022.

B. Consideration of the use of lifesaving PulsePoint app in our community.

C. Apportioned Cost Recovery for New Property Tax System.

ACTION: A & C information only. Item B – Don Cain gave presentation on letter of PulsePoint.

**5. CONSENT CALENDAR**

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- A. SUBJECT:** Approval of Minutes of the Regular City Council Meeting of February 8, 2022.

**RECOMMENDATION:** City Council review and approve draft minutes of the Regular City Council meeting of February 8, 2022.

**ACTION:** Councilmember Paul Steele motion to approve draft minutes of the Regular City Council meeting of February 8, 2022. Councilmember Iva Walton second the motion **AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None. **PASSED 4-0.**

## **6. OLD BUSINESS**

- A. SUBJECT:** Resolution No. 08-22, Sacramento Housing and Redevelopment Agency (SHRA) Community Development Block Grant (CDBG) Funding for Isleton Street Lighting.

**RECOMMENDATION:** Staff is requesting City Council to approve contract with Sacramento Housing and Redevelopment Agency (SHRA) for \$100,000. Community Development Block Grant (CDBG) funds for the Main Street Pedestrian Lights Project.

**ACTION:** Councilmember Paul Steele motion to approve contract with Sacramento Housing and Redevelopment Agency (SHRA) for \$100,000. Community Development Block Grant (CDBG) funds for the Main Street Pedestrian Lights Project. Vice Mayor Pamela Bulahan second the motion. **AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None. **PASSED 4-0.**

- B. SUBJECT:** City Council Vacancy – Sacramento County Grand Jury Report, February 7, 2022.

**RECOMMENDATION:** Staff recommends that City Council direct the solicitation of applications for the Fifth Councilmember and direct Staff to prepare a response to the Sacramento County Grand Jury letter of February 7, 2022.

**ACTION:** Council directed staff to post council vacancy March 11, 2022 to April 7, 2022.

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## 7. NEW BUSINESS

- A. **SUBJECT:** Draft Ordinance No. 2022-002, Title VIII Public Places, Chapter 8.01 Encroachments.

**RECOMMENDATION:** That City Council receive report and provide direction.

**ACTION:** No Action.

- B. **SUBJECT:** Arbor Pro - City of Isleton, California Tree Inventory Summary Report, February 2022.

**RECOMMENDATION:** That City Council review report and give direction.

**ACTION:** Received Tree Inventory and report. Needs to go to Planning Commission and then back to City Council.

- C. **SUBJECT:** City of Isleton Records Review, and Destruction Policy.

**RECOMMENDATION:** Staff recommends that City Council review and comment on City of Isleton Records Review, and Destruction Policy.

**ACTION:** Received Records Review, and Destruction Policy and to bring back to City Council on 5-10-22.

- D. **SUBJECT:** Resolution No. 08-22 of the City Council of City of Isleton, Sacramento County approving the Application for Grant Funds form the Recreational Trails Program.

**RECOMMENDATION:** Staff recommends City Council approve Resolution No. 08-22 for submission of grant application.

**ACTION:** Councilmember Paul Steele motion to approve Resolution No. 08-22 for submission on grant application with no consulting fees and with City Staff only. Vice Mayor Pamela Bulahan second the motion. AYES: Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. NOES: None. ABSTAIN: None. ABSENT: None. PASSED 4-0.

- E. **SUBJECT:** Resolution No. 06-22, a Resolution of the City Council of the City of Isleton Authorizing the City Manager, City Accountant, and City Clerk to deposit and withdrawal money in the Local Agency Investment Fund (LAIF) in the State Treasury.

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**RECOMMENDATION:** That City Council adopt Resolution No. 06-22 of the City Council of the City of Isleton Authorizing the City Manager and City Accountant to deposit and withdrawal money in the Local Agency Investment Fund (LAIF) in the State Treasury.

**ACTION:** Councilmember Paul Steele motion to adopt Resolution No. 06-22 of the City Council of the City of Isleton Authorizing the City Manager and City Accountant to deposit and withdrawal money in the Local Agency Investment Fund (LAIF) in the State Treasury. Councilmember Iva Walton second the motion.

**AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None. **PASSED** 4-0.

## **8. COUNCIL REPORTS AND COMMITTEE UPDATES**

- A. Councilmember Vacant
- B. Councilmember Paul Steele – Delta Protection meeting. Stop sign at 4<sup>th</sup> and A St.?
- C. Councilmember Iva Walton – Glad to see crosswalk patched.
- D. Vice Mayor Pamela Bulahan – SACOG-remotely; hope to meet in person.
- E. Mayor Eric Pene – Law Enforcement; 3<sup>rd</sup> meeting coming up.

## **9. STAFF GENERAL REPORTS AND DISCUSSION**

- A. City Manager Report – Code Enforcement-Dean Dockery. GHAD; 1/2 mill in grant funds.
- B. Fire Chief Report – Weed abatements, working with Code Enforcement. 57 Main St. is Red Tagged. Please put on next agenda. We are committed to take care of it. Dean Dockery – Thank you. Plan to educate and communicate and safety. Currently working on Commercial Businesses and ongoing pre-existing violations.

## **10. CLOSED SESSION**

- A. None.

## **11. ADJOURNMENT**

**AYES:**

**NOES:**

**ABSTAIN:**

**ABSENT:**

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MAYOR, Eric Pene

ATTEST:

DEPUTY CITY CLERK, Yvonne Zepeda

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## CITY OF ISLETON

### Regular City Council Meeting Minutes

Tuesday, April 12, 2022 at 6:30pm

208 Jackson Boulevard

Isleton, California 95641

You can call in to join our public meeting

### TELECONFERENCE OR IN PERSON MEETING

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This meeting will be held via teleconference or in person, pursuant to Executive Order N-29-20 issued by the State of California Executive Order by Governor Gavin Newsom on March 17, 2020. All members of the public interested in participating in this Zoom meeting can dial in by phone at 408-638-0968 (do not put a 1 before the number), Personal Meeting ID 337-903-7904# (for Personal ID just hit #) and then Passcode 123456#. For computer log-in, follow the link below.

#### Join Zoom Meeting

<https://us02web.zoom.us/j/3379037904?pwd=cWdVNkN5aHUxcjVwRGR1M1BpajcwZz09>

Meeting ID: 337 903 7904

Passcode: 123456

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#### 1. OPENING CEREMONIES

- A. Welcome & Call to Order – Mayor Eric Pene called to order at 6:34p.m.
- B. Pledge of Allegiance
- C. Roll Call

PRESENT: Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene.

#### 2. AGENDA CHANGES OR DELETIONS

ACTION: None.

#### 3. PUBLIC COMMENT

This is an opportunity for the public to speak to the Council on any item other than those listed for public hearing on this Agenda. Speakers are requested to use the podium in front of the Council and to begin by stating their name, whether they reside in Isleton and the name of the organization they represent if any. The Mayor may impose a time limit on any speaker depending on the number of people wanting to speak and the time available for the rest of the Agenda. In the event comments are related to an item scheduled on the Agenda, speakers will be asked to wait to make their comments until that item is being considered.

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**ACTION:** Aaron Allen called in regarding 50 Andrus Circle, Isleton, CA. 95641, where his Mother-in-law lives in a trailer. Would like a 6 month extension May 1 from Andrus Circle. Temp power there now and is residential property. Mayor Eric Pene suggest agendize for next City Council meeting and for Aaron to write a letter for council. Aleida Saurez read a letter she wrote in regards to the new Delta Queen lodge have a 420 Bus Tour- Sect. 2305 prohibited and unlawful-600ft closes to property line of school or parcel. AirBnb not a cannabis 420 – not family friendly.

#### **4. COMMUNICATION**

- A.** Award letter from State Department of Parks and Recreation.
- B.** CDTFA approved agreement Letter – Measure L, STJ-983.
- C.** Conditional Use Applicaton for AirBnb.

**ACTION:** A & B Information only. C – Mr. Hall request to allow an AirBnb-strictly family members no cannabis. Councilmember Paul Steele asked City Manager to take to Planning Commission. Councilmember Iva Walton mentioned a CUP, to PC on May 3, 2022.

#### **5. CONSENT CALENDAR**

- A. SUBJECT:** Approval of Minutes of the Regular City Council Meeting of March 22, 2022 and Special City Council Meeting of March 30, 2022.

**RECOMMENDATION:** City Council review and approve draft minutes of the Regular City Council meeting of March 22, 2022 and Special City Council meeting of March 30, 2022.

**ACTION:** Councilmember Iva Walton motion to approve draft minutes of the Regular City Council meeting of March 22, 2022 and Special City Council meeting of March 30, 2022. Mayor Eric Pene second the motion. **AYES:** Councilmember’s Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** Councilmember Paul Steele. **ABSENT:** None. **PASSED 3-1.**

#### **6. PUBLIC HEARING**

- A. SUBJECT:** None.

#### **7. OLD BUSINESS**

- A. SUBJECT:** City Council Vacancy appointment.

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**RECOMMENDATION:** That City Council select an application to fill the vacant Councilmember seat.

**ACTION:** Councilmember Paul Steele motion to select Kelly Hutson an application to fill the vacant Councilmember seat. Vice Mayor Pamela Bulahan second the motion. **AYES:** Councilmember's Paul Steele, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** Councilmember Iva Walton. **ABSTAIN:** None. **ABSENT:** None. **PASSED 3-1.**

**B. SUBJECT:** City of Isleton Records Review, and Destruction Policy.

**RECOMMENDATION:** Staff recommends that City Council review and comment on City of Isleton Records Review, and Destruction Policy.

**ACTION:** Tabled to be brought back in 60 days.

**C. SUBJECT:** Draft Ordinance No. 2022-002, Title VIII Public Places Chapter 8.01 Encroachments.

**RECOMMENDATION:** It is recommended that the City Council conduct first reading of Ordinance No. 2022-002, Chapter 8.01 Encroachments.

**ACTION:** Councilmember Paul Steele motion that the City Council conduct first reading of Ordinance No. 2022-002, Chapter 8.01 Encroachments. Vice Mayor Pamela Bulahan second the motion. **AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None. **PASSED 4-0.**

**8. NEW BUSINESS**

**A. SUBJECT:** City Council lien 209-211 Second Street, Isleton, California 956413

**RECOMMENDATION:** City Council lien 209-211 Second Street.

**ACTION:** Councilmember Paul Steele motion City Council to lien 209-211 Second Street. Vice Mayor Pamela Bulahan second the motion. **AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None. **PASSED 4-0.**

**AMERICANS WITH DISABILITIES ACT NOTICE:** In compliance with the Americans with Disabilities Act, persons needing a disability-related modification or accommodation, including auxiliary aids or services, to participate in this meeting, may contact Deputy City Clerk Yvonne Zepeda, at (916) 777-7770, by fax at (916) 777-7775 or by email to [Yvonne.zepeda@cityofisleton.com](mailto:Yvonne.zepeda@cityofisleton.com) at least 48 hours prior to the meeting.

**GOV. CODE § 54957.5 NOTICE:** Public records related to an agenda item that are distributed less than 72 hours before this meeting are available for public inspection during normal business hours at Isleton City Hall located at 101 Second Street, Isleton, California 95641.

- B. SUBJECT:** Resolution No. 09-22, a Resolution calling General Municipal Election for the City of Isleton, Sacramento County, California.

**RECOMMENDATION:** That City Council approve Resolution No. 09-22 calling General Municipal Election for the City of Isleton, Sacramento County, California.

**ACTION:** Councilmember Iva Walton motion that City Council approve Resolution No. 09-22 calling General Municipal Election for the City of Isleton, Sacramento County California. Mayor Eric Pene second the motion. **AYES:** Councilmember's Paul Steele, Iva Walton, Vice Mayor Pamela Bulahan, Mayor Eric Pene. **NOES:** None. **ABSTAIN:** None. **ABSENT:** None. **PASSED 4-0.**

**9. COUNCIL REPORTS AND COMMITTEE UPDATES**

- A. Councilmember Vacant – Vacant.
- B. Councilmember Paul Steele – None.
- C. Councilmember Iva Walton – Grant Money for lighting-light and the Main and Bill Board.
- D. Vice Mayor Pamela Bulahan – Thursday and Friday, SACOG Land use Meeting. Retreat at sugar mill. 21<sup>st</sup> in person meetings.
- E. Mayor Eric Pene – Received a letter from Solano County-meet in two weeks.

**10. STAFF GENERAL REPORTS AND DISCUSSION**

- A. City Manager Report – Grant of 600k-SACOG, 178 Wilson Ball Park. Boat Ramp study.
- B. Fire Chief Report – Charles and myself met with PG&E on concerns regarding power outages.

**11. CLOSED SESSION**

- A. Gov't Code§54956.9  
Pending Litigation  
**ACTION:** Council made Fire Report a Public document.

**12. ADJOURNMENT**

**AYES:**  
**NOES:**  
**ABSTAIN:**  
**ABSENT:**

\_\_\_\_\_  
MAYOR, Eric Pene

**ATTEST:**

\_\_\_\_\_  
DEPUTY CITY CLERK, Yvonne Zepeda

**AMERICANS WITH DISABILITIES ACT NOTICE:** In compliance with the Americans with Disabilities Act, persons needing a disability-related modification or accommodation, including auxiliary aids or services, to participate in this meeting, may contact Deputy City Clerk Yvonne Zepeda, at (916) 777-7770, by fax at (916) 777-7775 or by email to [Yvonne.zepeda@cityofisleton.com](mailto:Yvonne.zepeda@cityofisleton.com) at least 48 hours prior to the meeting.

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# City of Isleton

City Council  
Staff Report

DATE: 04-26-22

ITEM#: 7.A

CATEGORY: Old Business

---

## **TJKM PRESENTATION, LOCAL ROAD SAFETY PLAN (LRSP); REPORT PRESENTATION ADOPTION**

### **SUMMARY**

The City of Isleton's Local Road Safety Plan (LRSP) is a comprehensive plan that creates a framework to systematically identify and analyze traffic safety related issues and recommend projects and countermeasures. The LRSP aims to reduce fatal and severe injury collisions through a prioritized list of improvements that can enhance safety on local roadways.

The LRSP utilizes a comprehensive approach to safety incorporating the "4 E's of traffic safety": Engineering, Enforcement, Education and Emergency Medical Services (EMS). This approach recognizes that not all locations can be addressed solely by infrastructure improvements. Incorporating the 4 E's of traffic safety is often required to ensure successful implementation of significant safety improvements and reduce the severity and frequency of collisions throughout a jurisdiction.

The LRSP takes a proactive approach to addressing safety needs. It is viewed as a guidance document that can be a source of information and ideas. It can also be a living document, one that is routinely reviewed and updated by City staff and their safety partners to reflect evolving collision trends and community needs and priorities. With the LRSP as a guide, the City will be able to ready to apply for grant funds, such as the federal Highway Safety Improvement Program (HSIP). Starting with the next call for projects (Cycle 11), a LRSP will be required to apply for funds.

### **DISCUSSION**

The City received an \$80,000 grant from Caltrans to prepare the LRSP, along with an \$8,000 match from the City (match paid by SB1 Funds). After conducting an RFP process in spring 2021, the City selected TJKM Transportation Consultants to prepare the LRSP.

The City of Isleton's LRSP is a comprehensive plan that takes a proactive approach to addressing safety needs. The plan collected and evaluated collision data within the City from 2015 to 2019, conducted a community/stakeholder outreach campaign, and prepared a set of recommended improvements to address safety concerns at specific roadways and intersections throughout the community. The plan first established a set of five goals, which are as follows:

1. Identify and analyze safety problems and recommend improvements.
2. Improve the safety of pedestrians and bicyclists.

3. Coordinate implementation with key stakeholders.
4. Seek consistent funding until the vision is fulfilled.
5. Ensure safety improvements are made in an equitable manner.

Stakeholder and community outreach is an integral part of the LRSP process, to ensure that it is responsive and shaped by the community's needs and values. To meet this need, a stakeholder group was formed and met twice, once on October 19<sup>th</sup>, 2021 and the other on December 13<sup>th</sup>, 2021 to discuss traffic safety issues and give feedback on the LRSP process. This was supplemented by a project website ([www.isletonsafeststreets.com](http://www.isletonsafeststreets.com)) with an interactive map tool platform that allowed community members to submit traffic safety concerns directly to the project on an interactive map. The tool remained open for approximately two months and garnered 51 responses.

An analysis of Isleton's collisions showed that 10 collisions occurred during the study period, of which two were fatalities. Four identified prominent collision trends included improper turning violations, unsafe speeding violations, nighttime collisions, and pedestrian collisions. The team then utilized the Equivalent Property Damage Only (EPDO) analysis methodology from the Caltrans HSIP program to determine the most high-risk intersections and roadway segments in Isleton. The identified locations were:

- Intersection of H St/Main St
- Intersection of SR-160/2<sup>nd</sup> St/A St
- Intersection of SR-160/H St
- Intersection of Union St/D St
- SR-160 between Tyler Island Bridge Rd and 1<sup>st</sup> St
- H St between SR-160 and 6<sup>th</sup> St
- Main St/2<sup>nd</sup> St between SR-160 and H St
- 4<sup>th</sup> Ave between Delta Ave and Georgiana Dr.

Four additional corridors that had experienced few or no collisions were analyzed based on City staff input and supported by community input. These locations are:

- A St, 4<sup>th</sup> St, and Jackson St from City Limit to SR-160
- B St between SR-160 and 5<sup>th</sup> St
- Union St between C St and H St
- 6<sup>th</sup> St between Jackson St and H St

Based on the identified collision trends, the project team selected emphasis areas for the LRSP. Emphasis areas are focus areas for the LRSP that are identified through the comprehensive collision analysis of the identified high injury locations within the City of Isleton. Emphasis areas help in identifying appropriate safety strategies and countermeasures with the greatest potential to reduce collisions occurring at these high injury locations. They can include (but not be limited to): specific collision types, human behaviors, facility types, and specific locations or corridors. The following are the identified emphasis areas:

1. Reduce Intersection Collisions (collisions within 250 feet of intersections)



2. Improve Pedestrian Safety
3. Reduce Collisions from Improper Turning Violations
4. Address SR-160 Collisions
5. Reduce Unsafe Speed Violations and Rear End Collisions
6. Reduce Nighttime Collisions

Following the selection of emphasis areas, countermeasures were selected for each of the identified high-risk intersections, roadway segments and staff identified corridors based on extensive review of existing conditions at the site and characteristics of identified collisions in Isleton. The project team conducted a thorough review of the high-risk locations (intersections and roadway segments) using aerial photography, Google Maps Street View software, and in-person site visits. Crash characteristics of all collisions were considered. This resulted in the development of a countermeasure toolbox that includes HSIP approved countermeasures for each location and emphasis area, as well as non HSIP approved countermeasures and non-engineering related countermeasures (Education, Enforcement, and EMS). A summary of the recommendations is included in the draft LRSP Report.

The engineering countermeasures were then grouped into safety projects for high-risk intersections and roadway segments. A total of six safety projects were developed along with cost estimates and a Benefit/Cost Ratio (BCR), in accordance with Caltrans HSIP guidelines. The six safety projects are:

- Project 1: Systemic Improvements at Unsignalized Intersections (Advance Flashing Beacons and Splitter Islands)
- Project #2: Systemic Improvements at Unsignalized Intersections (Upgrade/Install Warning Signs, Upgrade Intersection Pavement Markings, and Improve Sight Distance)
- Project #3: Pedestrian Improvements at Unsignalized Intersections (Upgrade Pedestrian Crossings and Install Rectangular Rapid Flashing Beacon (RRFB) and Median Refuge Island)
- Project #4: Roadway Segment Improvements on SR-160 (Install Segment Lighting and Edge-line Rumble Strips)
- Project #5: Systemic Improvements on Roadway Segments (Install/Upgrade Signs with Fluorescent Sheeting, and Install Delineators, Reflectors, and Object Markers)
- Project #6: Systemic Improvements on Roadway Segments (Install Edge-lines and Centerlines)

The LRSP is a living document that is continuously monitored and evaluated to ensure the recommended countermeasures are effective, typically every 2-5 years. Since the most recent presentation to City Council on December 14<sup>th</sup>, 2021, a Draft LRSP report has been developed incorporating all sections described in this staff report.

The next step is to apply for HSIP grant funding to implement safety improvements in Isleton. The next call for projects (Cycle 11) is expected to open in April 2022. TJKM has scoped to assist the City with preparing and submitting two HSIP applications, and will work with the City to which projects and locations will be most competitive for funding.

## **FISCAL IMPACT**

Caltrans Local Road Safety Plant Grant \$80,000  
City of Isleton 10% Match \$8,000

TJKM Transportation Consultants \$74,476.13  
City match is \$7,476 and will be funded through transportation funds.

## **RECOMMENDATION**

Staff recommends City Council adopt the City of Isleton Local Road Safety Plan Report Feb 2022.

## **ATTACHMENTS**

1. City of Isleton Local Road Safety Plan (LRSP) Feb 2022

Prepared by: Diana O'Brien, Administrative Assistant  
Reviewed by: Charles Bergson, City Manager  
Submitted by: Yvonne Zepeda, Deputy City Clerk

A handwritten signature in blue ink, appearing to be "Yvonne Zepeda", is written over the text of the "Submitted by" line.





# Isleton

## Local Road Safety Plan

### Final Report

February 2022



**City of Isleton**  
**Local Road Safety Plan**

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## Executive Summary

The City of Isleton's Local Road Safety Plan (LRSP) is a comprehensive plan that creates a framework to systematically identify and analyze traffic safety related issues and recommend projects and countermeasures. The LRSP aims to reduce fatal and severe injury collisions through a prioritized list of improvements that can enhance safety on local roadways.

The LRSP takes a proactive approach to addressing safety needs. It is viewed as a guidance document that can be a source of information and ideas. It can also be a living document, one that is routinely reviewed and updated by City staff and their safety partners to reflect evolving collision trends and community needs and priorities. With the LRSP as a guide, the City will be able to apply for grant funds, such as the federal Highway Safety Improvement Program (HSIP). This document summarizes the collision analysis, identifies high-risk locations and recommends countermeasures at each of these high-risk locations. This is conducted as a part of the LRSP for the City of Isleton. This document is organized into seven sections as follows:

### Chapter 1 – Introduction

The introduction presents the project, describes how this report is organized, summarizes the vision and goals, the study area for the LRSP, details how the report is organized and introduces the safety partners.

### Chapter 2 – Literature Review

This chapter summarizes the City's and regional planning documents and projects that are relevant to the LRSP. It ensures that the recommendations of the LRSP are in line with existing goals, objectives, policies, or projects.

### Chapter 3 – Collision Data Collection and Analysis

This chapter summarizes data analysis approach and presents preliminary as well as detailed collision analysis and findings in the study area. This analysis of fatal and severe injury collisions is performed by facility type (intersection and roadway segment). Collision data was obtained and analyzed for a five-year period from 2015 to 2019 from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) and the University of California at Berkeley SaletREC's Transportation Injury Mapping Service (TIMS).



### Chapter 4 - Emphasis Areas

Emphasis areas are a focus of the LRSP that are identified through the various collision types and factors resulting in fatal and severe injury collisions within the City of Isleton. The six emphasis areas for Isleton are:

1. Reduce Intersection Collisions
2. Improve Pedestrian Safety
3. Reduce Collisions from Improper Turning Violations
4. Address SR-160 Collisions
5. Reduce Unsafe Speed Violations and Rear End Collisions
6. Reduce Nighttime Collisions

### Chapter 5 – Countermeasure Identification

Engineering countermeasures were selected for each of the high-risk locations and for the emphasis areas. These were based off of approved countermeasures from the Caltrans Local Roadway Safety Manual (LRSM) used in HSIP grant calls for projects. The intention is to give the City potential countermeasures for each location that can be implemented either in future HSIP calls for projects, or using other funding sources, such as the City's Capital Improvement Program. Non-engineering countermeasures were also selected using the 4 E's strategies, and are included with the emphasis areas.

### Chapter 6 – Safety Projects

A set of six safety projects were created for high-risk intersections and roadway segments, using HSIP approved countermeasures. These safety projects are:

- Project #1: Systemic Improvements at Unsignalized Intersections
- Project #2: Systemic Improvements at Unsignalized Intersections
- Project #3: Pedestrian Improvements at Unsignalized Intersections
- Project #4: Roadway Segment Improvements on SR-160
- Project #5: Systemic Improvements on Roadway Segments
- Project #6: Systemic Improvements on Roadway Segments

### Chapter 7 – Evaluation and Implementation

The LRSP is a guidance document that is recommended to be updated every two to five years in coordination with the safety partners. The LRSP document provides engineering, education, enforcement, and emergency medical service-related countermeasures that can be implemented throughout the City to reduce fatal and severe injury collisions. After implementing countermeasures, the performance measures for each emphasis area should



be evaluated annually. The most important measure of success of the LRSP should be reducing fatal and severe injury collisions throughout the City. If the number of fatal and severe injury collisions does not decrease over time, then the emphasis areas and countermeasures should be re-evaluated.



## 1. Introduction

### What is a LRSP?

The Local Road Safety Plan (LRSP) is a localized data-driven traffic safety plan that provides opportunities to address unique highway safety needs and reduce the number of fatal and severe injury collisions. The LRSP creates a framework to systematically identify and analyze traffic safety-related issues, and recommend safety projects and countermeasures. The LRSP facilitates the development of local agency partnerships and collaboration, resulting in the development of a prioritized list of improvements that can qualify for Highway Safety Improvement Program (HSIP) funding. The LRSP is a proactive approach to addressing safety needs and is viewed as a living document that can be constantly reviewed and revised to reflect evolving trends, and community needs and priorities.

### Process

The systemic approach in preparing the LRSP involves the following steps:

- Develop plan goals and objectives
- Analyze collision data
- Meet with stakeholders/safety partners
- Determine focus areas and identify crash reduction strategies
- Prioritize countermeasures/projects
- Prepare the LRSP

### Goals and Objectives of the Isleton LRSP

**Goal #1:** Systematically identify and analyze roadway safety problems and recommend improvements

**Objective 1:** Use the Systemic Safety Analysis data-driven process to identify traffic collisions in Isleton, (with an emphasis on fatal and severe injury collisions); where, when, and how they are occurring, and implement appropriate and proven countermeasures.

**Objective 2:** Improve roadway planning, design, operations, and connectivity to enhance safety and mobility for users of all ages and abilities

**Objective 3:** Implement traffic calming strategies to discourage speeding and other unsafe driving behaviors on residential streets

**Objective 4:** Ensure that all recommended improvements are consistent with City of Isleton goals, as well as State and Federal plans and goals (such as, but not limited to: California Strategic Highway Safety Plan, and the FHWA Local and Rural Road Safety Program).





**Goal 2:** Improve the safety of pedestrians and bicyclists by using proven effective countermeasures

**Objective 1:** Identify safety issues and locations/hot spots where bicycle and pedestrian collisions occur in Isleton, and treat with appropriate and effective engineering countermeasures

**Objective 2:** Provide educational programs for bicyclists, pedestrians, and motorists to inform on how to be safe in the public right-of-way, either through after-school programs, law enforcement programs, or other public/private sponsored programs

**Objective 3:** Improve sidewalks, walkways, and crossings to be free of hazards and to minimize conflicts with vehicular traffic

**Objective 4:** Prioritize improvements that promote Safe Routes to School efforts or are located near schools

**Goal 3:** Ensure coordination of key stakeholders to implement roadway safety improvements & response within Isleton

**Objective 1:** Coordinate between City Departments, Sheriff's Office, Fire Department, and EMS agencies to ensure a coordinated response to traffic safety, including:

- Implementation of safety improvements
- Public education on safety traveling in the public right-of-way, regardless of mode
- Enforcement of traffic safety laws in the public right-of-way
- Minimizing impacts to emergency response times.

**Objective 2:** Coordinate with local, regional, and state partners (such as SACOG or Caltrans), to identify and address traffic safety issues and ensure a coordinated response.

**Goal 4:** Continually seek funding for safety improvements

**Objective 1:** Ensure the LRSP meets Highway Safety Improvement Program (HSIP) guidelines in order to apply for funding for identified countermeasures

**Objective 2:** Provide a list of prioritized improvements that guide City investments and grant funding applications

**Objective 3:** Continually seek funding sources to implement engineering, education, enforcement, and emergency response solutions to roadway safety issues in Isleton



**Goal 5:** Ensure that safety improvements are made in a manner that is fair and equitable for all Isleton residents

**Objective 1:** Provide a forum for residents to submit traffic safety related complaints; and for City staff and officials to respond to such complaints

**Objective 2:** Ensure the consideration of equity when selecting where to make traffic safety improvements

**Objective 3:** Where feasible, implement community outreach to inform the public about upcoming safety improvements and seek their input

### Study Area

The City of Isleton is located in Sacramento County, California covering a total area of just under 314 acres, located on Andrus Island in the San Joaquin-Sacramento River Delta. The City's estimated population is 794 (US Census 2020). Jackson Blvd and River Road (SR 160) are the primary roadways that connect the City of Isleton to the Rio Vista Bridge and other nearby cities. The nearest cities include Rio Vista and Antioch to the south and west, Lodi to the east, and unincorporated Walnut Grove to the north. The study area is mapped in Figure 1 below.

### Demographic and Jurisdiction Information

Demographic data has been collected from the Census for the City of Isleton, Sacramento County, and California. A summary of the City's population and commute to work characteristics are presented below.

#### Population

The City of Isleton is located on the Sacramento River in the heart of the scenic Sacramento-San Joaquin Delta region. According to [www.data.census.gov](http://www.data.census.gov), the population of Isleton in 2020 was 794, which is about 0.05% of the county population. Sacramento County's population is 1,585,055.

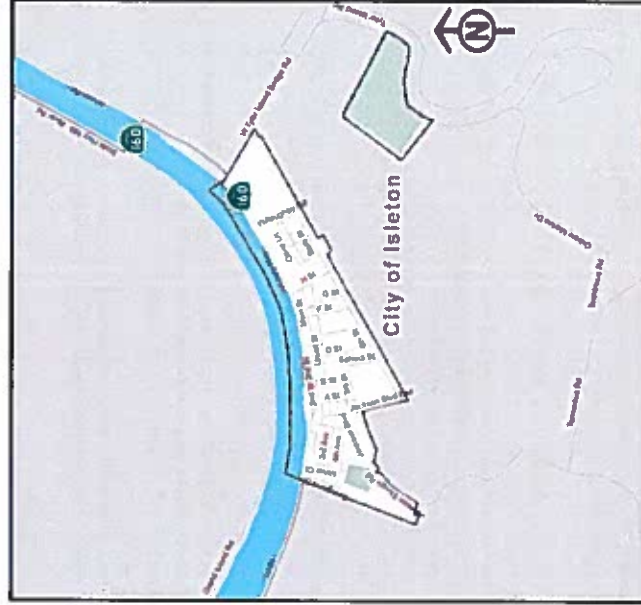
#### Commute to Work

According to the Census American Community Survey (ACS) 2019 5-Year Estimates, 87.6% of Isleton commuters get to work by driving alone. The second most common method of commuting to work is walking at nearly 5%, higher than both the Sacramento County and State rate of walking commuters. The different modes of transportation used by Isleton residents to commute to work are shown in Table 1 below.



**City of Isleton**  
**Local Road Safety Plan**

Figure 1. Study Area



**Safety Partners**  
Safety partners are vital to the development and implementation of an LRSP. For Isleton, these include City staff, Isleton Fire Department, Sacramento County Sheriff's Office, California Highway Patrol (CHP), River Delta Unified School District, Caltrans, Sacramento Area Council of Governments (SACOG), and Isleton residents. Many of these groups/agencies attended two virtual stakeholder meetings, which were held on October 19, 2021, and December 13, 2021 to review project goals and findings, and to solicit feedback from the group.

Figure 2. Zoom Meeting from Stakeholder Meeting #1

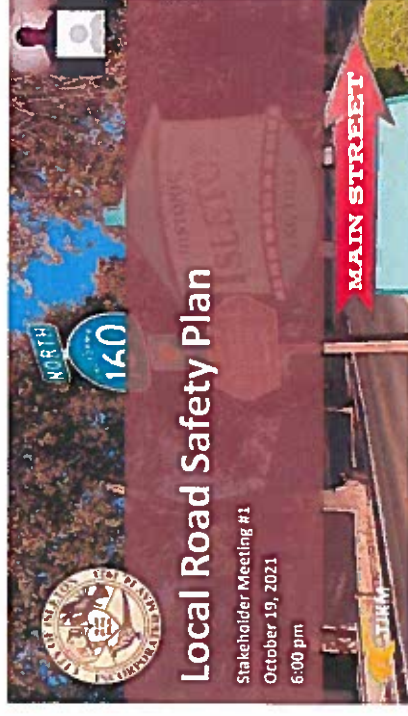


Table 1. Isleton Commute to Work Census Data

Commute to Work	Isleton	Sacramento County	California
Drive Alone	87.6%	77.1%	73.7%
Carpool	3.0%	10.1%	10.1%
Public Transportation	2.6%	2.5%	5.1%
Walked	4.9%	1.8%	2.6%
Bicycle	0.0%	0.9%	1.0%
Work from Home	1.9%	6.3%	5.9%
Other	0.0%	1.3%	1.6%

This stakeholder outreach was supplemented by a project website ([www.isletonsafeststreets.com](http://www.isletonsafeststreets.com)), with an interactive map tool platform. The interactive map was used to solicit input from Isleton residents outside the confines of traditional meetings.



Figure 3: Isleton LRSP Project Website

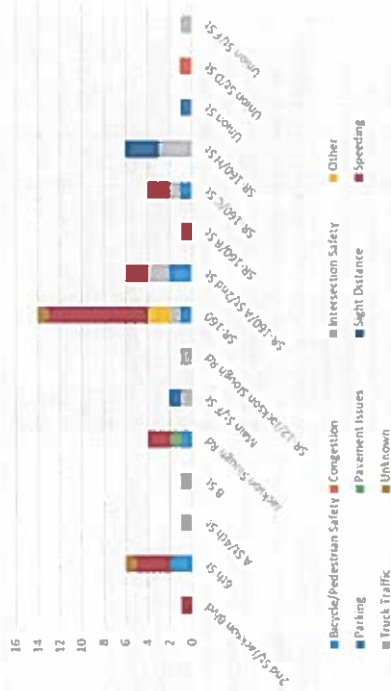


In total, 51 comments were received on this map. The most comments were received about SR-160, and the most common concern was speeding. The results of the interactive map are shown below in Figure 4, and summarized in Figure 5.

Figure 4: Interactive Map Comment Responses



Figure 5: Public Comments on Traffic Safety by Location





## 2. Existing Planning Efforts

This section summarizes the planning documents, projects underway, and studies reviewed for Isleton Local Road Safety Plan (LRSP). The purpose is to ensure the LRSP vision, goals, and E's strategies are aligned with prior planning efforts, planned transportation projects and non-infrastructure programs. The documents reviewed are listed below:

1. City of Isleton Comprehensive General Plan and Environmental Impact Report, 2000
2. City of Isleton Opportunities, Constraints, and Vision Report, 2017
3. Safety Element (Existing Conditions) of Isleton General Plan Memo, 2021
4. Land Use Background Report of Isleton General Plan, 2020
5. City of Isleton Parking Analysis and Development Program, 1989
6. Isleton 10-Year Capital Improvement Program (CIP), 2017
7. SACOG Regional Bicycle, Pedestrian, and Trails Master Plan, 2015
8. SACOG Metropolitan Transportation Plan/ Sustainable Communities Strategy, 2016

The following sections include brief descriptions of these documents and how they inform the development of the LRSP. A brief document summary is listed in Table 2. A more detailed list of upcoming projects and relevant policies is listed in Appendix A.



Table 2: Document Review Summary

Document	Highlights
City of Isleton Comprehensive General Plan and Environmental Impact Report, 2000	Enables the City Council to agree on development policies, provide clear guidance in judging whether projects comply with policies of the General Plan, and provide the basis for making intelligent amendments to the Plan as time and changing circumstances may dictate while being true to its purposes.
City of Isleton Opportunities, Constraints, and Vision Report, 2017	Documents community vision for Isleton and informs LRSP safety constraints along SR 160 and Main Street within the city limits.
Safety Element (Existing Conditions) of Isleton General Plan Memo, 2021	Reduces potential for short and long-term risks due to various hazards, identifies safety issues on SR 160 recommends specific mitigation actions.
Land Use Background Report of Isleton General Plan, 2020	Presents existing conditions and trends specific to land use and serves as a resource for the Land Use Element of the General Plan and the associated Environmental Impact Report.
City of Isleton Parking Analysis and Development Program, 1989	Parking study intended to alleviate parking issues within downtown Isleton. Assessed current and projected demand for off-street parking, identified possible sites for new parking development, and developed a financing program and implementation schedule.
Isleton 10-Year Capital Improvement Program (CIP), 2017	Outlines all city project investments and cost estimates from 2017-2026 including streets, parks and recreation, City services, waste water, and planning/design projects.
SACOG Regional Bicycle, Pedestrian, and Trails Master Plan, 2015	Provides a guiding document for all active transportation related investments in the six county Sacramento region, including two projects within Isleton.
SACOG Metropolitan Transportation Plan/ Sustainable Communities Strategy, 2016	Federally required guiding document for all transportation related investments across the six-county Sacramento region. The MTP/SCS lists all planned investments in roadways, bicycle and pedestrian infrastructure, transit, etc., including land use and growth forecasts, to ensure the transportation system meets the needs of the Sacramento region.





Relevant City and County Planning Documents & Projects

Isleton Comprehensive General Plan and Environmental Impact Report (2000)

Adopted in 2000, the Isleton Comprehensive General Plan and Environmental Impact Report is a planning document that compiled the City's long-term vision and outlined policies, standards, and programs to guide decisions concerning the City's development. The three primary functions of the General Plan are to enable the City Council to agree on development policies, provide clear guidance in judging whether projects comply with policies of the General Plan, and provide the basis for making intelligent amendments to the Plan as time and changing circumstances may dictate while being true to its purposes.

The General Plan aims to guide the City on land use, circulation, housing, public utilities, resource, and hazard management. The Circulation Element identifies transportation routes and design standards for streets and neighborhoods. It also suggests four alternatives for the realignment of State Route 160 within the Isleton and advises its expansion in future years. The General Plan documents typical roadway cross-section diagrams and circulation policies of different street systems. The General Plan informs the LRSP of the goals and policies guiding transportation development. It helps ensure the proposed countermeasures are well aligned with the City's vision. The General Plan is currently undergoing an update, and aspects of the new update (Safety Element, Land Use Background Report), are presented in this memo.

City of Isleton Opportunities, Constraints, and Vision Report (2017)

This report documents the community's vision for Isleton and lays the groundwork for achieving a successful, safe, and vibrant community in future years. It contains a community profile that describes existing conditions in Isleton, a section on Assets, Constraints, and Opportunities, and a draft Vision statement for the future. In addition, based on community feedback, this report informs the LRSP about the safety constraints along State Route 160 and insufficient parking along Main Street within the city limits. These constraints present the opportunity to capitalize on mobility, implement traffic calming and possible wayfinding measures.



Safety Element of Isleton General Plan & Existing Conditions Memo (2021)

The objective of the Safety Element of the General Plan is to reduce any potential for short and long-term risk of injury, loss of life, property damage, and socioeconomic impacts from fires, floods, droughts, earthquakes, landslides, climate change, and other hazards. The Safety Element directly relates to the land use, conservation, open space, housing, and environmental justice sections of the General Plan; flooding is one clear linkage, emphasized in the Safety Element and threaded throughout the General Plan. In the Existing Conditions memo, the Public Safety section emphasizes safety issues on State Route 160 and recommends to eliminate hazards to pedestrians and motorists resulting from pedestrians crossing the highway to reach the river.



Land Use Background Report of Isleton General Plan (2020)

The purpose of the Background Report is to support the City of Isleton's update to the Land Use Element of the General Plan. It presents existing conditions and trends specific to land use in the City of Isleton and serves as a resource for the Land Use Element of the General Plan and the associated Environmental Impact Report (EIR) that will be prepared pursuant to the requirements of the California Environmental Quality Act (CEQA).



City of Isleton Parking Analysis and Development Program (1989)

Recognizing increased tourist traffic by automobile, the City conducted a parking study of the entire city help alleviate parking issues within downtown Isleton. The purpose of the study was to assess current and projected demand for off-street parking, identify possible sites for new parking development, develop a financing program with adequate resources to construct new parking facilities, provide an implementation schedule based on projected funding availability, and to review current zoning ordinance and make recommendations as appropriate. Recommendations included striping all on-street parking spaces and exploring future parking lots along State Highway 160, First Street, A Street, and across from City Hall.



**Isleton 10-Year Capital Improvement Program (CIP) (2017)**

The City's 10-Year CIP outlines all capital and planning project investments from 2017-2026. This includes streets, parks and recreation, City services, waste water, and planning/design projects. Some of the transportation investments the City plans to make includes ADA ramp upgrades, road repaving, curb/gutter improvements, widening sidewalks, new signage/landscaping, and traffic calming improvements on Highway 160. The plan outlines cost estimates for each project as well as identified City funds and identified or planned grant funds.



**SACOG Regional Bicycle, Pedestrian, and Trails Master Plan (2015)**

The Regional Bicycle, Pedestrian, and Trails Master Plan serves as the guiding document for active transportation investments in the six county Sacramento region. In order for a project to be eligible for funding from SACOG, it must be contained within this plan. As it pertains to Isleton, two projects are proposed: a Class I multi-use path along the Sacramento River waterfront and Highway 160, and a Bicycle/Pedestrian Master Plan & Feasibility Study. Additional Class II bike lanes are proposed just outside City limits on Tyler Island Bridge Road and Oxbow Road



**SACOG Metropolitan Transportation Plan/ Sustainable Communities Strategy (2020)**

This document serves as the guiding document for all transportation related investments across the six-county Sacramento region. The MTP/SCS is a federally required document that not only lists all planned investments in roadways, bicycle and pedestrian infrastructure, transit, etc., but also includes land use and growth forecasts. The intention is to provide a link between land use and transportation and ensure that the transportation system is meeting the needs of the Sacramento region. Projects that are included in the plan are eligible to receive federal funding. The Plan is guided by the following four priority policy areas:



- Build vibrant places for today's and tomorrow's residents
- Foster the next generation of mobility solutions
- Modernize the way we pay for transportation infrastructure
- Build and maintain a safe, reliable, and multimodal transportation system



**3. Collision Data Collection and Analysis**

This chapter summarizes the results of a citywide collision analysis for the time period between January 2015 and December 2019, as part of the Local Road Safety Plan (LRSP). This chapter includes the following sections:

- Collision Data Analysis
- Geographic Collision Analysis
- High Injury Network
- Summary and Next Steps

The LRSP focuses on systematically identifying and analyzing traffic safety issues and recommends appropriate safety improvements. This chapter starts with an analysis of the collisions of all severity for the City of Isleton, including Property Damage Only (PDO) collisions. Collisions on State Route 160 (SR-160) were also included. A more detailed analysis for fatal and severe injury (F+SI) collisions that have occurred on Isleton roadways is included alongside the analysis of collisions of all severity

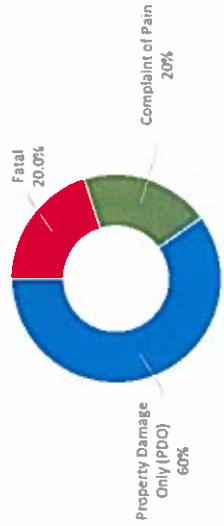
After this data was separated between intersection collisions and roadway segment collisions, a comprehensive evaluation was conducted based on factors such as: collision severity, type of collision, primary collision factor, lighting, weather, and time of the day. A list of high-injury intersections and roadway segments were then identified and ranked based on the calculation of the equivalent property damage only (EPDO) scoring system.

Figure 6 illustrates all the injury collisions that have occurred in Isleton from 1/1/2015 to 12/31/2019.





Figure 7. Collisions by Severity (2015-2019)



The analysis first includes a comparative evaluation between all collisions and F+SI collisions, based on various factors, including: collision trend over time, primary collision factor/violation category, collision type, facility type, motor vehicle involved with, weather, lighting, time of the day, and demographics of parties at-fault. Collision factors were then combined into pairs to dive deeper into the data and see what prominent trends are causing collisions in Isleton.

The collision data was separated below by facility type, i.e. based on collisions occurring on intersections and roadway segments. In accordance with HSIP guidelines, a collision was said to have occurred at an intersection if it occurred within 250 feet of it. The reported collisions categorized by facility type and collision severity are presented in Table 3.

Table 3. Collisions by Severity and Facility Type

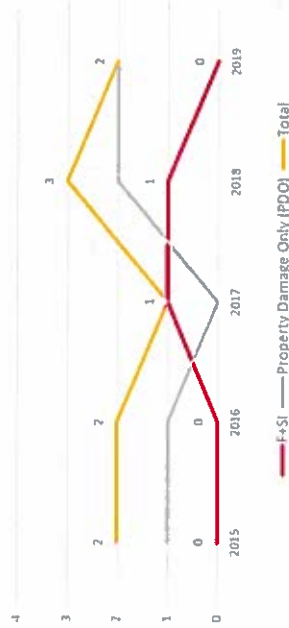
Collision Severity	Roadway Segment	Intersection	Total
Fatal	1	1	2
Severe Injury	0	0	0
Visible Injury	0	0	0
Complaint of Pain	1	1	2
Property Damage Only (PDO)	0	6	6
<b>Total</b>	<b>2</b>	<b>8</b>	<b>10</b>



Collision Severity by Year

For all collisions, the number overall increased from 2015 to 2018 before decreasing in 2019. The highest number of collisions (3 collisions) occurred in 2018 and the lowest number of collisions (1) occurred in 2017. A total of 2 F+SI collisions occurred in the City of Isleton during the study period, one in 2017 and 2018 each. Figure 8 illustrates the five-year collision trend for all collisions, F+SI collisions and PDO collisions.

Figure 8. Five Year Collision Trend



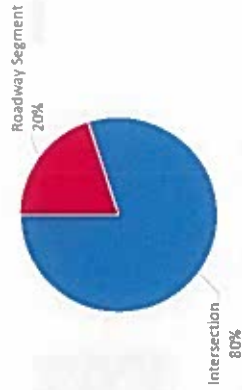
Intersection vs. Roadway Collisions

For the purposes of the analysis, a collision was said to have occurred at an intersection if it occurred within 250 feet of it. When evaluating collision location data for Isleton, the vast majority of collisions occurred at intersections. In the City of Isleton, 80% of all collisions (8 collisions) occurred at intersections whereas 20% (2 collisions) occurred on roadway segments. For the two F+SI collisions, one occurred at an intersection and one occurred on a roadway segment. This classification by location can be observed in Figure 9.





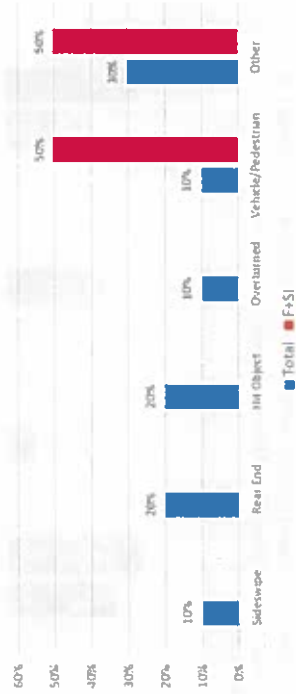
Figure 9: Intersection vs. Roadway Collisions – All Collisions



**Collision Type**

Considering all collisions, the most commonly occurring collision types (besides Other, where a specific type is not coded in the collision report) were rear end (20%) and hit object collisions (20%). The high percentage of intersection collisions overall likely contributes to higher percentages of rear-end collisions (this type of collision more commonly occurs at intersections). The two F+SI collisions includes a vehicle-pedestrian and other type collision. Figure 10 illustrates the collision type for all collisions as well as F+SI collisions.

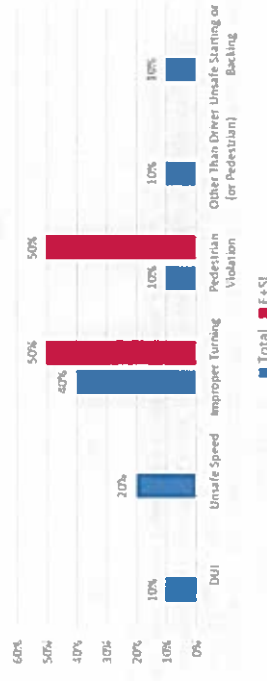
Figure 10: Collision Type – All Collisions vs. F+SI Collisions



**Violation Category**

Considering all collisions, the most common violation category was observed to be the improper turning (40%) and unsafe speed (20%). The two F+SI collisions includes an improper turning violation and a pedestrian violation (in most cases, this is when the pedestrian violates a vehicle's right-of-way). Figure 11 illustrates the violation category for all collisions and F+SI collisions.

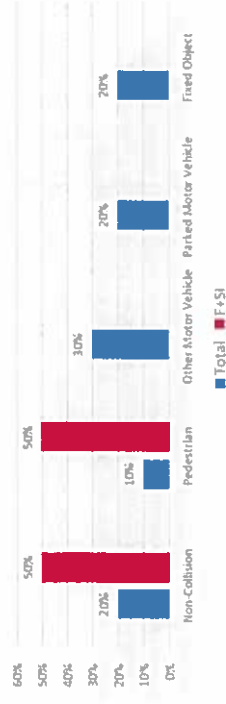
Figure 11: Violation Category: All Collisions vs. F+SI Collisions



**Motor Vehicle Involved With**

Motor Vehicle Involved With (MVIV) is the term used in SWITRS to indicate what the motor vehicle collided with, causing the collision. Considering all collisions, 30% of the collisions are motor vehicles involved with other motor vehicles. The F+SI collisions were categorized as a non-collision and a pedestrian collision. Further investigation into the F+SI collision categorized as non-collision indicates the vehicle ran off the road. Figure 12 illustrates the percentage for all collisions as well as F+SI collisions.

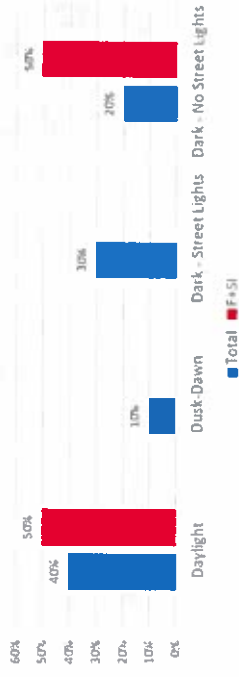
Figure 12: Motor Vehicle Involved With: All Collisions vs. F+SI Collisions



**Lighting**

For collisions of all severity, 50% of collisions have occurred in low light conditions (either at night or dawn/dusk), including 20% that occurred on streets with no street lights. 1 F+SI collision occurred in the dark with no street lights, while the other occurred in daylight. The significant percentage of collisions that occurred in low light conditions indicates that lighting may be a factor. Figure 13 illustrates the lighting condition for all collisions and F+SI collisions.

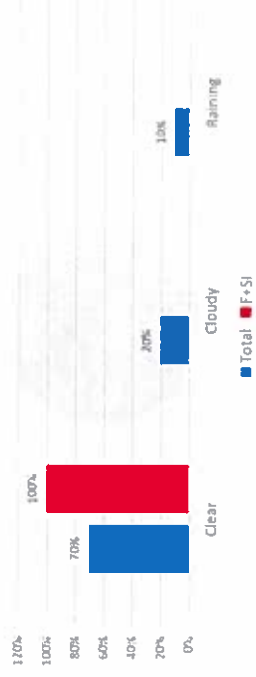
Figure 13: Lighting Conditions: All Collisions vs. F+SI Collisions



**Weather**

A large majority of all collisions (70%) occurred during clear weather conditions, while 20% of collisions occurred during cloudy weather conditions and 10% occurred during rainy conditions. Both F+SI collisions occurred during clear weather conditions. Figure 14 illustrates the percentage distribution of weather conditions during occurrence of collisions of all severity as well as F+SI collisions.

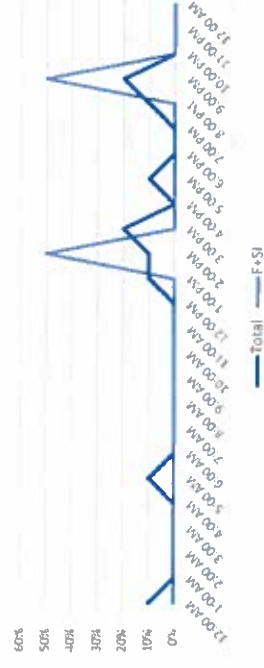
Figure 14: Weather Conditions: All Collisions vs. F+SI Collisions



**Time of the Day**

For collisions of all severity, the highest frequency occurred between 3:00 PM to 4:00 PM (20 percent) and 9:00 PM to 10:00 PM (20 percent). The two F+SI collisions occurred between 2:00 PM and 3:00 PM and 9:00 PM to 10:00 PM. Figure 15 illustrates the percentage of collisions occurring during the day for all collisions as well as F+SI collisions.

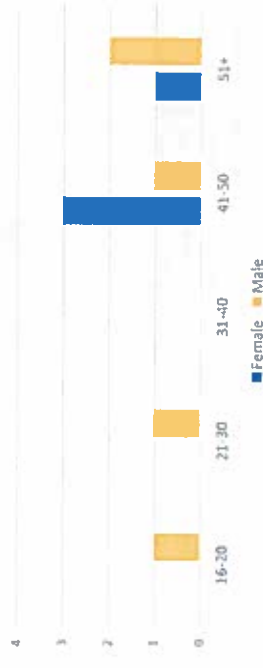
Figure 15: Time of the Day: All Collisions vs. F+SI Collisions



**Age and Gender of At-Fault Parties**

For all collisions, the gender of the party at fault is slightly more likely to be male than female (56%). The party at fault is also much more likely to be age 40 or above (78%). The two F+SI collisions show similar trends in age, with both at fault parties over the age of 40 (though both were female). Figure 16 illustrates the gender and ages of at-fault parties in all collisions.

Figure 16: Age and Gender of At-Fault Parties



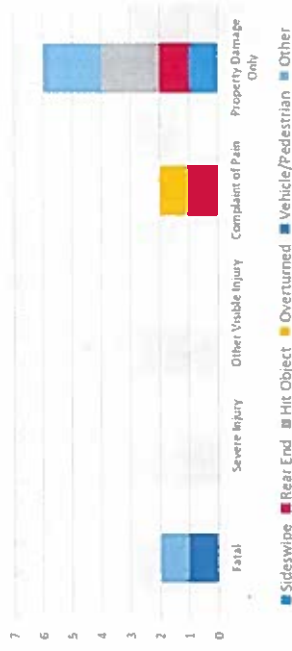
**Combining Collision Factors**

Combining collision factors allows the project team to dive deeper into the data and understand what factors may be contributing to collisions on Isleton's roadways. Understanding what collision factors are occurring most commonly together will inform which countermeasures or 4 E's strategies are most appropriate to address them. Below presents five combinations of collision factors to better understand the most prevalent traffic safety issues in Isleton: collision type and severity, collision type and violation category, motor vehicle involved with and violation category, collision type and lighting conditions, and collision type and time of day.

**Collision Type and Severity**

For all collisions, the most common collision types and severity combinations were Property Damage Only/Other, and Property Damage Only/Hit Object. Figure 17 shows the severity of collisions as well as the collision types.

Figure 17: All Collisions: Collision Type vs Severity (2015-2019)

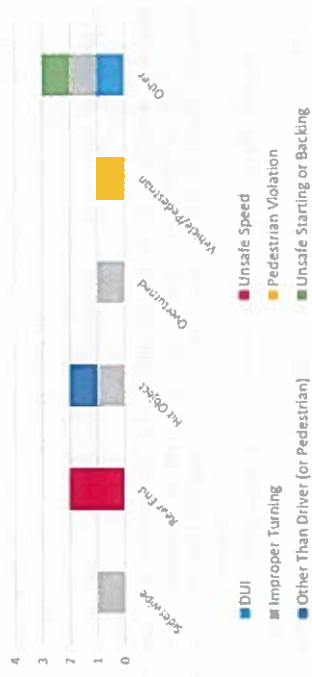


**Collision Type and Violation Category**

For all collisions, the most common collision types (other than Other collisions, which indicates a specific collision type was not coded in the collision report) were rear end and hit object collisions. Rear end collisions were caused by unsafe speed, while hit object collisions resulted from improper turning and factors other than the driver or pedestrian. Collisions labeled as Other were caused by DUI, improper turning, and unsafe starting or backing. Figure 18 illustrates the type of collision as well as the violation category for all collision severities.



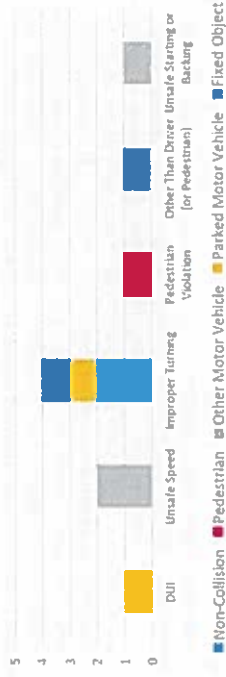
Figure 18: All Collisions: Collision Type vs Violation Category (2015-2019)



**Motor Vehicle Involved with and Violation Category**

For all collisions, the violation category of collisions that led to the highest amount of collisions was improper turning and unsafe speed. Improper turning violations most commonly resulted in non-collisions, collisions with parked motor vehicles, and collisions with fixed objects. Unsafe speed collisions most commonly resulted in collisions with other motor vehicles. The results, with violation category and motor vehicle involved with, are shown in Figure 19.

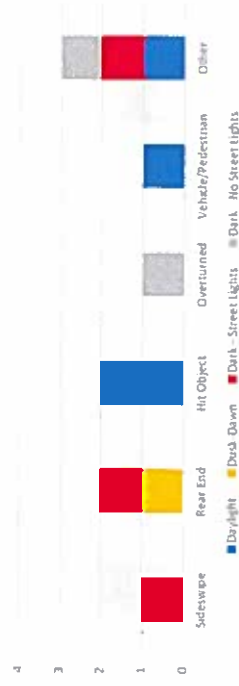
Figure 19: All Collisions: Motor Vehicle Involved with vs Violation Category



**Collision Type and Lighting Conditions**

Based on this chart, collisions in low or no light conditions resulted in sideswipe, rear end, and overturned collisions. Daylight collisions included hit object and vehicle/pedestrian collisions. Collisions labeled as Other occurred in both daylight and nighttime conditions. Figure 20 illustrates the lighting condition and the collision type as observed for all collisions.

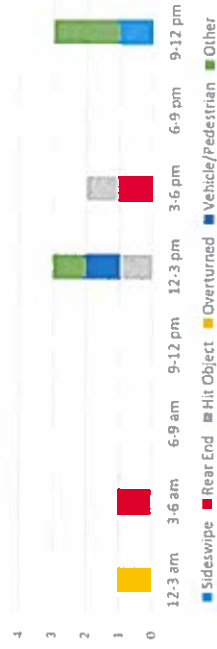
Figure 20: All Collisions: Collision Type vs Lighting Conditions



**Collision Type and Time of the Day**

For all collisions types, the most common collision type was hit object and rear end. Hit object collisions have been observed to occur primarily between 12pm and 6pm, while rear end collisions occurred between 3am-6am and 3pm-6pm. Figure 21 illustrates the collision type by the time of the day for all collisions.

Figure 21: All Collisions: Collisions Type vs Time of the Day



**Collision Locations and Trends**

The collisions analysis above was used to identify three prominent collision factors that highlight the top trends among collisions in Isleton. These three identified collision factors were: **improper turning, unsafe speed, and nighttime collisions.** Improper turning was the most common violation type among all collisions (40%), and also was the cause of one of the F+SI collisions. Unsafe speed caused 20% of all injury collisions and was a factor in one of the four injury collisions. Lastly, nighttime collisions made up half of all collisions when dawn/dusk collisions are included. It was a factor in two of the injury collisions, including one of the F+SI collisions. It's also worth noting that although it was only a factor in one of the collisions citywide, a **pedestrian collision** made up one of the two F+SI collisions. It will be important to examine potential countermeasures to combat pedestrian collisions as well and ensure Isleton's transportation network is safe for all ages and abilities. These collision trends will help to inform the Emphasis Areas selected for the LRSP, which represent the most critical traffic safety issues needing attention in Isleton. The 4 E's strategies and engineering countermeasures will be developed out of the Emphasis Areas.

**Collisions by the Numbers**

**Key findings on patterns and trends included:**

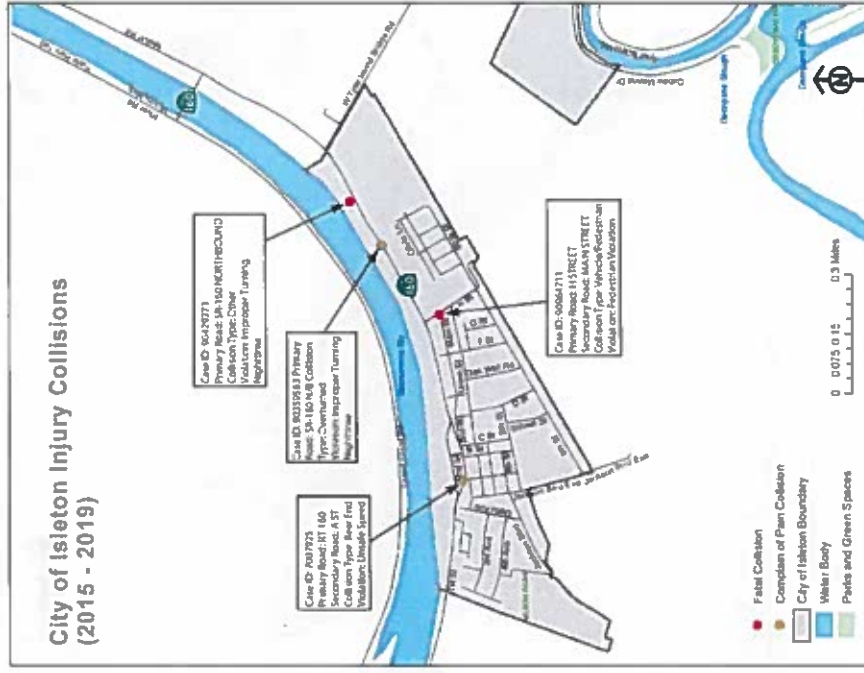
- 10 collisions occurred in Isleton between 2015 and 2019.
- Of these, six were Property Damage Only (PDO) collisions, two collisions led to a complaint of pain injury, and two led to a fatality.
- 2018 had the most collisions with three, while 2017 had the fewest (one).
- 80% of all collisions occurred at intersections, while 20% occurred on roadway segments.
- Rear-end collisions (20%) and hit object collisions (20%) were the most common collision types among all collisions.
- Improper turning violations were observed to be the most common with 40% of all collisions, followed by unsafe speed (20%).
- Vehicles colliding with other motor vehicles accounted for 30% of all collisions, followed by non-collisions (20%), parked motor vehicles (20%), and fixed objects (20%).
- 40% of all collisions occurred in daylight, followed by 30% at night with street lights present.
- A large majority of collisions occurred in clear weather conditions (70%), followed by 20% of collisions in cloudy conditions and 10% in rainy conditions.
- The hour with the most observed collisions was 3:00 pm to 4:00 pm (20%) and 9:00 pm to 10:00 pm (20%).





Figure 22 shows the location, collision type, violation type and severity for injury collisions in Isleton.

Figure 22: Injury Collisions by Type and Violation Category



**Collision Severity Index**

A collision severity weight was used to identify the high severity collision network, using the Equivalent Property Damage Only (EPDO) method. The EPDO method accounts for both the severity and frequency of collisions by converting each collision to an equivalent number of property damage only (PDO) collisions. The EPDO method assigns a crash cost and score to each collision according to the severity of the crash weighted by the comprehensive crash cost. These EPDO scores are calculated using a simplified version of the comprehensive crash costs per HSIP Cycle 10 application. The weights used in the analysis are shown below in Table 4.

Table 4: EPDO Score used in HSIP Cycle 10

Collision Severity	EPDO Score
Fatal and Severe Injury Combined	165*
Visible Injury	11
Complaint of Pain	6
PDO	1

\*This is the score used in HSIP Cycle 10 for collisions on roadways segments, to simplify the analysis this study uses the same score for all F+SI collisions regardless of location.

The EPDO scores for all collisions can then be aggregated in a variety of ways to identify collision patterns, such as location hot-spots. The weighted collisions for the City of Isleton were geolocated onto Isleton's road network.

Figure 23 shows the location and geographic concentration of collisions by their EPDO score.

Figure 23: Isleton Severity Index



**High-Injury Network**

Following the detailed collision analysis, the next step was to identify the high-risk roadway segments and intersections in the City of Isleton. The high risk locations will form the basis for the subsequent engineering countermeasure recommendations. The methodology for scoring the high injury locations is the same method used in the severity weight section.

An Equivalent Property Damage Only (EPDO) analysis was performed for the roadway network to establish the High Injury Network and rank high-risk locations. It was found that the intersection with the highest EPDO score was H Street at Main Street (165), while the roadway segment with the highest EPDO score was SR-160 from W. Tyler Island Bridge Road to 1<sup>st</sup> Street (179). A total of four high-risk intersections and four high-risk roadway segments were identified (see Table 3 for the high-risk intersections and Table 4 for the high-risk roadway segments).

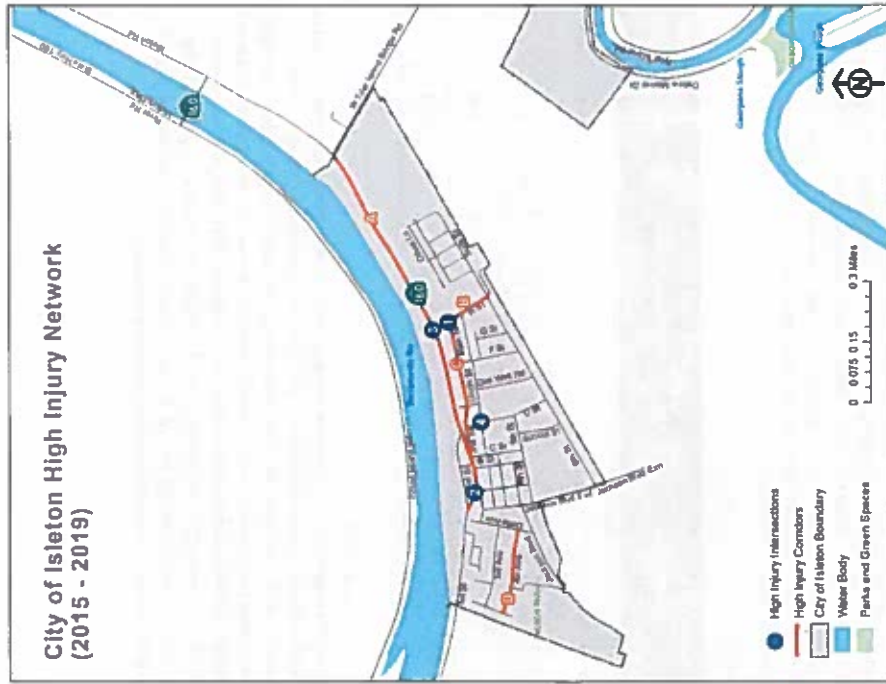
In addition to the high-risk segments identified from the collision analysis, four additional roadway segments were identified by City staff as locations of concern, supported by resident comments. These locations were included in the selection of countermeasures:

- A Street, 4<sup>th</sup> Street, and Jackson Street: City Limit to SR-160
- B Street: SR-160 to 5<sup>th</sup> Street
- Union Street: C Street to H Street
- 6<sup>th</sup> Street: Jackson Street to H Street

Figure 24 shows the top four high-collision roadway segments, and top four high-collision intersections. This high collision network has a total of nine collisions and two F+SI collisions, which represents 90 percent of the collisions and 100 percent of F+SI collisions in Isleton.

For the purposes of the high collision network analysis, intersections include collisions that occurred within 250 feet of an intersection, and roadways include all collisions that occurred along the roadway as per the SWITRS collision data.

Figure 24: City of Isleton High Injury Network



**High Injury Intersections**  
Four intersections were identified as high injury intersections. There were a total of five collisions and one F+SI collisions that occurred at these intersections. The intersection of H Street and Main Street has the highest EPDO score, primarily due to the fact that a fatal collision occurred at this intersection. Table 5 lists the collision rate of the top four identified high-collision intersections along with their collision total and the number of F+SI collisions. Collisions falling into one of the three identified trends are also listed (improper turning violations, unsafe speed violations, and nighttime collisions)

Table 5: High Injury Intersections

ID	Intersection	Total	F+SI	Improper Turning	Unsafe Speed	Night-time	EPDO Score
1	H St/Main St	1	1	0	0	0	165
2	2 <sup>nd</sup> St/A St/SR-160	2	0	0	1	0	7
3	SR-160/H St	1	0	0	1	1	1
4	Union St/D St	1	0	1	0	1	1



**High Injury Corridors**

Four corridors were identified as high injury corridors. There was a total two F+SI collisions and eight total collisions on these corridors. The corridor with the highest EPDO score is River Road/SR-160. Table 6 lists the collision rate of the top four identified high-collision corridors along with the number of F+SI collisions and total collisions. Collisions falling into one of the three identified trends are also listed (improper turning violations, unsafe speed violations, and nighttime collisions)

Table 6: High Injury Corridors

ID	Corridors	Total	F+SI	Collisions			Length (miles)	EPDO Score
				Improper Turning	Unsafe Speed	Nighttime		
A	River Rd/SR-160: W Tyler Island Bridge Rd to 1 <sup>st</sup> St	5	1	2	2	3	1.0	179
B	H St: River Rd/SR-160 to 6 <sup>th</sup> St	1	1	0	0	0	0.15	165
C	Main St/2 <sup>nd</sup> St: SR-160 to H St	1	0	1	0	0	0.30	1
D	4 <sup>th</sup> Ave: Delta Ave to Georgiana Dr	1	0	0	0	1	0.21	1

**Annual Average Daily Traffic (AADT) on SR-160**

One of the biggest concerns of Isleton residents, when asked in stakeholder meetings, and on the interactive map, is increasing traffic on SR-160. To understand if changes in traffic volumes had occurred over the recent seven years, TJKM pulled Annual Average Daily Traffic (AADT) data from Caltrans' Traffic Census program for Highway 160 at the Isleton Bridge (the closest available location to Isleton). It was found that from 2013-2020, AADT increased in the NB direction by 98%, and by 44% in the SB direction. This shows a trend to increasing northbound volumes passing through the city, although some of this increase can possibly be attributed to an improving economy following the recession.



**Summary**

Between 2015 and 2019, a total of 10 collisions occurred within the City of Isleton, four of which resulted in an injury. Two of these injury collisions were fatal, representing 20% of all collisions in Isleton. These two fatal collisions were a vehicle/pedestrian collision and a non-collision (further analysis revealed the vehicle ran off the road), and were caused by a pedestrian violation and improper turning respectively. Among all collisions, the most prominent collision type were hit object and rear end collisions, while improper turning and unsafe speed were the most common violation types. Three of the four injury collisions occurred along SR-160.

Three prominent collision factors that emerged were:

- Improper turning
- Unsafe speed
- Nighttime collisions
- Pedestrian collisions

Improper turning was the most common violation type among all collisions (40%), and also was the cause of one of the F+SI collisions along SR-160. Of all collisions, two improper turning collisions occurred on SR-160, one occurred on Main St, and one occurred on Union St. Improper turning collisions can potentially be mitigated by improving the visibility of an intersection or roadway through upgraded pavement markings, upgraded signage, installing/upgrading lighting, or improving sight distance. Driver education or enforcement can also be beneficial in addressing improper turning movements.

Unsafe speed caused 20% of all injury collisions and was a factor in one of the four injury collisions. Both observed unsafe speed caused collisions occurred on SR-160. Speeding can be mitigated through the introduction of traffic calming, which can be a combination of street narrowing, medians, bulb outs at intersections, or Complete Streets elements like high visibility crosswalks, bike lanes, and wider sidewalks. Driver education and speed enforcement, either through radar trailers or officer patrols, can also help to mitigate instances of unsafe speed violations.

For all collisions, 50% of collisions occurred during the nighttime or low light conditions, including one of the two fatal or severe injury collisions. Nighttime injury collisions were observed primarily on SR-160 east of H St. This may indicate that lighting at these locations should be evaluated to insure lumen levels are adequate. Many different factors can contribute to nighttime collisions, such as low lighting levels that can be targeted with countermeasure, but extraneous factors can also contribute to nighttime injury such as





alcohol use, sleep and fatigue. Improvements such as installing new lighting, upgrading existing lighting to a higher lumen, installing and upgrade signs with new fluorescent sheeling and installing pedestrian improvements with lighting elements such as RRFBS (rectangular rapid flashing beacons) and HAWKS can help make these locations safer for all road users.

Although it made up only one of the 10 collisions citywide, it's worth noting that a **fatal pedestrian collision** was one of the two F+SI collisions that occurred in the study period. Addressing these types of collisions helps to make Isleton's transportation network safe for all modes of travel. Countermeasures such as traffic calming, high visibility crosswalks, Rectangular Rapid Flashing Beacons (RRFBs), sidewalk bulb outs, advanced flashing warning signs, can all help to address pedestrian collisions.



#### 4. Emphasis Areas

Emphasis areas are focus areas for the LRSP that are identified through the comprehensive collision analysis of the identified high injury locations within the City of Isleton. Emphasis areas help in identifying appropriate safety strategies and countermeasures with the greatest potential to reduce collisions occurring at these high injury locations. They can include (but not be limited to): specific collision types, human behaviors, facility types, and specific locations or corridors.

This technical memorandum summarizes the top six (6) emphasis areas identified for the City of Isleton. These emphasis areas were derived from the consolidated high injury collision database (Appendix B) where top injury factors were identified by combining the data manually. Along with findings from the data analysis, stakeholder input was also considered while identifying emphasis areas specific to the City of Isleton.

#### The Four E's of Traffic Safety

The LRSP utilizes a comprehensive approach to safety incorporating the "4 E's of traffic safety": Engineering, Enforcement, Education and Emergency Medical Services (EMS). This approach recognizes that not all locations can be addressed solely by infrastructure improvements. Incorporating the 4 E's of traffic safety is often required to ensure successful implementation of significant safety improvements and reduce the severity and frequency of collisions throughout a jurisdiction.

Some of the common violation types that may require a comprehensive approach are speeding, failure-to-yield to pedestrians, red light running, aggressive driving, failure to wear safety belts, distracted driving, and driving while impaired. When locations are identified as having these types of violations, coordination with the appropriate law enforcement agencies is needed to arrange visible targeted enforcement to reduce the potential for future driving violations and related crashes and injuries.

To improve safety, education efforts can be used to supplement enforcement and improve the efficiency of each strategy. Education can also be employed in the short-term to address high crash locations until the recommended infrastructure project can be implemented. Similarly, Emergency Medical Services entails strategies around supporting organizations that provide rapid response and care when responding to collisions causing injury, by stabilizing victims and transporting them to medical facilities.



**Existing Traffic Safety Efforts in the City of Isleton**

The City of Isleton and Sacramento County have already planned or implemented safety strategies corresponding to the 4 E's of traffic safety. The strategies detailed in this memorandum can supplement these existing programs and concentrate them on high injury collision locations and crash types. These initiatives are summarized in the following table:

Table 2: Existing Traffic Safety Efforts in Isleton

Document/ Program	Description	E's Addressed
City of Isleton Opportunities, Constraints, and Vision Report (2017)	This report focus on safety issue along the SR-160, and insufficient parking along Main Street within the city limits. These constraints present the opportunity to capitalize on mobility, implement traffic calming and possible wayfinding measures.	Engineering
Safety Element of Isleton General Plan & Existing Conditions Memo (2021)	In the Existing Conditions memo, the Public Safety section emphasizes safety issues on SR-160 and recommends to eliminate hazards to pedestrians and motorists resulting from pedestrians crossing the highway to reach the river. Recognizing increased tourist traffic by automobile and to ensure safety, this study recommends striping all on-street parking spaces and exploring future parking lots along SR 160, First Street, A Street, and across from City Hall.	Engineering
City of Isleton Parking Analysis and Development Program (1989)	As per the 2017 CIP, City plans to invest in transportation safety projects including ADA ramp upgrades, road repaving, curb/gutter improvements, widening sidewalks, new signage/landscaping, and traffic calming improvements on SR-160.	Engineering



**Factors Considered in the Determination of Emphasis Areas**

This section presents collision data analysis for each emphasis area. Emphasis areas were determined by factors that led to the highest amount of collisions, with a specific emphasis on fatal and severe (F+S) injury collisions. In addition to the collision data, emphasis areas were also identified from the feedback received from community and stakeholders. This section also presents comprehensive programs, policies and countermeasures from the 4 E's of traffic safety to reduce collisions in specific emphasis areas, identifies performance metrics, and potential implementing partners.

Table 2: Existing Traffic Safety Efforts in Isleton

Document/ Program	Description	E's Addressed
SACOG Metropolitan Transportation Plan/ Sustainable Communities Strategy (2020)	This plan/strategy sets policies related to transportation safety such as prioritizing cost effective safety improvements, investing in bicycle and pedestrian infrastructure, and reduce greenhouse gas emissions and vehicle miles traveled.	Engineering
Sacramento Area Bicycle Advocates	This non-profit organization encourages safe bike trips within the Sacramento area by promoting improvements to the bicycling infrastructure by local governments, partnering with community and decision makers, and providing skill training under a safe route to school program.	Education
California Highway Patrol (CHP) Problem Oriented Policing (POP)	CHP's Valley Division has implemented a POP team for the South Sacramento region that also serves the Delta. Citizens can contact the team to inform them of a recurring traffic safety issue and respond to the issue.	Enforcement
Sacramento County Sheriff's Office (SCSO)	SCSO serves as the police department in the City of Isleton and enforces traffic laws on the City's roadways.	Enforcement, EMS

**Factors Considered in the Determination of Emphasis Areas**

This section presents collision data analysis for each emphasis area. Emphasis areas were determined by factors that led to the highest amount of collisions, with a specific emphasis on fatal and severe (F+S) injury collisions. In addition to the collision data, emphasis areas were also identified from the feedback received from community and stakeholders. This section also presents comprehensive programs, policies and countermeasures from the 4 E's of traffic safety to reduce collisions in specific emphasis areas, identifies performance metrics, and potential implementing partners.

The City of Isleton experienced nine collisions on its high injury network, which consists of all identified high-risk intersections and roadway segments. Of these, two were fatal or severe



injury collisions (F+ S). All statistics presented below are based on these nine high injury network collisions. The identified emphasis areas are as follows:

- Emphasis Area 1 – Reduce Intersection Collisions
- Emphasis Area 2 – Improve Pedestrian Safety
- Emphasis Area 3 – Reduce Collisions from Improper Turning Violations
- Emphasis Area 4 – Address SR 160 Collisions
- Emphasis Area 5 – Reduce Unsafe Speed Violations and Rear-End Collisions
- Emphasis Area 6 – Reduce Nighttime Collisions



**Emphasis Area 1 – Reduce Intersection Collisions**  
 Seven of the nine high-injury network collisions (78%) occurred at intersections. Intersection collisions are in many cities the most common locations for collisions due to increased conflict points between vehicles, pedestrians, and bicycles. Of the intersection collisions in Isleton, two occurred due to unsafe speed, two occurred due to improper turning, and four occurred at night. The following table details 4 E's strategies selected to address intersection collisions in Isleton.

2      2      4  
**Unsafe Speed**      **Improper Turning**      **Nighttime**

Table 8: Emphasis Area 1 Strategies

Objective: Reduce the number of fatal and severe injury collisions at Intersections.			
Education	Strategy	Performance Measure	Agencies/ Organizations
Education	Conduct public information and education campaign for intersection safety laws regarding stop signs, and safe driving habits, such as proper turning.	Number of education campaigns or residents reached	City/Sheriff's Office
Enforcement	Targeted enforcement at high-risk intersections to monitor traffic law violations, right-of-way violations, speed limit laws and other violations that occur at intersections.	Number of tickets issued.	Sheriff's Office/CHP
Engineering	<ul style="list-style-type: none"> <li>• NS06. Install/Upgrade larger or additional stop signs or other intersection warning/regulatory signs</li> <li>• NS07. Upgrade intersection pavement markings</li> <li>• NS08. Install Flashing Beacons at Stop-Controlled Intersections</li> <li>• NS09. Install flashing beacons as advance warning (NS11)</li> <li>• NS10. Install transverse rumble strip on approaches</li> <li>• NS11. Improve sight distance to intersection (Clear Sight Triangles)</li> <li>• NS13. Install splitter-islands on the minor road approaches</li> <li>• R01. Add Segment Lighting</li> <li>• R22. Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)</li> <li>• R27. Install delineators, reflectors and/or object markers</li> </ul>	Number of intersections improved	City
EMS	Improve resource deployment and clear routes for emergency responses to collision sites.	EMS vehicle response time.	Sacramento County Emergency Medical Services Agency (SCEMSA)



**Emphasis Area 2 – Improve Pedestrian Safety**

While Isleton experienced only one pedestrian collision (11% of all high injury network collisions) it resulted in a fatality. Pedestrians, along with bicyclists, are among the most vulnerable road users and will benefit from pedestrian safety improvements on Isleton streets. The fatal collision that occurred was the result of a pedestrian violation and crossing not in a crosswalk.

**1 1 1**  
**Involved a pedestrian Pedestrian Violation Fatal Collision**  
**crossing not on a crosswalk**

Table 9: Emphasis Area 2 Strategies

Objective		Agencies/ Organizations
Strategy	Performance Measure	
<p><b>Education</b></p> <p>Conduct pedestrian safety campaigns and outreach to raise their awareness of pedestrian safety needs through media outlets, social media and Sacramento County Walk &amp; Bike.</p> <p>Consider partnering with Safe Routes to School to conduct bicycle and pedestrian safety programs at Isleton Elementary School.</p>	<p><b>Number of education campaigns or residents reached</b></p>	<p>City/School District/Sheriff's Office</p>
<p><b>Enforcement</b></p> <p>Targeted enforcement at high-risk locations especially near schools and downtown Isleton where pedestrians are more present.</p> <p>Increase enforcement during time periods of high bicycle/pedestrian activity</p>	<p><b>Number of tickets issued</b></p>	<p>Sheriff's Office/CHP</p>
<p><b>Engineering</b></p> <ul style="list-style-type: none"> <li>NS07, Upgrade intersection pavement markings (NSL)</li> <li>NS19PA, Install raised medians (ridge islands)</li> <li>NS21PR/RS35R, Install/upgrade pedestrian crossing (with enhanced safety features)</li> <li>RS06R, Install raised pedestrian crossing</li> <li>RS77R, Install Rectangular Rapid Flashing Beacons (RRFB)</li> <li>High-visibility ladder crosswalks</li> <li>Med-block curb extension or intersection bulb-outs</li> <li>In-road yield sign for pedestrian crossing at crosswalk</li> <li>The City should apply for NSP pedestrian set aside funds every two years</li> </ul>	<p><b>Number of locations improved</b></p>	<p>City</p>
<p><b>EMS</b></p> <p>Improve resource deployment and clear routes for emergency responses to collision sites.</p>	<p><b>EMS vehicle response time</b></p>	<p>Sacramento County Emergency Medical Services Agency (CEMSA)</p>



**Emphasis Area 3 – Reduce Collisions from Improper Turning Violations**

Four (44%) of the collisions on the high injury network were improper turning collisions, including 1 fatal or severe injury (F+S) collision. Of these improper turning collisions, two resulted in a non-collision (one of these was an overturned vehicle), two occurred on SR-160, and three occurred at night.

**2 2 3**  
**Collisions due to Collisions on SR-160 Nighttime Collisions**  
**Non-Collision Factor**

Table 10: Emphasis Area 3 Strategies

Objective		Agencies/ Organizations
Strategy	Performance Measure	
<p><b>Education</b></p> <p>Conduct public information and education campaign for intersection safety laws regarding traffic light, stop signs, and turning left or right.</p>	<p><b>Number of education campaigns or residents reached</b></p>	<p>City/Sheriff's Office</p>
<p><b>Enforcement</b></p> <p>Targeted enforcement at high-risk intersections to monitor improper turning violations.</p>	<p><b>Number of tickets issued</b></p>	<p>Sheriff's Office/CHP</p>
<p><b>Engineering</b></p> <ul style="list-style-type: none"> <li>NS06, Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs</li> <li>NS07, Upgrade intersection pavement markings (NSL)</li> <li>NS11, Improve sight distance to intersection (Clear Sight Triangles)</li> <li>NS13, Install speeder-stands on the major road approaches</li> <li>NS14, Install raised median on approaches (NSL)</li> <li>NS18, Install left-turn lane (where no left-turn lane exists)</li> <li>NS1, Add Segment Lighting</li> <li>RS2, Install/Upgrade signs with new fluorescent shearing (regulatory or warning)</li> <li>RS7, Install delineators, reflectors and/or object markers</li> <li>RS8, Install edge-lines and cantstrips</li> <li>RS1, Install edge-line variable strip/strips</li> </ul>	<p><b>Number of intersections improved</b></p>	<p>City</p>
<p><b>EMS</b></p> <p>Improve resource deployment and clear routes for emergency responses to collision sites.</p>	<p><b>EMS vehicle response time</b></p>	<p>Sacramento County Emergency Medical Services Agency (CEMSA)</p>





**Emphasis Area 4 – Address SR-160 Collisions**

Five of the nine collisions on the high injury network (56%) were collisions that occurred on SR-160, including 1 fatal or severe injury (F+S) collision. Two of these collisions occurred due to unsafe speed, two of them resulted in a rear end collision, and four of them occurred at night. As SR-160 is an important arterial and the roadway with the highest amount of traffic in Isleton, this corridor is a high priority to the City. Feedback from Isleton residents through the project website interactive map tool also shows that residents are concerned about safety on SR-160.

**2 2 4**  
**Unsafe Speed Collisions Rear End Collisions Nighttime Collisions**

Table 11: Emphasis Area 4 Strategies

Objective: Reduce the number of fatal and severe injury collisions that occur on SR-160.			
	Strategy	Performance Measure	Agencies/Organizations
Education	Conduct public information and education campaign for safe driving habits, including the dangers of speeding and obeying traffic laws to specifically address unsafe speed and illegal passing violations on SR-160 (based on stakeholder comments).	Number of education campaigns or residents reached	City/Sheriff's Office
Enforcement	Targeted enforcement at high-risk intersections and corridors to monitor safety along SR-160, particularly monitoring unsafe speed violations.	Number of tickets issued	Sheriff's Office/CHP
Engineering	<ul style="list-style-type: none"> <li>NS08, Install flashing beacons as advance warning (NSL)</li> <li>NS10, Install transverse rumble strips on approaches</li> <li>NS11, Improve sight distance to intersection (Clear Sight Triangles)</li> <li>NS12, Improve pavement friction (High Friction Surface Treatments)</li> <li>NS189a, Install raised medians (refuge islands)</li> <li>NS2196/NS3598, Install/upgrade pedestrian crossing (with enhanced safety features)</li> <li>R04, Install Guardrail</li> <li>R27, Install delineators, reflectors and/or object markers</li> <li>R31, Install edge line rumble strips/strips</li> <li>Traffic calming on SR-160 through downtown Isleton (e.g. pedestrian crossing enhancements, bulb outs, raised medians)</li> </ul>	Number of locations improved.	City/City
EMS	Improve resource deployment and clear routes for emergency responses to collision sites.	EMS vehicle response time	Sacramento County Emergency Medical Services Agency (SCEMSA)



**Emphasis Area 5 – Reduce Unsafe Speed Violations and Rear-End Collisions**  
 Two (22%) of the high injury network collisions were collisions that occurred due to unsafe speed and led to a rear end collision. This violation and collision type commonly occur together as speeding often does not leave a vehicle enough time to stop quickly if needed. Of these unsafe speed/rear end collisions, both collisions occurred with another motor vehicle, on SR-160, and at night.

**2 2 2**  
**Collisions Involving SR-160 Intersection Nighttime Collisions**  
**Other Motor Vehicle Collisions**

Table 12: Emphasis Area 5 Strategies

Objective: Reduce the number of fatal and severe injury collisions that are a result of unsafe speed violations and rear end collisions.			
	Strategy	Performance Measure	Agencies/Organizations
Education	Conduct public information and education campaign on the dangers of speeding and causes of rear end collisions.	Number of education campaigns	City/Sheriff's Office
Enforcement	Targeted enforcement along SR-160 to monitor speeding Portable radar trailers to provide drivers with a visual speed feedback.	Number of tickets issued	Sheriff's Office/CHP
Engineering	<ul style="list-style-type: none"> <li>NS01, Add intersection lighting (NSL)</li> <li>NS06, Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs</li> <li>NS07, Upgrade intersection pavement markings (NSL)</li> <li>NS09, Install flashing beacons as advance warning (NSL)</li> <li>NS10, Install transverse rumble strips on approaches</li> <li>NS12, Improve pavement friction (High Friction Surface Treatments)</li> <li>R21, Improve pavement friction (High Friction Surface Treatments)</li> <li>R26, Install dynamic/variable speed warning signs</li> <li>Install traffic calming features to slow traffic (e.g. pedestrian crossing enhancements, bulb outs/guard enclosures, raised medians)</li> </ul>	Number of locations improved.	City
EMS	Improve resource deployment and clear routes for emergency responses to collision sites.	EMS vehicle response time	Sacramento County Emergency Medical Services Agency (SCEMSA)





Table 14: List of Countermeasure Toolbox Improvements by Location

ID	Location	HSP Eligible Recommended Countermeasures
I-1	H St/Main St	<ul style="list-style-type: none"> <li>Upgrade intersection pavement markings</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install flashing beacons at stop-controlled intersection</li> <li>Convert to all-way stop control (if warrant is met)</li> <li>Install raised median at pedestrian refuge island</li> <li>Improve sight distance to intersection (Clear Sight Triangle)</li> <li>Add intersection lighting</li> </ul>
I-2	2 <sup>nd</sup> St/A St/SR-160	<ul style="list-style-type: none"> <li>Install flashing beacons as advance warning</li> <li>Install or upgrade stop or other intersection regulatory/warning signs</li> <li>Install splitter islands on minor road approaches</li> <li>Install raised median on approaches</li> <li>Install transverse rumble strips on approaches</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install rectangular Rapid Flashing Beacon</li> <li>Install raised median at pedestrian refuge island</li> <li>Upgrade intersection pavement markings</li> <li>Improve pavement friction</li> <li>Install or add intersection lighting</li> </ul>
I-3	SR-160/H St	<ul style="list-style-type: none"> <li>Improve sight distance to intersection</li> <li>Install flashing beacons at stop controlled intersection</li> <li>Install flashing beacons as advance warning</li> <li>Install or add intersection lighting</li> <li>Install or upgrade stop or other intersection regulatory/warning signs</li> <li>Install splitter islands on minor road approaches</li> <li>Install raised median on approaches</li> <li>Install transverse rumble strips on approaches</li> <li>Improve pavement friction</li> </ul>
I-4	Union St/D St	<ul style="list-style-type: none"> <li>Install or add intersection lighting</li> <li>Upgrade intersection pavement markings</li> <li>Improve sight distance to intersection</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install or upgrade stop or other intersection regulatory/warning signs</li> <li>Install splitter islands on minor road approaches</li> </ul>
A	SR-160: Tyler Island Bridge Rd to 1 <sup>st</sup> St	<ul style="list-style-type: none"> <li>Install guard rail</li> <li>Install edge-line rumble strips/stripes</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Add segment lighting</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Remove or relocate fixed objects outside Clear Recovery Zone</li> <li>Install raised median</li> <li>Install rectangular Rapid Flashing Beacon</li> <li>Install dynamic/variable speed warning signs</li> <li>Improve pavement friction</li> <li>Install delineators, reflectors, and/or object markers</li> </ul>



ID	Location	HSP Eligible Recommended Countermeasures
B	H St: SR-160 to 6 <sup>th</sup> St	<ul style="list-style-type: none"> <li>Add segment lighting</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Install edge-lines and centerlines</li> <li>Install delineators, reflectors, and/or object markers</li> <li>Install sidewalk</li> <li>Remove or relocate fixed objects outside Clear Recovery Zone</li> </ul>
C	Main St/2 <sup>nd</sup> St: SR-160 to H St	<ul style="list-style-type: none"> <li>Add segment lighting</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install edge-lines and centerlines</li> </ul>
D	4 <sup>th</sup> Ave: Delta Ave to Georgiana Dr	<ul style="list-style-type: none"> <li>Add segment lighting</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Install edge-lines and centerlines</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> </ul>
E	A St/A <sup>th</sup> St/Jackson St City Limit to SR-160	<ul style="list-style-type: none"> <li>Install sidewalk</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Add segment lighting</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Install delineators, reflectors, and/or object markers</li> </ul>
F	B St: SR-160 to 3 <sup>rd</sup> St	<ul style="list-style-type: none"> <li>Add segment lighting</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install edge-lines and centerlines</li> <li>Install delineators, reflectors, and/or object markers</li> <li>Install sidewalk</li> <li>Remove or relocate fixed objects outside Clear Recovery Zone</li> <li>Install or upgrade signs with new fluorescent sheeting</li> </ul>
G	Union St: C St to H St	<ul style="list-style-type: none"> <li>Remove or relocate fixed objects outside Clear Recovery Zone</li> <li>Install sidewalk</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install edge-lines and centerlines</li> <li>Add segment lighting</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Install delineators, reflectors, and/or object markers</li> </ul>
H	6 <sup>th</sup> St: Jackson St to H St	<ul style="list-style-type: none"> <li>Add segment lighting</li> <li>Install curve advance warning signs</li> <li>Install chevron signs on horizontal curves</li> <li>Improve pavement friction</li> <li>Install sidewalk</li> <li>Upgrade/install pedestrian crossing (with enhanced safety features)</li> <li>Install blue lanes</li> <li>Install edge-lines and centerlines</li> <li>Install raised median</li> <li>Install or upgrade signs with new fluorescent sheeting</li> <li>Install delineators, reflectors, and/or object markers</li> </ul>





Tables 15 and 16 provides a description of each countermeasure along with the crash reduction factor (CRF), federal funding eligibility, and opportunity for systemic implementation. An excerpt of the LRSM, detailing each available HSIP countermeasure referenced in the recommendations tables, is included as Appendix D. (Note: CRF = Crash Reduction Factor).

Table 15. Non-Signalized Intersection Countermeasures

Code	Countermeasure Name	Countermeasure Description	CRF	Federal Funding	Systemic Approach Opportunity
NS01	Add intersection lighting (NS1)	Provision of lighting at the intersection and all its approaches	40%	100%	Medium
NS02	Convert to all-way STOP control (from 2-way or Yield control)	Conversion of 2-way stop intersection to 4-way stop	50%	100%	High
NS06	Install/Upgrade larger or additional stop signs or other intersection warning/regulatory signs	Additional regulatory and warning signs at or prior to intersections will help enhance the ability of approaching drivers to perceive them	15%	100%	Very High
NS07	Upgrade intersection pavement markings	Increase the visibility of an intersection by upgrading pavement markings where none exist or are faded/cracked	25%	100%	Very High
NS08	Install Flashing Beacons at Stop-Controlled Intersections	Reinforce driver awareness of an intersection	15%	100%	High
NS09	Install flashing beacons as advance warning (NS1)	Installation of an advance flashing beacons can be used to supplement and call driver attention to intersection control signs	30%	100%	High
NS10	Install transverse rumble strips on approaches	Provide an auditory and tactile sensation for a motorist approaching an intersection	20%	90%	High



Code	Countermeasure Name	Countermeasure Description	CRF	Federal Funding	Systemic Approach Opportunity
NS11	Improve sight distance to intersection (Clear Sight Triangles)	Clearing roadside obstructions to improve sight distance at the intersection	20%	90%	High
NS12	Improve pavement friction (High Friction Surface Treatments)	Improves the friction of the pavement and improves skid resistance	55%	100%	Medium
NS13	Install splitter-islands on the minor road approaches	Splitter islands can provide a positive separation between turning vehicles on a through road and vehicles stopped on the minor road approach. Also allows for an extra stop sign at an intersection.	40%	90%	Medium
NS14	Install raised medians on approaches	Channel traffic approaching an intersection	25%	90%	Medium
NS19PB	Install raised medians (refuge islands)	Decreases the level of exposure of pedestrians to traffic and allows pedestrians to only cross one direction of traffic at a time	45%	90%	Medium
NS21PB	Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	Enhances pedestrian crossings with high visibility patterns, yield lines, pedestrian signage, etc. to warn drivers of the presence of pedestrians	35%	100%	Medium
NS22PB	Install Rectangular Rapid Flashing Beacon (RRFB)	Rectangular Rapid Flashing Beacon (RRFB) includes pedestrian-activated flashing lights and additional signage that enhance the visibility of marked crosswalks and alert motorists to pedestrian crossings	35%	100%	Medium



Table 16: Roadway Segment Countermeasures

Code	Countermeasure Name	Countermeasure Description	CRF	Federal Funding	Systemic Approach Opportunity
R01	Add Segment Lighting	Provision of lighting along roadways	35%	100%	Medium
R02	Remove or relocate fixed objects outside of Clear Recovery Zone	Provisions of a clear zone. A clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway. Removing or moving fixed objects, flattening slopes, or providing recovery areas reduces the likelihood of a crash.	35%	90%	Medium
R04	Install guardrail	Reduces the severity of lane departure crashes	25%	100%	Medium
R08	Install raised median	Provides a rigid barrier between opposing traffic	25%	90%	Medium
R21	Improve pavement friction (High Friction Surface Treatments)	Improves the friction of the pavement and improves skid resistance	55%	100%	High
R22	Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	Additional or new signage can address crashes caused by lack of driver awareness or compliance of roadway signing.	15%	100%	Very High
R23	Install chevron signs on horizontal curves	Warns driver of an approaching curve and provides guidance to drivers	40%	100%	Very High
R24	Install curve advance warning signs	Serves as an advance warning of an unexpected or sharp curve	25%	100%	Very High
R26	Install dynamic/variable speed warning signs	Includes the addition of dynamic regulatory signs to warn drivers of speed	30%	100%	High



Code	Countermeasure Name	Countermeasure Description	CRF	Federal Funding	Systemic Approach Opportunity
R27	Install delineators, reflectors and/or object markers	Installation of delineators, reflectors and/or object markers are intended to warn drivers of an approaching curve or fixed object that cannot easily be removed.	15%	100%	Very High
R28	Install edgelines and centerlines	Provisions of centerlines and edge-lines where none exist or make significant upgrades to existing lines	25%	100%	Very High
R31	Install edgeline rumble strips/stripes	Provision of edgeline rumble strips that create an auditory sound when driven over to mitigate lane departures	15%	100%	High
R32PB	Install bike lanes	Delineates available road space that is exclusive or preferential for use by bicycles	35%	90%	High
R34PB	Install sidewalk/pathway (to avoid walking along roadway)	Sidewalks and walkways provide people with space to travel within the public right-of-way that is separated from roadway vehicles.	80%	90%	Medium
R35PB	Install/upgrade pedestrian crossing (with enhanced safety features)	The enhanced safety elements, which may include curb extensions, medians and pedestrian crossing islands, beacons, and lighting, combined with pavement markings delineating a portion of the roadway that is designated for pedestrian crossing.	35%	90%	Medium



## 6. Safety Projects

This chapter summarizes the process of selecting safety projects as part of the analysis for the City of Isleton's Local Road Safety Plan (LRSP). The next step after the identification of high-risk locations, emphasis areas and applicable countermeasures was to identify location specific safety improvements for all high-risk roadway segments and intersections.

Specific countermeasures and improvements were selected from the 2020 Local Roadway Safety Manual (LRSM) from Caltrans, where:

- S refers to improvements at signalized locations,
- NS refers to improvements at non-signalized locations, and
- R refers to improvements at roadway segments.

The corresponding number refers to the countermeasure number in the LRSM (2020). The countermeasures were grouped into safety projects for high-risk intersections and roadway segments. A total of six safety projects were developed. All countermeasures were identified based on the technical teams' assessment of viability that consisted of extensive analysis, observations, City staff input, and stakeholder/community input. The most applicable and appropriate countermeasures as identified have been grouped together to form projects that can help make high-risk locations safer.

A set of six safety projects were created for high-risk intersections and roadway segments, using HSP approved countermeasures:

- Project #1: Systemic Improvements at Unsignalized Intersections – Install Flashing Beacons as Advance Warning, and Install Splitter Islands on Minor Road Approaches
- Project #2: Systemic Improvements at Unsignalized Intersections – Install/Upgrade Larger or Additional Stop Signs or Other Intersection Regulatory/Warning Signs, Upgrade Intersection Pavement Markings, and Improve Sight Distance to Intersection
- Project #3: Pedestrian Improvements at Unsignalized Intersections (Pedestrian Set-Aside Application) – Install/Upgrade Pedestrian Crossing with Enhanced Safety Features, Install Rectangular Rapid Flashing Beacon (RRFB), and Install Raised Medians (Refuge Islands)
- Project #4 – Roadway Segment Improvements on SR-160 – Add Segment Lighting and Install edgeline rumble strips/strips
- Project #5 – Systemic Improvements on Roadway Segments – Install/Upgrade Signs with New Fluorescent Sheeting, and Install Delineators, Reflectors, and/or Object Markers



- Project #6 – Systemic Improvements on Roadway Segments (Edgeline Set-Aside Application) – Install Edgelines and Centerlines

These safety projects were chosen based on the previously completed collisions analysis, which was used to identify main collision attributes that were found to be leading factors of fatal and severe collisions in Isleton. These collision factors were identified to be:

- Improper turning collisions
- Unsafe speed collisions
- Nighttime collisions
- Pedestrian collisions

For collisions of all severity, including PDO collisions, 40% occurred as a result of an improper turning violation, and the cause of one the F+SI collisions along SR-160. To address these collisions, viable safety projects at intersections include: installing or upgrade to larger or adding additional stop signs or other intersection warning/regulatory signs, upgrade signs with new fluorescent sheeting, upgrade intersection pavement markings, improving sight distance, installing edgeline rumble strips/strips, and improving lighting along SR-160 east of H Street.

Unsafe speed caused 20% of all injury collisions and was a factor in one of the four injury collisions. Both observed unsafe speed collisions occurred on SR-160. To address these collisions, viable safety projects include installing/upgrading pedestrian crossing at uncontrolled locations (with enhanced safety features), installing a pedestrian median refuge island, installing a Rectangular Rapid Flashing Beacon (RRFB), installing splitter islands on minor road approaches, and installing flashing beacons as advance warning.

50% of all collisions occurred at night or during low light conditions (dawn/dusk), including one of two fatal or severe injury collisions. To address these collisions, viable safety projects include installing segment lighting on SR-160 east of H Street, installing or upgrade to larger or adding additional stop signs or other intersection warning/regulatory signs, upgrade intersection pavement markings, and upgrade signs with new fluorescent sheeting for better visibility. Pedestrian improvements that can help nighttime visibility include installing/upgrading pedestrian crossing at uncontrolled locations (with enhanced safety features), and installing a Rectangular Rapid Flashing Beacon (RRFB).

Although it made up only one of the 10 collisions citywide, it's worth noting that a fatal pedestrian collision was one of the two F+SI collisions that occurred in the study area. To





address these collisions, viable safety projects include installing/upgrading pedestrian crossing at uncontrolled locations (with enhanced safety features), installing a median refuge island, and installing a Rectangular Rapid Flashing Beacon (RRFB).

The next step in the process will be to prepare grant ready materials for HSP Cycle 11 applications. TJKM has scoped to provide the City with materials for up to two applications. However, it should be noted that while the LRSP projects were based on high-risk locations, HSP applications can be expanded to include many locations across the city. TJKM will work with the City to identify additional locations that may be beneficial to add to the HSP application and calculate the BCR.

Table 17 lists the safety projects for high-risk intersections and roadway segments, along with total base planning level cost (2021 dollar amounts) estimates and the resultant preliminary Benefit-Cost (B/C) Ratio. The "Total Benefit" estimates were calculated for the proposed improvements being evaluated in the proactive safety analysis. This "Total Benefit" is divided by the "Total Cost per Location" estimates for the proposed improvements, giving the resultant B/C Ratio. The B/C Ratio Calculation follows the methodology as mentioned in the LRSM (2020). The title of each countermeasure is located in Table 18.

Appendix E lists the detailed methodology to calculate B/C Ratio, as well as the complete cost, benefit and B/C Ratio calculation spreadsheet.

Table 17: List of Viable Safety Projects

Location	CM1	CM2	CM3	Cost per Location	B/C Ratio
<b>Project 1 – Install Flashing Beacons as Advance Warning, and Install Splitter Islands on Minor Road Approaches</b>					
2 <sup>nd</sup> St/A St/SR-160	NS09	NS13		\$69,664	
H St/Main St	NS09	NS13		\$35,518	29.85
SR-160/H St	NS09	NS13		\$64,120	
<b>Project 2: Install/Upgrade STOP or Intersection Warning/Regulatory Signs, Upgrade Intersection Pavement Markings, and Improve Sight Distance to Intersection</b>					
H St/Main St	NS06	NS07	NS11	\$2,128	
2 <sup>nd</sup> St/A St/SR-160	NS06	NS07	NS11	\$13,244	30.12
SR-160/H St	NS06	NS07	NS11	\$76,944	
Union St/D St	NS06	NS07	NS11	\$13,300	



Location	CM1	CM2	CM3	Cost per Location	B/C Ratio
<b>Project 3: Pedestrian Improvements (Crossings, Refuge Island, and Rectangular Rapid Flashing Beacon) at Unsignalized Intersections (Set-Aside Application)</b>					
H St/Main St	NS21PB			\$32,305	
2 <sup>nd</sup> St/A St/SR-160	NS21PB			\$63,385	N/A*
Union St/D St	NS21PB			\$63,805	
SR-160/C St	NS21PB	NS19PB	NS22PB	\$97,514	
<b>Project 4: Roadway Segment Improvements on SR-160 (Add Segment Lighting and Edge-Line Rumble Strips)</b>					
SR-160: H St to Tyler Island Bridge Rd	R01	R31		\$374,080	6.38
<b>Project 5: Install/Upgrade Signs with New Fluorescent Sheeting, and Install Delineators, Reflectors, and/or Object Markers</b>					
SR-160: W. Tyler Island Bridge Rd to 1 <sup>st</sup> St	R22	R27		\$15,120	
H St: SR-160 to 6 <sup>th</sup> St	R22	R27		\$6,650	
Main St/2 <sup>nd</sup> St: SR-160 to H St	R22	R27		\$6,160	
A St, 4 <sup>th</sup> St, Jackson St: City Limit to SR-160	R22	R27		\$27,860	16.68
B St: SR-160 to 5 <sup>th</sup> St	R22	R27		\$5,110	
Union St: C St to H St	R22	R27		\$14,120	
6 <sup>th</sup> St: Jackson St to H St	R22	R27		\$8,260	
4 <sup>th</sup> Ave: Delta Ave to Georgiana Dr	R22	R27		\$3,640	
<b>Project 6: Install Edge-Lines and Centerlines (Edge-Line Set-Aside Application)</b>					
Various locations citywide**	R28			\$214,663	N/A*

Notes: CM – countermeasure. B/C ratio is the dollar amount of benefits divided by the cost of the countermeasure.

\*HSP Set-Aside Applications do not require a collision history or BCR

\*\*Cost is based on 40% of the City's centerline miles.



Table 1B: List of Countermeasure Names

Countermeasure Name	Countermeasure Name
NS06 – Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs	
NS07 – Upgrade intersection pavement markings	
NS09 – Install flashing beacons as advance warning (Non-signalized Intersection)	
NS11 – Improve sight distance to intersection (Clear Sight Triangles)	
NS13 – Install splitter islands on the minor road approaches	
NS19PB – Install raised medians (refuge islands)	
NS21PB – Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)	
NS22PB – Install Rectangular Rapid Flashing Beacon (RRFB)	
R01 – Add Segment Lighting	
R22 – Install/Upgrade signs with new fluorescent sheeting (regulatory or warning)	
R27 – Install delineators, reflectors and/or object markers	
R28 – Install edge-lines and centerlines	
R31 – Install edgeline rumble strips/stripes	



## 7. Evaluation and Implementation

This chapter describes the steps the City may take to evaluate the success of this plan and steps needed to update the plan in the future. The LRSP is a guidance document and requires periodic updates to assess its efficacy and re-evaluate potential solutions. It is recommended to update the plan every two to five years in coordination with the identified safety partners. This document was developed based on community needs, stakeholder input, and collision analysis conducted to identify priority emphasis areas throughout the City. The implementation of strategies under each emphasis area would aim to reduce fatal and severe injury collisions in the coming years.

### Implementation

The LRSP is a guidance document that is recommended to be updated every two to five years in coordination with the safety partners. The LRSP document provides engineering, education, enforcement, and emergency medical service related countermeasures that can be implemented throughout the City to reduce fatal and severe injury collisions. It is recommended that the City of Isleton implement the selected projects in high-collision locations in coordination with other projects proposed for the City's infrastructure development in their future Capital Improvement Plans. After implementing countermeasures, the performance measures for each emphasis area should be evaluated annually. The most important measure of success of the LRSP should be reducing fatal and severe injury collisions throughout the City. If the number of fatal and severe injury collisions does not decrease over time, then the emphasis areas and countermeasures should be re-evaluated.

Funding is a critical component of implementing any safety project. While the HSIP program is a common source of funding for safety projects, there are numerous other funding sources that could be pursued for such projects. (See Table 19 below).





Table 19: List of Potential Funding Sources

Funding Source	Funding Agency	Amount Available	Next Estimated Call for Projects	Applicable E's	Notes
Active Transportation Program	Caltrans, California Transportation Commission, SACOG	~\$50 million per cycle (every two years)	2022	Engineering, Education	Can use used for most active transportation related safety projects as well as education programs. Funding available through Caltrans or SACOG
Highway Safety Improvement Program	Caltrans		April 2022	Engineering	Most common grant source for safety projects
Regional Program	SACOG (Combines various federal and state funds)	\$163.4 million in FY 2020/21	TBD, last call in 2021	Engineering	Implement cost effective projects that support MTP/SOS performance outcomes, including First First and system modernization
Community Design	SACOG (Combines various federal and state funds)	\$18.2 million in FY 2020/21	TBD, last call in 2021	Engineering	Focuses on placemaking projects
Disadvantaged Community Popeline Projects	SACOG (Combines various federal and state funds)	\$3 million	Mid-2022	Engineering, Others TBD	Identify and advance community-led projects that benefit disadvantaged communities
Innovative Mobility Program	SACOG (Combines various federal and state funds)	\$6 million	2022 TBD	Engineering	Plan and pilot mobility projects and programs to reduce VMT and GHG emissions
Office of Traffic Safety Grants	California Office of Traffic Safety	Varies by grant	Closes January 31 <sup>st</sup> annually	Education, Enforcement, Emergency Response	10 grants available to address various components of traffic safety
Affordable Housing and Sustainable Communities Program	Strategic Growth Council and Dept of Housing and Community Development	~\$405 million	2022	Engineering, Education	Must be connected to affordable housing projects, typically focuses on bike/pedestrian infrastructure/programs
Urban Greening	California Natural Resources Agency	\$24.5 million	2022	Engineering	Focused on bike/pedestrian infrastructure and greening public spaces
Local Streets and Road Maintenance and Rehabilitation	CTC (distributed to local agencies)	\$1.5 billion statewide	N/A; distributed by formula	Engineering	Typically pays for road maintenance type projects
RAISE Grant	USDOT	~\$1 billion	2022	Engineering	Typically used for larger infrastructure projects
Sustainable Transportation Equity Project	California Air Resources Board	~\$19.5 million	TBD; most recent call in 2020	Engineering, Education	Targets projects that will increase transportation equity in disadvantaged communities
Transformative Climate Communities	Strategic Growth Council	~\$90 million	TBD; most recent call in 2020	Engineering	Funds community-led projects that achieve major reductions in greenhouse gas emissions in disadvantaged communities



**Monitoring and Evaluation**

For the success of the LRSP, it is crucial to monitor and evaluate the four E-strategies continuously. Monitoring and evaluation help provide accountability, ensure the effectiveness of the countermeasures for each emphasis area, and help making decisions on the need for new strategies. The process would help the City make informed decisions regarding the implementation plan's progress and accordingly, update the goals and objectives of the plan.

After implementing countermeasures, the strategies should be evaluated annually as per their performance measures. The evaluation should be recorded in a before-after study to validate the effectiveness of each countermeasure as per the following observations:

- Number of fatal and severe injury collisions
- Number of police citations
- Number of public comments and concerns

Evaluation should be conducted during similar time periods and durations each year. The most important measure of success of the LRSP should be reduction in fatal and severe injury collisions throughout the City. If the number of F+SI collisions doesn't decrease initially, then the countermeasures should be evaluated as per the other observations, as mentioned above. The effectiveness of the countermeasures should be compared to the goals for each emphasis area.

**LRSP Update**

The LRSP is a guidance document and is recommended to be updated every two to five years after adoption. After monitoring performance measures focused on the status and progress of the E's strategies in each emphasis area, the next LRSP update can be tailored to resolve any continuing safety problems. An annual stakeholder meeting with the safety partners is also recommended to discuss the progress for each emphasis area and oversee the implementation plan. The document should then be updated as per the latest collision data, emerging trends, and the E's strategies' progress and implementation.



## Appendix A: Matrix of Planning Goals, Policies, and Projects

**Appendix A: Table of Policies and Projects from the Literature Review:  
Relevant Goals, Policies, and Projects**

Document	Relevant Goals, Policies, and Projects
<p><b>Isleton Comprehensive General Plan and Environmental Impact Report (2000)</b></p>	<p><b>Goals:</b></p> <ul style="list-style-type: none"> <li>• Balancing the Costs and Benefits of Urbanization through Economic Development</li> <li>• Equality of Opportunity</li> <li>• Community Identity</li> <li>• Quality in the Form, Design and Functions of the Urban Area</li> <li>• Enhancing the Quality of Life</li> <li>• Protections from Flood Hazards</li> <li>• Assigning the Costs of Constructing and Maintaining New Development</li> <li>• Assigning the Benefits of Redevelopment</li> <li>• Accessing the Sacramento River Frontage</li> <li>• Historic Preservation</li> </ul> <p><b>Policies:</b></p> <ul style="list-style-type: none"> <li>• In-fill Development within the Existing City Limits</li> <li>• Expanding the Urban Pattern Beyond the Existing City Limits</li> <li>• Annexation to the Urban Limit Line through Phased Development</li> <li>• Limitations Upon the Timing of Development</li> <li>• Maintaining Reasonable Balance in Housing Type</li> <li>• Achieving Visual and Functional Quality in New Development</li> <li>• Redevelopment and Revitalization</li> <li>• Population and Economic Policies</li> </ul>
	<p><b>Circulation Element</b></p> <p>Objective: The development of an integrated system of internal circulation and to provide access to other parts of the County and the region to serve all citizens of the Isleton area, including the young, the elderly, and the physically disabled, by seeking the following:</p> <ul style="list-style-type: none"> <li>• Increased safety for citizens.</li> <li>• The efficient movement of people and goods.</li> </ul>

Document	Relevant Goals, Policies, and Projects
<p>signage detracts from downtown's sense of place and potential economic activity.</p> <p>Circulation Opportunities:</p> <ul style="list-style-type: none"> <li>• <b>Thoroughfare:</b> The City has an opportunity to capitalize on the amount of traffic that passes through Isleton along Highway 160.</li> <li>• <b>Traffic Slowing Measures:</b> Drivers tend to slow down when they perceive that bikes and pedestrians are likely to be present and when the design of the street conveys that it is more than just a travel conduit. The community has an opportunity to transform the portion of Highway 160 that is in downtown into a shared and valued community space. Improvements to Highway 160 such as aesthetic paving for pedestrian crossings, bike lanes, street trees, landscaping, decorative lighting, and street furniture can improve the pedestrian experience and also serve to slow traffic, improving safety at the intersection of Highway 160 and A Street.</li> <li>• <b>City Gateway</b> features that elevate Isleton's sense of place could help attract drivers who are passing through the city to stop and explore Isleton. Such features could include large wayfinding and historical information signage and banners on light posts. The Delta Protection Commission and Sacramento-San Joaquin Delta Conservancy will be working with the City of Isleton and organizations such as the Isleton Chamber of Commerce on a range of signage efforts, including developing a Delta wide signage plan, creating interpretive signs for heritage sites, and placing signs near and within the city. The signage plan, which is led by the Delta Conservancy, will identify and prioritize the locations for three types of signs (welcome, directional, and interpretive), create sign design templates, and discuss implementation requirements.</li> </ul>	<p>Lower vehicle operating costs.</p> <ul style="list-style-type: none"> <li>• Lower vehicle miles traveled and therefore lower quantities and impacts of vehicle emissions.</li> <li>• Economy in street construction and maintenance.</li> <li>• A circulation system which is correlated and consistent with the needs of land use patterns fostered by the Land Use Element.</li> <li>• Minimizing and (where possible) avoiding the disruption of residential areas caused by through traffic.</li> <li>• Protection of future rights-of-way needed for Arterial and Collector Street widening within developed areas.</li> </ul> <p><b>Circulation Constraints:</b></p> <ul style="list-style-type: none"> <li>• <b>State Highway 160 (River Road)</b> runs east/west through the northern end of Isleton. The majority of Highway 160 is on the levee adjacent to the Sacramento River, although part of the highway descends from the levee, primarily in the portion north of Delta Avenue to E Street. The speed limit drops from 50 mph to 40 mph as travelers reach the city limits, and then drops to 30 mph near 1<sup>st</sup> Street as Highway 160 dips down into downtown.</li> <li>• <b>Safety:</b> Highway 160 creates safety issues as it passes through Isleton, particularly at the intersection with A Street and 2<sup>nd</sup> Street. The intersection configuration can create confusion, and many drivers are traveling above the posted 30 mph speed limit as they enter downtown. While there are crosswalks at three of the five intersections, they are not well-marked and there are no other signs warning travelers to watch for pedestrians.</li> <li>• <b>Segmented Downtown:</b> The major segment of Downtown is along 2<sup>nd</sup> Street from A Street to C Street, where Highway 160 dips down into the community, bringing higher-speed through traffic. Travelers along Highway 160 could easily pass through a portion of the downtown without realizing that the Historic District along Main Street even exists. This circulation pattern and lack of wayfinding</li> </ul>

Document	Relevant Goals, Policies, and Projects
<p><b>City of Isleton Opportunities, Constraints, and Vision Report (2017)</b></p>	<p>Lower vehicle operating costs.</p> <ul style="list-style-type: none"> <li>• Lower vehicle miles traveled and therefore lower quantities and impacts of vehicle emissions.</li> <li>• Economy in street construction and maintenance.</li> <li>• A circulation system which is correlated and consistent with the needs of land use patterns fostered by the Land Use Element.</li> <li>• Minimizing and (where possible) avoiding the disruption of residential areas caused by through traffic.</li> <li>• Protection of future rights-of-way needed for Arterial and Collector Street widening within developed areas.</li> </ul> <p><b>Circulation Constraints:</b></p> <ul style="list-style-type: none"> <li>• <b>State Highway 160 (River Road)</b> runs east/west through the northern end of Isleton. The majority of Highway 160 is on the levee adjacent to the Sacramento River, although part of the highway descends from the levee, primarily in the portion north of Delta Avenue to E Street. The speed limit drops from 50 mph to 40 mph as travelers reach the city limits, and then drops to 30 mph near 1<sup>st</sup> Street as Highway 160 dips down into downtown.</li> <li>• <b>Safety:</b> Highway 160 creates safety issues as it passes through Isleton, particularly at the intersection with A Street and 2<sup>nd</sup> Street. The intersection configuration can create confusion, and many drivers are traveling above the posted 30 mph speed limit as they enter downtown. While there are crosswalks at three of the five intersections, they are not well-marked and there are no other signs warning travelers to watch for pedestrians.</li> <li>• <b>Segmented Downtown:</b> The major segment of Downtown is along 2<sup>nd</sup> Street from A Street to C Street, where Highway 160 dips down into the community, bringing higher-speed through traffic. Travelers along Highway 160 could easily pass through a portion of the downtown without realizing that the Historic District along Main Street even exists. This circulation pattern and lack of wayfinding</li> </ul>



Document	Relevant Goals, Policies, and Projects
<p><b>Safety Element (Existing Conditions) of Isleton General Plan Memo, 2021</b></p>	<ul style="list-style-type: none"> <li>The City will continue to give priority to the support of police protection, and to fire suppression and prevention functions of the Isleton Fire Department.</li> <li>The City will maintain a street system which is capable of providing access to any fires that may develop within the urban area, and which is capable of providing for the adequate evacuation of residents in the event of an emergency condition of magnitude.</li> <li>In the event that any part of the levee system protecting Isleton was to fail, the most expedient evacuation routes would be east and north along the Sacramento River levee roads toward Walnut Grove, and then east toward Interstate 5.</li> </ul> <p><b>Goals, Policies, and Implementation Actions</b></p> <ul style="list-style-type: none"> <li>GOAL-SAF-2: Create and maintain a safe environment in Isleton</li> <li>POLICY-SAF-2.2: Provide adequate policing and fire protection services to serve the existing and projected population of Isleton</li> <li>POLICY-SAF-2.3: Engage Isleton residents in public safety initiatives</li> <li>POLICY-SAF-4.2: Ensure that City-owned properties, facilities, trails, and parks meet the needs of the community while maximizing public safety for all users</li> <li>POLICY-SAF-4.3: Require new development to fully accommodate emergency access</li> <li>POLICY-SAF-4.4: Design the right-of-way and maintain a street system to facilitate emergency access and evacuation to all residents</li> <li>Action-SAF-4.3.2: Require new development to incorporate existing evacuation routes in their design and define new evacuation routes, if needed.</li> <li>Action-SAF-4.4.1: Include the Fire Department and Sacramento County Sheriff's Department in all capital improvement projects to ensure that emergency access is prioritized as a design consideration.</li> </ul>

Document	Relevant Goals, Policies, and Projects
<p><b>Land Use Background Report of Isleton General Plan (2020)</b></p>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Consideration should be given to how land use decisions can mitigate anticipated traffic increases on Highway 160</li> <li>The General Plan should consider whether land acquisitions by the City will be necessary to accommodate future public facilities, i.e. a new City Hall, and if so where such public facilities should be located.</li> <li>Land use decisions and future growth in the City of Isleton should consider and be balanced with the public safety capabilities of the City including policing, fire and emergency response.</li> <li>A new traffic study must be done to account for previously unanalyzed build out capacities. Specifically, the traffic study should account for impacts as a result of the Commercial, Industrial, and Mixed Use designations moving forward. (For "mixed use" designations residential units are now considered in the 2040 build out analysis and can be accounted for in future traffic studies).</li> </ul>
<p><b>City of Isleton Parking Analysis &amp; Development Report (1989)</b></p>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Investigate the feasibility of acquisition and development of the triangular shaped parcel bounded by Highway 160, First Street, and A Street. Feasibility and timing will be dependent on funding availability and negotiated acquisition.</li> <li>When the City is no longer in need of the Fire Department building across from City Hall, convert and develop the property as a surface parking lot.</li> <li>Restripe and physically improve (Curbs and Planter) the center parking area on Second Street between A and D Streets and A Street between 1<sup>st</sup> and 2<sup>nd</sup> Streets.</li> <li>Stripe all on-street parking spaces.</li> <li>If a volunteer effort to reduce employer and employee parking is unsuccessful, limit parking in the downtown area to 2 hours between 8am and 6pm.</li> </ul>
<p><b>City of Isleton 10-Year Capital</b></p>	<p>Upcoming Road Projects (Project Cost)</p>

Document	Relevant Goals, Policies, and Projects
<p><b>Improvement Program (2017)</b></p> <ul style="list-style-type: none"> <li>3<sup>rd</sup> Street from Jackson to C: Repave and upgrade ADA ramps (\$130,900)</li> <li>4<sup>th</sup> Street from A St to B St: Upgrade ADA ramps and gutter rehab (\$62,832)</li> <li>B Street from 2<sup>nd</sup> to 5<sup>th</sup> St: Widen sidewalk, upgrade ADA ramps, and upgrade drainage (\$81,496)</li> <li>C Street from 3<sup>rd</sup> St to 5<sup>th</sup> St: Make sidewalks ADA accessible (\$46,569)</li> <li>G Street from 6<sup>th</sup> St to E, 3<sup>rd</sup> St: Repave (\$77,677)</li> <li>H Street from Union to 6<sup>th</sup> St: Repave (\$75,583)</li> <li>Union St from C St to D St: Make sidewalks ADA accessible, water service repairs (\$243,946)</li> <li>B St from Hwy 160 to 1<sup>st</sup> St: Repave and ADA ramps (\$31,185)</li> <li>1<sup>st</sup> St to Hwy 160: Repave (\$18,595)</li> <li>Entry Improvement #1: Install new signage and landscaping (\$70,000)</li> <li>Entry Improvement #2: Install new signage and landscaping (\$70,000)</li> <li>Traffic Calming &amp; Safety Improvements on Hwy 160: Install pedestrian crossings, bike lanes, street trees, landscaping, decorative lighting, street furniture, and intersection improvements at Hwy 160/A St intersection (\$1,400,000)</li> </ul>	<ul style="list-style-type: none"> <li>Multi-Use Class I Path along the Sacramento River waterfront and Highway 160 (Delta Trail)</li> <li>Bicycle &amp; Pedestrian Master Plan and Feasibility Study</li> </ul> <p><b>Policy 2:</b> Pursue funding opportunities that support the infrastructure improvements needed to support new housing and employment opportunities in existing urban, suburban, and rural communities.</p> <p><b>Policy 10:</b> Find solutions and reliable funding sources to meet the maintenance needs of roads that support rural economies, natural resource-based industries, agriculture, farm-to-market routes, and freight corridors.</p> <p><b>Policy 20:</b> Prioritize cost effective safety improvements that will help the region eliminate fatal transportation related accidents.</p> <p><b>Policy 22:</b> Invest in bicycle and pedestrian infrastructure to encourage healthy, active transportation trips and provide recreational opportunities for residents and visitors.</p> <p><b>Policy 24:</b> Invest in transportation improvements that improve access to major economic assets and job centers.</p> <p><b>Policy 25:</b> Prioritize investments in transportation improvements that reduce greenhouse gas emissions and vehicle miles traveled.</p>
<p><b>SACOG Metropolitan Transportation Plan/ Sustainable Communities Strategy (2020)</b></p>	

Document	Relevant Goals, Policies, and Projects
<p><b>SACOG Regional Bicycle, Pedestrian, and Trails Master Plan (2015)</b></p>	<p><b>Goals</b></p> <ul style="list-style-type: none"> <li><b>Goal 1:</b> Increase and improve bicycle and pedestrian access and mobility for residents and visitors for all ages and abilities</li> <li><b>Goal 2:</b> Improve and maintain the quality and operation of bikeway and walkway networks</li> <li><b>Goal 3:</b> Improve bicycle and pedestrian safety</li> <li><b>Goal 6:</b> Increase education, encouragement, and awareness programs about bicycle and pedestrian travel</li> <li><b>Goal 8:</b> Increase collaboration among stakeholders throughout the region to seek funding and implement bicycle and pedestrian projects, programs, and related efforts.</li> </ul> <p>City of Isleton Projects</p>

## Appendix B: Consolidated Collision Database

Appendix B

CASE_ID	ACCIDENT_YEAR	PROC_DAT1	JURIS	COLLISION OFFICER	RC	1500	20CSO	RC	7	5	1	3403	0
8362239	2016	20170517	3403	20160626	1500	20CSO	RC	7	5	1	3403	0	
90359563	2016	20170103	9352	20161224	15	19787		6	3	1	3403	0	
90429273	2017	20170406	9352	20170115	2114	20185		7	2	1	3403	0	
90651496	2018	20180130	9352	20180118	1723	18598		4	2	1	3403	0	
90692338	2018	20180229	9352	20180214	2050	19053		3	2	1	3403	0	
90964711	2018	20190410	9352	20181211	1348	20369		2	1	1	3403	0	
91044216	2019	20190802	9352	20190730	1520	19787		2	2	1	3403	0	
7007925	2015	20170113	9352	20150714	550	17258		2	2	1	3403	0	
90082427	2015	20151228	9352	20151211	1955	19702		5	2	1	3403	0	

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CASE_ID	STATE_IPM	CALTRANS	STATE_NO	ROUTE_SU	POSTMILE	POSTMILE	LOCATION	RAMP_INT	SIDE_OF_TOW_AW/COLLISION
8362239	N								N
90355663	Y								Y
90429273	Y								Y
90651486	Y								N
90692338	N								N
90964711	N								N
91044216	Y								Y
7007925	Y	SAC	3	160			4.59 H	5	N
90082427	N								Y

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CASE_ID	BEAT_TYPI	CHP_BEAT	CITY_DWIS	CHP_BEAT	BEAT_NUM	PRIMARY_SECONDARY	DISTANCE	DIRECTION	INTERSECT	WEATHER	WEATHER
8362239	0	0	0	0	0	S MAIN ST	106 W	N	A		
90355663	3	5	3	2	2	90 SR-160 N/W TYLER I	1500 S	N	A		
90429273	1	3	3	2	2	162 SR-160 N/W TYLER I	655 S	N	A		
90651486	1	3	3	2	2	162 SR-160 N STREET	5 N	N	C		
90692338	3	5	3	2	2	90 4TH AVE DELTA AVE	45 W	N	B		
90964711	3	5	3	2	2	90 H STREET MAUN STRI	0	Y	A		
91044216	1	3	3	2	2	162 SR-160 N/A ST	50 N	N	A		
7007925	1	3	3	2	2	162 RT 160 A ST	30 H	N	A		
90082427	3	5	3	2	2	90 UNION ST D ST.	18 E	N	B		

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CASE_ID	NUMBER	PARTY_CD	PRIMARY_PCT_CODE	PCF_VIOL_PCT_CODE	PCF_VIOL_PCT	VOL_HIT	HIT_AND_ITYPE_OF	HMVW	PED_ACTK
8362239	0	1	A	-	8	22107	M	E	I
9035563	0	1	A	-	8	22107	M	F	A
9042973	1	0	1A	-	8	22107	M	H	A
90651496	0	0	2A	-	3	21850	M	C	C
90682338	0	0	2A	-	1	23152 A	M	H	E
90964711	1	0	2A	-	11	21954 A	M	G	B
91044216	0	0	2C	-	18		N	E	I
7007925	0	1	3A	-	3	22350	N	C	C
90082427	0	0	2A	-	8	22107	M	B	E

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CASE_ID	ROAD_SUF	ROAD_CD	ROAD_CTL	ROAD_CTLGHTING	CONTROL_CHP	ROAD_PED	BICYCLE_A	MOTORCY	TRUCK_AC	NOT_PRIV	ALCONTRL
8362239	A	H	-	A	D	D	0	0	Y		
9035563	A	H	-	D	D	0	0	0	Y		
9042973	A	H	-	D	D	0	0	0	Y		
90651496	B	H	-	C	D	0	0	0	Y		
90682338	B	H	-	C	D	0	0	0	Y		
90964711	A	H	-	A	D	0	0	Y			
91044216	A	H	-	A	D	0	0	0	Y		
7007925	A	H	-	B	A	0	0	0	Y		
90082427	A	M	-	C	D	0	0	0	Y		



Appendix B

CASE_ID	SECONDARY_LATITUDE	LONGITUDE
8362739	38.16255	-121.606
90359563	38.24209	-121.51
90429273	38.16613	-121.599
90651496	38.16345	-121.604
90692338	38.59627	-121.505
90964711	38.1629	-121.604
91044216	38.16193	-121.611
7007925	38.16709	-121.612
90082427	38.16179	-121.609

Appendix B

CASE_ID	STWD_VET_CHP_VERT_COUNT	SE_COUNT	VE_COUNT	CC_COUNT	PE_COUNT	BI_COUNT	BI_COUNT_M	BI_COUNT_M	PRIMARY
8362739	A	1	0	0	0	0	0	0	0
90359563	A	1	0	0	1	0	0	0	0
90429273	A	1	0	0	0	0	0	0	0
90651496	H	66	0	0	0	0	0	0	0
90692338	D	22	0	0	0	0	0	0	0
90964711	N	60	0	0	1	0	0	0	0
91044216									
7007925	D	22	0	0	1	0	0	0	0
90082427	A	1	0	0	0	0	0	0	0



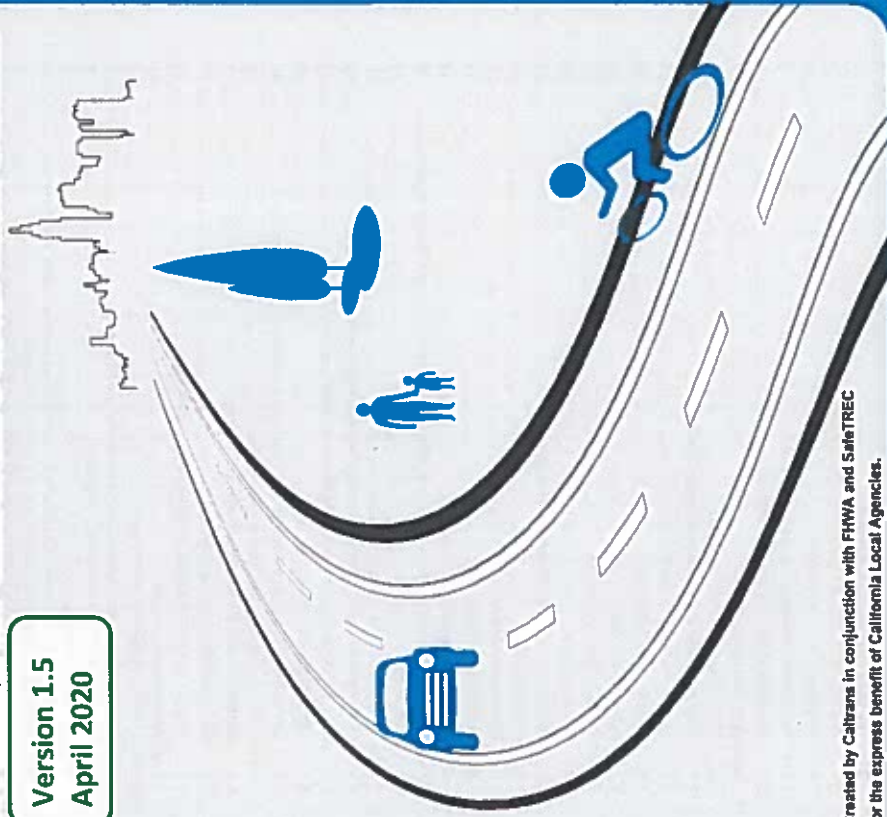




# Local Roadway Safety

## A Manual for California's Local Road Owners

Version 1.5  
April 2020



Created by Caltrans in conjunction with FHWA and SafeTREC for the express benefit of California Local Agencies.



U.S. Department of Transportation  
Federal Highway Administration

Safe Transportation  
Research & Education Center  
**SafeTREC**

### Document History

Version 1.0: 4/20/2012

The California Department of Transportation - Division of Local Assistance developed the first version of the Local Roadway Safety Manual (Version 1.0) in 2012 to support the Cycle 5 HSIP call-for-projects.

Version 1.1: 4/26/2013

Based on feedback and lessons learned from Cycle 5, Caltrans updated Appendix B: "Table of Countermeasures and Crash Reduction Factors" to better clarify text in "Where to use", "Why it works", and "General Qualities" for several of the countermeasures included in the original manual.

No other changes were made to the Local Roadway Safety Manual as part of Version 1.1

Version 1.2: 03/10/2015

Based on feedback and lessons learned from Cycle 6, Caltrans made minor updates to the text of the document as needed for achieving consistency with overall Caltrans local HSIP guidance documents. The following sections were updated: 1.2, 4.2, 5.1, 6.2, and Appendix B, E, F & G.

Version 1.3: 04/29/2016

Caltrans made updates to the text of the document as needed in the following sections: 4.2, 5.1 and Appendix B.

Version 1.4: 06/08/2018

3/30/18 - Caltrans made updates to the crash costs in Appendix D, some of the website links in Appendix G, and some other texts of the document.

6/8/18 - Countermeasure 522 ("Modify signal phasing to implement a Leading Pedestrian Interval (LPI)") is added.

Version 1.5: April 2020

Caltrans added a few more countermeasures (e.g. Pedestrian Scramble, Install Separated Bike Lanes, Reduced Left-Turn Conflict Intersections, and Curve Shoulder widening), renumbered the countermeasures and updated the crash costs in Appendix D.

### Future Updates:

In the future, Caltrans anticipates that additional changes will be needed to keep the Local Roadway Safety Manual consistent with future Calls-for-Projects' Guidelines and Application Instructions. In addition, new local HSIP programs, improvements to California data on local roadways, data analysis tools, and the latest safety research and methodologies may give rise to the need to make more significant changes to this manual.



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## Appendix B: Table of Countermeasures and Crash Reduction Factors

The intent of the information contained in this appendix is to provide local agency safety practitioners with a list of effective countermeasures that are appropriate remedies to many common safety issues. The tables in Section 4.2 present a quick summary of the specific values that the Caltrans Division of Local Assistance uses to assess and select projects for its calls-for-projects. In addition to the same information as in Section 4.2, this appendix also includes notes for Caltrans HSP calls-for-projects and "General information" regarding where the countermeasure should be used, why it works, the general qualities that can be used to suggest the potential complexity of installation, and information from FHWA CMF Clearinghouse on the type of crashes where the countermeasure is best used and a range of their expected overall effectiveness.

The countermeasures have been sorted into 3 categories: Signalized Intersection, Non-Signalized Intersection, and Roadway Segment. Pedestrian and bicycle related countermeasures have been included in each of these categories.

Caltrans gives careful consideration to the fair application of its calls-for-projects process. Starting in 2012, the award of safety funding has been solely based on a determined benefit-to-cost ratio for each project. The fixed set of countermeasures and CRFs included in these tables are intended to allow for all projects to be evaluated consistently and fairly throughout the project selection process. However, at this time, there are no CRFs/CMFs available for several safety improvements, such as: "dynamic/variable speed regulatory signs", "non-motorized signs and markings (regulatory and warning)", "Square-up (reduce curve radius) turn lanes" and non-infrastructure elements. These safety improvement items can be included in project applications, but they will not be included into the B/C ratio calculations, unless the safety improvements meet the intent of other separate countermeasures included in the attached lists. Caltrans is interested in adding these countermeasures (and many others) to these tables once CRFs/CMFs have been established. Caltrans will continue to periodically update this list of allowable countermeasures and CRFs as new safety research data becomes available. With this in mind, Caltrans is interested in feedback and suggestions from local agency safety practitioners on the overall countermeasure list as well as specific details of individual countermeasures, including locally developed safety effectiveness information.

Caltrans used the following references to assist its team in developing the information shown in the following tables. Safety Practitioners are encouraged to utilize these references for a more expansive list of countermeasures and CRFs / CMFs.

The Crash Modification Factors Clearinghouse  
<http://www.cmfclearinghouse.org/>

NCHRP Report 500 Series: Volumes 4, 5, 6, 7, 10, 12, 13, and others  
<http://www.trb.org/Main/Blurbs/152868.aspx>

Highway Safety Manual (HSM)

<https://www.highwaysafetymanual.org>

**Pedestrian and Bicycle - Tools to Diagnose and Solve the Problem**

[https://safety.fhwa.dot.gov/ped\\_bike/tools\\_solve/](https://safety.fhwa.dot.gov/ped_bike/tools_solve/)

**FHWA Local and Rural Road / Training, Tools, Guidance and Countermeasures for Locals**

[http://safety.fhwa.dot.gov/local\\_rural/training/](http://safety.fhwa.dot.gov/local_rural/training/)

**FHWA Desktop Reference for Crash Reduction Factors**

<https://safety.fhwa.dot.gov/tools/cdr/resources/fhwa080011/>

### **For each countermeasure (CM):**

(Title) CM No., CM Name

- CM No. is
  - S01 through S21P8 for Intersection Countermeasures – Signalized,
  - NS01 through NS23PB for Intersection Countermeasures – Unsignalized, or
  - R01 through R38 for Roadway Countermeasures.

**For HSIP Calls-for-projects:**

- Funding Eligibility - 100%, 90% or 50%.
- Crash Types Addressed - "All", "Pedestrian and Bicycle", "Night", "Emergency Vehicle", or "Animal".
- CRF - Crash Reduction Factor used for HSIP calls-for-projects.
- Expected Life - 10 years or 20 years.
- Notes - Specific requirements are provided for utilizing the countermeasure on applications for Caltrans statewide calls-for-projects.

**General Information:**

- Where to use – Roadway segments and intersections with specific common characteristics can be addressed with similar countermeasures that are most effective
- Why it works – A discussion of the benefit of a countermeasure is important to determine its appropriateness in addressing certain roadway crash types at areas with specific issues as determined by the data and roadway features.
- General Qualities (Time, Cost and Effectiveness) – This category is more subjective and can vary substantially. 'Time' refers to the approximate relative time it can take to implement the countermeasure. Costs can vary considerably due to local conditions, so 'cost' represents the relative cost of applying a countermeasure. A relative overall 'effectiveness' is also provided for some countermeasures. All of this subjective information may not be applicable to the unique circumstances for the agency and should not be utilized without verification by the safety practitioner.
- FHWA CMF Clearinghouse
  - Crash Types Addressed – In order to effectively reduce the number and severity of roadway crashes, it is necessary to match countermeasures to the crash types they are intended to address. Depending on the type of problem, one or more of a range of countermeasures could be the most effective way to reduce the number and severity of future crashes.

- **Crash Reduction Factor** – The crash reduction factor (CRF) is an indication of the effectiveness of a particular treatment, measured by the percentage of crashes it is expected to reduce. Note: As mentioned earlier in this section, the effectiveness of a countermeasure can also be expressed as a Crash Modification Factor (CMF), which is defined mathematically as 1 – CRF. However, this document uses CRFs as they can be more insightful when analyzing roadways for potential "reductions" in crashes. There is a range of CRF values that exist for each of the countermeasures (or similar countermeasures). The range of CRFs is provided to give local safety practitioners a clear understanding that they may need to go to the FHWA CMF Clearinghouse to find the most appropriate countermeasure and CRF for their specific projects and local prioritization.

## B.1 Intersection Countermeasures – Signalized

### S01. Add Intersection Lighting (Signalized Intersection => S.1)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	"night" crashes	40%	20 years
<b>Notes:</b> This CM only applies to "night" crashes (all types) occurring within limits of the proposed roadway lighting, engineered area.			
General Information			
<b>Where to use:</b> Signalized intersections that have a disproportionate number of night-time crashes and do not currently provide lighting at the intersection or at its approaches. Crash data should be studied to ensure that safety at the intersection could be improved by providing lighting (this strategy would be supported by a significant number of crashes that occur at night).			
<b>Why it works:</b> Providing lighting at the intersection itself, or both at the intersection and on its approaches, improves the safety of an intersection during nighttime conditions by (1) making drivers more aware of the surroundings at an intersection, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances, and (3) improving the visibility of non-motorists. Intersection lighting is of particular benefit to non-motorized users. Lighting not only helps them navigate the intersection, but also helps drivers see them better.			
<b>General Qualities (Time, Cost and Effectiveness):</b> A lighting project can usually be completed relatively quickly, but generally requires at least 1 year to implement because the lighting system must be designed and the provision of electrical power must be arranged. The provision of lighting involves both a fixed cost for lighting installation and an ongoing maintenance and power cost which results in a moderate to high cost. Some locations can result in high B/C ratios, but due to higher costs, these projects often result in medium to low B/C ratios.			
FHWA CMF Clearinghouse: <b>Night, All</b>   CRF: 20-74%			

### S02. Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	15%	10 years
<b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the upgraded signals. This CM does not apply to improvements like "battery backup systems", which do not provide better intersection/signal visibility or help drivers negotiate the intersection (unless applying past crashes that occurred when the signal lost power). If new signal mast arms are part of the proposed project, CM "52" should not be used and the signal improvements would be included under CM "57".			
General Information			
<b>Where to use:</b> Signalized intersections with a high frequency of right-angle and rear-end crashes occurring because drivers are unable to see traffic signals sufficiently in advance to safely negotiate the intersection being approached. Signal intersection improvements include new LED lighting, signal back plates, retro-reflective tape outlining the back plates, or visors to increase signal visibility, larger signal heads, relocation of the signal heads, or additional signal heads.			
<b>Why it works:</b> Providing better visibility of intersection signals aids the drivers' advance perception of the upcoming intersection. Visibility and clarity of the signal should be improved without creating additional confusion for drivers.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Installation costs and time should be minimal as these type strategies are classified as low cost and implementation does not typically require the approval process normally associated with more complex projects. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in low to moderate cost projects that are more appropriate to seek state or federal funding.			
FHWA CMF Clearinghouse: <b>Rear-End, Angle</b>   CRF: 0-66%			

### S03. Improve signal timing (coordination, phases, red, yellow, or operation)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
50%	All	15%	10 years
<b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new signal timing. For projects coordination signals along a corridor, the crashes related to side-street movements should not be applied. This CM does not apply to projects that only "study" the signal network and do not make physical timing changes, including corridor operational studies and improvements to Traffic Operation Centers (TOCs). In California calls for projects, this CM has a HSIP reimbursement ratio of 50%, considering that it will improve the signal operation rather than merely the safety.			
General Information			
<b>Where to use:</b> Locations that have a crash history at multiple signalized intersections. Signalization improvements may include adding phases, lengthening clearance intervals, eliminating or restricting higher-risk movements, and coordinating signals at multiple locations. Understanding the corridor or roadway's crash history can provide insight into the most appropriate strategy for improving safety.			
<b>Why it works:</b> Certain timing, phasing, and control strategies can produce multiple safety benefits. Sometimes capacity improvements come along with the safety improvements and other times adverse effects on delay or capacity occur. Corridor improvements often have the highest benefit but may take longer to implement. Projects focused on capacity improvements (without a separate focus on signal timing safety needs) may not result in a reduction in future crashes.			
<b>General Qualities (Time, Cost and Effectiveness):</b> In general, these low-cost improvements to multiple signalized intersections can be implemented in a short time. Typically these low cost improvements are funded through local funding by local maintenance crews. However, some projects requiring new interconnect infrastructure can have moderate to high costs making them more appropriate to seek state or federal funding. The expected effectiveness of this CM must be assessed for each individual project.			
FHWA CMF Clearinghouse: <b>All</b>   CRF: 0-41%			

### S04. Provide Advanced Dilemma-Zone Detection for high speed approaches

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	40%	10 years
<b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new detection and signal timing.			
General Information			
<b>Where to use:</b> More rural/remote areas that have a high frequency of right-angle and rear-end crashes. The Advanced Dilemma-Zone Detection system enhances safety at signalized intersections by modifying traffic control signal timing to reduce the number of drivers that may have difficulty deciding whether to stop or proceed during a yellow phase. This may reduce rear-end crashes associated with unsafe stopping and angle crashes due to illegally continuing into the intersection during the red phase.			
<b>Why it works:</b> Clearance times provide safe, orderly transitions in ROW assignment between conflicting streams of traffic. An Advanced Dilemma-Zone Detection system has several benefits relative to traditional multiple detector systems, which have upstream detection for vehicles in the dilemma zone but do not take the speed or size of individual vehicles into account. These benefits include: Reducing the frequency of red-light violations; Reducing the frequency of crashes associated with the traffic signal phase change (for example, rear-end and angle crashes); Reducing delay and stop frequency on the major road and a reduction in overall intersection delay.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Installation costs should be low and the time to implement short. Additional modifications to the traffic signal controller may also be necessary. In general, this CM can be very effective and can be considered on a systematic approach. Video detection equipment is now available for this purpose, making installation and maintenance more efficient.			
FHWA CMF Clearinghouse: <b>All</b>   CRF: 39%			



S05. Install emergency vehicle pre-emption systems

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Emergency Vehicle - only	70%	10 years
Notes:	This CM only applies to 'E.V.' crashes occurring on the approaches / influence area of the new pre-emption system.		
General Information			
Where to use:			
Consider that there is a history of crashes involving emergency response vehicles. The target of this strategy is signalized intersections where normal traffic operations impede emergency vehicles and where traffic conditions create a potential for conflicts between emergency and non-emergency vehicles. These conflicts could lead to almost any type of crash, due to the potential for erratic maneuvers of vehicles moving out of the paths of emergency vehicles.			
Why it works:			
Providing emergency vehicle preemption capability at a signal or along a corridor can be a highly effective strategy in two ways: any type of crash could occur as emergency vehicles try to navigate through intersections and as other vehicles try to maneuver out of the path of the emergency vehicles. In addition, a signal preemption system can decrease emergency vehicle response times therefore decreasing the time in receiving emergency medical attention, which is critical in the outcome of any crash. When data is not available for past crashes with emergency vehicles, an agency may consider combining the E.V. pre-emption improvements into a comprehensive project that also makes significant signal hardware and/or signal timing improvements.			
General Qualities (Time, Cost and Effectiveness):			
Costs for installation of a signal preemption system will vary from medium to high, based upon the number of signalized intersections in which preemption will be installed and the number of emergency vehicles to be outfitted with the technology. The number of detectors, a requirement for new signal controllers, and the intricacy of the preemption system could increase costs. This CM is considered systemic as it is usually implemented on a corridor-basis.			
FHWA CMF Clearinghouse: Crash Types Addressed: Emergency Vehicle - only CRF: 70%			

S06. Install left-turn lane and add turn phase (signal has no left-turn lane or phase before)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	55%	20 years
Notes:	This CM only applies to crashes occurring on the approaches / influence area of the new left turn lanes. This CM does NOT apply to converting a single-left into double-left turn.		
General Information			
Where to use:			
Intersections that do not currently have a left turn lane or a related left-turn phase that are experiencing a large number of crashes. Many intersection safety problems can be traced to difficulties in accommodating left-turning vehicles. In particular, where there is currently no accommodation for left-turning traffic. A key strategy for minimizing collisions related to left-turning vehicles (angle, rear-end, sideswipe) is to provide exclusive left-turn lanes and the appropriate signal phasing, particularly on high-volume and high-speed major-road approaches. Agencies need to document their consideration of the MUTCD, Section 4D.19 guidelines, the section on implementing protected left-turn phases.			
Why it works:			
Left-turn lanes allow separation of left-turn and through-traffic streams, thus reducing the potential for rear-end collisions. Left-turn phasing also provides a safer opportunity for drivers to make a left-turn. The combination of left-turn storage and a left-turn signal has the potential to reduce many collisions between left-turning vehicles and through vehicles and/or non-motorized road users.			
General Qualities (Time, Cost and Effectiveness):			
Implementation time may vary from months to years. At some locations, left-turn lanes can be quickly installed simply by restriping the roadway. At other locations, widening of the roadway, acquisition of additional right-of-way, and extensive environmental processes may be needed. Such projects require a substantial time for development and construction. Costs are highly variable and range from very low to high. Installing a protected left turn lane and phase where none exist results in a high Crash Reduction Factor and is often highly effective.			
FHWA CMF Clearinghouse: Crash Types Addressed: All CRF: 55%			

S07. Provide protected left turn phase (left turn lane already exists)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	20 years
Notes:	This CM only applies to crashes occurring on the approaches / influence area of the new left turn phases. This CM does NOT apply to converting a single-left into double-left turn (unless the single left is unprotected and the proposed double left will be protected).		
General Information			
Where to use:			
Signalized intersections (with existing left turn pockets) that currently have a permissive left-turn or no left-turn protection that have a high frequency of angle crashes involving left turning, opposing through vehicles, and non-motorized road users. A properly lined protected left-turn phase can also help reduce rear-end and sideswipe crashes between left-turning vehicles and the through vehicles as well as vehicles behind them. Protected left turn phases are warranted based on such factors as turning volumes, delay, visibility, opposing vehicle speed, distance to travel through the intersection, presence of non-motorized road users, and safety experience of the intersections. Agencies need to document their consideration of the MUTCD, Section 4D.19 guidelines, the section on implementing protected left-turn phases.			
Why it works:			
Left turns are widely recognized as the highest risk movements at signalized intersections. Providing protected left-turn phases (i.e., the provision for a specific phase for a turning movement) for signalized intersections with existing left turn pockets significantly improve the safety for left-turn maneuvers by removing the need for the drivers to navigate through gaps in oncoming/opposing through vehicles. Where left turn pockets are not protected, the pedestrian and bicyclist crossing phase often conflicts with these left turn maneuvers. Drivers focused on negotiating the gaps of oncoming cars may not anticipate and/or perceive the non-motorized road users.			
General Qualities (Time, Cost and Effectiveness):			
If the existing traffic signal only requires a minor modification to allow for a protected left-turn phase, then the cost would also be low. The time to implement this countermeasure is short because there is no actual construction that has to take place. In-house signal maintainers can perform this operation once the proper signal phasing is determined so the cost is low. In addition, the countermeasure is tried and proven to be effective. Has the potential of being applied on a systemic/systematic approach.			
FHWA CMF Clearinghouse: Crash Types Addressed: Rear-End, Sideswipe, Broadside CRF: 16 - 99%			

S08. Convert signal to mast arm (from pedestal-mounted)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	20 years
Notes:	This CM only applies to crashes occurring on the approaches / influence area of the converted signal heads that are relocated from median and/or outside shoulder pedestals to signal heads on master arms over the travel-lanes. Projects using CM "57" should not also apply "52" in the B/C Calc.		
General Information			
Where to use:			
Intersections currently controlled by pedestal mounted traffic signals (in medians and/or on outside shoulder) that have a high frequency of right-angle and rear-end crashes occurring because drivers are unable to see traffic signals in advance to safely negotiate the intersection. Intersections that have pedestal-mounted signals may have poor visibility and can result in vehicles not being able to stop in time for a signal change. Care should be taken to place the new signal heads (with back plates) as close to directly over the center of the travel lanes as possible.			
Why it works:			
Providing better visibility of intersection signs and signals aids the drivers' advance perception of the upcoming intersection. Visibility and clarity of the signal should be improved without creating additional confusion or distraction for drivers.			
General Qualities (Time, Cost and Effectiveness):			
Dependent on the scope of the project. Costs are generally moderate for this type of project. There is usually no right-of-way costs, minimal roadway reconstruction costs, and a shorter project development timeline. At the same time, new mast arms can be expensive. Some locations can result in high B/C ratios, but due to moderate costs, some locations may result in medium to low B/C ratios.			
FHWA CMF Clearinghouse: Crash Types Addressed: Rear-End, Angle CRF: 12 - 74%			

**S09. Install raised pavement markers and striping (Through Intersection)**  
For HSIP Calls-for-projects

Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	10%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring in the intersection and influence areas of the new pavement markers and/or markings.</p> <p><b>Where to use:</b> Intersections where the lane designations are not clearly visible to approaching motorists and/or intersections noted as being complex and experiencing crashes that could be attributed to a driver's unsuccessful attempt to navigate the intersection. Driver confusion can exist in regard to choosing the proper turn path or where through lanes do not line up. This is especially relevant at intersections where the overall pavement area of the intersection is large, and multiple turning lanes are involved or other unfamiliar elements are presented to the driver.</p> <p><b>Why it works:</b> Adding clear pavement markings can guide motorists through complex intersections. When drivers approach and traverse through complex intersections, drivers may be required to perform unusual or unexpected maneuvers. Providing more effective guidance through an intersection will minimize the likelihood of a vehicle leaving its appropriate lane and encroaching upon an adjacent lane.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs of implementing this strategy will vary based on the scope and number of applications. Applying raised pavement markers is relatively low cost but can be variable and determined largely by the material used for pavement markings (paint, thermoplastic, epoxy, RPIs etc.). When using this type delineators, an issue of concern is the cost-to-service-life of the material. (Note: When HSIP safety funding is used for these installations in high-wear-locations, the local agency is expected to maintain the improvement for a minimum of 10 years.) When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.</p> <p>FHWA CMF Clearinghouse:   Crash Types Addressed:   Wet, Night, All   CRF:   10-33%</p>			

**S10. Install flashing beacons as advance warning (S.I.)**  
For HSIP Calls-for-projects

Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new flashing beacons.</p> <p><b>Where to use:</b> 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 in time to comply.</p> <p><b>Why it works:</b> Increased driver awareness of an approaching signalized intersection and an increase in the driver's time to react. Driver awareness of both downstream intersections and traffic control devices is critical to intersection safety. Crashes often occur when the driver is unable to perceive an intersection, signal head or the back of a stopped queue in time to react. Advance flashing beacons can be used to supplement and call driver attention to intersection control signs. Most advance warning flashing beacons can be powered by solar, thus reducing the issues relating to power source.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Before choosing this CM, the agency needs to confirm the ability to provide power to the site (solar may be an option). Flashing beacons can be constructed with minimal design, environmental and right-of-way issues and have relatively low costs. This combined with a relatively high CRF, can result in high B/Cs for locations with a history of crashes and lead to a high effectiveness.</p> <p>FHWA CMF Clearinghouse:   Crash Types Addressed:   Rear End, Angle   CRF:   36-62%</p>			

**S11. Improve pavement friction (High Friction Surface Treatments)**  
For HSIP Calls-for-projects

Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	55%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the improved friction overlay. This CM is not intended to apply to standard chip-seal or open-graded maintenance projects for long segments of corridors or structure repaving projects intended to fix failed pavement.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Nationally, this countermeasure is referred to as "High Friction Surface Treatments" or HFST. Signalized intersections noted as having crashes on wet pavements or under dry conditions when the pavement friction available is significantly less than needed for the actual roadway approach speed. This treatment is intended to target locations where skidding and failure to stop is determined to be a problem in wet or dry conditions and the target vehicle is unable to stop due to insufficient skid resistance.</p> <p><b>Why it works:</b> Improving the skid resistance at locations with high frequencies of wet-road crashes and/or failure to stop crashes can result in reductions of 50 percent for wet-road crashes and 20 percent for total crashes. Applying HFST can double friction numbers, e.g. low 40s to high 80s. This CM represents a special focus area for both FHWA and Caltrans, which means there are extra resources available for agencies interested in more details on High Friction Surface Treatment projects.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> This strategy can be relatively inexpensive and implemented in a short timeframe. The installation would be done by either agency personnel or contractors and can be done by hand or machine. In general, this CM can be very effective and can be considered on a systematic approach.</p> <p>FHWA CMF Clearinghouse:   Crash Types Addressed:   Wet, Night, All   CRF:   10-62%</p>			

**S12. Install raised median on approaches (S.I.)**  
For HSIP Calls-for-projects

Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	25%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new raised median. All new raised medians funded with HSIP funding must not include the removal of the existing roadway structural section and must be dowelled into the existing roadway surface. This new requirement is being implemented to maximize the safety-effectiveness of the limited HSIP funding and to minimize project impacts.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Intersections noted as having turning movement crashes near the intersection as a result of insufficient access control. Application of this CM should be based on current crash data and a clearly defined need to restrict or accommodate the movement.</p> <p><b>Why it works:</b> Raised medians next to left-turn lanes at intersections offer a cost-effective means for reducing crashes and improving operations at higher volume intersections. The raised medians prohibit left turns into and out of driveways that may be located too close to the functional area of the intersection.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Raised medians at intersections may be most effective in retrofit situations where high volumes of turning vehicles have degraded operations and safety, and where more extensive CMs would be too expensive because of limited right-of-way and the constraints of the built environment. The result is this CM can be very effective and can be considered on a systematic approach. Raised medians can often be installed directly over the existing pavement. When agencies opt to install landscaping in conjunction with new raised medians, the portion of the cost for landscaping and other non-safety related items that exceeds 10% of the project total cost is not federally participated and must be funded by the applicant.</p> <p>FHWA CMF Clearinghouse:   Crash Types Addressed:   Angle   CRF:   21-55%</p>			



**S13PB, Install pedestrian median fencing on approaches**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	35%	20 years
Notes:	This CM only applies to "Ped & Bike" crashes occurring on the approaches/influence area of the new pedestrian median fencing.		
General Information			
Where to use:			
Signalized intersections with high pedestrian-generators nearby (e.g. transit stops) may experience a high volume of pedestrians walking across the travel lanes at mid-block locations instead of walking to the intersection and waiting to cross during the walk phase. When this safety issue cannot be mitigated with signal timing and shoulder/sidewalk treatments, then installing a continuous pedestrian barrier in the median may be a viable solution.			
Why it works:			
Adding pedestrian median fencing has the opportunity to enhance pedestrian safety at locations noted as being problematic involving pedestrians running/darting across the roadway outside the intersection crossings. Pedestrian median fencing can significantly reduce this safety issue by creating a positive barrier, forcing pedestrians to the designated pedestrian crossing.			
General Qualities (Time, Cost and Effectiveness):			
Costs associated with this strategy will vary widely depending on the type and placement of the median fencing. Impacts to transit and other land uses may need to be considered and controversy can delay the implementation. In general, this CM can be effective as a spot-location approach.			
PHWA CMF Clearinghouse:	Crash Types Addressed:	Pedestrian, Bicycle	CRF: 35-40%

**S14, Create directional median openings to allow (and restrict) left-turns and U-turns (S.I.)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	50%	20 years
Notes:	This CM only applies to crashes occurring in the intersection / influence area of the new directional openings.		
General Information			
Where to use:			
Crashes related to turning maneuvers include angle, rear-end, pedestrian, and sideswipe (involving opposing left turns) type crashes. If any of these crash types are an issue at an intersection, restriction or elimination of the turning maneuver may be the best way to improve the safety of the intersection.			
Why it works:			
Restricting turning movement into and out of an intersection can help reduce conflicts between through and turning traffic. The number of access points, coupled with the speed differential between vehicles traveling along the roadway, contributes to crashes. Affecting turning movements by either allowing them or restricting them, based on the application, can ensure safe movement of traffic.			
General Qualities (Time, Cost and Effectiveness):			
Turn prohibitions that are implemented by closing a median opening can be implemented quickly. The cost of this strategy will depend on the treatment. Impacts to businesses and other land uses must be considered and controversy can delay the implementation. In general, this CM can be very effective and can be considered on a systematic approach.			
PHWA CMF Clearinghouse:	Crash Types Addressed:	All	CRF: 51%

**S15, Reduced Left-Turn Conflict Intersections (S.I.)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	50%	20 years
Notes:	This CM only applies to crashes occurring in the intersection / influence area of the new Reduced Left-Turn Conflict.		
General Information			
Where to use and Why it works:			
Reduced left-turn conflict intersections are geometric designs that alter how left-turn movements occur in order to simplify decisions and minimize the potential for related crashes. Two highly effective designs that rely on U-turns to complete certain left-turn movements are known as the restricted crossing U-turn (RCUT) and the median U-turn (MUT).			
The RCUT intersection modifies the direct left-turn and through movements from cross-street approaches. Minor road traffic makes a right turn followed by a U-turn at a designated location (either signalized or unsignalized) to continue in the desired direction.			
The RCUT is suitable for a variety of circumstances, including along rural, high-speed, four-lane, divided highways or signalized routes. It also can be used as an alternative to signalization or constructing an interchange. RCUTs work well when consistently used along a corridor, but also can be used effectively at individual intersections.			
The MUT intersection modifies direct left turns from the major approaches. Vehicles proceed through the main intersection, make a U-turn a short distance downstream, followed by a right turn at the main intersection. The U-turns can also be used for modifying the cross-street left turn.			
The MUT is an excellent choice for heavily traveled intersections with moderate left-turn volumes. When implemented at multiple intersections along a corridor, the efficient two-phase signal operation of the MUT can reduce delay, improve travel times, and create more crossing opportunities for pedestrians and bicyclists.			
MUT and RCUT Can Reduce Conflict/Pedestrians by 50%			
General Qualities (Time, Cost and Effectiveness):			
Implementing this strategy may take from months to years, depending on whether additional R/W is required. Such projects require a substantial time for development and construction. Costs are highly variable and range from very low to high. The expected effectiveness of this CM must be assessed for each individual location.			
PHWA CMF Clearinghouse:	Crash Types Addressed:	Angle/Left-turn/Rear-End/All	CRF: 34.8-100%



S16. Convert intersection to roundabout (from signal)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	Varies	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring in influence area of the new roundabout. This CM is not intended for mini-roundabouts. The benefit of this CM is calculated using Caltrans procedure. The CRF is dependent on the ADT, project location (Rural/Urban) and the roundabout type (1 lane or 2 lanes). The benefit comes from both the reduction in the number and the severity of the crashes.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Signalized intersections that have a significant crash problem and the only alternative is to change the nature of the intersection itself. Roundabouts can also be very effective at intersections with complex geometry and intersections with frequent left turn movements.</p> <p><b>Why it works:</b> The types of conflicts that occur at roundabouts are different from those occurring at conventional intersections; namely, conflicts from crossing and left-turn movements are not present in a roundabout. The geometry of a roundabout forces drivers to reduce speeds as they proceed through the intersection. This helps keep the range of vehicle speed narrow, which helps reduce the severity of crashes when they do occur. Pedestrians only have to cross one direction of traffic at a time at roundabouts, thus reducing their potential for conflicts.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Provision of a roundabout requires substantial project development. The need to acquire right-of-way is likely and will vary from site to site and depends upon the geometric design. These activities may require up to 4 years or longer to implement. Mini-roundabouts may be able to be built more expeditiously with signs and markings, but do not have the same CRFs as those shown in this CM. Costs are variable, but construction of a roundabout to replace an existing signalized intersection are relatively high. The result is this CM may have reduced relative-effectiveness compared to other CMs.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All CRF: 35 - 67%</p>			

S17PB. Install pedestrian countdown signal heads

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	25%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring in the intersection/crossing with the new countdown heads.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Signals that have signalized pedestrian crossing with walk/don't walk indicators and where there have been pedestrian vs. vehicle crashes.</p> <p><b>Why it works:</b> A pedestrian countdown signal contains a timer display and counts down the number of seconds left to finish crossing the street. Countdown signals can reassure pedestrians who are in the crosswalk when the flashing "DON'T WALK" interval appears that they still have time to finish crossing. Countdown signals begin counting down either when the "WALK" or when the flashing "DON'T WALK" interval appears and stop at the beginning of the steady "DON'T WALK" interval. These signals also have been shown to encourage more pedestrians to use the pedestrian rather than jaywalk.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs and time of installation will vary based on the number of intersections included in this strategy and if it requires new signal controllers capable of accommodating the enhancement. When considered at a single location, these low cost improvements are usually funded through local funding by local crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian, Bicycle CRF: 25%</p>			

S18PB. Install pedestrian crossing (S.I.)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	25%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring in the intersection/crossing with the new crossing. This CM is not intended to be used for high-cost aesthetic enhancements to intersection crosswalks (i.e. stamped concrete or stamped asphalt).</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Signalized intersections with no marked crossing and pedestrian signal heads, where pedestrians are known to be crossing intersections that involve significant turning movements. They are especially important at intersections with (1) multiphase traffic signals, such as left-turn arrows and split phases, (2) school crossings, and (3) double-right or double-left turns. At signalized intersections, pedestrian crossings are often safer when the left turns have protected phases that do not overlap the pedestrian walk phase.</p> <p><b>Why it works:</b> Adding pedestrian crossings has the opportunity to enhance pedestrian safety at locations noted as being problematic. Nearly one-third of all pedestrian-related crashes occur at or within 50 feet of an intersection. Of these, 30 percent may involve a turning vehicle. Another 22 percent of pedestrian crashes involve a pedestrian either running across the intersection or driving out in front of a vehicle whose view was blocked just prior to the impact. Finally, 16 percent of these intersection-related crashes occur because of a driver violation (e.g., failure to yield right-of-way). When agencies opt to install aesthetic enhancement to intersection crosswalks like stamped concrete/asphalt, the project design and construction costs can significantly increase. For HSIP applications, these costs must be accounted for in the B/C calculation, but these costs (over standard crosswalk markings) must be tracked separately and are not federally reimbursable and will increase the agency's local funding share for the project costs.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs associated with this strategy will vary widely, depending if curb ramps and sidewalk modifications are required with the crossing. When considered at a single location, these low cost improvements may be funded through local funding by local crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate to high cost projects that are appropriate to seek state or federal funding.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian, Bicycle CRF: 25%</p>			

S19PB. Pedestrian Scramble

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	40%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring in the intersection with the new pedestrian crossing.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Pedestrian Scramble is a form of pedestrian "WALK" phase at a signalized intersection in which all vehicular traffic is required to stop, allowing pedestrians/bicyclists to safely cross through the intersection in any direction, including diagonally. Pedestrian Scramble may be considered at signalized intersections with very high pedestrian/bicycle volumes, e.g. in an urban business district.</p> <p><b>Why it works:</b> Pedestrian Scramble has been shown to reduce injury risk and increase bicycle ridership due to its perceived safety and comfort.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Not involving any additional INM, Pedestrian Scramble should not require a long development process and should be implemented reasonably soon. A systematic approach may be used in implementing this CM, resulting in cost efficiency with low to moderate cost.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian, Bicycle CRF: 10% to 51%</p>			

## 8.2 Intersection Countermeasures – Non-signalized

### NS01. Add Intersection Lighting (NSJ)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Night	40%	20 years
<b>Notes:</b> This CM only applies to "night" crashes (all types) occurring within limits of the proposed roadway lighting "engineered" area.			
<b>General Information</b>			
<b>Where to use:</b> Non-signalized intersections that have a disproportionate number of nighttime crashes and do not currently provide lighting at the intersection or at its approaches. Crash data should be studied to ensure that safety at the intersection could be improved by providing lighting (this strategy would be supported by a significant number of crashes that occur at night)			
<b>Why it works:</b> Providing lighting at the intersection itself, or both at the intersection and on its approaches, improves the safety of an intersection during nighttime conditions by (1) making drivers more aware of the surroundings at an intersection, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances, and (3) improving the visibility of non-motorists. Intersection lighting is of particular benefit to non-motorized users as lighting not only helps them navigate the intersection, but also helps drivers see them better.			
<b>General Qualities (Time, Cost and Effectiveness):</b> A lighting project can usually be completed relatively quickly, but generally requires at least 1 year to implement because the lighting system must be designed and the provision of electrical power must be arranged. The provision of lighting involves both a fixed cost for lighting installation and an ongoing maintenance and power cost. For rural intersections, studies have shown the installation of streetlights reduced nighttime crashes at unlit intersections and can be more effective in reducing nighttime crashes than either rumble strips or overhead flashing beacons. Some locations can result in high B/C ratios, but due to higher costs, these projects often result in medium to low B/C ratios.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Night, All CRF: 25-50%			

### NS02. Convert to all-way STOP control (from 2-way or Yield control)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	50%	10 years
<b>Notes:</b> This CM only applies to crashes occurring in the intersection and/or influence area of the new control. CA-NUTCD warrant must be met.			
<b>General Information</b>			
<b>Where to use:</b> Unsignalized intersection locations that have a crash history and have no controls on the major roadway approaches. However, 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. MUTCD warrants should always be followed.			
<b>Why it works:</b> All-way stop control can reduce right-angle and turning collisions at unsignalized intersections by providing more orderly movement at an intersection, reducing through and turning speeds, and minimizing the safety effect of any sight distance restrictions that may be present. Advance public notification of the change is critical in assuring compliance and reducing crashes.			
<b>General Qualities (Time, Cost and Effectiveness):</b> The costs involved in converting to all-way stop control are relatively low. All-way stop control can normally be implemented at multiple intersections with just a change in signing on intersection approaches, and typically are very quick to implement. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Left-turn, angle CRF: 6-80%			

### S20PB. Install advance stop bar before crosswalk (Bicycle Box)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	15%	10 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the intersection-crossing with the new advanced stop bars.			
<b>General Information</b>			
<b>Where to use:</b> Signalized intersections with a marked crossing, where significant bicycle and/or pedestrian volumes are known to occur.			
<b>Why it works:</b> Adding advance stop bar before the striped crosswalk has the opportunity to enhance both pedestrian and bicycle safety. Stopping cars well before the crosswalk provides a buffer between the vehicles and the crossing pedestrians. It also allows for a dedicated space for cyclists, making them more visible to drivers (this dedicated space is often referred to as a bike-box)			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs and time of installation will vary based on the number of intersections included in this strategy and if it requires new signal controllers capable of accommodating the enhancement. When considered at a single location, these low cost improvements are usually funded through local funding by local crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian, Bicycle CRF: 35%			

### S21PB. Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	60%	10 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the intersections with signalized pedestrian crossing with the newly implemented Leading Pedestrian Interval (LPI).			
<b>General Information</b>			
<b>Where to use:</b> Intersections with signalized pedestrian crossing that have high turning vehicles volumes and have had pedestrian vs. vehicle crashes.			
<b>Why it works:</b> A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter an intersection 3-7 seconds before vehicles are given a green indication. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn left. LPIs provide (1) increased visibility of crossing pedestrians, (2) reduced conflicts between pedestrians and vehicles, (3) increased likelihood of motorists yielding to pedestrians; and (4) enhanced safety for pedestrians who may be slower to start into the intersection.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs for implementing LPIs are very low, since only minor signal timing alteration is required. This makes it an easy and inexpensive countermeasure that can be incorporated into pedestrian safety action plans or policies and can become routine agency practice. When considered at a single location, the LPIs are usually local-funded. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian, Bicycle CRF: 5%			



NS03. Install signals

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring in the intersection and/or influence area of the new signals. All new signals must meet MUTCD "safety" warrants: 4, 5 or 7. Given the overarching operational changes that occur when an intersection is signalized, no other intersection CMs can be applied to the intersection crashes in conjunction with this CM.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Traffic signals can be used to prevent the most severe type crashes (right-angle, left-turn). Consideration to signalize an unsignalized intersection should only be given after (1) less restrictive forms of traffic control have been utilized at the installation of a traffic signal often leads to an increased frequency of crashes (rear-end) on major roadways and introduces congestion and (2) signal warrants have been met. Refer to the CA MUTCD, Section 4C.01, Studies and Factors for Justifying Traffic Control Signals.</p> <p><b>Why it works:</b> Traffic signals have the potential to reduce the most severe type crashes but will likely cause an increase in rear-end collisions. A reduction in overall injury severity is likely the largest benefit of traffic signal installation.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Typical traffic signal costs fall in the medium to high category and are affected by application, type of signal and right-of-way considerations. Projects of this magnitude should only be considered after alternate and lesser means of correction have been evaluated. Some locations can result in high B/C ratios, but due to higher costs, these projects often result in medium to low B/C ratios.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All CRF: 0 - 74%</p>			

NS04. Convert intersection to roundabout (from all way stop)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	Varies	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring in the intersection and/or influence area of the new control. The benefit of this CM is calculated using Caltrans procedure. The CRF is dependent on the ADT, project location (Rural/Urban) and the roundabout type (1 lane or 2 lanes). The benefit comes from both the reduction in the number and the severity of the crashes.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Intersections that have a high frequency of right-angle and left-turn type crashes. Whether such intersections have existing crash patterns or not, a roundabout provides an alternative to signalization. The primary target locations for roundabouts should be moderate-volume unsignalized intersections. Roundabouts may not be a viable alternative in many suburban and urban settings where right-of-way is limited.</p> <p><b>Why it works:</b> Roundabouts provide an important alternative to signalized and all-way stop-controlled intersections. Modern roundabouts differ from traditional traffic circles in that they operate in such a manner that traffic entering the roundabout must yield the right-of-way to traffic already in it. Roundabouts can serve moderate traffic volumes with less delay than all-way stop-controlled intersections and provide fewer conflict points. Crashes at roundabouts tend to be less severe because of the speed constraints and elimination of left-turn and right-angle movements.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Construction of roundabouts are usually relatively costly and major projects, requiring the environmental process, right-of-way acquisition, and implementation under an agency's long term capital improvement program. (For this reason, roundabouts may not be appropriate for California's Federal Safety Programs that have relatively short delivery requirements.) Even with roundabouts higher costs, they still can have a relatively high effectiveness.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Left-turn, Angle CRF: 12 - 78 %</p>			

NS05. Convert intersection to roundabout (from 2-way stop or Yield control)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	Varies	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring in the intersection and/or influence area of the new control. The benefit of this CM is calculated using Caltrans procedure. The CRF is dependent on the ADT, project location (Rural/Urban) and the roundabout type (1 lane or 2 lanes). The benefit comes from both the reduction in the number and the severity of the crashes.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Intersections that have a high frequency of right-angle and left-turn type crashes. Whether such intersections have existing crash patterns or not, a roundabout provides an alternative to signalization. The primary target locations for roundabouts should be moderate-volume unsignalized intersections. Roundabouts may not be a viable alternative in many suburban and urban settings where right-of-way is limited.</p> <p><b>Why it works:</b> Roundabouts provide an important alternative to signalized and all-way stop-controlled intersections. Modern roundabouts differ from traditional traffic circles in that they operate in such a manner that traffic entering the roundabout must yield the right-of-way to traffic already in it. Roundabouts can serve moderate traffic volumes with less delay than all-way stop-controlled intersections and provide fewer conflict points. Crashes at roundabouts tend to be less severe because of the speed constraints and elimination of left-turn and right-angle movements.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Construction of roundabouts are usually relatively costly and major projects, requiring the environmental process, right-of-way acquisition, and implementation under an agency's long term capital improvement program. (For this reason, roundabouts may not be appropriate for California's Federal Safety Programs that have relatively short delivery requirements.) Even with roundabouts higher costs, they still can have a relatively high effectiveness.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Left-turn, Angle CRF: 12 - 78 %</p>			

NS06. Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	15%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring in the influence area of the new signs. The influence area must be determined on a location by location basis.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> The target for this strategy should be approached to unsignalized intersections with patterns of rear-end, right-angle, or turning collisions related to lack of driver awareness of the presence of the intersection.</p> <p><b>Why it works:</b> The visibility of intersections and, thus, the ability of approaching drivers to perceive them can be enhanced by installing larger regulatory and warning signs at or prior to intersections. A key to success in applying this strategy is to select a combination of regulatory and warning sign techniques appropriate for the conditions on a particular unsignalized intersection approach.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Signage improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number of signs. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All CRF: 11 - 55%</p>			

NS07. Upgrade Intersection pavement markings (NS.I)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	25%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new pavement markings. This CM is not intended to be used for general maintenance activities (i.e. the replacement of existing pavement markings in-kind) and must include upgraded safety features over the existing pavement markings and striping.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Unsignalized intersections that are not clearly visible to approaching motorists, particularly approaching motorists on the major road. The strategy is particularly appropriate for intersections with patterns of rear-end, right-angle, or turning crashes related to lack of driver awareness of the presence of the intersection. Also at minor road approaches where conditions allow the stop bar to be seen by an approaching driver at a significant distance from the intersection. Typical improvements include "Stop Ahead" markings and the addition of Centerlines and Stop Bars.</p> <p><b>Why it works:</b> The visibility of intersections and, thus, the ability of approaching drivers to perceive them can be enhanced by installing appropriate pavement delineation in advance of and at intersections will provide approaching motorists with additional information at these locations. Providing visible stop bars on minor road approaches to unsignalized intersections can help direct the attention of drivers to the presence of the intersection. Drivers should be more aware that the intersection is coming up, and therefore make safer decisions as they approach the intersection.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Pavement marking improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number of markings. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding. Note: When federal safety funding is used for these installations in high-wear-locations, the local agency is expected to maintain the improvement for a minimum of 10 years.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All CRF: 13 - 60%</p>			

NS08. Install Flashing Beacons at Stop-Controlled Intersections

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	15%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the stop-controlled approaches / influence area of the new beacons.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Flashing beacons can reinforce driver awareness of the Non-Signalized intersection control and can help mitigate patterns of right angle crashes related to stop sign violations. Post-mounted advanced flashing beacons or overhead flashing beacons can be used at stop-controlled intersections to supplement and call driver attention to stop sign.</p> <p><b>Why it works:</b> Flashing beacons provide a visible signal to the presence of an intersection and can be very effective in rural areas where there may be long stretches between intersections as well as locations where night time visibility of intersections is an issue.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Flashing beacons can be constructed with minimal design, environmental and right-of-way issues and have relatively low costs. Before choosing this CM, the agency needs to confirm the ability to provide power to the site (solar may be an option). In general, this CM can be very effective and can be considered on a systematic approach.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Angle, Rear-End CRF: 5-34%</p>			

NS09. Install flashing beacons as advance warning (NS.I)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new beacons placed in advance of the intersection.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Non-Signalized intersections with patterns of crashes that could be related to lack of a driver's awareness of approaching intersection or control at a downstream intersection.</p> <p><b>Why it works:</b> Advance flashing beacons can be used to supplement and call driver attention to intersection control signs. Flashing beacons are intended to reinforce driver awareness of the stop or yield signs and to help mitigate patterns of crashes related to intersection regulatory sign violations. Most advance warning flashing beacons can be powered by solar, thus reducing the issues relating to power source.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Use of flashing beacons requires minimal development process, allowing flashing beacons to be installed within a short time period. Before choosing this CM, the agency needs to confirm the ability to provide power to the site (solar may be an option). In general, this CM can be very effective and can be considered on a systematic approach.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Angle, Rear-End CRF: 26 - 62%</p>			

NS10. Install transverse rumble strips on approaches

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	20%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new rumble strips.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Transverse rumble strips are installed in the travel lane for the purposes of providing an auditory and tactile sensation for each motorist approaching the intersection. They can be used at any stop or yield approach intersection, often in combination with advance signing to warn of the intersection ahead. Due to the noise generated by vehicles driving over the rumble strips, care must be taken to minimize disruption to nearby residences and businesses.</p> <p><b>Why it works:</b> When motorists are traveling along the roadway, they are sometimes unaware they are approaching an intersection. This is especially true on rural roads, as there may be fewer clues indicating an intersection ahead. Transverse rumble strips warn motorists that something unexpected is ahead that they need to pay attention to.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Use of transverse rumble strips requires minimal development process, allowing transverse rumble strips to be installed within a short time period. In general, this CM can be very effective and can be considered on a systematic approach, although care should be taken to not over-use this CM. Note: When federal safety funding is used for these installations in high-wear-locations, the local agency is expected to maintain the improvement for a minimum of 10 years.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All CRF: 0 - 35%</p>			



**NS11. Improve sight distance to intersection (Clear Sight Triangles)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	20%	10 years
<b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the significantly improved sight distance. Minor/incidental improvements to sight distance would not likely result in the CRF shown below.			
General Information			
<b>Where to use:</b> Unsignalized intersections with restricted sight distance and patterns of crashes related to lack of sight distance where sight distance can be improved by clearing roadside obstructions without major reconstruction of the roadway.			
<b>Why it works:</b> Adequate sight distance for drivers at stop or yield-controlled approaches to intersections has long been recognized as among the most important factors contributing to overall safety at unsignalized intersections. By removing sight distance restrictions (e.g., vegetation, parked vehicles, signs, buildings) from the sight triangles at stop or yield-controlled intersection approaches, drivers will be able to see approaching vehicles on the main line, without obstruction and therefore make better decisions about entering the intersection safely.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Projects involving clearing sight obstructions on the highway right-of-way can typically be accomplished quickly, assuming the objects are readily movable. Clearing sight obstructions on private property requires more time for discussions with the property owner. Costs will generally be low, assuming that, in most cases the objects to be removed are within the right-of-way. In general, this CMs can be very effective and can be implemented by agencies' maintenance staff and/or implemented on a systematic approach. Usually only high-cost removals would be good candidates for Caltrans Federal Safety Funding. Note: When federal safety funding is used to remove vegetation that has the potential to grow back, the local agency is expected to maintain the improvement for a minimum of 10 years.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 11 - 56%

**NS12. Improve pavement friction (High Friction Surface Treatments)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	55%	10 years
<b>Notes:</b> This CM only applies to crashes occurring within the limits of the improved friction overlay. This CM is not intended to apply to standard chip-seal or open-graded maintenance projects for long segments of corridors or structure repaving projects intended to fix failed pavement.			
General Information			
<b>Where to use:</b> Nationally, this countermeasure is referred to as "High Friction Surface Treatments" or HFST. Non-signalized intersections noted as having crashes on wet pavements or under dry conditions when the pavement friction available is significantly less than needed for the actual roadway approach speeds. This treatment is intended to target locations where sludding and failure to stop is determined to be a problem in wet or dry conditions and the target vehicle is unable to stop due to insufficient skid resistance.			
<b>Why it works:</b> Improving the skid resistance at locations with high frequencies of wet-road crashes and/or failure to stop crashes can result in reductions of 50 percent for wet-road crashes and 20 percent for total crashes. Applying HFST can double friction numbers, e.g. low-40s to high 80s. This CM represents a special focus area for both FHWA and Caltrans, which means there are extra resources available for agencies interested in more details on High Friction Surface Treatment projects.			
<b>General Qualities (Time, Cost and Effectiveness):</b> This strategy can be relatively inexpensive and implemented in a short timeframe. The installation would be done by either agency personnel or contractors and can be done by hand or machine. In general, this CM can be very effective and can be considered on a systematic approach.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 10 - 62 %

**NS13. Install splitter-islands on the minor road approaches**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	40%	20 years
<b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new splitter island on the minor road approaches.			
General Information			
<b>Where to use:</b> Minor road approaches to unsignalized intersections where the presence of the intersection or the stop sign is not readily visible to approaching motorists. The strategy is particularly appropriate for intersections where the speeds on the minor road are high. In creation of a splitter island allows for an additional stop sign to be placed in the median for the minor approach.			
<b>Why it works:</b> The installation of splitter islands allows for the addition of a stop sign in the median to make the intersection more conspicuous. Additionally, the splitter island on the minor-road provides for a positive separation between turning vehicles on the through road and vehicles stopped on the minor road approach.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Splitter islands at non-signalized intersections can usually be installed with minimal roadway reconstruction and relatively quickly. In general, this CM can be very effective and can be considered on a systematic approach.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 35 - 100 %

**NS14. Install raised median on approaches (NS.I)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	25%	20 years
<b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new raised median. All new raised medians funded with federal HSIP funding must not include the removal of the existing roadway structural section and must be dowelled into the existing roadway surface. This new requirement is being implemented to maximize the safety-effectiveness of the limited HSIP funding and to minimize project impacts.			
General Information			
<b>Where to use:</b> Where related or nearby turning movements affect the safety and operation of an intersection. Effective access management is key to improving safety at, and adjacent to, intersections. The number of intersection access points coupled with the speed differential between vehicles traveling along the roadway often contributes to crashes. Any access points within 250 feet upstream and downstream of an intersection are generally undesirable.			
<b>Why it works:</b> Raised medians with left-turn lanes at intersections offer a cost-effective means for reducing crashes and improving operations at higher volume intersections. The raised medians also prohibit left turns into and out of driveways that may be located too close to the functional area of the intersection.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Raised medians at intersections may be most effective in retrofit situations where high volumes of turning vehicles have degraded operations and safety, and where more extensive approaches would be too expensive because of limited right-of-way and the constraints of the built environment. Because raised medians limit property access to right turns only, the need for providing alternative access ways should be considered. In general, this CM can be very effective and can be considered on a systematic approach. When agencies opt to install landscaping in conjunction with new raised medians, the portion of the cost for landscaping and other non-safety related items that exceeds 10% of the project total cost is not federally participated and must be funded by the applicant.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 20 - 39 %

**NS15. Create directional median openings to allow (and restrict) left-turns and u-turns (NS.1)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	50%	20 years
<b>Notes:</b> This CM only applies to crashes occurring in the intersection / influence area of the new directional openings.			
<b>General Information</b>			
<b>Where to use:</b> Crashes related to turning maneuvers include angle, rear-end, pedestrian, and sideswipe (involving opposing left turns) type crashes. If any of these crash types are an issue at an intersection, restriction or elimination of the turning maneuver may be the best way to improve the safety of the intersection. Because raised medians limit property access to right turns only, they should be used in conjunction with efforts to provide alternative access ways and promote driveway signing objectives.			
<b>Why it works:</b> Agencies are increasingly using access management techniques on urban and suburban arterials to manage the number of conflicts experienced at an intersection. A key element of access management is to restrict certain movements, create directional median openings, or close median openings that are deemed too close to an intersection.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Turn prohibitions that are implemented by closing a median opening can usually be implemented quickly. Costs are highly variable but in many cases could be considered low. In some cases this strategy may involve acquiring access or constructing replacement access. Those actions will significantly increase the cost of the project. Impacts to businesses and other land uses must be considered and controversy can delay the implementation. In general, this CM can be very effective and can be considered on a systematic approach.			
<b>PHWA CMF Clearinghouse:</b>		<b>Crash Types Addressed:</b>	<b>CRF:</b> 51%
		All	

**NS16. Reduced Left-Turn Conflict Intersections (NS.1)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	50%	20 years
<b>Notes:</b> This CM only applies to crashes occurring in the intersection / influence area of the new Reduced Left-Turn Conflict.			
<b>General Information</b>			
<b>Where to use and Why it works:</b> Reduced left turn conflict intersections are economic designs that after how left turn movements occur in order to simplify decisions and minimize the potential for related crashes. Two highly effective designs that rely on U-turns to complete certain left-turn movements are known as the restricted crossing U-turn (RCUT) and the median U-turn (MUT).			
<b>Restricted Crossing U-Turn (RCUT):</b> The RCUT intersection modifies the direct left-turn and through movements from cross-street approaches. Minor road traffic makes a right turn followed by a U-turn at a designated location (either signalized or unsignalized) to continue in the desired direction.			
<b>The RCUT is suitable for a variety of circumstances, including along rural, high-speed, four-lane, divided highways or signalized arterials. It also can be used as an alternative to signalization or constructing an interchange. RCUTs work well when consistently used along a corridor, but also can be used effectively at individual intersections.</b>			
<b>Median U-Turn (MUT)</b> The MUT intersection modifies direct left turns from the major approaches. Vehicles proceed through the main intersection, making a U-turn a short distance downstream, followed by a right turn at the main intersection. The U-turns can also be used for modifying the cross-street left turns.			
<b>The MUT is an excellent choice for heavily traveled intersections with moderate left-turn volumes. When implemented at multiple intersections along a corridor, the efficient two-phase signal operation of the MUT can reduce delay, improve travel times, and create more crossing opportunities for pedestrians and bicyclists.</b>			
<b>MUT and RCUT Can Reduce Conflict Points by 50%</b>			
<b>General Qualities (Time, Cost and Effectiveness):</b> Implementing this strategy may take from months to years, depending on whether additional R/W is required. Such projects require a substantial time for development and construction. Costs are highly variable and range from very low to high. The expected effectiveness of this CM must be assessed for each individual location.			
<b>PHWA CMF Clearinghouse:</b>		<b>Crash Types Addressed:</b>	<b>CRF:</b> 34.8-100%
		Angle/Left-Turn/Rear-End/All	



NS17. Install right turn lane (NSL)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	20%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new right turn lanes. This CM is not eligible for use at existing all-way stop intersections.</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Many collisions at unsignalized intersections are related to right-turn maneuvers. A key strategy for minimizing such collisions is to provide exclusive right-turn lanes, particularly on high-volume and high-speed major-road approaches. When considering new right-turn lanes, potential impacts to non-motorized users should be considered and mitigated as appropriate. When considering new right-turn lanes, potential impacts to non-motorized users should be considered and mitigated as appropriate.</p> <p><b>Why it works:</b> The strategy is targeted to reduce the frequency of rear-end collisions resulting from conflicts between vehicles turning right and following vehicles and vehicles turning right and through vehicles coming from the left on the cross street. Right turn lanes also remove slow-vehicles that are decelerating to turn right from the through traffic stream, thus reducing the potential for rear-end collisions. Right-turn lanes can increase the length of the intersection crossing and create an additional potential conflict point for non-motorized users.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Implementing this strategy may take from months to years. At some locations, right turn lanes can be quickly and simply installed by restriping the roadway. At other locations, widening of the roadway, acquisition of additional right-of-way, and extensive environmental processes may be needed. Such projects require a substantial time for development and construction. Costs are highly variable and range from very low to high. The expected effectiveness of this CM must be assessed for each individual location.</p>			
FHWA CMF Clearinghouse: Crash Types Addressed: All		CRF:	14 - 26 %

NS18. Install left-turn lane (where no left-turn lane exists)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	35%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring on the approaches / influence area of the new left-turn lanes. This CM does NOT apply to converting a single-left into double-left turn. This CM is not eligible for use at existing all-way stop intersections.</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Many collisions at unsignalized intersections are related to left-turn maneuvers. A key strategy for minimizing such collisions is to provide exclusive left-turn lanes, particularly on high-volume and high-speed major-road approaches. When considering new left-turn lanes, potential impacts to non-motorized users should be considered and mitigated as appropriate.</p> <p><b>Why it works:</b> Adding left-turn lanes remove vehicles waiting to turn left from the through-traffic stream, thus reducing the potential for rear-end collisions. Because they provide a sheltered location for drivers to wait for a gap in opposing traffic, left-turn lanes may encourage drivers to be more selective in choosing a gap to complete the left-turn maneuver. This strategy may reduce the potential for collisions between left-turn and opposing through vehicles.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Implementing this strategy may take from months to years. At some locations, left-turn lanes can be quickly and simply installed by restriping the roadway. At other locations, widening of the roadway, acquisition of additional right-of-way, and extensive environmental processes may be needed. Such projects require a substantial time for development and construction. Costs are highly variable and range from very low to high. The expected effectiveness of this CM must be assessed for each individual location.</p>			
FHWA CMF Clearinghouse: Crash Types Addressed: All		CRF:	9 - 55 %

NS19PB. Install raised medians (refuge islands)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	45%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring in the crossing with the new islands. All new raised medians funded with federal HSIP funding must not include the removal of the existing roadway structural section and must be dowelled into the existing roadway surface. This new requirement is being implemented to maximize the safety-effectiveness of the limited HSIP funding and to minimize project impacts.</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Intersections that have a long pedestrian crossing distance, a higher number of pedestrians, or a crash history. Raised medians decrease the level of exposure for pedestrians and allow pedestrians to concentrate on (or cross) only one direction of traffic at a time.</p> <p><b>Why it works:</b> Raised pedestrian refuge islands, or medians at crossing locations along roadways, are another strategy to reduce exposure between pedestrians and motor vehicles. Refuge islands and medians that are raised (i.e., not just painted) provide pedestrians more secure places of refuge during the street crossing. They can stop pathway across the street and wait for an adequate gap in traffic before completing their crossing.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Median and pedestrian refuge areas are a low-cost countermeasure to implement. This cost can be applied to retrofit improvements or if it is a new construction project, implementing this countermeasure is even more cost-effective. In general, this CM can be very effective and can be considered on a systematic approach. When agencies opt to install landscaping in conjunction with new raised medians, the portion of the cost for landscaping and other non-safety related items that exceeds 10% of the project total cost is not federally participated and must be funded by the applicant.</p>			
FHWA CMF Clearinghouse: Crash Types Addressed: Pedestrian and Bicycle		CRF:	30 - 56 %

NS20PB. Install pedestrian crossing at uncontrolled locations (signs and markings only)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	25%	10 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring in the intersection/crossing with the new crossing. This CM is not intended to be used for high-cost aesthetic enhancements to intersection crosswalks (i.e., stamped concrete or stamped asphalt).</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Non-signalized intersections without a marked crossing, where pedestrians are known to be crossing intersections that involve significant vehicular traffic. They are especially important at school crossings and intersections with right and/or left turns pockets. See Zeger study (Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations) for additional guidance regarding when to install a marked crosswalk.</p> <p><b>Why it works:</b> Adding pedestrian crossings has the opportunity to enhance pedestrian safety at locations noted as being problematic. Pavement markings delineate a portion of the roadway that is designated for pedestrian crossing. These markings will often be different for controlled versus uncontrolled locations. The use of "ladder", "zebra" or other enhanced markings at uncontrolled crossings can increase both pedestrian and driver awareness to the increased exposure at the crossing. Incorporating advanced "stop" or "yield" markings provides an extra safety buffer and can be effective in reducing the "multiple-threat" danger to pedestrians. Nearly one-third of all pedestrian-related crashes occur at or within 50 feet of an intersection. Of these, 30 percent may involve a turning vehicle. There are several types of pedestrian crosswalks, including: continental, ladder, zebra, and standard. When agencies opt to install aesthetic enhancement to intersection crosswalks like stamped concrete/asphalt, the project design and construction costs can significantly increase. For HSIP applications, these costs must be accounted for in the B/C calculation, but these costs (over standard crosswalk markings) must be tracked separately and are not federally reimbursable and will increase the agency's local-funding share for the project costs.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs associated with this strategy will vary widely, depending upon if curb ramps and sidewalk modifications are required with the crossing. When considered at a single location, these low cost improvements are usually funded through local funding by local crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.</p>			
FHWA CMF Clearinghouse: Crash Types Addressed: Pedestrian and Bicycle		CRF:	25 %

NS21PB, Install/upgrade pedestrian crossing at uncontrolled locations (with enhanced safety features)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	35%	20 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the new crossing (influence area) with enhanced safety features. This CM is not intended to be used for high-cost aesthetic enhancements to intersection crosswalks (i.e., stamped concrete or stamped asphalt).			
<b>General Information</b>			
<b>Where to use:</b> Non-signalized intersections where pedestrians are known to be crossing intersections that involve significant vehicular traffic. They are especially important at school crossings and intersections with turn pockets. Based on the Zeger study (Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations) at many locations, a marked crosswalk alone may not be sufficient to adequately protect non-motorized users. In these cases, <b>flexible beacons, such as extensions, advanced "give" or "yield" markings, and other safety features</b> should be added to complement the standard crossing elements.			
<b>Why it works:</b> Adding pedestrian crossings that include enhanced safety features has the opportunity to enhance pedestrian safety at locations noted as being especially problematic. The enhanced safety elements help delineate a portion of the roadway that is designated for pedestrian crossing. Incorporating advanced "yield" markings provide an extra safety buffer and can be effective in reducing the "multiple-threat" danger to pedestrians. Nearly one-third of all pedestrian-related crashes occur at or within 50 feet of an intersection. When agencies opt to install aesthetic enhancement to intersection crosswalks like stamped concrete/asphalt, the project design and construction costs can significantly increase. For HSIP applications, these costs must be accounted for in the B/C calculation, but these costs (over standard crosswalk markings) must be tracked separately and are not federally reimbursable and will increase the agency's local-funding share for the project costs.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs associated with this strategy will vary widely, depending upon the types of enhanced features that will be combined with the standard crossing improvements. The need for new curb ramps and sidewalk modifications will also be a factor. This CM may be effectively and efficiently implemented using a systematic approach with more than one location and can have relatively high B/C ratios based on just non-motorized crash history.			
<b>TRMA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian and Bicycle   CRF: 37%			

NS23PB, Install Pedestrian Signal (including Pedestrian Hybrid Beacon (HAWK))  
For HSIP Calls-for-projects

Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	55%	20 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the intersection/crossing with the new signal.			
<b>General Information</b>			
<b>Where to use:</b> Intersections noted as having a history of pedestrian vs. vehicle crashes and in areas where the likelihood of the pedestrian presence is high. Corridors should also be assessed to determine if there are adequate safe opportunities for non-motorists to cross and if a pedestrian signal, or a Pedestrian Hybrid Beacon (PHB) (also called High-Intensity Activated CrossWalk Beacon (HAWK)) are needed to provide an active warning to motorists when a pedestrian is in the crosswalk.			
<b>Why it works:</b> Adding a pedestrian signal has the opportunity to greatly enhance pedestrian safety at locations noted as being problematic. Nearly one-third of all pedestrian-related crashes occur at or within 50 feet of an intersection. In combination with this CM, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including: sign and markings directing pedestrians and cyclists on appropriate/legal travel paths and signs and markings warning motorists of non-motorized users of the roadway that should be expected.			
<b>General Qualities (Time, Cost and Effectiveness):</b> The cost of improvements are generally high, but can vary dependent on the type of signal and overall scope of the project. In most cases the project duration can be short. The expected effectiveness of this CM must be assessed for each individual location.			
<b>TRMA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian and Bicycle   CRF: 15 - 69%			

NS22PB, Install Rectangular Rapid Flashing Beacon (RRFB)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	35%	20 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the influence area (expected to be a maximum of within 250') of the crossing which includes the RRFB.			
<b>General Information</b>			
<b>Where to use:</b> Rectangular Rapid Flashing Beacon (RRFB) includes pedestrian-activated flashing lights and additional signage that enhance the visibility of marked crosswalks and alert motorists to pedestrian crossings. It uses an irregular flash pattern that is similar to emergency flashers on police vehicles. RRFBs are installed at un-signalized intersections and mid-block pedestrian crossings.			
<b>Why it works:</b> RRFBs can enhance safety by increasing driver awareness of potential pedestrian conflicts and reducing crashes between vehicles and pedestrians at unsignalized intersections and mid-block pedestrian crossings. The addition of RRFB may also increase the safety effectiveness of other treatments, such as crossing warning signs and markings.			
<b>General Qualities (Time, Cost and Effectiveness):</b> RRFBs are a lower cost alternative to traffic signal and hybrid signals. This CM can often be effectively and efficiently implemented using a systematic approach with numerous locations.			
<b>TRMA CMF Clearinghouse:</b> Crash Types Addressed: Pedestrian, Bicycle   CRF: 7 - 47.4%			



### B.3 Roadway Countermeasures

#### R01. Add Segment Lighting

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Night	35%	20 years
<p><b>Notes:</b> This CM only applies to "night" crashes (all types) occurring within limits of the proposed roadway lighting "engineered" area.</p> <p><b>Where to use:</b> Where to use: Noted substantial patterns of nighttime crashes. In particular, patterns of rear-end, right-angle, turning or roadway departure collisions on the roadways may indicate that night time drivers can be unaware of the roadway characteristics.</p> <p><b>Why it works:</b> Providing roadway lighting improves the safety during nighttime conditions by (1) making drivers more aware of the surroundings, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances to perceive roadway characteristic in advance of the change, and (3) improving non-motorist's visibility and navigation.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> It is expected that projects of this type may be constructed in a year or two and are relatively costly. There are several types of costs associated with providing lighting, including the cost of providing a permanent source of power to the location, the cost for the luminaire supports (i.e., poles), and the cost for routinely replacing the bulbs and maintenance of the luminaire supports. Some locations can result in high B/C ratios, but due to higher costs, these projects often result in medium to low B/C ratios.</p> <p>FHWA CMF Clearinghouse: Night, All   CRF: 18 - 69 %</p>			

#### R02. Remove or relocate fixed objects outside of Clear Recovery Zone

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
50%	All	35%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new clear recovery zone (per Caltrans' HDM).</p> <p><b>Where to use:</b> Known locations or roadway segments prone to collisions with fixed objects such as utility poles, drainage structures, trees, and other fixed objects, such as the outside of a curve, end of lane drops, and in traffic islands. A clear recovery zone should be developed on every roadway, as space is available. In situations where public right-of-way is limited, steps should be taken to request assistance from property owners, as appropriate.</p> <p><b>Why it works:</b> While this strategy does not prevent the vehicle leaving the roadway, it does provide a mechanism to reduce the severity of a resulting crash. A clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway. Removing or moving fixed objects, flattening slopes, or providing recovery areas reduces the likelihood of a crash.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Projects involving removing fixed objects from highway right-of-way can typically be accomplished quickly, assuming the objects are readily movable. Clearing objects on private property requires more time for discussions with the property owner. Costs will generally be low, assuming that in most cases the objects to be removed are within the right-of-way. This CMs can be very effective and can be implemented by agencies' maintenance staff and/or implemented on a systematic approach. High-cost removals or removals implemented using a systematic approach would be good candidates for Caltrans Federal Safety Funding.</p> <p>FHWA CMF Clearinghouse: Crash Types Addressed: Fixed Object   CRF: 17 - 100 %</p>			

#### R03. Install Median Barrier

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	25%	20 years
<p><b>Notes:</b> For Caltrans' statewide Calls-for-Projects, this CM only applies to crashes occurring within the limits of the new barrier.</p> <p><b>Where to use:</b> Areas where crash history indicates drivers are unintentionally crossing the median and the cross-overs are resulting in high severity crashes. The installation of median barriers can increase the number of PDO and non-severe injuries. The net result in safety from this countermeasure is connected more to reducing the severity of crashes not the number of crashes. It is recommended to review the warrants as outlined in Chapter 7 of the Caltrans Traffic Manual when considering whether to install median barriers.</p> <p><b>Why it works:</b> This strategy is designed to prevent head-on collisions by providing a barrier between opposing lanes of traffic. The variety of median barriers available makes it easier to choose a site-specific solution. The main advantage is the reduction of the severity of the crashes. The key to success would be in selecting an appropriate barrier based on the site, previous crash history, maintenance needs, and median width.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> This strategy would in many cases be possible to implement within a short period after site selection. Costs will vary depending on the type of median barrier selected and whether the strategy is implemented as a stand-alone project or incorporated as part of a reconstruction or resurfacing effort. Maintenance costs and worker exposure will also vary depending on the type of barrier selected. The expected effectiveness of this CM must be assessed for each individual location.</p> <p>FHWA CMF Clearinghouse: Crash Types Addressed: Head-on   CRF: 0 - 94 %</p>			

#### R04. Install Guardrail

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	25%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new guardrail. This CM is not intended to be used for general maintenance activities (i.e. the replacement of existing damaged rail). For projects proposing to upgrade existing guardrail to current standards, this CM and corresponding CRF should only be applied to locations where past crash data or engineering judgment applied to the existing rail conditions suggests the upgraded guardrail may result in fewer or less severe crashes (justifying the use of the 25% CRF for this CM).</p> <p><b>Where to use:</b> Guardrail is installed to reduce the severity of lane departure crashes. However, guardrail can reduce crash severity only for those conditions where striking the guardrail is less severe than going down an embankment or striking a fixed object. Guardrail should only be installed where it is clear that crash severity will be reduced, or there is a history of run-off-the-road crashes at a given location that have resulted in severe crashes. New and upgraded guardrail and end treatments must meet current safety standards; see Method for Assessing Safety Hardware (MASH) for more information. Caltrans for other national accepted guidance) slope/height criteria need to be considered and documented.</p> <p><b>Why it works:</b> Guardrail redirects a vehicle away from embankment slopes or fixed objects and dissipates the energy of an errant vehicle.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Strategies range from relatively inexpensive too costly. Costly projects may include those that upgrade existing guardrail applications to more semi-rigid and rigid barrier systems over extended distances. In general, this CMs can be effective and can be implemented by agencies' maintenance staff and/or implemented on a systematic approach.</p> <p>FHWA CMF Clearinghouse: Crash Types Addressed: Fixed Object, Run-off Road   CRF: 11 - 78 %</p>			

R05, Install impact attenuators

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	25%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new attenuators. This CM is not intended to be used for general maintenance activities (i.e. the replacement of existing damaged attenuators). For projects proposing to upgrade existing attenuators to current standards, this CM and corresponding CRF should only be applied to locations where past crash data or engineering judgment applied to the existing attenuator conditions suggests the upgraded attenuators may result in fewer or less severe crashes (justifying the use of the 25% CRF for this CM).</p> <p><b>Where to use:</b> Impact attenuators are typically used to shield rigid roadside objects such as concrete barrier ends, steel guardrail ends and bridge piers from oncoming automobiles. Attenuators should only be installed where it is impractical for the objects to be removed. New and upgraded barrier end-treatments must meet current safety standards, see MASH for more information.</p> <p><b>Why it works:</b> Attenuators bring an errant vehicle to a more-controlled stop or redirect the vehicle away from a rigid object. Attenuators are effective at absorbing impact energy and increasing occupant safety. They also tend to draw attention to the fixed object, which helps drivers steer clear of the fixed objects.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs depending on the scope of the project, type(s) used, and associated ongoing maintenance costs. Time to install is fairly quick once site is identified.</p> <p><b>FHWA CMF Clearinghouse:</b> Fixed Object, Run-off Road   CRF: 5 - 50 %</p>			

R06, Flatten side slopes

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	30%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new side slopes. Minor/incidental flattening of side slopes would not likely result in the CRF shown below and may not be appropriate for use in Caltrans B/C calculations.</p> <p><b>Where to use:</b> Roadways experiencing frequent lane departure crashes that result in roll-over type crashes as a result of the roadway slope being so severe as to not accommodate a reasonable degree of driver correction. When there is a need to reduce the severity of lane departure crashes without installing a barrier system that could result in increased numbers of crashes.</p> <p><b>Why it works:</b> Flattened slopes provide a greater area for a driver to regain control of a vehicle. Steep slopes, ditches or unprotected hazardous drops-offs adjacent to a travel lane offer little opportunities to correct an inappropriate action by a driver and can result in severe crashes.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Roadside modifications range from relatively inexpensive to very costly. Strategies that include creating safer side slopes where none exists can be moderately expensive based on the scope of the project and the associated clearing, grading, etc. The potential for high environmental and right-of-way impacts is high which can take several years to clear. In other cases this CM can be effective and can be implemented by agencies' maintenance staff and/or implemented on a systematic approach.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Fixed Object, Run-off Road   CRF: 5 - 62 %</p>			

R07, Flatten side slopes and remove guardrail

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	40%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of both the removed guardrail and the new side slopes.</p> <p><b>Where to use:</b> Locations where high number of crashes originate as a lane departure and result in collision with guardrail or a fixed object located on the side slope shielded by guardrail. The guardrail may or may not meet current standards. Even though guardrails are generally installed to reduce the severity of departure crashes, they still can result in severe crashes in some locations.</p> <p><b>Why it works:</b> Flattened side slopes and an unobstructed clear zone provide a greater area for a driver to regain control of a vehicle. The existing guardrail may help protect the steep slopes, fixed objects, or unprotected hazardous drops-offs adjacent to a travel lane, but removing all of these obstacles generally improves safety.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Roadside modifications range from relatively inexpensive to very costly. Strategies that include creating safer side slopes where none exists can be moderately expensive based on the scope of the project and the associated clearing, grading, etc. The potential for high environmental and right-of-way impacts is high which can take several years to clear.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Roll Over, Fixed Object   CRF: 42%</p>			

R08, Install raised median

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	25%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new raised median. All new raised medians funded with federal HSIP funding must not include the removal of the existing roadway structural section and must be dowelled into the existing roadway surface. This new requirement is being implemented to maximize the safety-effectiveness of the limited HSIP funding and to minimize project impacts.</p> <p><b>Where to use:</b> Areas experiencing head-on collisions that may be affected by both the number of vehicles that cross the centerline and by the speed of oncoming vehicles. Installing a raised median is a more restrictive approach in that it represents a more rigid barrier between opposing traffic. Application of raised medians on roadways with higher speeds is not advised. Instead a median barrier should be considered. Including landscaping in new raised medians can be counterproductive to the HSIP safety goals and should only be done in ways that do not increase driver exposure to fixed objects and that will maintain driver's sight distance needs throughout the life of the proposed landscaping. Agencies need to consider and document impacts of additional landscaping at nearby intersections.</p> <p><b>Why it works:</b> Adding raised medians is a particularly effective strategy as it adds to or reallocates the existing cross section to incorporate a buffer between the opposing travel lanes and reinforces the limits of the travel lane. Raised median may also be used to limit unsafe turning movements along a roadway.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> In some cases this strategy may be a retrofit into the existing roadway by utilizing a portion of the existing paved shoulder. These raised medians can be installed directly over the existing pavement. Cost and time to implement could significantly increase if the paved area is not sufficient to include a median. The surface treatment of the raised median could significantly affect their cost-effectiveness: standard concrete or other hardscape surfaces are usually more cost effective than landscaped medians. When agencies opt to install landscaping in conjunction with new raised medians, the project design and construction costs can significantly increase due to excavation, backfill/top-soil, water-connection, irrigation, planting, maintenance needed for the landscaping. When agencies opt to install landscaping in conjunction with new raised medians, the portion of the cost for landscaping and other non-safety related items that exceed 10% of the project total cost is not federally participated and must be funded by the applicant.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Head-on   CRF: 20 - 75 %</p>			



**R09. Install median (flush)**

For HSP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	15%	20 years
<b>Notes:</b> This CM only applies to crashes occurring within the limits of the new flush median. The new median must be a minimum of 4 feet wide for "wider" if a narrow median exists before the proposed project.			
<b>General Information</b>			
<b>Where to use:</b> Areas experiencing head-on collisions that may be affected by both the number of vehicles that cross the centerline and by the speed of oncoming vehicles. Roadways with oversized lanes offer an opportunity to restripe the roadway to reduce the lanes to standard widths and use the extra width for the median.			
<b>Why it works:</b> Adding medians is a particularly effective strategy as it adds to or realigns the existing cross section to incorporate a narrow buffer median between opposing flows, thereby providing a greater opportunity to correct an errant maneuver and further reinforce the limits of the travel lane. Application widths can vary based on the available cross section and intended application. Additional safety can be provided by combining this CM with rumble strips.			
<b>General Qualities (Time, Cost and Effectiveness):</b> In some cases this strategy may be retrofitted into the existing roadway by utilizing a portion of the existing paved shoulder and can ultimately be as simple as restriping the roadway. Costs and time to implement could significantly increase if the paved area is not sufficient to include a median.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 15 - 78 %

**R10PH. Install pedestrian median fencing**

For HSP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	35%	20 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring on the approaches/influence area of the new pedestrian median fencing.			
<b>General Information</b>			
<b>Where to use:</b> Roadway segments with high pedestrian generators and pedestrian destinations nearby (e.g. transit stops) may experience a high volume of pedestrians walking across the travel lanes at mid-block locations instead of walking to the nearest intersection or designated mid-block crossing. When this safety issue cannot be mitigated with shoulder, sidewalk and/or crossing treatments, then installing a continuous pedestrian barrier in the median may be a viable solution.			
<b>Why it works:</b> Adding pedestrian median fencing has the opportunity to enhance pedestrian safety at locations noted as being problematic involving pedestrians running/darting across the roadway outside designated pedestrian crossings. Pedestrian median fencing can significantly reduce this safety issue by creating a positive barrier, forcing pedestrians to the designated pedestrian crossing.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs associated with this strategy will vary widely depending on the type and placement of the median fencing. Impacts to transit and other land uses may need to be considered and controversy can delay the implementation. In general, this CM can be effective as a spot-location approach.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 25 - 40%

**R11. Install acceleration / deceleration lanes**

For HSP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	25%	20 years
<b>Notes:</b> This CM only applies to crashes occurring within the limits of the new accel/decel lanes on high speed roadways. Significant improvements to the merge length for lane-drop locations is also an acceptable use of this CM.			
<b>General Information</b>			
<b>Where to use:</b> Areas proven to have crashes that are the result of drivers not being able to turn onto a high speed roadway to accelerate until the desired roadway speed is reached and areas that do not provide the opportunity to safely decelerate to negotiate a turning movement. This CM can also be used to improve the safety of merging vehicles at a lane-drop location.			
<b>Why it works:</b> A lane that does not provide enough deceleration length and storage space for turning traffic may cause the turn queue to back up into the adjacent through lane. This can contribute to rear-end and sideswipe crashes. An acceleration lane is an auxiliary or speed-change lane that allows vehicles to accelerate to highway speeds (high speed roadways) before entering the through-traffic lanes of a highway. Additionally, if acceleration by entering traffic takes place directly on the traveled way, it may disrupt the flow of through-traffic and cause rear-end and sideswipe collisions.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs are highly variable. Where sufficient median or shoulder space exists it may be possible to provide acceleration/deceleration lanes at a moderate cost. Where the roadway must be widened and additional right-of-way must be acquired, higher costs and a lengthy time-to-construct are likely. The expected effectiveness of this CM must be assessed for each individual location.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 10 - 75 %

**R12. Widen lane (initially less than 10 ft)**

For HSP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	25%	20 years
<b>Notes:</b> Note: For Caltrans' statewide Calls-for-Projects, this CM only applies to crashes occurring within the limits of the widened lanes. Widening must a minimum of 1 foot.			
<b>General Information</b>			
<b>Where to use:</b> Horizontal curves or tangents and low speed or high speed roadways identified as having lane departure crashes, sideswipe or head-on crashes that can be attributed to an existing pavement width less than 10 feet.			
<b>Why it works:</b> Increasing pavement width can affect almost all crash types. A common practice is to widen the traveled way on horizontal curves to make operating conditions on curves comparable to those on tangents. Speed is a primary consideration when evaluating potential adverse impacts of lane width on safety. On high-speed, rural two-lane highways, an increased risk of cross-centerline head-on or cross-centerline sideswipe crashes is a concern because drivers may have more difficulty staying within the travel lane.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs will depend on the amount of reconstruction necessary and on whether additional right-of-way is required. In general, this is one of the higher-cost strategies recommended, but it can also be very beneficial. Since this is a relatively expensive treatment, one of the keys to creating a cost effective project with at least a medium B/C ratio is targeting higher-hazard roadways.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 5 - 70 %

**R13. Add two-way left-turn lane (without reducing travel lanes)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	30%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new lane, where an existing median did not already exist.</p>			
<p><b>Where to use:</b> Roadways having a high frequency of drivers being rear-ended while attempting to make a left turn across oncoming traffic. Also can be effective for drivers crossing the centerline of an undivided multi-lane roadway inadvertently.</p>			
<p><b>Why it works:</b> Two-way left-turn lanes provide a buffer between opposing directions of travel and separate left turning traffic from through traffic. They can also help to allow vehicles to begin to accelerate before entering the through-traffic lanes. They reduce the disruption of flow of through-traffic and reducing rear-end and sideswipe collisions. For some roadways the option of converting a four-lane undivided arterial to three-lane roadways with a center left-turn lane and bike lanes should be considered (see "Road Diet" CM).</p>			
<p><b>General Qualities (Time, Cost and Effectiveness):</b> In some cases this strategy may be retrofitted into the existing roadway by utilizing a portion of the existing paved shoulder and can ultimately be as simple as restriping the roadway. Costs and time to implement could significantly increase if the paved area is not sufficient to include a median, requiring new right-of-way, and having significant environmental impacts. The expected effectiveness of this CM must be assessed for each individual location as the B/C ratios will vary from low to high.</p>			
<p>PRWA CMF Clearinghouse: All Crash Types Addressed: All CRF: 8 - 50 %</p>			

**R14. Road Diet (Reduce travel lanes from 4 to 3 and add a two way left-turn and bike lanes)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	30%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new lane striping. "Intersection" crashes can only be applied when they resulted from turning movements that had no designated turn lanes/phases in the existing condition and the Road Diet will provide turn lanes/phases for these movements. This CM does not apply to roadway sections that already included left turn lanes or two way left turn lanes before the lane reductions. New bike lanes are also expected to be part of these projects. Pre-approval from the HSIP program manager is needed for: 1) the use of this CM without removing a travel lane in each direction and/or without adding new bike lanes; and/or 2) if any pavement is planned to be removed for the purpose of adding landscaping, planter boxes, or other non-roadway user features.</p>			
<p><b>Where to use:</b> Areas noted as having a higher frequency of head-on, left turn, and rear-end crashes with traffic volumes that can be handled by only 2 free flowing lanes. Using this strategy in locations with traffic volumes that are too high could result in diversion of traffic to routes less safe than the original four-lane design. It may also result in congestion levels that contribute to other crashes.</p>			
<p><b>Why it works:</b> The application of this strategy usually reduces the roadway segment speeds and serious head-on crashes. In many cases the extra pavement width can be used for the installation of bike lanes. In addition to increasing bicycle safety, these bike lanes can increase the safety of on-street parking.</p>			
<p><b>General Qualities (Time, Cost and Effectiveness):</b> Implementation would require more time than in other low-cost treatments to complete environmental analyses, traffic studies and public input. Projects that only require new lane markings and minor signalization modifications will have relatively low cost and can be very effective and can be considered on a systematic approach. These striping and signal modification costs should be considered part of this CM and not an additional CM. If additional signal hardware improvements are being made, over what is needed for the road diet, then the Improve Signal Hardware CM may also be used. Often road diet projects need a seal-coat placed on the roadway to fully remove the old stopping. These seal coats are considered part of the proper installation of this CM. In contrast, structural-overlays should not be considered part of this CM and are not considered eligible for funding in the California Local HSIP.</p>			
<p>PRWA CMF Clearinghouse: All Crash Types Addressed: All CRF: 25 - 43 %</p>			

**R15. Widen shoulder**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	30%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new paved shoulder. A minimum of 2 feet width must be added and the new/resulting shoulders must be a minimum of 4 feet wide. This CM is not eligible unless it is done as the last step of an "incremental approach", for which the agency documents that: 1) they have already pursued and installed lower cost and lower impact CMs (i.e. signing/striping upgrades to MUTCD standards/recommendations, rumble strips, etc.), 2) they have already monitored the crash occurrences after these improvements were installed, and 3) the "after" crash rate is still unacceptably high. This "incremental approach" (or a special exception from the HSIP program manager) must be documented in the Narrative Questions in the application and a summary of the "before" and "after" crash analysis must be attached to the application.</p>			
<p><b>General Information</b></p>			
<p><b>Where to use:</b> Roadways that have a frequent incidence of vehicles leaving the travel lane resulting in an unsuccessful attempt to reenter the roadway. The probability of a safe recovery is increased if an errant vehicle is provided with an increased paved area in which to initiate such a recovery.</p>			
<p><b>Why it works:</b> Based on the best available research, adding shoulder or widening an existing shoulder provides a greater area to regain control of a vehicle, as well as lateral clearance to roadside objects such as guardrail, signs and poles. They may also provide space for disabled vehicles to stop or drive slowly, provide increased sight distance for through vehicles and for vehicles entering the roadway, and in some cases reduce passing conflicts between motor vehicles and bicyclists and pedestrians. The likely safety benefits for adding or widening an existing shoulder generally increase as the widening width increases. Practitioners should refer to NCHRP Report 500 Series, the CMF Clearinghouse or other references for more details.</p>			
<p><b>General Qualities (Time, Cost and Effectiveness):</b> Shoulder widening costs would depend on whether new right-of-way is required and whether extensive roadside modification is needed. Since shoulder widening can be a relatively expensive treatment, one of the keys to creating a cost effective project is with at least a medium B/C ratio is targeting higher-hazard roadways.</p>			
<p>PRWA CMF Clearinghouse: All Crash Types Addressed: All CRF: 15 - 75 %</p>			

**R16. Curve Shoulder Widening (Outside Only)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	45%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits (for influence area) of the new shoulder widening at curves. A minimum of 2-4 feet width must be added to the outside of horizontal curves and the new traversable shoulder must be a minimum of 4 feet wide.</p>			
<p><b>Where to use:</b> Roadway curves noted as having frequent lane departure crashes due to inadequate or no shoulders, resulting in an unsuccessful attempt to reenter the roadway.</p>			
<p><b>Why it works:</b> Adding shoulders (outside only) creates a recovery area in which a driver can regain control of a vehicle, as well as lateral clearance to roadside objects.</p>			
<p><b>General Qualities (Time, Cost and Effectiveness):</b> To maximize the B/C ratio and the cost, only outside shoulder at curves is to be widened. This CM can be implemented in a relatively short timeframe.</p>			
<p>PRWA CMF Clearinghouse: NA</p>			



R17. Improve horizontal alignment (flatten curves)

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	50%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits (or influence area) of the improved alignment. This CM is not eligible unless it is done as the last step of an "incremental approach" including: the agency documents that: 1) they have already pursued and installed lower cost and lower impact CMs (i.e. signing/stripping upgrades to MUTCD standards/recommendations, rumble strips, etc.), 2) they have already monitored the crash occurrences after these improvements were installed, and 3) the "after" crash rate is still unacceptably high. This "incremental approach" (or a special exception from the HSIP program manager) must be documented in the Narrative Questions in the application and a summary of the agency's 'before' and 'after' crash analysis must be attached to the application.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Roadways with horizontal curves that have experienced lane departure crashes as a result of a roadway segment having compound curves or a severe radius. This strategy should generally be considered only when less expensive strategies involving clearing of specific sight obstructions or modifying traffic control devices have been tried and have failed to ameliorate the crash patterns.</p> <p><b>Why it works:</b> Increasing the radius of a horizontal curve can be very effective in improving the safety performance of the curve. Curve modification reduces the likelihood of a vehicle leaving its lane, crossing the roadway centerline, or leaving the roadway at a horizontal curve; and minimizes the adverse consequences of leaving the roadway. Horizontal alignment improvement projects are expected to include standard/improved super-elevation elements, which should be considered part of this CM and not an additional CM.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> This strategy is a long term, higher-cost alternative for improving the safety of a horizontal curve because it usually involves total reconstruction of the roadway. It may also require acquisition of additional right-of-way and an environmental review. This strategy, albeit costly, has shown that increasing the radius of curvature can significantly reduce total curve-related crashes by up to 80 percent. The expected effectiveness of this CM must be assessed for each individual location.</p> <p>FHWA CMF Clearinghouse:   All   CRF   24 - 50%</p>			

R18. Flatten crest vertical curve

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	25%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits (or influence area) of the improved alignment. This CM is not eligible unless it is done as the last step of an "incremental approach" including: the agency documents that: 1) they have already pursued and installed lower cost and lower impact CMs (i.e. signing/stripping upgrades to MUTCD standards/recommendations, rumble strips, etc.), 2) they have already monitored the crash occurrences after these improvements were installed, and 3) the "after" crash rate is still unacceptably high. This "incremental approach" (or a special exception from the HSIP program manager) must be documented in the Narrative Questions in the application and a summary of the agency's 'before' and 'after' crash analysis must be attached to the application.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> The target for this strategy is usually unsignalized intersections with restricted sight distance due to vertical geometry and with patterns of crashes related to that lack of sight distance that cannot be ameliorated by less expensive methods. This strategy should generally be considered only when less expensive strategies involving clearing of specific sight obstructions or modifying traffic control devices have been tried and have failed to ameliorate the crash patterns.</p> <p><b>Why it works:</b> Adequate sight distance for drivers at stopped approaches to intersections has long been recognized as among the most important factors contributing to overall intersection safety. Vertical alignment improvement projects are expected to include standard/improved super-elevation elements, which should be considered part of this CM and not an additional CM.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Projects involving changing the horizontal and/or vertical alignment to provide more sight distance are quite extensive and usually take several years to accomplish. If additional right-of-way is required or environmental impacts are expected, these projects will require a substantial period of time. Since this is usually an expensive treatment, one of the keys to creating a cost effective project with at least a medium B/C ratio is targeting higher-hazard locations.</p> <p>FHWA CMF Clearinghouse:   All   CRF   20 - 51%</p>			

R19. Improve curve superelevation

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	45%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits (or influence area) of the improved super-elevation. This CM does not apply to sections of roadways where the horizontal or vertical alignments are changing via another CM.</p> <p><b>General Information</b></p> <p><b>Where to use:</b> Roadways noted as having frequent lane departure crashes and inadequate or no super-elevation. Safety can be enhanced when the super-elevation is improved or restored along curves where the actual super-elevation is less than the optimal.</p> <p><b>Why it works:</b> Super-elevation works with friction between the tires and pavement to counteract the forces on the vehicle associated with cornering. Many curves may have inadequate super-elevation because of vehicles traveling at higher speeds than were originally designed for, because of loss of effective super-elevation after resurfacing, or because of changes in design policy after the curve was originally constructed.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> This strategy can be a higher-cost alternative for improving the safety of a curve because it involves reconstruction to some degree. Other projects may be able to be constructed by simple overlays and minimal reconstruction of roadway features. When simple overlay lanes are pursued, a systematic installation approach may be appropriate. The expected effectiveness of this CM must be assessed for each individual location.</p> <p>FHWA CMF Clearinghouse:   Run-off Road, All   CRF   40 - 50%</p>			

**R20. Convert from two-way to one-way traffic**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	All	35%	20 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new one-way sections.</p>			
<p><b>Where to use:</b> One-way streets can offer improved signal timing and accommodate odd-spaced signals. One-way streets can simplify crossings for pedestrians, who must look for traffic in only one direction. While studies have shown that conversion of two-way streets to one-way generally reduces pedestrian crashes and the number of conflict points, one-way streets tend to have higher speeds which creates new problems. Care must be taken not to create conditions that cause driver confusion and erratic maneuvers.</p> <p><b>Why it works:</b> Studies have shown a 10 to 50-percent reduction in total crashes after conversion of a two-way street to one-way operation. While studies have shown that conversion of two-way streets to one-way generally reduces pedestrian crashes, one-way streets tend to have higher speeds which creates new problems. At the same time, this strategy (1) increases capacity significantly and (2) can force safety-related drawbacks including pedestrian confusion and minor side-swipe crashes.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> The costs will vary depending on length of treatment and if the conversion requires modification to signals. Conversion costs can be high to build "crossovers" where the one-way streets convert back to two-way streets and to rebuild traffic signals. It's also likely that these types of modifications will require public involvement and could significantly add to the time it takes to complete the project. The expected effectiveness of this CM must be assessed for each individual location.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All CRF: 26 - 43 %</p>			

**R22. Install Upgrade signs with new fluorescent sheeting (regulatory or warning)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	35%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the influence area of the new/upgraded signs. This CM is not intended for maintenance upgrades of street-name, parking, guide, or any other signs without a primary focus on roadway safety. This CM is not eligible unless it is done as part of a larger sign audit project, including the study of: 1) the existing signs' locations, sizes and information per MUTCD standards, 2) missing signs per MUTCD standards, and 3) sign retroreflectivity. The overall sign audit scope for a special (exception from the HSIP program manager) must be documented in the Narrative Questions in the application. Based on the scope of the project/audit, it may be appropriate to combine other CMs in the B/C calculation.</p>			
<p><b>Where to use:</b> The target for this strategy should be on roadway segments with patterns of head on, nighttime, non-intersection, run-off road, and sideswipe crashes related to lack of driver awareness of the presence of a specific roadway feature or regulatory requirement. Ideally this type of safety CM would be combined with other sign evaluations and upgrades (install chevrons, warning signs, delineators, markers, beacons, and relocation of existing signs per MUTCD standards).</p> <p><b>Why it works:</b> This strategy primarily addresses crashes caused by lack of driver awareness for compliance roadway signing. It is intended to get the drivers attention and give them a visual warning by using fluorescent yellow sheeting for other retroreflective material.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Signing improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number of signs. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding. When considering any type of federally funded sign upgrade project, California local agencies are encouraged to consider "Roadway Safety Signing Audit (RSSA) and Upgrade Projects", including RSSAs in the development phase of sign projects are expected to identify non-standard (per MUTCD) sign features and missing signs that may otherwise go unnoticed. More information on RSSA is available on the Local Assistance HSIP webpage.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Head on, Run-off road, Sideswipe, Night CRF: 10 - 35%</p>			

**R21. Improve pavement friction (High Friction Surface Treatments)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	55%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the improved friction overlay. This CM is not intended to apply to standard chip-seal or open-graded maintenance projects for long segments of corridors or structure repairing projects intended to fix failed pavement.</p>			
<p><b>Where to use:</b> Nationally, this countermeasure is referred to as "High Friction Surface Treatments" or HFST. Areas as noted having crashes on wet pavements or under dry conditions when the pavement friction available is significantly less than actual roadway speeds, including but not limited to curves, steep ramps, intersections, and areas with short stopping or weaving distances. This treatment is intended to target locations where skidding is determined to be a problem, in wet or dry conditions and the target vehicle if one that runs (slid) off the road or is unable to stop due to insufficient skid resistance.</p> <p><b>Why it works:</b> Improving the skid resistance at locations with high frequencies of wet-road crashes and/or failure to stop crashes can result in a reduction of 50 percent for wet-road crashes and 20 percent for total crashes. Applying HFST can double friction numbers, e.g. low 40s to high 80s. This CM represents a special focus area for both FHWA and Caltrans, which means there are extra resources available for agencies interested in more details on High Friction Surface Treatment projects.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> This strategy can be relatively inexpensive and implemented in a short timeframe. The installation would be done by either agency personnel or contractors and can be done by hand or machine. In general, this CM can be very effective and can be considered on a systematic approach.</p> <p><b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Wet, Rear-End, All CRF: 17 - 68 %</p>			



**R23. Install chevron signs on horizontal curves**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	40%	10 years
<b>Notes:</b> This CM only applies to crashes occurring within the influence area of the new signs. (i.e. only through the curve).			
General Information			
<b>Where to use:</b> Roadways that have an unacceptable level of crashes on relatively sharp curves during periods of light and darkness. Ideally this type of safety CM would be combined with other sign evaluations and upgrades (install warning signs, delineators, markers, beacons, and relocation of existing signs per MUTCD standards.)			
<b>Why it works:</b> Post-mounted chevrons are intended to warn drivers of an approaching curve and provide tracking information and guidance to the drivers. While they are intended to act as a warning, it should also be remembered that the posts, placed along the roadside, represent a possible object with which an errant vehicle can crash into. Design of posts to minimize damage and injury is an important part of the considerations to be made when selecting these treatments.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Signing improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number of signs. When considered at a single location, these low cost improvements are usually funded through local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding. When considering any type of federally funded sign upgrade project, California local agencies are encouraged to consider "Roadway Safety Signing Audit (RSSA) and Upgrade Projects". Including RSSAs in the development phase of sign projects are expected to identify non-standard (per MUTCD) sign features and missing signs that may otherwise go unnoticed. More information on RSSAs is available on the Local Assistance HSIP website.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Run-off Road, All <b>CRF:</b> 6-64%			

**R24. Install curve advance warning signs**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	25%	10 years
<b>Notes:</b> This CM only applies to crashes occurring within the influence area of the new signs. (i.e. only through the curve).			
General Information			
<b>Where to use:</b> Roadways that have an unacceptable level of crashes on relatively sharp curves during periods of light and darkness. This countermeasure may also include horizontal alignment and/or advisory speed warning signs. Ideally this type of safety CM would be combined with other sign evaluations and upgrades (install warning signs, chevrons, delineators, markers, beacons, and relocation of existing signs per MUTCD standards.)			
<b>Why it works:</b> This strategy primarily addresses problem curves, and serves as an advance warning of an unexpected or sharp curve. It provides advance information and gives drivers a visual warning that their added attention is needed.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Signing improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number of signs. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding. When considering any type of federally funded sign upgrade project, California local agencies are encouraged to consider "Roadway Safety Signing Audit (RSSA) and Upgrade Projects". Including RSSAs in the development phase of sign projects are expected to identify non-standard (per MUTCD) sign features and missing signs that may otherwise go unnoticed. More information on RSSAs is available on the Local Assistance HSIP website.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: Run-off Road, All <b>CRF:</b> 20-30%			

**R25. Install curve advance warning signs (flashing beacon)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	10 years
<b>Notes:</b> This CM only applies to crashes occurring within the influence area of the new signs. (i.e. only through the curve).			
General Information			
<b>Where to use:</b> Roadways that have an unacceptable level of crashes on relatively sharp curves. Flashing beacons in conjunction with warning signs should only be used on horizontal curves that have an established severe crash history to help maintain their effectiveness.			
<b>Why it works:</b> This strategy primarily addresses problem curves, and serves as an enhanced advance warning of an unexpected or sharp curve. It provides advance information and gives drivers a visual warning that their added attention is needed. Flashing beacons are an added indication that a curve may be particularly challenging.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Use of flashing beacons requires minimal development process, allowing flashing beacons to be installed within a short time period. Before choosing this CM, the agency needs to confirm the ability to provide power to the site (solar may be an option). In general, this CM can be very effective and can be considered on a systematic approach.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All <b>CRF:</b> 30%			

**R26. Install dynamic (variable speed) warning signs**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	30%	10 years
<b>Notes:</b> This CM only applies to crashes occurring within the influence area of the new signs. (i.e. through the curve) (This CM does not apply to dynamic regulatory signed warning signs. There are currently no nationally accepted CRFs for dynamic regulatory signs (also known as Radar Speed Feedback Signs). CRFs are being developed and Caltrans hopes to include these CMs and CRFs in future calls for projects.)			
General Information			
<b>Where to use:</b> Curvilinear roadways that have an unacceptable level of crashes due to excessive speeds on relatively sharp curves.			
<b>Why it works:</b> This strategy primarily addresses crashes caused by motorists traveling too fast around sharp curves. It is intended to get the drivers attention and give them a visual warning that they may be traveling over the recommended speed for the approaching curve. Care should be taken to limit the placement of these signs to help maintain their effectiveness.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Use of dynamic speed warning signs requires minimal development process, allowing them to be installed within a short time period. Before choosing this CM, the agency needs to confirm the ability to provide power to the site (solar may be an option). In general, this CM can be very effective and can be considered on a systematic approach.			
<b>FHWA CMF Clearinghouse:</b> Crash Types Addressed: All <b>CRF:</b> 0-41%			

**R27. Install delineators, reflectors and/or object markers**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	15%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits / influence area of the new features. (This is not a striping-related CM)</p> <p><b>Where to use:</b> Roadways that have an unacceptable level of crashes on curves (relatively flat to sharp) during periods of light and darkness. Any road with a history of fixed object crashes is a candidate for this treatment, as are roadways with similar fixed objects along the roadside that have yet to experience crashes. If a fixed object cannot be relocated or made break-away, placing an object marker can provide additional information to motorists. Ideally this type of safety CM would be combined with other sign evaluations and upgrades (such as warning signs, chevrons, beacons, and relocation of existing signs per MUTCD standards).</p> <p><b>Why it works:</b> Delineators, reflectors and/or object markers are intended to warn drivers of an approaching curve or fixed object that cannot easily be removed. They are intended to provide tracking information and guidance to the drivers. They are generally less costly than Chevron Signs as they don't require posts to place along the roadside, avoiding an additional object with which an errant vehicle can crash into.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> These improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number of locations. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in low to moderate cost projects that are more appropriate to seek state or federal funding. When considering any type of federally funded sign upgrade project, California local agencies are encouraged to consider "Roadway Safety Audit (RSA) and Upgrade Projects", including RSAs in the development phase of sign projects are expected to identify non-standard (per MUTCD) sign features and missing sign that may otherwise go unnoticed. More information on RSA is available on the Local Assistance HSIP webpage.</p>			
FHWA CMF Clearinghouse:		Crash Types Addressed:	All
		CRF	0-30%

**R28. Install edge-lines and centerlines**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	25%	10 years
<p><b>Notes:</b> This CM only applies to crashes occurring within the limits of the new centerlines and/or edge-lines. This CM is not intended to be used for general maintenance activities (i.e. the replacement of existing striping and RPMs in-kind) and must include upgraded safety features over the existing striping. For two lane roadways allowing passing, a striping audit must be done to ensure the passing limits meeting the MUTCD standards. Both the centerline and edge-lines are expected to be upgraded, unless prior approval is granted by Caltrans staff in writing and attached to application.</p> <p><b>Where to use:</b> General Information</p> <p><b>Where to use:</b> Any road with a history of run-off-road right, head-on, opposite-direction sideswipe, or run-off-road-left crashes is a candidate for this treatment. Install where the existing lane delineation is not sufficient to assist the motorist in understanding the existing limits of the roadway. Depending on the width of the roadway, various combinations of edge line and/or center line pavement markings may be the most appropriate. Incorporating raised/reflective pavement markers (RPMs) into centerlines (and edge-lines) should be considered as it has been shown to improve safety.</p> <p><b>Why it works:</b> Installing edge-lines and centerlines where none exists or making significant upgrades to existing lines (paint to thermoplastic, adding a durable disk/bump in the thermoplastic stripes, or adding RPMs) are intended to help drivers who might leave the roadway because of their inability to see the edge of the roadway along the horizontal edge of the pavement or cross over the centerline of the roadway into oncoming traffic. New pavement marking products tend to be more durable, are all-weather, more visible, and have a higher retroreflectivity than traditional pavement markings.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> These improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number and length of locations. This CM can be effectively and efficiently implemented using a systematic approach with numerous and long locations, resulting in low to moderate cost projects that are more appropriate to seek state or federal funding. When considering any type of federally funded striping upgrade project, California local agencies are encouraged to consider "Roadway Safety Audit and Upgrade Projects" including wide-scale striping audits in the development phase of striping projects are expected to identify non-standard (per MUTCD) striping/markings features, no-passing zone limits needing adjustment, and missing striping/markings that may otherwise go unnoticed. More information on this concept is available on the Local Assistance HSIP webpage under an RSA example document. Note: When federal safety funding is used for these installations in high-wear locations, the local agency is expected to maintain the improvement for a minimum of 10 years.</p>			
FHWA CMF Clearinghouse:		Crash Types Addressed:	Head-on, Run-off Road, All
		CRF	0-44%



R29. Install no-passing line

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	45%	10 years
Notes: This CM only applies to crashes occurring within the limits of the new or extended no-passing zones.			
Where to use:			
Roadways that have a high percentage of head-on crashes suggesting that many head-on crashes may relate to failed passing maneuvers. No-passing lines should be installed where drivers' "passing sight distance" is not available due to horizontal or vertical obstructions. General restriping projects can be good opportunities to reevaluate and incorporate new no-passing zone limits. The incorporation of "No Passing Zone" pennants should also be considered when reevaluating the limits of no-passing zones. Installing no-passing limits in areas that are not warranted may reduce the overall safety of the corridor as drivers may become frustrated and attempt passing maneuvers at other locations without the necessary sight distance.			
Why it works:			
When the centerline markings do not differentiate between passing and no-passing areas, drivers may have difficulty determining where passing maneuvers can be completed safely. Providing clear and engineered passing and no-passing areas can encourage drivers to wait patiently for safe passing areas and avoid aggressively looking for passing opportunities.			
General Qualities (Time, Cost and Effectiveness):			
These improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number and length of locations. When considered at a single location, these low cost improvements are usually funded through local funding by local maintenance crews. However, this CM can be effectively and efficiently implemented using a systematic approach with numerous and long locations, resulting in low to moderate cost projects that are more appropriate to seek state or federal funding.			
FHWA CMF Clearinghouse:   Crash Types Addressed:   Head-on, Side-swipe   CRF:   40-53%			

R30. Install centerline rumble strips/strips

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	20%	10 years
Notes: This CM only applies to crashes occurring within the limits of the new rumble strips/strips.			
Where to use:			
Center line rumble strips/strips can be used on virtually any roadway - especially those with a history of head-on crashes. It is recommended that rumble strips/strips be applied systematically along an entire route instead of only at spot locations. For all rumble strips/strips, pavement condition should be sufficient to accept milled rumble strips. Care should be taken when considering installing rumble strips in locations with residential land uses or in areas with high bicycle volumes.			
Why it works:			
Rumble strips provide an auditory indication and tactile rumble when driven on, alerting drivers that they are drifting out of their travel lane, giving them time to recover before they depart the roadway or cross the center line. Additionally, rumble strips (pavement marking in the rumble itself) provide an enhanced marking, especially in wet dark conditions.			
General Qualities (Time, Cost and Effectiveness):			
These improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number and length of locations. This CM can be effectively and efficiently implemented using a systematic approach with numerous and long locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.			
FHWA CMF Clearinghouse:   Crash Types Addressed:   Head-on, Side-swipe, All   CRF:   15-68%			

R31. Install edgeline rumble strips/strips

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	All	15%	10 years
Notes: This CM only applies to crashes occurring within the limits of the new rumble strips/strips.			
Where to use:			
Shoulder and edge line milled rumble strips/strips should be used on roads with a history of roadway departure crashes. It is recommended that rumble strips/strips be applied systematically along an entire route instead of only at spot locations. For all rumble strips/strips, pavement condition should be sufficient to accept milled rumble strips. Special requirements may apply and care should be taken when considering installing rumble strips in locations with residential land uses or in areas with high bicycle volumes.			
Why it works:			
Rumble strips provide an auditory indication and tactile rumble when driven on, alerting drivers that they are drifting out of their travel lane, giving them time to recover before they depart the roadway or cross the center line. Additionally, rumble strips (pavement marking in the rumble itself) provide an enhanced marking, especially in wet dark conditions.			
General Qualities (Time, Cost and Effectiveness):			
These improvements do not require a long development process and can typically be implemented quickly. Costs for implementing this strategy are nominal and depend on the number and length of locations. This CM can be effectively and efficiently implemented using a systematic approach with numerous and long locations, resulting in moderate cost projects that are more appropriate to seek state or federal funding.			
FHWA CMF Clearinghouse:   Crash Types Addressed:   Run-off Road   CRF:   10-41%			

R32.PB. Install bike lanes

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	35%	20 years
Notes: This CM only applies to "Ped & Bike" crashes occurring within the limits of the Class II (not Class III) bike lanes. When an off-street bike-path is proposed that is not adjacent to the roadway, the applicant must document the engineering judgment used to determine which "Ped & Bike" crashes to apply.			
Where to use:			
Roadway segments noted as having crashes between bicycles and vehicles that may be preventable with a buffer/shoulder. Most studies suggest that bicycle lanes may provide protection against bicycle/motor vehicle collisions. Striped bike lanes can be incorporated into a roadway when it is desirable to delineate which available road space is for exclusive or preferential use by bicyclists.			
Why it works:			
Most studies present evidence that bicycle lanes provide protection against bicycle/motor vehicle collisions. Bicycle lanes provide marked areas for bicyclists to travel along the roadway and provide for more predictable movements for both bicyclists and motorists. Evidence also shows that riding with the flow of vehicular traffic reduces bicyclists' chances of collision with a motor vehicle. Locations with bicycle lanes have lower rates of wrong way riding. In combination with this CM, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including: sign and markings directing bicyclists on appropriate/legal travel paths and signs and markings warning motorists of non-motorized uses of the roadway that should be expected.			
General Qualities (Time, Cost and Effectiveness):			
Adding striped bicycle lanes can range from the simply restriping the roadway and minor signing to projects that require roadway widening, right-of-way, and environmental impacts. It is most cost efficient to create bike lanes during street reconstruction, street resurfacing, or at the time of original construction. The expected effectiveness of this CM must be assessed for each individual location. For simple installation scenarios, this CM can be very effective and can be considered on a systematic approach.			
FHWA CMF Clearinghouse:   Crash Types Addressed:   Pedestrian, Bicycle   CRF:   0-53%			

**R33PB, Install Separated Bike Lanes**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	45%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring within the limits of the separated bike lanes. When an off-street bike-path is proposed that is not adjacent to the roadway, the applicant must document the engineering judgment used to determine which "Ped &amp; Bike" crashes to apply.</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Separated bike lanes are most appropriate on streets with high volumes of bike traffic and/or high bike-vehicle collisions, presumably in an urban or suburban area. Separation types range from simple, painted buffers and flexible delineators, to more substantial separation measures including raised curbs, grade separation, bollards, planters, and parking lanes. These options range in feasibility due to roadway characteristics, available space, and cost. In some cases, it may be possible to provide additional space in areas where pedestrian and bicyclist may interact, such as the parking buffer, or loading zone, or extra bike lane width for cyclists to pass one another.</p> <p><b>Why it works:</b> Separated bike lanes provide increased safety and comfort for bicyclists beyond conventional bicycle lanes. By separating bicyclists from motor traffic, "protected" or physically separated bike lanes can offer a higher level of comfort and are attractive to a wider spectrum of the public. Intersections and approaches must be carefully designed to promote safety and facilitate left turns for bicyclists from the primary corridor to cross street.</p> <p>In combination with this CM, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including sign and markings directing cyclists on appropriate/legal travel paths and signs and markings warning motorists of non-motorized users of the roadway that should be expected.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> The cost of installing separated bike lanes can be low to medium or high, depending on whether roadway widening, right-of-way and environmental impacts are involved. It is most cost efficient to create bike lanes during street reconstruction, street resurfacing, or at the time of original construction. The expected effectiveness of this CM must be assessed for each individual location.</p>			
<b>FHWA CMF Clearinghouse:</b>		Crash Types Addressed:	Pedestrian, Bicycle
		CRF:	3.7 - 100%

**R34PB, Install sidewalk/pathway (to avoid walking along roadway)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	80%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring within the limits of the new walkway. This CM is not intended to be used where an existing sidewalk is being replaced with a wider one, unless prior Caltrans approval is included in the application. When an off-street multi-use path is proposed that is not adjacent to the roadway, the applicant must document the engineering judgment used to determine which "Ped &amp; Bike" crashes to apply.</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Areas noted as not having adequate or no sidewalks and a history of walking along roadway pedestrian crashes. In rural areas asphalt curbs and/or separated walkways may be appropriate.</p> <p><b>Why it works:</b> Sidewalks and walkways provide people with space to travel within the public right-of-way that is separated from roadway vehicles. The presence of sidewalks on both sides of the street has been found to be related to significant reductions in the "walking along roadway" pedestrian crash risk compared to locations where no sidewalks or walkways exist. Reductions of 50 to 90 percent of these types of pedestrian crashes. In combination with this CM, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including sign and markings directing pedestrians and cyclists on appropriate/legal travel paths and signs and markings warning motorists of non-motorized users of the roadway that should be expected.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs for sidewalks will vary, depending upon factors such as width, materials, and existing of curb, gutter and drainage. Asphalt curbs and walkways are less expensive, but require more maintenance. The expected effectiveness of this CM must be assessed for each individual location. These projects can be very effective in areas of high pedestrian volumes with a past history of crashes involving pedestrians.</p>			
<b>FHWA CMF Clearinghouse:</b>		Crash Types Addressed:	Pedestrian, Bicycle
		CRF:	65 - 85%

**R35PB, Install/upgrade pedestrian crossing (with enhanced safety features)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	35%	20 years
<p><b>Notes:</b> This CM only applies to "Ped &amp; Bike" crashes occurring in the influence area (expected to be a maximum of within 250') of the new crossing which includes new enhanced safety features. Note: This CM is not intended to be combined with the "Install raised pedestrian crossing" when calculating the improvement's B/C ratio. This CM is not intended to be used for high-cost aesthetic enhancements (i.e. stamped concrete or stamped asphalt).</p>			
<b>General Information</b>			
<p><b>Where to use:</b> Roadway segments with no controlled crossing for a significant distance in high-use midblock crossing areas and/or midblock road locations. Based on the Zeiger study (Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations) at many locations, a marked crosswalk alone may not be sufficient to adequately protect non-motorized users. In these cases, flashing beacons, curb extensions, medians and pedestrian crossing islands and/or other safety features should be added to complement the standard crossing elements. For multi-lane roadways, advance "yield" markings can be effective in reducing the multiple-threat danger to pedestrians.</p> <p><b>Why it works:</b> Adding pedestrian crossings has the opportunity to greatly enhance pedestrian safety at locations noted as being problematic. The enhanced safety elements, which may include curb extensions, medians and pedestrian crossing islands, beacons, and lighting, combined with pavement markings delineating a portion of the roadway that is designated for pedestrian crossing. Care must be taken to warn drivers of the potential for pedestrians crossing the roadway and enhanced improvements added to the crossing increase the likelihood of pedestrians crossing in a safe manner. In combination with this CM, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including sign and markings directing pedestrians and cyclists on appropriate/legal travel paths and signs. When agencies opt to install aesthetic enhancements to crossings like stamped concrete/asphalt, the project design and construction costs can significantly increase. For HSIP applications, these costs must be accounted for in the B/C calculation, but these costs (over standard crosswalk markings) must be tracked separately and are not federally reimbursable and will increase the agency's local-funding share for the project costs.</p> <p><b>General Qualities (Time, Cost and Effectiveness):</b> Costs associated with this strategy will vary widely, depending on the extent of the curb extensions, raised medians, flashing beacons, and other pedestrian safety elements that are needed with the crossing. When considered as a single location, these improvements can sometimes be low cost and funded through local funding by local crews. This CM can often be effectively and efficiently implemented using a systematic approach with numerous locations, resulting in moderate to high cost projects that are appropriate to seek state or federal funding.</p>			
<b>FHWA CMF Clearinghouse:</b>		Crash Types Addressed:	Pedestrian, Bicycle
		CRF:	8 - 55%



**R36PB, Install Raised Pedestrian Crossing**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Pedestrian and Bicycle	35%	20 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the area with the new raised crossing. Note: This CM is not intended to be combined with the "Install pedestrian crossing (with enhanced safety features)" when calculating the improvement's B/C ratio.			
<b>General Information</b>			
<b>Where to use:</b> On lower-speed roadways, where pedestrians are known to be crossing roadways that involve significant vehicular traffic. Based on the Zegeer study (Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations) at many locations, a marked crosswalk alone, may not be sufficient to adequately protect non-motorized users. In these cases, raised crossings can be added to complement the standard crossing elements. Special requirements may apply and extra care should be taken when considering installing raised crossings to ensure unintended safety issues are not created, such as: emergency vehicle access or truck route issues.			
<b>Why it works:</b> Adding a raised pedestrian crossing has the opportunity to enhance pedestrian safety at locations noted as being especially problematic. The raised crossing encourages motorists to reduce their speed and provides improved delineation for the portion of the roadway that is designated for pedestrian crossing. In combination with this CM, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including: sign and markings directing pedestrians and cyclists on appropriate/legal travel paths.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Costs associated with this strategy will vary widely, depending upon the elements of the raised crossing and the need for new curb ramps and sidewalk modifications. This CM may be effectively and efficiently implemented using a systematic approach with more than one location and can have medium to high B/C ratios based on past non-motorized crash history.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 30 - 46%
		Pedestrian, Bicycle	

**R36B, Install Animal Fencing**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
90%	Animal	80%	20 years
<b>Notes:</b> This CM only applies to "animal" crashes occurring within the limits of the new fencing.			
<b>General Information</b>			
<b>Where to use:</b> At locations with high percent of vehicular/animal crashes (reactive) or where there is a known high percent of animals crossing due to migratory patterns (proactive).			
<b>Why it works:</b> Animal fencing helps to channelize the identified animals to a natural or man-made crossing, eliminating the conflict between vehicles and animals on the same place. Animal fencing is typically installed at a bridge location with its "run of need" dependent on the surrounding terrain.			
<b>General Qualities (Time, Cost and Effectiveness):</b> Time to install fencing can be moderate to lengthy depending on the environmental commitments and agreed upon solution to mitigating project impacts. Costs will be fairly low and depend on the "run of need" length. There will be minimal recurring maintenance costs on keeping the fence intact. The expected effectiveness of this CM must be assessed for each individual location.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 70 - 90 %
		Animal	

**R37PB, Install Rectangular Rapid Flashing Beacon (RRFB)**

For HSIP Calls-for-projects			
Funding Eligibility	Crash Types Addressed	CRF	Expected Life
100%	Pedestrian and Bicycle	35%	20 years
<b>Notes:</b> This CM only applies to "Ped & Bike" crashes occurring in the influence area (expected to be a maximum of within 250') of the crossing which includes the RRFB.			
<b>General Information</b>			
<b>Where to use:</b> Rectangular Rapid Flashing Beacon (RRFB) includes pedestrian-activated flashing lights and additional signage that enhance the visibility of marked crosswalks and alert motorists to pedestrian crossings. It uses an irregular flash pattern that is similar to emergency flashers on police vehicles. RRFBs are installed at unsignalized intersections and mid-block pedestrian crossings.			
<b>Why it works:</b> RRFBs can enhance safety by increasing driver awareness of potential pedestrian conflicts and reducing crashes between vehicles and pedestrians at unsignalized intersections and mid-block pedestrian crossings. The addition of RRFB may also increase the safety effectiveness of other treatments, such as crossing warning signs and markings.			
<b>General Qualities (Time, Cost and Effectiveness):</b> RRFBs are a lower cost alternative to traffic signals and hybrid signals. This CM can often be effectively and efficiently implemented using a systematic approach with numerous locations.			
FHWA CMF Clearinghouse:		Crash Types Addressed:	CRF: 7 - 47.4%
		Pedestrian, Bicycle	

## Appendix E: B/C Ratio Calculation – LRSM (2020)

### Benefit/Cost Ratio Calculations

This appendix includes the Benefit/Cost methodology used in the Caltrans calls-for-projects in the HSIP programs. The HSM, Part B - Chapter 7, includes more details on conducting Economic Appraisal for roadway safety projects. Local agencies will be required to utilize the HSIP Analyzer to calculate the B/C ratio as part of their application for HSIP funding. Starting in Cycle 7 call for projects, the fatality and severe injury costs have been combined for calculating the benefit. Because fatality figures are small and are a matter of randomness, this change is being made to reduce the possibility of selecting an improvement project on the basis of randomness.

$$3) \text{ Benefit (Annual)} = \sum_{i=1}^Y \frac{CRF \times N \times CC_{sev}}{Y}$$

- CRF : Crash reduction factor in each countermeasure.
- S : Severity (D: PDO, 1: Minor Injury, 2: Injury, 3: Severe Injury/Fatal). See the below table.
- N : Number of Crashes, in severity levels, related to selected countermeasure.
- Y : Crash data time period (Year).
- CC<sub>sev</sub> : Crash costs in severity levels.

Severity (S)	Crash Severity *	Location Type	Crash Cost ***
3		Signalized Intersection	\$1,590,000
3	**Fatality and Severe Injury Combined (KA)	Non Signalized Intersection	\$2,530,000
3		Roadway	\$2,390,000
2	Evident Injury – Other Visible (B)		\$142,300
1	Possible Injury–Complaint of Pain (C)		\$80,900
0	Property Damage Only (D)		\$13,300

- \* The letters in parenthesis (K, A, B, C and D) refer to the KABCO scale; it is commonly used by law enforcement agencies in their crash reporting efforts and is further documented in the HSM.
- \*\* Figures were calculated based on an average Fatality (K) / Severe Injury (A) ratio for each area type, a crash cost for a Fatality (K) of \$7,219,800, and a crash cost of a Severe/Disabling Injury (A) of \$389,000. These costs are used in the HSIP Analyzer.
- \*\*\* Based on Table 7-1, Highway Safety Manual (HSM), First Edition, 2010. Adjusted to 2020 Dollars.

$$2) \text{ Benefit (Life)} = \text{Benefit (annual)} \times \text{Years of service life}$$

$$3) \text{ Benefit/Cost Ratio (each countermeasure): } \text{Benefit Cost Ratio}_{(CA)} = \frac{\text{Benefit (Life)}_{(CA)}}{\text{Total Project Cost}_{(CA)}}$$

$$4) \text{ Benefit/Cost Ratio (project): } \text{Benefit/Cost Ratio (Project)} = \frac{\sum_{CA} \text{Benefit (Life)}_{(CA)}}{\text{Total Project Cost}}$$



Present Balance Date	Credit Cards					CM Account Benefits					CM Account Date	
	Paid	Service Agency	Direct Pledge APY	Completion of Plan	PWD	Direct Credit	Total Credit Card	CM Account Priority	CM Account Priority	CM Account Priority		
1	0	0	0	0	0	0	0	0	0	0	0	0
2	2,100,000.00	0	0	0	0	2,100,000.00	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
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31	0	0	0	0	0	0	0	0	0	0	0	0
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73	0	0	0	0	0	0	0	0	0	0	0	0
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84	0	0	0	0	0	0	0	0	0	0	0	0
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93	0	0	0	0	0	0	0	0	0	0	0	0
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95	0	0	0	0	0	0	0	0	0	0	0	0
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99	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0

CM Line Benefits	CM Account Benefits		Total Benefits	BIC
	CM Account Date	CM Account Priority		
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2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
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49	0	0	0	0
50	0			



# City of Isleton

City Council  
Staff Report

DATE: April 26, 2022

ITEM#: 7.B

CATEGORY: Old Business

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## RESOLUTION 15-22 - RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ISLETON APPROVES GRANT AGREEMENT #C4133066 PROJECT #1186 WITH CALIFORNIA PARKS AND RECREATION DIVISION OF BOATING & WATERWAYS FOR ISLETON BOAT LAUNCH FACILITY; APPROVE

### SUMMARY

Last year the City Council adopted Resolution 001-21 of the City of Isleton in Sacramento County Authorizing City Manager to submit application for Funding from the Division of Boating and Waterways (DBW), Harbors and Watercraft Revolving Fund for the Boat Launch Facility Grant.

On Thursday February 10, 2022 the DBW Commission approved a \$200,000 grant to provide funding to develop a final concept design for a Boat Launching Facility. If this is confirmed, the proposed grant would provide planning funds for design for the Isleton Boat Launching Facility and obtain permits that would be necessary prior to construction.

### DISCUSSION

#### Proposed DBW Scope of Work

DBW will contribute up to \$200,000 for design, engineering, and permitting for the future construction of the following scope items:

**Boat ramp** – Construct a new single-lane V-grooved concrete ramp.

**Pile Guided Boarding Floats** – An 80-foot pile guided boarding float would be added.

**Driveway modifications** – Improve and modify roadways and driveways as necessary for construction and functionality.

**Parking improvements** – Modify Recreation Area parking for ADA access for vehicle-boat trailer and single-vehicle parking and regular vehicle-boat trailer access. Slurry/seal and/or restripe auxiliary lot as necessary to ensure an adequate number of spaces is provided for the boat ramp.

**ADA path of travel** – Provide ADA-compliant path of travel between BLF components.

**Lighting** – Lighting at the top of the boat ramp.

**Signage** – Add directional, monument, and designation signage.

**Payment kiosk** – Add payment stations for payment of parking and launching fees.

Resolution 15-22 of the City Council of the City of Isleton approves the \$200,000.00 grant from Department of Parks and Recreation, Division the Isleton Boat Launch Facility that the City Manager, or his/her designee is hereby authorized and empowered to execute in the name of the City of Isleton all grant documents, including but not limited to, applications, agreements, amendments and requests for payment, necessary to secure grant funds and implement the approved grant project

### **FISCAL IMPACT**

The Department of Boating and Waterways has awarded \$200,000 Boat Launch Design Grant to the City. There is no City requirement for matching funds.

Upon completion of design, the City will apply for construction funding from several available funding sources including Division of Boating and Waterways and State Parks.

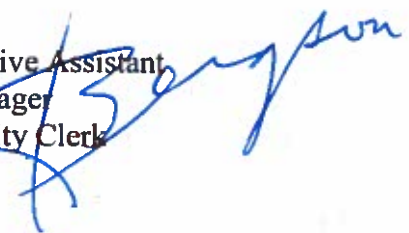
### **RECOMMENDATION**

Staff recommends that Council approve Department of Boating and Waterways contract agreement for the Isleton Boat Launching Facility.

### **ATTACHMENTS**

1. Contract Agreement
2. Resolution 15-22 - Resolution of the City Council of the City of Isleton Approves Grant Agreement #C4133066 Project #1186 with California Parks and Recreation Division of Boating & Waterways for Isleton Boat Launch Facility
3. Isleton Boat Launch Facility Feasibility Report

Prepared by: Diana O'Brien, Administrative Assistant  
Reviewed by: Charles Bergson, City Manager  
Submitted by: Yvonne Zepeda, Deputy City Clerk



**RESOLUTION NO. 15-22**

**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ISLETON APPROVES GRANT AGREEMENT #C4133066 PROJECT #1186 WITH DEPARTMENT OF PARKS AND RECREATION, DIVISION OF BOATING & WATERWAYS FOR BOAT LAUNCH FACILITY**

**WHEREAS**, the State Department of Boating and Waterways provides grants and loans to cities, counties and districts for the development of small craft harbor facilities; and

**WHEREAS**, the grant will fund design, engineering, and permitting for the construction for a new boat launch facility. This facility will consist of a new boat ramp, ADA path of travel, modified driveways and parking lots, boarding float, signage, utilities, lighting and payment station. Planning activities will include development of a cost estimate for construction of the facility.

**WHEREAS**, Department of Parks and Recreation, Division of Boating and Waterways conducted a feasibility study that has found the proposed project to be feasible and economically justified; and

**WHEREAS**, Department of Parks and Recreation, Division of Boating and Waterways awarded the City of Isleton a \$200,000 grant, fund title Harbors and Watercraft Revolving Fund.

**NOW, THEREFORE, BE IT RESOLVED** that the **City Council of the City of Isleton** and approves the \$200,000.00 grant from Department of Parks and Recreation, Division the Isleton Boat Launch Facility.

**BE IT FURTHER RESOLVED** that the **City Manager**, or his/her designee is hereby authorized and empowered to execute in the name of the **City of Isleton** all grant documents, including but not limited to, applications, agreements, amendments and requests for payment, necessary to secure grant funds and implement the approved grant project; and

**PASSED AND ADOPTED** at the regular meeting of the City Council of the City of Isleton held on this 26th day of April 2022.

**AYES:**

**NOES:**

**ABSTAIN:**

**ABSENT:**

\_\_\_\_\_  
MAYOR, Eric Pene

ATTEST:

\_\_\_\_\_  
DEPUTY CITY CLERK, Yvonne Zepeda







State of California • Natural Resources Agency

DEPARTMENT OF PARKS AND RECREATION

Division of Boating and Waterways

P.O. Box 942896

Sacramento, California 94296-0001

Gavin Newsom, Governor

Armando Quintero, Director

Charles Bergson, City Manager  
City of Isleton  
PO Box 716  
Isleton, CA 95641  
Email: [cbergson@cityofisleton.com](mailto:cbergson@cityofisleton.com)

Subject: Isleton Boat Launching Facility  
(Agreement # C4133066) (Project #1186)

Dear Mr. Bergson:

Enclosed is the grant agreement between the City of Isleton and the Department of Parks and Recreation, Division of Boating and Waterways (DBW) for the above listed project.

Please complete the following item(s) and return to my attention at the address stated above. **This Agreement is not binding on either party until approved by the appropriate authorized state agencies.** Grant Performance Period and Grant Agreement Term begin the date the face-page is signed by DBW. DBW will write this date on the blank lines at execution. The State will not make payments for any work done or purchases made prior to the agreement being fully executed.

X  Grant Agreement face-page, sign in blue ink or e-sign, date, and return one original electronic copy to [deborah.holmes@parks.ca.gov](mailto:deborah.holmes@parks.ca.gov) or one hardcopy to my attention at the address above

X  CCC 04/2017, Enclosed as Exhibit D, have the proper individual complete, sign in blue ink or e-sign, date, and return copy to [deborah.holmes@parks.ca.gov](mailto:deborah.holmes@parks.ca.gov) or one hardcopy to the address above. The CCC 04/2017 package contains clauses and conditions that may apply to your Agreement. The CCC will be kept on file in a central location and must be renewed every three (3) years and updated as changes occur. **The "Contractor" as referred to in the forms is the "Grantee" to this Agreement.**

For inquiries regarding the implementation of this Grant Agreement, please contact Casey Caldwell at (916) 902-8824 or by email at [casey.caldwell@parks.ca.gov](mailto:casey.caldwell@parks.ca.gov).

For inquiries regarding the processing of this Grant Agreement, please contact me at (916) 516-6067 or by email at [deborah.holmes@parks.ca.gov](mailto:deborah.holmes@parks.ca.gov).

Sincerely,

DocuSigned by:

*Deborah Holmes*

42D148F3398B42D...

Deborah Holmes  
Grants and Loans Unit

Enclosures



State of California – Natural Resources Agency  
DEPARTMENT OF PARKS AND RECREATION  
DIVISION OF BOATING AND WATERWAYS

**GRANT AGREEMENT**

**GRANTEE:** City of Isleton

**GRANT PERFORMANCE PERIOD** is from: \_\_\_\_\_ through February 1, 2024.

**GRANT AGREEMENT TERM** is from: \_\_\_\_\_ through February 1, 2044.

**PROJECT TITLE:** Isleton BLF (1186)

**GRANT NUMBER:** C4133066

The Grantee agrees to the terms and conditions of this grant, hereinafter referred to as Agreement, and the State of California, acting through its Director of Parks and Recreation, agrees to fund the total grant amount indicated below for the project identified in the Feasibility Report which is a part of the Agreement consisting of: Exhibit A "Small Craft Launching Facility Construction Grant and Operating Agreement", pages 1-17. Exhibit A, Attachment 1 "Department of Parks and Recreation, Division of Boating and Waterways Maintenance Guidelines", pages 1-4. Exhibit B "Isleton BLF Feasibility Report", pages 1-8. Exhibit C "General Terms and Conditions", pages 1-4. Exhibit D "Contractor Certification Clauses", pages 1-4.

**Grantee:** City of Isleton

**Agency:** Department of Parks and Recreation  
Division of Boating and Waterways

**Address:** PO Box 716  
Isleton, CA 95641

**Address:** P.O. Box 942896  
Sacramento, CA 94296-0001

**BY:** \_\_\_\_\_  
(Authorized Signature)

**BY:** \_\_\_\_\_  
(Authorized Signature)

**CHARLES BERGSON, CITY MANAGER**  
(Printed Name and Title of Authorized Representative)

**KEREN DILL, STAFF SERVICES MANAGER II**  
(Printed Name and Title of Authorized Representative)

**Date** \_\_\_\_\_

**Date** \_\_\_\_\_

**CERTIFICATE OF FUNDING  
(FOR STATE USE ONLY)**

<b>GRANT</b> C4133066	<b>AMENDMENT NO</b>	<b>FISCAL SUPPLIER NO</b> 0000070973		<b>PROGRAM</b> 2855019
<b>AMOUNT ENCUMBERED BY THIS DOCUMENT</b> \$200,000.00	<b>FUND TITLE</b> HARBORS AND WATERCRAFT REVOLVING FUND		<b>AGENCY BILLING CODE NO</b> 053709	
<b>PRIOR AMOUNT ENCUMBERED BY THIS DOCUMENT</b> \$0.00	<b>GL / APPROP REF / FUND</b> 3790-101-051600001	<b>CHAPTER</b> 6	<b>STATUTE (ENY)</b> 2020	<b>FISCAL YEAR</b> 2021/22
<b>TOTAL AMOUNT ENCUMBERED TO DATE</b> \$200,000.00	<b>RPTG STRUCTURE</b> 37900709	<b>ACCOUNT / ALT ACCOUNT</b> 5432000/ 5432000000	<b>ACTIVITY</b> 61066	<b>PROJECT</b> 37900THER

**SMALL CRAFT LAUNCHING FACILITY  
CONSTRUCTION GRANT AND OPERATING AGREEMENT**

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## ARTICLE 1 - DEFINITIONS

- A. "Account": An interest-bearing account to be established by the Grantee for the deposit of grant funds when grant funds are disbursed in advance (see Article 5); such account is to be designated the "Boating Grant – Isleton Launching Facility Construction Development Fund" which shall reflect all receipts and expenditures of grant funds.
- B. "Budget Act": The Legislature enactment of a budget in support of on-going programs (appropriations) in accordance with the provisions of Section 12 of Article IV of the Constitution of the State of California.
- C. "CEQA": The California Environmental Quality Act.
- D. "Commission": The Boating and Waterways Commission.
- E. "Date of Acceptance": The date specified on the Project Completion Certification, and which denotes the beginning of the twenty (20) year portion of the Grant term in accordance with Article 3, Subpart A of this Exhibit.
- F. "Department": The Department of Parks and Recreation, Division of Boating and Waterways.
- G. "Exhibit B": The feasibility report exhibit presents the proposed Project in "concept" form only. The actual Project layout shall be determined by the Grantee and the engineer of record (to be determined) during the design process taking actual site conditions and public safety into account. The Project must meet the scope, cost and intent of this report and shall conform to Department guidelines.
- H. "Grant": Funds provided pursuant to Harbors and Navigation Code section 72.5 to finance all or part of the Project Costs.
- I. "Grant Performance Period": The time during which the grantee may carry out the work authorized by the Grant Agreement.
- J. "Grantee": The Entity identified as Grantee on the face page of the Grant Agreement.
- K. "Project": The construction, improvement or development of a recreational small craft boat launching facility as described in Exhibit B.
- L. "Project Area": The real property, and improvements thereto, identified in Exhibit B, within which the Project will be undertaken.
- M. "Project Completion Certification": A fully executed Notice of Completion, or equivalent, which states the Grantee has accepted the Project as complete on a specific date (Date of Acceptance).

- N. "Project Costs": Engineering, permitting, material and construction costs that are incurred by the Grantee for the purpose of completing the Project. However, Project costs incurred:
1. Shall not include any indirect or overhead charges,
  2. For engineering, permitting and inspection shall be no greater than the combined maximum budget allocation for *Engineering, Inspection* and *Permit Costs* as identified in Exhibit B (Feasibility Report – Cost Estimate Table),
  3. For engineering, inspection, and construction management services provided by Grantee or Grantee's personnel may only be reimbursed with prior written approval of Department, and
  4. Shall not include any expenses incurred prior to the start date of this Agreement.

#### ARTICLE 2 - GRANTEE'S WARRANTIES

- A. Grantee warrants that the obligation created by this Agreement will not create an indebtedness or liability contrary to the provisions of Section 18 of Article XVI of the Constitution of the State of California.
- B. Grantee warrants that it has title to, or adequate interests in, the Project Area. Adequate interests include, but are not limited to, the following:
1. Access to the Project Area by a maintained public way,
  2. A right of passage over a waterway, open to the public, between the Project Area and navigable waters, and
  3. Easements or other rights of way outside the Project Area sufficient to provide utilities and services to the Project.
- C. Grantee warrants that there is no encumbrance, lien, easement, license, title, cloud or other interest that may interfere with the Project Area or use thereof by the public.

#### ARTICLE 3 - TERM OF AGREEMENT

- A. This Agreement, subject to any provision for prior termination, shall begin on the first date of the Grant Performance Period and shall continue for twenty (20) years from the Date of Acceptance by the Grantee. If the Date of Acceptance occurs before or after the stated Grant Performance Period end date, the Agreement will be amended to reflect the revised 20-year term.

- B. This Agreement may be extended, amended or cancelled upon the written agreement of the parties.

ARTICLE 4 - BUDGET CONTINGENCY

- A. Only funds that have been appropriated by the Legislature and approved for expenditure on the Project by the Department, on or before the first date of the Grant Performance Period of this Agreement, are authorized for disbursement through this Agreement.
- B. In the event that the Legislature or Department, for any reason, does not approve sufficient funding for this Project, or should the Grantee be unable to complete the Project within the established budget or otherwise be unable to fund any costs over the established budget, and provided that Grantee has not accepted any grant funds, Department shall have no liability to pay any funds whatsoever to Grantee or to furnish any other consideration under this Agreement and Grantee shall not be obligated to perform any provision of this Agreement; this Agreement shall be of no further force and effect.
- C. In the event that the Legislature or Department does not approve sufficient funds to complete the Project, or should the Grantee be unable to complete the Project within the established budget or otherwise be unable to fund any costs over the established budget, and Grantee has drawn grant funds:
  - 1. Grantee shall repay all drawn grant funds within ninety (90) days of the end of the fiscal year that such approval is denied, or
  - 2. Grantee shall complete the Project within the scheduled timeline using Grantee's own funds, or
  - 3. Department and Grantee may agree upon a reduced scope version of the Project to be completed within the scheduled timeline and all funds in excess of those previously appropriated necessary to complete the Project shall come from Grantee, or
  - 4. Department and Grantee may, within ninety (90) days of knowledge of such denial, agree that the expenditure of such funds toward the Project constitutes construction completion. The date of such agreement shall become the Date of Acceptance of the Project and Grantee shall be obligated to perform all non-construction provisions of this Agreement for twenty (20) years beyond the Date of Acceptance.

## ARTICLE 5 - DISBURSEMENT OF GRANT

The Department shall provide a Grant to the Grantee in the maximum amount stated on the face page of the Grant Agreement, however:

- A. No funds shall be disbursed for work performed prior to the first date of the Grant Performance Period of this Agreement.
- B. The Department shall have no obligation to disburse any of the Grant for construction activities unless and until the Grantee demonstrates that it has acquired all permits necessary to construct and operate the Project.
- C. The Department shall have no obligation to disburse any of the Grant unless and until the Grantee provides the Department with copies of fully executed contracts for which it seeks reimbursement.
- D. The Department shall have no obligation to disburse any of the Grant unless and until the Grantee demonstrates that it has satisfactorily complied with the California Environmental Quality Act (CEQA) for the Project.
- E. Grant disbursements to cover Project Costs shall be made in arrears as follows:
  1. Grantee shall request a Grant disbursement in arrears at least quarterly, but not more frequently than monthly, for any and all reimbursable expenses incurred during that period, using the form provided by the Department unless Grantee has a form otherwise approved by the Department in writing. Paid invoices or other evidence of Grantee's payment of Project Costs must accompany Grant disbursement requests.
  2. Grant disbursement requests shall be submitted in duplicate hardcopy to the Department in a form satisfactory to the Department.
  3. In the event no reimbursable expenses were incurred during a quarter, the Grantee shall report to the Department of any progress made on the Project, or explanation of no progress made on the Project, at least quarterly, but not more frequently than monthly.
  4. The Department shall withhold from each Grant disbursement an amount equal to ten percent (10%) of each disbursement until the Department has accepted the Project as complete and has approved all Project Costs and all stop notices or other liens have been released.



5. Grantee shall request final Grant disbursement no later than thirty (30) days following the Date of Acceptance of the Project by the Grantee.
- F. The Department may withhold any Grant disbursement if the Grantee fails to comply with any of the provisions of this Agreement.

#### ARTICLE 6 - DESIGN AND CONSTRUCTION OF PROJECT

- A. The Grantee shall obtain from the Department advance written approval of the following:
1. All bid documents prior to advertisement including plans and specifications,
  2. All contracts prior to award,
  3. All change orders of \$5,000 or more, for any work performed under this Agreement, and
  4. All changes to Project schedule discussed in Subpart D of this Article, of thirty (30) days or more.
- B. All architectural and engineering contracts for plans and specifications shall require that the plans and specifications:
1. Be prepared by persons licensed by the State of California to undertake the type of design work required by the Project (engineer's/architect's certificate number to appear on construction contract design documents),
  2. Be prepared in conformance with the most recent version of the Department of Boating and Waterways' *Layout, Design and Construction Handbook for Small Craft Boat Launching Facilities*,
  3. Be submitted to the Department and Grantee in 11" X 17" hardcopy and on CD or DVD in full sized and 11" X 17" PDF format. Specifications shall also be submitted in hardcopy and in PDF format,
  4. Become the property of the Grantee,
  5. Provide for all Project facilities set forth in Exhibit B, and
  6. Provide for shore side facilities for removing waste from vessel holding tanks in accordance with the Harbors and Navigation Code section 654.1.
- C. All construction contracts for the Project shall:
1. Be awarded in accordance with all applicable laws and regulations,
  2. Contain the following clause: "The Department of Parks and Recreation, Division of Boating and Waterways and its agents may, at any and all reasonable times

during the term of this Agreement, enter the Project Area for purposes of inspecting the Project Area.”

3. Contain a clause stating that the Contractor and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee who is employed in the work covered by such contracts or against any applicant for such employment because of sex, sexual orientation, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age, marital status, and denial of family care leave, and that such provisions shall include, but not be limited to: employment, upgrading, promotion or transfer, recruitment, or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship,
  4. Contain a clause that the construction contractor shall comply with all air pollution and environmental control rules, regulations, ordinances and statutes which apply to the Project and any work performed pursuant to this Agreement,
  5. Require that the Project be constructed according to the plans and specifications prepared for the Project, and that quality control shall be performed, and compliance with specifications shall be verified, by qualified professionals selected by the Grantee or Grantee's representative, and
  6. Require the preparation of a concrete test panel as specified in Subpart F of this Article.
  7. Shall contain the requirements of Article 10 Liability and Fire Insurance and Article 20 Liability of this Agreement.
- D. The Grantee shall, within sixty (60) days of approval of this Agreement, provide the Department with a Project schedule showing the proposed dates of the following Project phases or milestones:
1. Beginning and ending dates of Project design consultant selection by Grantee,
  2. Submission of the consultant services agreement to the Department for approval,
  3. Beginning and ending of Project design,
  4. Submission of plans and specifications to the Department for approval at 30%, 60%, 90% and 100% completion,
  5. Beginning and ending dates of Grantee advertising of Project for bids,
  6. Project bid opening date,

7. Submission of the construction Agreement to the Department for approval,
  8. Beginning and ending dates of Project construction,
  9. Acceptance of Project by the Grantee, and
  10. Submission of a Project Completion Certification to the Department.
- E. The Grantee shall provide the Department with a Construction Schedule showing all construction milestones, including the date the v-grooving test panel will be prepared and ready for Department inspection as required by Subpart F below.
- F. No placement or v-grooving of concrete for boat launching ramps on the Project shall be allowed until the construction contractor demonstrates proficiency in creating a satisfactory v-grooved surface by preparing a concrete test panel measuring no less than 6 feet by 4 feet. A Department representative must accept the test panel before the construction contractor shall be allowed to place or v-groove concrete for boat launching ramps. Precast boat launching ramp panels are exempt from the test panel requirement but must also be approved by a Department representative prior to placement or installation. Test panels must be adjacent to, but not part of, any ramp work to be completed and must remain accessible until all ramp work is completed and accepted by Department. Contractor may incorporate test panel into other concrete work (i.e. trash enclosure, etc.).
- G. Prior to the commencement of the construction of the Project, the Grantee shall cause the contractor and a corporate surety acceptable to the Department to furnish in favor of the Grantee and the Department, as their interests may appear, bonds or other security interests as allowed pursuant to Public Contract Code sections 10263 and 22300 in the minimum amounts indicated below:
1. Faithful performance – one-hundred percent (100%) of the total contract bid price.
  2. Labor and materials – one-hundred percent (100%) of the total contract bid price.
- H. The Grantee shall provide at least quarterly written reporting to the Department as to the progress and status of the Project using the form provided by the Department unless Grantee has a form otherwise approved by the Department in writing.

#### ARTICLE 7 - COMPLETION OF PROJECT

- A. The Grantee shall complete the Project no later than February 1, 2024.

- B. The Grantee shall provide the following to the Department within sixty (60) days of the Date of Acceptance:
1. A Project Completion Certification (or equivalent)
  2. An accounting of all Grant funds
  3. As-built plans and specifications on CD or DVD

**ARTICLE 8 - OPERATION AND MAINTENANCE OF PROJECT**

- A. The Grantee shall not transfer its interest in the Project Area without the written approval of the Department.
- B. The Project and all other improvements constructed or placed in the Project Area shall be operated solely as a recreational small craft boat launching facility. Other uses of the facility such as for craft fairs, festivals, SNO-PARKS, special events, storage, transient parking, camping, etc., are not allowed without the prior written permission of the Department.
- C. The Project Area shall be open to all recreational vessels, including vessels powered by 2-stroke and 4-stroke gasoline engines, at all times during the term of this Agreement except as approved by the Department. Notwithstanding Harbors and Navigation Code section 660, any non-emergency restrictions related to time-of-day use, speed zones, special-use areas, or pollution control measures in the Project Area which result in closure or partial closure of waterways in the Project Area to any recreational vessel shall be subject to prior approval by the Department. Failure to obtain prior approval of the Department for such restrictions shall constitute a breach of this Agreement and may result in penalties set forth in Article 9 of this Exhibit.
- D. The Grantee (or any lessee or concessionaire operating under the authority of the Grantee) shall not charge any fee or combination of fees totaling more than \$13.00 to include but not limited to fees for: vessel launch and retrieval, parking, entry, day-use, and water-use. Such funds may be collected and used only to make repairs, renewals, and replacements necessary for the efficient operation of the recreational small craft boat launching facility and to keep the facility in good repair at all times. The total fee charged may be adjusted annually in accordance with percentage changes in the *United States Bureau of Labor Statistics Consumer Price Index (CPI) using the U.S. City Average, All Items, 1982-84 = 100*, as of the first date of the Grant Performance Period of this

- Agreement. Any adjustment exceeding the annual percentage change in the CPI shall be made only after the Grantee obtains the written approval of the Department. Such rates and fees shall be maintained at a level comparable to those charged at State owned boat launching facilities in the region.
- E. The Grantee shall maintain the Project Area and all improvements funded by this Agreement in accordance with the Department of Parks and Recreation, Division of Boating and Waterways Maintenance Guidelines (Guidelines), a copy of which is attached to and made a part of this Agreement. The Department and its agents may, at any and all reasonable times during the term of this Agreement, enter the Project Area for purposes of inspecting the Project Area to determine if the facility is being maintained according to the Guidelines.
1. The Grantee shall provide to the Department, within sixty (60) days of the first date of the Grant Performance Period of this Agreement, a maintenance schedule for approval detailing how each objective of the attached Guidelines will be addressed within the Project Area over the term of this Agreement. Each objective of the Guidelines must be considered; any objectives that are not applicable to a Grantee shall be included in the schedule with notation that such objective does not apply to this Project Area. The Department shall not unreasonably withhold its approval; however, it is the Grantee's responsibility to ensure that such maintenance schedule adequately addresses Grantee's responsibilities and each objective. The Department's written approval of the maintenance schedule shall be required before any funds are disbursed.
  2. The Grantee shall comply with the approved maintenance schedule throughout the term of this Agreement. Failure to maintain the facility according to the maintenance schedule is a breach of this Agreement and shall preclude the Grantee from receiving any future grants.
  3. Any changes to the maintenance schedule must be approved in writing by the Department.
- F. The Department shall not be liable for any costs of maintenance, management, control or operation of the Project Area.
- G. The Project Area shall be open and accessible for the use and enjoyment by the general public on equal and reasonable terms.



- H. All Project Area facilities shall be maintained and operated with due regard to public safety and in accordance with all applicable laws, ordinances, and regulations. All contracts relating to the operation of the Project shall include a nondiscrimination and compliance clause as referenced in Article 6, Subpart C of this Exhibit.
- I. All concession agreements for the operation and maintenance of the Project Area must have the written approval of the Department prior to award. The Department will approve such concession agreements only when the Grantee can demonstrate that private sector operation is the best available alternative. Concession agreements of a short-term duration (five years or less) are preferred, with renewal based upon performance reviews by both the local governmental agency and the Department. Any concession agreement for operation and maintenance of greater than five (5) years shall require the concessionaire to make a capital investment, acceptable to the Department, in the Project Area.
- J. All concession agreements for operation of the Project shall provide the following:
  - 1. Fees paid to the Grantee by the concessionaire for the operation and maintenance of the Project (usually a percentage of gross receipts) may only be for "reasonable administrative charges" so as not to motivate the Grantee to turn over the operation and maintenance of the Project for purely profit considerations.
  - 2. Fees paid to the concessionaire for use of the facility shall be no greater than those allowed in this Agreement.
  - 3. The concessionaire shall operate the Project and all other improvements placed in the Project Area solely as a recreational small craft boat launching facility unless receiving written permission from the Grantee and the Department for other permanent or special event uses.
  - 4. The Project Area shall be open and accessible for the use and enjoyment by the general public on equal and reasonable terms.
  - 5. All Department signs shall be kept permanently in place.

#### ARTICLE 9 - BREACH OF AGREEMENT

The Department through written notice may require the Grantee to remedy to Department's satisfaction any breach of this Agreement within ninety (90) days of the date of such notice. The Department may extend the time permitting remedy of the breach if the Grantee begins such

remedy within the said period; however, if the Grantee fails to proceed with or complete any remedial action within the time allowed, then the Department may take one or more of the following steps:

- A. The Department may take any action to correct the breach. The Grantee shall be liable for all costs, including administrative costs, incurred in the course of correcting the breach.
- B. The Department may require the Grantee to repay the Department for all Project Costs funded by the Grant. Grantee shall make such repayment within one-hundred and eighty (180) days of the close of the fiscal year within which Department demands repayment. Repayment shall be determined by the Department on a prorated unexpired term basis (the remainder of the twenty (20) year term as determined in Article 3, Subpart A).
- C. In the event the Grantee adopts time-of-day, speed zones, special-use area, pollution control measures, or any other restrictions which restrict any or all of the Project Area, or result in its closure or partial closure to any form of recreational vessel, the Department may determine the percentage of boaters affected and may require the Grantee to repay the Grant on a prorated unexpired term basis for that percentage of all Project Costs funded by the Grant. The Grantee shall make such repayment within one-hundred and eighty (180) days of the close of the fiscal year within which a Department demands repayment. Repayment shall be made according to a schedule determined by the Department after consultation with Grantee.

ARTICLE 10 - LIABILITY AND FIRE INSURANCE

- A. The Grantee shall, at a minimum, maintain in full force and effect during the term of this Agreement the following insurance:

Bodily Injury or Death:	\$1,000,000 each person
	\$1,000,000 each occurrence
Property and Product Damage	\$1,000,000 each occurrence
	\$1,000,000 aggregate
Fire Insurance	90% of the full insurable value of all insurable components of the Project.

- B. All policy or policies shall contain the following endorsement:  
The State of California, its officers, agents, employees and servants are hereby declared to be additional insured under the terms of this policy, as to activities of

both the Grantee and the Department in respect to the Project, and this policy shall not be cancelled without thirty (30) days prior written notice to the Department.

- C. The Grantee agrees that all contracts between it and the contractor (or contractors) responsible for construction of the Project shall contain a clause which requires the contractor(s) to obtain insurance in the minimum amounts and kinds specified above in Article 10, Subpart A.
- D. The insurance requirements specified above in Article 10, Subpart A, may be satisfied to the extent that the Grantee can provide comparable protection for the Grantee and the Department by virtue of the Grantee's participation in any "risk management" plan, self insurance program, insurance pooling arrangement, or any combination of these, provided that the protection plan has been approved by the Department.
- E. The Grantee agrees that all contracts between it and the designer (or designers) responsible for design and preparation of plans and specifications of the Project shall contain a clause requiring said designer(s) to obtain Architect's Professional Liability (errors and omissions) Insurance in the amount of \$1,000,000.
- F. Copies of any policy or policies, including any new or renewal policy, shall be in a form satisfactory to the Department. Copies of such policy or policies shall be submitted to the Department at least twenty (20) days prior to the effective date or dates thereof.
- G. Loss under any fire insurance policy shall be payable to the Department for deposit in an appropriate trust fund with the State of California. The proceeds may be paid to the Grantee upon the Grantee's application for the reconstruction of the destroyed facilities.
- H. The Department shall not be responsible for the payment of any premiums or assessments on Grantee's insurance policies.
- I. Grantee shall provide proof of insurance to the Department annually and upon written request by the Department.

#### ARTICLE 11 - INSTALLATION OF OTHER FACILITIES

- A. The Grantee may at its own expense place or cause to be placed within the Project Area any structure, alteration, and/or improvement in addition to those set forth and described in Exhibit B, provided that such facilities:
  - 1. Are constructed, maintained and operated for the use, enjoyment, protection and service of the public,

2. Are in compliance with Article 8 of this Exhibit,
  3. Do not directly or indirectly reduce the service capabilities for the boating public called for in Exhibit B including the sanitary and parking facilities, and
  4. Have the prior written approval of the Department. Approvals shall not be unreasonably withheld.
- B. The Department shall not be obligated to make or cause to be made any alteration, improvement, or repair to any facilities within the Project Area in addition to the original construction to the Project as provided for herein.

#### ARTICLE 12 - SIGN REFERRING TO DEPARTMENT FINANCING

The Grantee shall cause a permanent sign to be installed within the Project Area, which shall include the Department's logo (to be provided by Department) and a statement that the Department financed the Project. The sign may contain additional statements, which recognize the participation of other government agencies in the Project. The sign shall be installed before the Project is made available to the public. The standard Department precast concrete sign shall be used unless the Grantee is required to use a different sign style or motif. An electronic drawing of the standard Department Project credit sign shall be furnished by the Department to the Grantee for inclusion in the plans and specifications. The location of the Project credit sign and make-up of a non-standard sign, including the dimensions, materials and lettering, requires the prior approval of the Department.

#### ARTICLE 13 - DIRECTIONAL SIGNS

The Grantee shall at the direction of the Department cause permanent directional signs to be installed, which shall provide adequate directions for reaching the Project Area. The signs shall be installed on major roads in the area and in as close proximity as possible to freeway exits in conformance with the provisions of the Local Agency's Development Code and the State Department of Transportation (Cal Trans) policy. The locations and make-up of the signs, including the dimensions, materials, and lettering, require the prior approval of the Department.

**ARTICLE 14 - WAIVER OF RIGHTS**

Any waiver by either party hereto of its rights with respect to a default or any other matter arising in connection with this Agreement shall not be deemed to be a waiver with respect to any other default or matter.

**ARTICLE 15 - PROJECT REPRESENTATIVES**

The Grantee and the Department shall each designate specific staff representatives for the purposes of communication between parties. Grantee's representative shall be by delegation of authority, signed by the person designated by Resolution to sign the Agreement or any amendments, and to make decisions concerning the Agreement.

**ARTICLE 16 - REMEDIES NOT EXCLUSIVE**

The use by either the Department or the Grantee of any remedy specified in this Agreement for the enforcement of this Agreement is not exclusive and shall not deprive the party using such remedy of, or limit the application of, any other remedy provided by law.

**ARTICLE 17 - OPINIONS AND DETERMINATIONS**

Where the terms of this Agreement provide for action to be based upon the opinion, judgment, approval, review, or determination of either the Department or Grantee, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious or unreasonable.

**ARTICLE 18 - ASSIGNMENT**

No assignment or transfer of this Agreement or any part hereof, rights hereunder, or interest herein by the Grantee shall be valid unless and until it is approved by the Department in writing. The Department's approval shall be granted at its sole discretion and may be made subject to such reasonable terms and conditions as the Department may impose.



ARTICLE 19 - SUCCESSORS AND ASSIGNS OBLIGATED

This Agreement and all of its provisions shall apply to and bind the successors and assigns of the parties hereto.

ARTICLE 20 - LIABILITY

- A. The Grantee waives all claims and recourse against the Department, including the right to contribution for any losses or damages arising from, growing out of, or in any way connected with or incident to this Agreement.
- B. The Grantee agrees to indemnify, defend and hold harmless, the Department, its officers, agents and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, suppliers, laborers, and any other person, firm, entity or corporation furnishing or supplying work services, materials, or supplies in connection with the performance of this Agreement, and/or from any and all claims and losses accruing or resulting to any person, firm, entity or corporation who may be injured or damaged by Grantee in the performance of this Agreement.
- C. The Grantee shall indemnify, hold harmless, and defend the Department, its officers, agents and employees against any and all claims, demands, damages, costs, expenses or liability connected with or arising out of the acquisition, design, construction, operation, maintenance, existence or failure of the Project.
- D. If the Department is named as a co-defendant, the Grantee shall notify the Department and represent it unless the Department elects to represent itself. If the Department undertakes its own defense, it shall bear its own litigation costs, expenses and attorney's fees.

ARTICLE 21 - TERMINATION

- A. **Prior Termination.** This Agreement shall terminate on the date specified in Article 7, Subpart A of this Exhibit if by such date (1) the Grantee has not met all conditions precedent to disbursement under this Agreement, or (2) the Department has disbursed no part of the Grant funds.

- B. Termination. In addition to the Department's right to terminate pursuant to Exhibit C, and as otherwise provided in this Agreement, the Department may terminate this Agreement without cause upon a thirty (30) calendar days advance written notice to the Grantee.
- C. The Grantee shall promptly return all advanced funds to the Department.

ARTICLE 22 - SUPERSEDING GENERAL TERMS AND CONDITIONS (GTC)

- A. The reference to the Contractor in Exhibit C is the Grantee in this Agreement.
- B. Notwithstanding Paragraph 13 in Exhibit C, payment to Grantee for expenses shall be limited as provided for in Article 5 of this Exhibit.
- C. Paragraph 5 in Exhibit C is replaced by Article 20 of this Exhibit.

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# ***Department of Parks and Recreation, Division of Boating and Waterways Maintenance Guidelines***

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## ***Introduction***

This document presents guidelines for meeting the minimum maintenance standards for the operation and maintenance of publicly owned boat launching facilities that are funded by the California Department of Parks and Recreation, Division of Boating and Waterways (DBW).

Because DBW funds these publicly owned facilities, the State has a financial stake in their success. The attached guidelines, developed by DBW, are intended to ensure that DBW funded boat launch facilities are managed and maintained in a manner compatible with DBW's mission – *to provide safe and convenient boating access* – and that the public entity owning the facility (the “Agency”) is fulfilling its responsibilities. The Agency's primary responsibility in this context is maintaining the value of the property, including both tangible site improvements and the intangible value of the boat launch facility's reputation with the boating public.

## ***Scope***

The scope of these guidelines is limited to those items that reflect the quality of the boat launch facility (BLF) and its operations. The seven categories that are addressed are: (1) regular maintenance, (2) major maintenance, (3) boat launch facility staff, (4) boat launch facility operations and administration, (5) boat launch facility regulations, (6) security, and (7) amenities.

The scope does not include financial measures and other items that would be covered separately when a Memorandum of Understanding (MOU), Operating Agreement, Concession Agreement or Lease Agreement occurred between an Agency and an operator. In addition, these guidelines are separate from, and complementary to, the conditions and expectations set forth in any contractual agreement that might exist between the Agency and an operator. These guidelines were developed under the assumption that any contractual obligations, such as financial performance, reporting, and lease payments from an operator to an Agency, would be monitored separately. However, in the event that an Agency contracts out the operation of a BLF to an operator, any agreement between the Agency and the operator must specify that the operator must apply these guidelines and operate and maintain the BLF to at least the minimum condition that would be achieved by following these guidelines.

These guidelines should be applied within the context of the existing maintenance conditions of the boat launch facility. Likewise, they should reflect long-term goals for the boat launch facility.

The three key long-term goals that apply to most publicly owned boat launch facilities are as follows:

- Maintain the boat launch facility to a standard that attracts boaters to the boat launch facility.
- Meet current and long-range needs of the community and of boaters in the region.
- Produce, or set aside, boat launch or parking revenues sufficient to maintain the boat launch facility infrastructure, such as regular slurry sealing and striping of the parking lot, replacement of boarding float flotations as needed, or restroom roof repairs.

The following guidelines represent the minimum that shall be required of an Agency to operate and maintain a DBW funded BLF.

### ***Guidelines***

The following table documents, in categories, the minimum outcomes that must be met in a properly maintained DBW funded BLF. The Agency is responsible for preparing, and updating, a maintenance schedule describing, in detail, how each of the objective/outcomes will be addressed by the Agency during the term of the BLF contract. During the grant term, the maintenance schedule shall be updated every five years, and whenever there are changes to the property, expected or unexpected, that might normally require changes in maintenance levels (examples include, but are not limited to, new construction or other major physical and non-physical changes including storm damage, faster than anticipated erosion, or higher than expected usage). In the event that such a change will not require a change in maintenance levels an updated maintenance schedule is still required; and, the Agency must clearly document why no change in service is required.

In order to verify that Agencies are maintaining facilities as required, DBW will make periodic and random inspections of funded BLFs. After an inspection, Agencies will be provided with DBW's inspection results. In the event that facilities are not being maintained to DBW's guidelines, the Agency will be required to respond and take corrective action immediately. Agencies that do not maintain their facilities to at least these guidelines will not be considered for future DBW funding.

<b>Category</b>	<b>Objectives/Outcomes</b>
<b>A. Regular Maintenance</b>	Maintenance of existing and new structures and facilities is conducted on a regular basis to maintain viability of the boat launch facility. Taking into account the initial condition of the boat launch facility, the facilities, including ramps, boarding floats, restrooms, lighting, and landscaping are maintained in a safe, neat, sanitary, and orderly condition.
<b>B. Major Maintenance</b>	Inspections for possible major maintenance problems are conducted to prevent the need for premature replacement of facilities. The boat launch facility structures are maintained in an acceptable manner, enhancing the long-term viability of the boat launch facility and reducing risk to users, the Agency, and DBW. The facility is maintained in an insurable condition and is free of defects caused by neglect. Major maintenance of necessary items is scheduled and completed in a timely manner and minimizes degradation of the boat launch facility.
<b>C. Staff</b>	Boat launch facility staff, where provided, are qualified, competent, and experienced. Staff are (1) knowledgeable about boats and boating, (2) available every day including peak season holidays, (3) friendly, (4) professional in appearance, and (5) proactive in meeting the needs of customers.



Category	Objectives/Outcomes
<b>C. Staff (cont.)</b>	Boat launch facility staff, where provided, are responsive to customers and maintain a service orientation. A mechanism to reach staff or other personnel in off-hours or emergencies is in place.
<b>D. Operations and Administration</b>	<p>The Operator has a long-range plan to maintain viability of the boat launch facility that is realistic and reflective of DBW's mission.</p> <p>The staff management plan specifies staffing levels and availability of staff, and procedures for responses to complaints. All facilities and services are operated in accordance with hours authorized in the contract/operating agreement.</p>
<b>E. Regulations</b>	The boat launch facility is in compliance with applicable federal, state, and local laws, rules, regulations, contracts, and restrictions.
<b>F. Security</b>	Boat launch facility security is maintained to appropriate guidelines for the region. The Boat launch facility security system is in place and operational and law enforcement incidents at the boat launch facility are at levels similar to other boat launch facilities in the region.
<b>G. Amenities</b>	Amenities provided are in good condition, and help draw customers to the facility.

## **ISLETON BOAT LAUNCHING FACILITY FEASIBILITY REPORT**



*Proposed boat launch ramp location*



*Parking area near proposed ramp*

**City of Isleton  
\$200,000 Grant**

### **SUMMARY**

The Boating and Waterways Commission (Commission) is being asked to provide Advice and Comment on the City of Isleton's (City) request for a \$200,000 planning grant from the Harbors and Watercraft Revolving Fund (HWRF) for improvements to the Isleton Boat Launching Facility (BLF).

The proposed grant will fund design, engineering, and permitting for construction for a new boat launching facility. This facility will consist of a new boat ramp, ADA path of travel, modified driveways and parking lots, signage, utilities, lighting, and payment stations. Planning activities will include development of a cost estimate for construction of the facility.

Although there are potential challenges associated with this project, staff believes this project is feasible. If approved, the proposed construction improvements are expected to be completed by December 2023.

The Department of Parks and Recreation, Division of Boating and Waterways seeks Commission Advice and Comment on this proposed \$200,000 HWRF planning grant to the City of Isleton for the proposed improvements to Isleton BLF described in this February 10, 2022 Feasibility Report.

### **GRANT APPLICANT AND PREVIOUS COMMISSION ACTION**

#### **Grant Applicant**

The grant applicant for the proposed project is the City of Isleton. The City owns part of the land where BLF amenities would be situated, and controls the remainder under a lease from the State Lands Commission.

### Commission Site Visit

Due to the COVID-19 pandemic, site tours are not currently feasible. Boating and Waterways Commission members are scheduled to receive a virtual tour of the BLF site on February 10, 2022, during the Commission meeting.

### Previous Commission Action

There is no previous Commission action for this location.

## GENERAL LOCATION AND AREA

### Location

The City of Isleton is on the southern shore of Sacramento River in Northern California. Isleton is located 50 miles south of Sacramento, and 60 miles east of San Francisco.

### Directions

If you are using GPS to navigate to the facility, enter "William Ramos Public Park and Recreation Area, Isleton" as your destination.

To reach Isleton from Sacramento International Airport, take Interstate 5 South 48 miles to Exit 498 for Twin Cities Road. Turn right onto Twin Cities Road, continue for four miles, then turn left onto River Road and continue for two miles. Turn right onto Walnut Grove Bridge, then in 500 feet turn left onto CA-160 S / River Road. In nine miles, the project area will be on your right.



Source: Google Maps



## Area

The City of Isleton (pop. 800) is located in far southwestern Sacramento County. The majority of communities around Isleton are small, rural townships. The City of Rio Vista (pop. 7,360) is located about six miles west of Isleton. The unincorporated community of Walnut Grove (pop. 1,533) is located about 10 miles northeast of Isleton. The City is also located in the Sacramento-San Joaquin Delta National Heritage Area.

The City of Isleton was founded in 1874. It is one of the oldest historical towns along the Sacramento River and is known for boating, fishing, camping, historic tours, farming, wine tasting, and bike riding. Since 2008 the City has been working on the revitalization of its historic downtown and reestablishment of the City as a tourist destination. Music, arts, and cultural events are increasing tourism to the downtown historical business district. These events include the annual Spam Festival, Chinese New Year's Celebration, Wine Tasting Events, and Second Saturdays. The City is also working to start up a summer weekend festival similar to the formerly popular Isleton Crawdad Festival.

The City acquired a Community Development Block Grant in 2001 to provide public water access and recreational opportunities. The City constructed a 100-foot long floating dock for tie-ups and bathroom facilities through this grant. Fishing is available year-round on the Sacramento River.

## History

There has never been a public boat launching facility at this location.

The proposed construction site was donated to the City of Isleton by the local Ramos family. It is located along the southern shore of the Sacramento River. The site was dedicated as the William Ramos Public Park and Recreation Area.

The City has received funding for a Tier 1 Boating Infrastructure Grant (BIG) project. The City will use these federal funds to design improvements to the public docking facilities. The City would like to construct the BIG project and the BLF project at the Recreation Area, which has limited shoreline available.

## Usage

There is currently no public boat launch facility in Isleton.

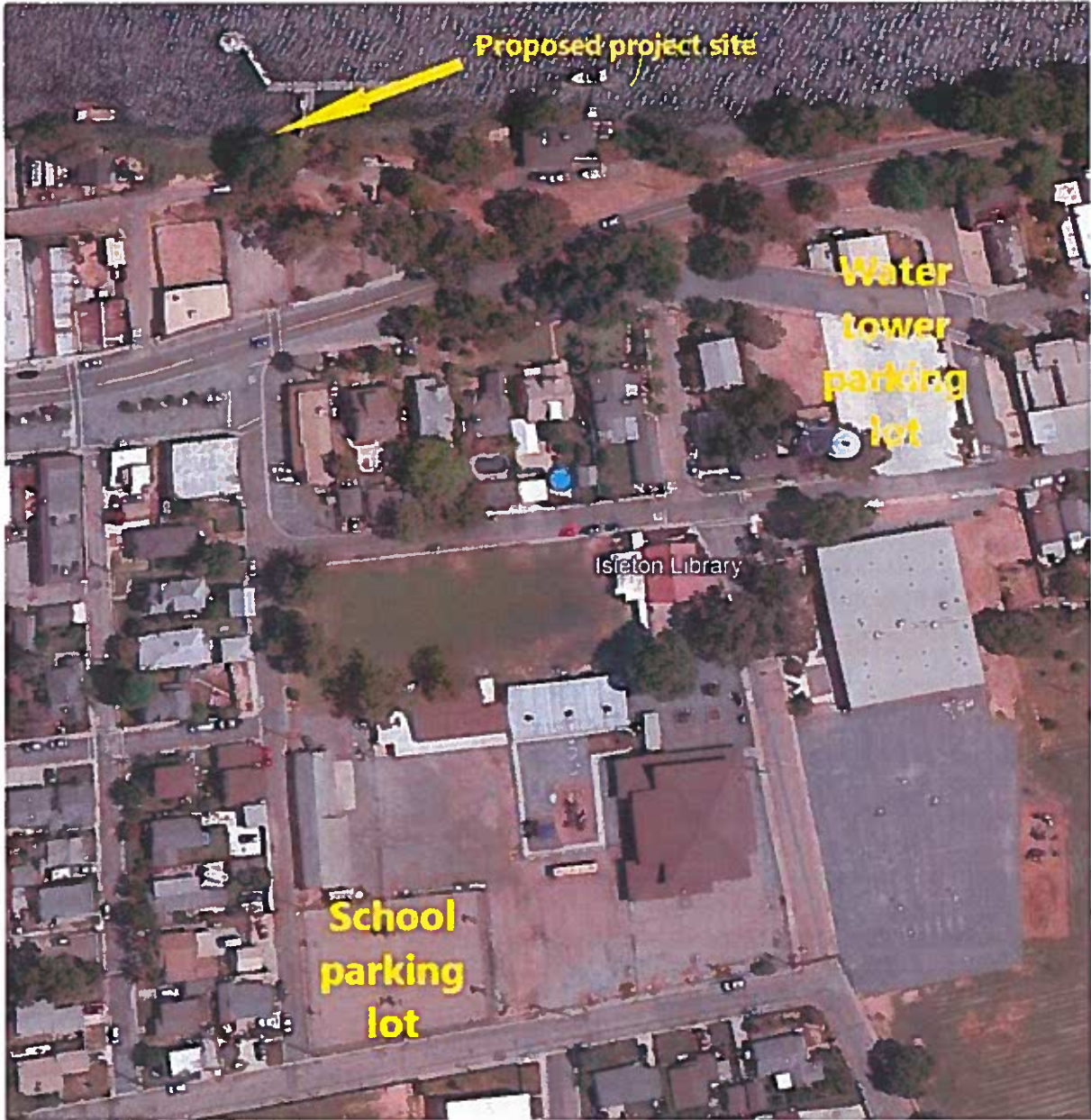
However, there are three existing publicly-accessible boat launch facilities on the Sacramento River within ten miles of the proposed project location. The Vieira's Resort Boat Launch is a privately-owned facility located two miles west of the proposed project site, on the south side of the river. The City of Rio Vista Boat Launch Facility is a publicly-owned facility located six miles west of the proposed project site, on the west side of the river. The Ko-Ket Resort Boat Launch is a privately-owned facility located seven miles northeast of the project site, on the south side of the river. A fourth nearby facility, the privately-owned B&W Resort Boat Launch, is four miles south of the proposed project site and provides access to the San Joaquin and Mokelumne Rivers.

## Existing Conditions

There is an existing boating and fishing dock near the project site, as well as an ADA-compliant restroom. Over the past 10 years, the dock has deteriorated due to exposure to water currents and other natural elements.

There is limited space for parking at the site as currently constructed. The William Ramos Park and Recreation Area does not have enough room to accommodate twenty vehicle-trailer parking stalls, which is the minimum DBW normally requires for the investment to construct a single-

lane launch ramp. The City is exploring the possibility of leasing part of a school lot at C Street and 5th Street to make up for any parking deficiencies at the proposed ramp site. In the alternative, the City will provide parking at the City owned Tower Parking Lot on 2nd Street. DBW expects all necessary parking will be identified and property rights secured (if necessary) during concept design development. This will be a condition of the grant, which must be fulfilled before the remainder of funds for engineering and permitting will be available.



Source: Google Maps



Vehicle access to the ramp would be provided directly from First Street. Vehicles trailering boats would exit the ramp and drive on City streets to park. Both proposed offsite parking lots are less than a quarter mile drive from the head of the proposed ramp.

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## PROJECT DESCRIPTION

The proposed grant would provide funding to develop a final concept design, which would confirm that both the Boat Launching Facility and the BIG project can be accommodated at the proposed site. If this is confirmed, the proposed grant would provide planning funding to at least the 60% level of project designs for the future construction of the Isleton Boat Launching Facility and obtain permits that would be necessary prior to construction.

### Proposed DBW Scope

DBW will contribute up to \$200,000 for design, engineering, and permitting for the future construction of the following scope items:

**Boat ramp** – Construct a new single-lane V-grooved concrete ramp.

**Pile Guided Boarding Floats** – An 80-foot pile guided boarding float would be added.

**Driveway modifications** – Improve and modify roadways and driveways as necessary for BLF construction and functionality.

**Parking improvements** – Modify Recreation Area parking for ADA access for vehicle-boat trailer and single-vehicle parking and regular vehicle-boat trailer access. Slurry/seal and/or restripe auxiliary lot as necessary to ensure an adequate number of spaces is provided for the boat ramp.

**ADA path of travel** – Provide ADA-compliant path of travel between BLF components.

**Lighting** – Lighting at the top of the boat ramp.

**Signage** – Add directional, monument, and designation signage.

**Payment kiosk** – Add payment stations for payment of parking and launching fees.

### Cost Estimate

The estimated total project cost for design, engineering, and permitting is \$200,000. This cost estimate includes \$27,000 for developing the preliminary concept designs, \$98,000 for engineering to at least the 60% design stage, and \$75,000 for permitting once the 60% designs are complete.

### Project Status

The proposed project has been planned to the concept level, although additional concept development is necessary to ensure feasibility of both BLF and BIG construction at the Recreation Area. See Exhibits A and B on pages 7 and 8.

### Timeline

The City estimates that engineering, design, and permitting would be completed approximately two years from execution of the proposed grant agreement.

### Engineering Feasibility

An assessment of engineering feasibility will be part of this project. The project area's size is physically constrained by the Sacramento River, location of the proposed BIG dock, roadways, and private ownership of nearby parcels.

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## **Environmental Impact and Permits**

Site environmental reviews required under the California Environmental Quality Act and the National Environmental Protection Act are currently underway. Permitting has not yet begun.

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## **PROJECT METRICS**

### **Annual Launches**

According to the City of Isleton's grant application, the annual number of motorized boat launches at the proposed facility is forecasted to be 4,500. The number of non-motorized boat launches is forecasted to be 500.

### **Annual User Days**

Based on the California Boating Needs Assessment study published in 2002, the area average for numbers of users per boat (motorized) at Sacramento River is 2.88. Therefore, the estimated annual number of user days is 12,960 motorized and 500 non-motorized for a combined 13,460 (annual launches \* users per boat)

### **User Day Value**

The 2019 Boating Needs Assessment Study estimated a base user day value. This value, adjusted for CPI is \$33.51 per user. The total forecasted annual user day value for this facility is \$451,000 (user day value \* current annual user days).

### **Benefit-Cost Ratio**

A common method in the analysis of investments is to establish net present value of the benefits and costs associated with a project. If the Benefit-Cost ratio exceeds "1" then the investment, weighed against available investment alternatives, is worthy of consideration from a financial perspective.

A construction cost estimate will be developed during the grant period. However, the maximum DBW would expect construction to cost is \$2 million. If construction costs did reach that maximum, the benefit-cost ratio inclusive of both this grant and construction would be 2.13.

### **User Fees**

The City intends to charge \$10 to launch a boat and \$3 to park at this facility.

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## **CONCLUSION**

The Department's analysis indicates that this project, as proposed, makes needed improvements and improves public access. Further planning is necessary to determine whether this project is feasible from an engineering perspective and will be cost-effective.

## **COMMISSION ADVICE AND COMMENT**

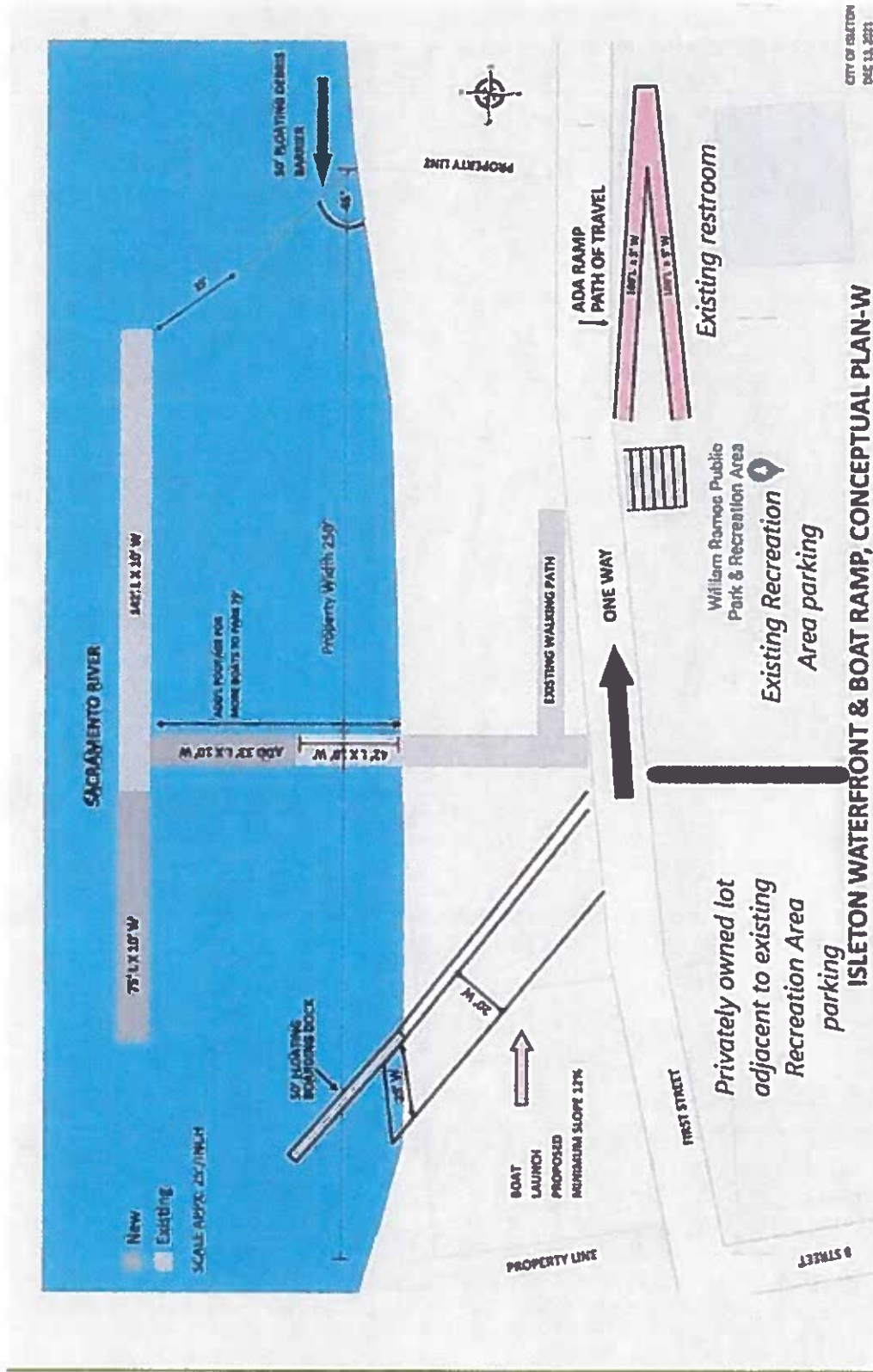
The Department of Parks and Recreation, Division of Boating and Waterways seeks Commission Advice and Comment on the proposed \$200,000 Harbors and Watercraft Revolving Fund construction grant with a condition to the City of Isleton for improvements described in this February 10, 2022 Feasibility Report.

## **CONDITION**

Before any grant funds shall be made available for engineering and permitting, DBW must accept the City's plan for providing parking for at least twenty vehicle-trailers.

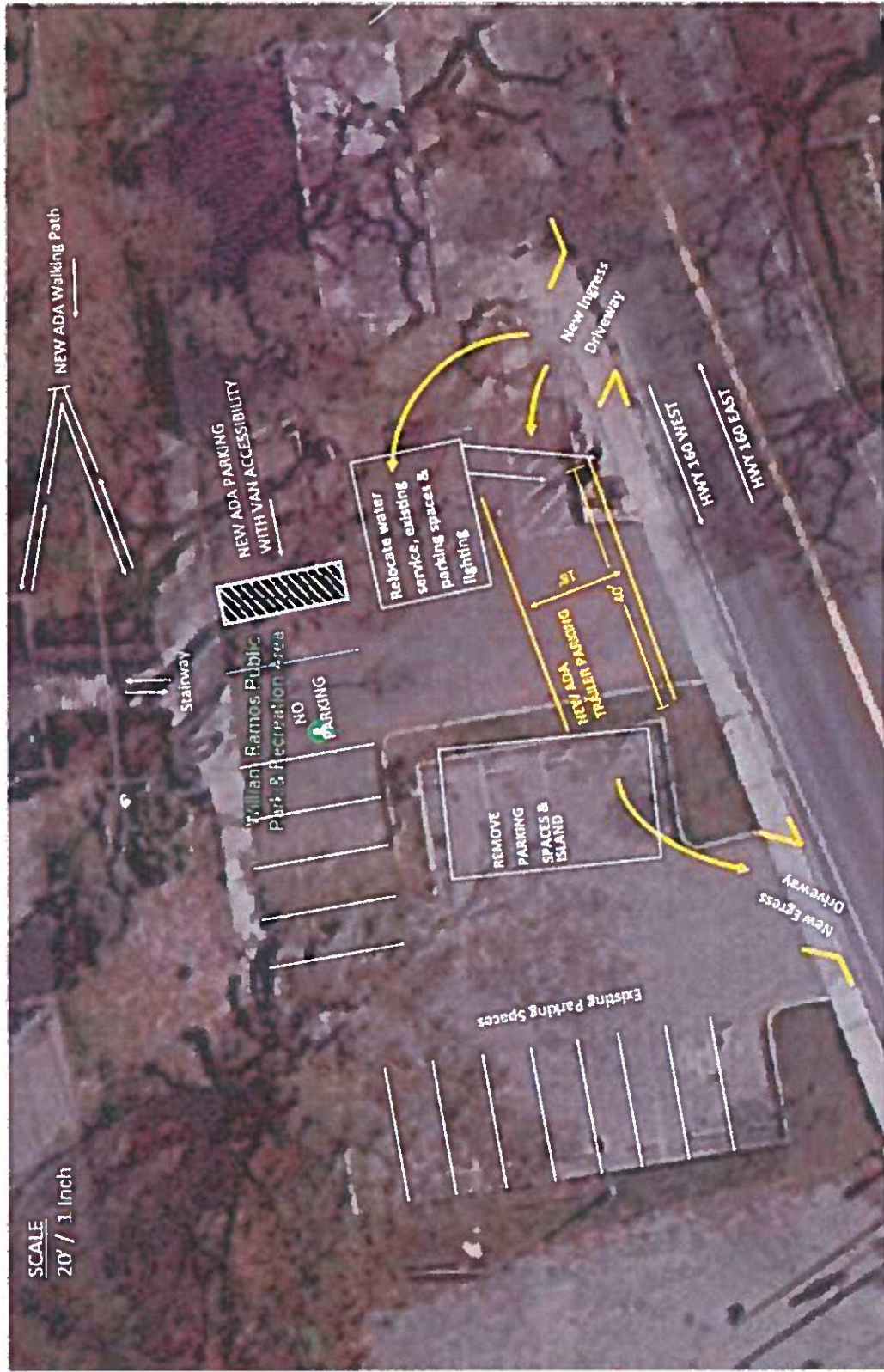
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**Exhibit A – Concept Design for facility**





**Exhibit B – Concept design for parking near ramp**



# General Terms and Conditions (GTC 04/2017)

## EXHIBIT C

1. **APPROVAL**: This Agreement is of no force or effect until signed by both parties and approved by the Department of General Services, if required. Contractor may not commence performance until such approval has been obtained.
2. **AMENDMENT**: No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the parties.
3. **ASSIGNMENT**: This Agreement is not assignable by the Contractor, either in whole or in part, without the consent of the State in the form of a formal written amendment.
4. **AUDIT**: Contractor agrees that the awarding department, the Department of General Services, the Bureau of State Audits, or their designated representative shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement. Contractor agrees to maintain such records for possible audit for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Further, Contractor agrees to include a similar right of the State to audit records and interview staff in any subcontract related to performance of this Agreement. (Gov. Code §8546.7, Pub. Contract Code §10115 et seq., CCR Title 2, Section 1896).
5. **INDEMNIFICATION**: Contractor agrees to indemnify, defend and save harmless the State, its officers, agents and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, suppliers, laborers, and any other person, firm or corporation furnishing or supplying work services, materials, or supplies in connection with the performance of this Agreement, and from any and all claims and losses accruing or resulting to any person, firm or corporation who may be injured or damaged by Contractor in the performance of this Agreement.
6. **DISPUTES**: Contractor shall continue with the responsibilities under this Agreement during any dispute.
7. **TERMINATION FOR CAUSE**: The State may terminate this Agreement and be relieved of any payments should the Contractor fail to perform the requirements of this Agreement at the time and in the manner herein provided. In the event of such termination the State may proceed with the work in any manner deemed proper by the State. All costs to the State shall be deducted from any sum due the Contractor under this Agreement and the balance, if any, shall be paid to the Contractor upon demand.



8. **INDEPENDENT CONTRACTOR:** Contractor, and the agents and employees of Contractor, in the performance of this Agreement, shall act in an independent capacity and not as officers or employees or agents of the State.
9. **RECYCLING CERTIFICATION:** The Contractor shall certify in writing under penalty of perjury, the minimum, if not exact, percentage of post-consumer material as defined in the Public Contract Code Section 12200, in products, materials, goods, or supplies offered or sold to the State regardless of whether the product meets the requirements of Public Contract Code Section 12209. With respect to printer or duplication cartridges that comply with the requirements of Section 12156(e), the certification required by this subdivision shall specify that the cartridges so comply (Pub. Contract Code §12205).
10. **NON-DISCRIMINATION CLAUSE:** During the performance of this Agreement, Contractor and its subcontractors shall not deny the contract's benefits to any person on the basis of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status, nor shall they discriminate unlawfully against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status. Contractor shall insure that the evaluation and treatment of employees and applicants for employment are free of such discrimination. Contractor and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12900 et seq.), the regulations promulgated thereunder (Cal. Code Regs., tit. 2, §11000 et seq.), the provisions of Article 9.5, Chapter 1, Part 1, Division 3, Title 2 of the Government Code (Gov. Code §§11135-11139.5), and the regulations or standards adopted by the awarding state agency to implement such article. Contractor shall permit access by representatives of the Department of Fair Employment and Housing and the awarding state agency upon reasonable notice at any time during the normal business hours, but in no case less than 24 hours' notice, to such of its books, records, accounts, and all other sources of information and its facilities as said Department or Agency shall require to ascertain compliance with this clause. Contractor and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. (See Cal. Code Regs., tit. 2, §11105.)

Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the Agreement.

11. **CERTIFICATION CLAUSES:** The CONTRACTOR CERTIFICATION CLAUSES contained in the document CCC 04/2017 are hereby incorporated by reference and made a part of this Agreement by this reference as if attached hereto.
12. **TIMELINESS:** Time is of the essence in this Agreement.

13. COMPENSATION: The consideration to be paid Contractor, as provided herein, shall be in compensation for all of Contractor's expenses incurred in the performance hereof, including travel, per diem, and taxes, unless otherwise expressly so provided.
14. GOVERNING LAW: This contract is governed by and shall be interpreted in accordance with the laws of the State of California.
15. ANTITRUST CLAIMS: The Contractor by signing this agreement hereby certifies that if these services or goods are obtained by means of a competitive bid, the Contractor shall comply with the requirements of the Government Codes Sections set out below.
  - a. The Government Code Chapter on Antitrust claims contains the following definitions:
    - 1) "Public purchase" means a purchase by means of competitive bids of goods, services, or materials by the State or any of its political subdivisions or public agencies on whose behalf the Attorney General may bring an action pursuant to subdivision (c) of Section 16750 of the Business and Professions Code.
    - 2) "Public purchasing body" means the State or the subdivision or agency making a public purchase. Government Code Section 4550.
  - b. In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder. Government Code Section 4552.
  - c. If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery. Government Code Section 4553.
  - d. Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action. See Government Code Section 4554.

16. **CHILD SUPPORT COMPLIANCE ACT:** For any Agreement in excess of \$100,000, the contractor acknowledges in accordance with Public Contract Code 7110, that:
- a. The contractor recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and
  - b. The contractor, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.
17. **UNENFORCEABLE PROVISION:** In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.
18. **PRIORITY HIRING CONSIDERATIONS:** If this Contract includes services in excess of \$200,000, the Contractor shall give priority consideration in filling vacancies in positions funded by the Contract to qualified recipients of aid under Welfare and Institutions Code Section 11200 in accordance with Pub. Contract Code §10353.
19. **SMALL BUSINESS PARTICIPATION AND DVBE PARTICIPATION REPORTING REQUIREMENTS:**
- a. If for this Contract Contractor made a commitment to achieve small business participation, then Contractor must within 60 days of receiving final payment under this Contract (or within such other time period as may be specified elsewhere in this Contract) report to the awarding department the actual percentage of small business participation that was achieved. (Govt. Code § 14841.)
  - b. If for this Contract Contractor made a commitment to achieve disabled veteran business enterprise (DVBE) participation, then Contractor must within 60 days of receiving final payment under this Contract (or within such other time period as may be specified elsewhere in this Contract) certify in a report to the awarding department: (1) the total amount the prime Contractor received under the Contract; (2) the name and address of the DVBE(s) that participated in the performance of the Contract; (3) the amount each DVBE received from the prime Contractor; (4) that all payments under the Contract have been made to the DVBE; and (5) the actual percentage of DVBE participation that was achieved. A person or entity that knowingly provides false information shall be subject to a civil penalty for each violation. (Mil. & Vets. Code § 999.5(d); Govt. Code § 14841.)

20. **LOSS LEADER**: If this contract involves the furnishing of equipment, materials, or supplies then the following statement is incorporated: It is unlawful for any person engaged in business within this state to sell or use any article or product as a "loss leader" as defined in Section 17030 of the Business and Professions Code. (PCC 10344(e).)

CCC 04/2017

**CERTIFICATION**

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY that I am duly authorized to legally bind the prospective GRANTEE to the clause(s) listed below. This certification is made under the laws of the State of California.

<i>GRANTEE/Bidder Firm Name (Printed)</i>		<i>Federal ID Number</i>
<i>By (Authorized Signature)</i>		
<i>Printed Name and Title of Person Signing</i>		
<i>Date Executed</i>	<i>Executed in the County of</i>	

**GRANTEE CERTIFICATION CLAUSES**

1. **STATEMENT OF COMPLIANCE**: GRANTEE has, unless exempted, complied with the nondiscrimination program requirements. (Gov. Code §12990 (a-f) and CCR, Title 2, Section 11102) (Not applicable to public entities.)

2. **DRUG-FREE WORKPLACE REQUIREMENTS**: GRANTEE will comply with the requirements of the Drug-Free Workplace Act of 1990 and will provide a drug-free workplace by taking the following actions:

- a. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations.
- b. Establish a Drug-Free Awareness Program to inform employees about:
  - 1) the dangers of drug abuse in the workplace;
  - 2) the person's or organization's policy of maintaining a drug-free workplace;
  - 3) any available counseling, rehabilitation and employee assistance programs; and,
  - 4) penalties that may be imposed upon employees for drug abuse violations.
- c. Every employee who works on the proposed Agreement will:
  - 1) receive a copy of the company's drug-free workplace policy statement; and,
  - 2) agree to abide by the terms of the company's statement as a condition of employment on the Agreement.

Failure to comply with these requirements may result in suspension of payments under the Agreement or termination of the Agreement or both and GRANTEE may be ineligible for award of any future State agreements if the department determines that any of the following has occurred: the GRANTEE has made false certification, or violated the



certification by failing to carry out the requirements as noted above. (Gov. Code §8350 et seq.)

**3. NATIONAL LABOR RELATIONS BOARD CERTIFICATION:** GRANTEE certifies that no more than one (1) final unappealable finding of contempt of court by a Federal court has been issued against GRANTEE within the immediately preceding two-year period because of GRANTEE's failure to comply with an order of a Federal court, which orders GRANTEE to comply with an order of the National Labor Relations Board. (Pub. Contract Code §10296) (Not applicable to public entities.)

**4. CONTRACTS FOR LEGAL SERVICES \$50,000 OR MORE- PRO BONO REQUIREMENT:** GRANTEE hereby certifies that GRANTEE will comply with the requirements of Section 6072 of the Business and Professions Code, effective January 1, 2003.

GRANTEE agrees to make a good faith effort to provide a minimum number of hours of pro bono legal services during each year of the contract equal to the lessor of 30 multiplied by the number of full time attorneys in the firm's offices in the State, with the number of hours prorated on an actual day basis for any contract period of less than a full year or 10% of its contract with the State.

Failure to make a good faith effort may be cause for non-renewal of a state contract for legal services, and may be taken into account when determining the award of future contracts with the State for legal services.

**5. EXPATRIATE CORPORATIONS:** GRANTEE hereby declares that it is not an expatriate corporation or subsidiary of an expatriate corporation within the meaning of Public Contract Code Section 10286 and 10286.1, and is eligible to contract with the State of California.

**6. SWEATFREE CODE OF CONDUCT:**

a. All Contractors contracting for the procurement or laundering of apparel, garments or corresponding accessories, or the procurement of equipment, materials, or supplies, other than procurement related to a public works contract, declare under penalty of perjury that no apparel, garments or corresponding accessories, equipment, materials, or supplies furnished to the state pursuant to the contract have been laundered or produced in whole or in part by sweatshop labor, forced labor, convict labor, indentured labor under penal sanction, abusive forms of child labor or exploitation of children in sweatshop labor, or with the benefit of sweatshop labor, forced labor, convict labor, indentured labor under penal sanction, abusive forms of child labor or exploitation of children in sweatshop labor. The contractor further declares under penalty of perjury that they adhere to the Sweatfree Code of Conduct as set forth on the California Department of Industrial Relations website located at [www.dir.ca.gov](http://www.dir.ca.gov), and Public Contract Code Section 6108.

b. The GRANTEE agrees to cooperate fully in providing reasonable access to the GRANTEE's records, documents, agents or employees, or premises if reasonably required by authorized officials of the contracting agency, the Department of Industrial

Relations, or the Department of Justice to determine the GRANTEE's compliance with the requirements under paragraph (a).

7. **DOMESTIC PARTNERS**: For contracts of \$100,000 or more, GRANTEE certifies that GRANTEE is in compliance with Public Contract Code section 10295.3.

8. **GENDER IDENTITY**: For contracts of \$100,000 or more, GRANTEE certifies that GRANTEE is in compliance with Public Contract Code section 10295.35.

### **DOING BUSINESS WITH THE STATE OF CALIFORNIA**

The following laws apply to persons or entities doing business with the State of California.

1. **CONFLICT OF INTEREST**: GRANTEE needs to be aware of the following provisions regarding current or former state employees. If GRANTEE has any questions on the status of any person rendering services or involved with the Agreement, the awarding agency must be contacted immediately for clarification.

Current State Employees (Pub. Contract Code §10410):

- 1). No officer or employee shall engage in any employment, activity or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any state agency, unless the employment, activity or enterprise is required as a condition of regular state employment.
- 2). No officer or employee shall contract on his or her own behalf as an independent GRANTEE with any state agency to provide goods or services.

Former State Employees (Pub. Contract Code §10411):

- 1). For the two-year period from the date he or she left state employment, no former state officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements or any part of the decision-making process relevant to the contract while employed in any capacity by any state agency.
- 2). For the twelve-month period from the date he or she left state employment, no former state officer or employee may enter into a contract with any state agency if he or she was employed by that state agency in a policy-making position in the same general subject area as the proposed contract within the 12-month period prior to his or her leaving state service.

If GRANTEE violates any provisions of above paragraphs, such action by GRANTEE shall render this Agreement void. (Pub. Contract Code §10420)

Members of boards and commissions are exempt from this section if they do not receive payment other than payment of each meeting of the board or commission, payment for preparatory time and payment for per diem. (Pub. Contract Code §10430 (e))

2. LABOR CODE/WORKERS' COMPENSATION: GRANTEE needs to be aware of the provisions which require every employer to be insured against liability for Worker's Compensation or to undertake self-insurance in accordance with the provisions, and GRANTEE affirms to comply with such provisions before commencing the performance of the work of this Agreement. (Labor Code Section 3700)

3. AMERICANS WITH DISABILITIES ACT: GRANTEE assures the State that it complies with the Americans with Disabilities Act (ADA) of 1990, which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA. (42 U.S.C. 12101 et seq.)

4. GRANTEE NAME CHANGE: An amendment is required to change the GRANTEE's name as listed on this Agreement. Upon receipt of legal documentation of the name change the State will process the amendment. Payment of invoices presented with a new name cannot be paid prior to approval of said amendment.

5. CORPORATE QUALIFICATIONS TO DO BUSINESS IN CALIFORNIA:

a. When agreements are to be performed in the state by corporations, the contracting agencies will be verifying that the contractor is currently qualified to do business in California in order to ensure that all obligations due to the state are fulfilled.

b. "Doing business" is defined in R&TC Section 23101 as actively engaging in any transaction for the purpose of financial or pecuniary gain or profit. Although there are some statutory exceptions to taxation, rarely will a corporate contractor performing within the state not be subject to the franchise tax.

c. Both domestic and foreign corporations (those incorporated outside of California) must be in good standing in order to be qualified to do business in California. Agencies will determine whether a corporation is in good standing by calling the Office of the Secretary of State.

6. RESOLUTION: A county, city, district, or other local public body must provide the State with a copy of a resolution, order, motion, or ordinance of the local governing body which by law has authority to enter into an agreement, authorizing execution of the agreement.

7. AIR OR WATER POLLUTION VIOLATION: Under the State laws, the GRANTEE shall not be: (1) in violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district; (2) subject to cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or (3) finally determined to be in violation of provisions of federal law relating to air or water pollution.

8. PAYEE DATA RECORD FORM STD. 204: This form must be completed by all contractors that are not another state agency or other governmental entity.



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## **ISLETON BOAT LAUNCHING FACILITY FEASIBILITY REPORT**



*Proposed boat launch ramp location*



*Parking area near proposed ramp*

**City of Isleton  
\$200,000 Grant**

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### **SUMMARY**

The Boating and Waterways Commission (Commission) is being asked to provide Advice and Comment on the City of Isleton's (City) request for a \$200,000 planning grant from the Harbors and Watercraft Revolving Fund (HWRF) for improvements to the Isleton Boat Launching Facility (BLF).

The proposed grant will fund design, engineering, and permitting for construction for a new boat launching facility. This facility will consist of a new boat ramp, ADA path of travel, modified driveways and parking lots, signage, utilities, lighting, and payment stations. Planning activities will include development of a cost estimate for construction of the facility.

Although there are potential challenges associated with this project, staff believes this project is feasible. If approved, the proposed construction improvements are expected to be completed by December 2023.

The Department of Parks and Recreation, Division of Boating and Waterways seeks Commission Advice and Comment on this proposed \$200,000 HWRF planning grant to the City of Isleton for the proposed improvements to Isleton BLF described in this February 10, 2022 Feasibility Report.

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### **GRANT APPLICANT AND PREVIOUS COMMISSION ACTION**

#### **Grant Applicant**

The grant applicant for the proposed project is the City of Isleton. The City owns part of the land where BLF amenities would be situated, and controls the remainder under a lease from the State Lands Commission.



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### Commission Site Visit

Due to the COVID-19 pandemic, site tours are not currently feasible. Boating and Waterways Commission members are scheduled to receive a virtual tour of the BLF site on February 10, 2022, during the Commission meeting.

### Previous Commission Action

There is no previous Commission action for this location.

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## GENERAL LOCATION AND AREA

### Location

The City of Isleton is on the southern shore of Sacramento River in Northern California. Isleton is located 50 miles south of Sacramento, and 60 miles east of San Francisco.

### Directions

If you are using GPS to navigate to the facility, enter "William Ramos Public Park and Recreation Area, Isleton" as your destination.

To reach Isleton from Sacramento International Airport, take Interstate 5 South 48 miles to Exit 498 for Twin Cities Road. Turn right onto Twin Cities Road, continue for four miles, then turn left onto River Road and continue for two miles. Turn right onto Walnut Grove Bridge, then in 500 feet turn left onto CA-160 S / River Road. In nine miles, the project area will be on your right.



Source: Google Maps

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## Area

The City of Isleton (pop. 800) is located in far southwestern Sacramento County. The majority of communities around Isleton are small, rural townships. The City of Rio Vista (pop. 7,360) is located about six miles west of Isleton. The unincorporated community of Walnut Grove (pop. 1,533) is located about 10 miles northeast of Isleton. The City is also located in the Sacramento-San Joaquin Delta National Heritage Area.

The City of Isleton was founded in 1874. It is one of the oldest historical towns along the Sacramento River and is known for boating, fishing, camping, historic tours, farming, wine tasting, and bike riding. Since 2008 the City has been working on the revitalization of its historic downtown and reestablishment of the City as a tourist destination. Music, arts, and cultural events are increasing tourism to the downtown historical business district. These events include the annual Spam Festival, Chinese New Year's Celebration, Wine Tasting Events, and Second Saturdays. The City is also working to start up a summer weekend festival similar to the formerly popular Isleton Crawdad Festival.

The City acquired a Community Development Block Grant in 2001 to provide public water access and recreational opportunities. The City constructed a 100-foot long floating dock for tie-ups and bathroom facilities through this grant. Fishing is available year-round on the Sacramento River.

## History

There has never been a public boat launching facility at this location.

The proposed construction site was donated to the City of Isleton by the local Ramos family. It is located along the southern shore of the Sacramento River. The site was dedicated as the William Ramos Public Park and Recreation Area.

The City has received funding for a Tier 1 Boating Infrastructure Grant (BIG) project. The City will use these federal funds to design improvements to the public docking facilities. The City would like to construct the BIG project and the BLF project at the Recreation Area, which has limited shoreline available.

## Usage

There is currently no public boat launch facility in Isleton.

However, there are three existing publicly-accessible boat launch facilities on the Sacramento River within ten miles of the proposed project location. The Vieira's Resort Boat Launch is a privately-owned facility located two miles west of the proposed project site, on the south side of the river. The City of Rio Vista Boat Launch Facility is a publicly-owned facility located six miles west of the proposed project site, on the west side of the river. The Ko-Ket Resort Boat Launch is a privately-owned facility located seven miles northeast of the project site, on the south side of the river. A fourth nearby facility, the privately-owned B&W Resort Boat Launch, is four miles south of the proposed project site and provides access to the San Joaquin and Mokelumne Rivers.

## Existing Conditions

There is an existing boating and fishing dock near the project site, as well as an ADA-compliant restroom. Over the past 10 years, the dock has deteriorated due to exposure to water currents and other natural elements.

There is limited space for parking at the site as currently constructed. The William Ramos Park and Recreation Area does not have enough room to accommodate twenty vehicle-trailer parking stalls, as DBW normally requires for the investment to construct a single-lane launch ramp. The

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City has offered to lease part of a school lot that is approximately 0.1 miles south of the project site to make up for any parking deficiencies at the proposed BLF site not yet been approved. Council approval is a recommended condition of this grant. The driving directions from the ramp to this auxiliary parking lot are shown below. In the alternative, the City will provide this parking at the City owned Tower Parking Lot at 502 2<sup>nd</sup> Street located about 400 feet east from the project site.





Source: Google Maps

Vehicle access to the ramp would be provided directly from First Street. Vehicles trailering boats would exit the ramp and drive on City streets for less than a mile to access parking.

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## PROJECT DESCRIPTION

The proposed grant would provide funding to develop a final concept design, which would confirm that both the Boat Launching Facility and the BIG project can be accommodated at the proposed site. If this is confirmed, the proposed grant would provide planning funding to at least the 60% level of project designs for the future construction of the Isleton Boat Launching Facility and obtain permits that would be necessary prior to construction.

### Proposed DBW Scope

DBW will contribute up to \$200,000 for design, engineering, and permitting for the future construction of the following scope items:

**Boat ramp** – Construct a new single-lane V-grooved concrete ramp.

**Pile Guided Boarding Floats** – An 80-foot pile guided boarding float would be added.

**Driveway modifications** – Improve and modify roadways and driveways as necessary for BLF construction and functionality.

**Parking improvements** – Modify Recreation Area parking for ADA access for vehicle-boat trailer and single-vehicle parking and regular vehicle-boat trailer access. Slurry/seal and/or restripe auxiliary lot as necessary to ensure an adequate number of spaces is provided for the boat ramp.

**ADA path of travel** – Provide ADA-compliant path of travel between BLF components.

**Lighting** – Lighting at the top of the boat ramp.

**Signage** – Add directional, monument, and designation signage.

**Payment kiosk** – Add payment stations for payment of parking and launching fees.

### Cost Estimate

The estimated total project cost for design, engineering, and permitting is \$200,000. This cost estimate includes \$27,000 for developing the preliminary concept designs, \$98,000 for engineering to at least the 60% design stage, and \$75,000 for permitting once the 60% designs are complete.

### Project Status

The proposed project has been planned to the concept level, although additional concept development is necessary to ensure feasibility of both BLF and BIG construction at the Recreation Area. See Exhibits A and B on pages 8 and 9.

### Timeline

The City estimates that engineering, design, and permitting would be completed approximately two years from execution of the proposed grant agreement.

### Engineering Feasibility



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An assessment of engineering feasibility will be part of this project. The project area's size is physically constrained by the Sacramento River, location of the proposed BIG dock, roadways, and private ownership of nearby parcels.

### **Environmental Impact and Permits**

Site environmental reviews required under the California Environmental Quality Act and the National Environmental Protection Act are currently underway. Permitting has not yet begun.

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## **PROJECT METRICS**

### **Annual Launches**

According to the City of Isleton's grant application, the annual number of motorized boat launches at the proposed facility is forecasted to be 4,500. The number of non-motorized boat launches is forecasted to be 500.

### **Annual User Days**

Based on the California Boating Needs Assessment study published in 2002, the area average for numbers of users per boat (motorized) at Sacramento River is 2.88. Therefore, the estimated annual number of user days is 12,960 motorized and 500 non-motorized for a combined 13,460 (annual launches \* users per boat)

### **User Day Value**

The 2019 Boating Needs Assessment Study estimated a base user day value. This value, adjusted for CPI is \$33.51 per user. The total forecasted annual user day value for this facility is \$451,000 (user day value \* current annual user days).

### **Benefit-Cost Ratio**

A common method in the analysis of investments is to establish net present value of the benefits and costs associated with a project. If the Benefit-Cost ratio exceeds "1" then the investment, weighed against available investment alternatives, is worthy of consideration from a financial perspective.

A construction cost estimate will be developed during the grant period. Until that cost estimate has been developed, DBW cannot report an estimated Benefit-Cost ratio.

### **User Fees**

The City intends to charge \$10 to launch a boat and \$3 to park at this facility.

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## **CONCLUSION**

The Department's analysis indicates that this project, as proposed, makes needed improvements and improves public access. Further planning is necessary to determine whether this project is feasible from an engineering perspective and will be cost-effective.

## **COMMISSION ADVICE AND COMMENT**

The Department of Parks and Recreation, Division of Boating and Waterways seeks Commission Advice and Comment on the proposed \$200,000 Harbors and Watercraft Revolving Fund construction grant with a condition to the City of Isleton for improvements described in this February 10, 2022 Feasibility Report.

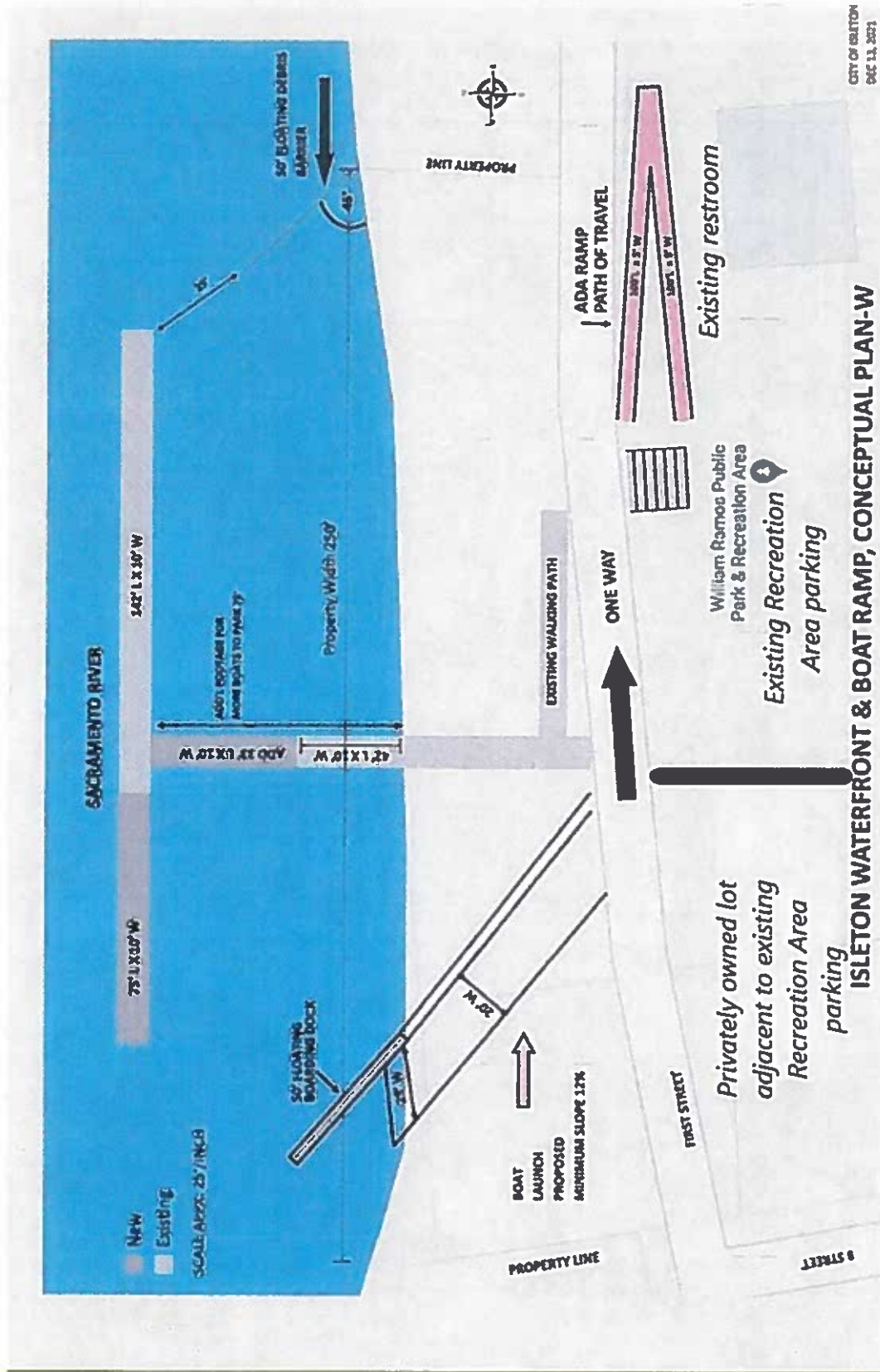
## **CONDITION**

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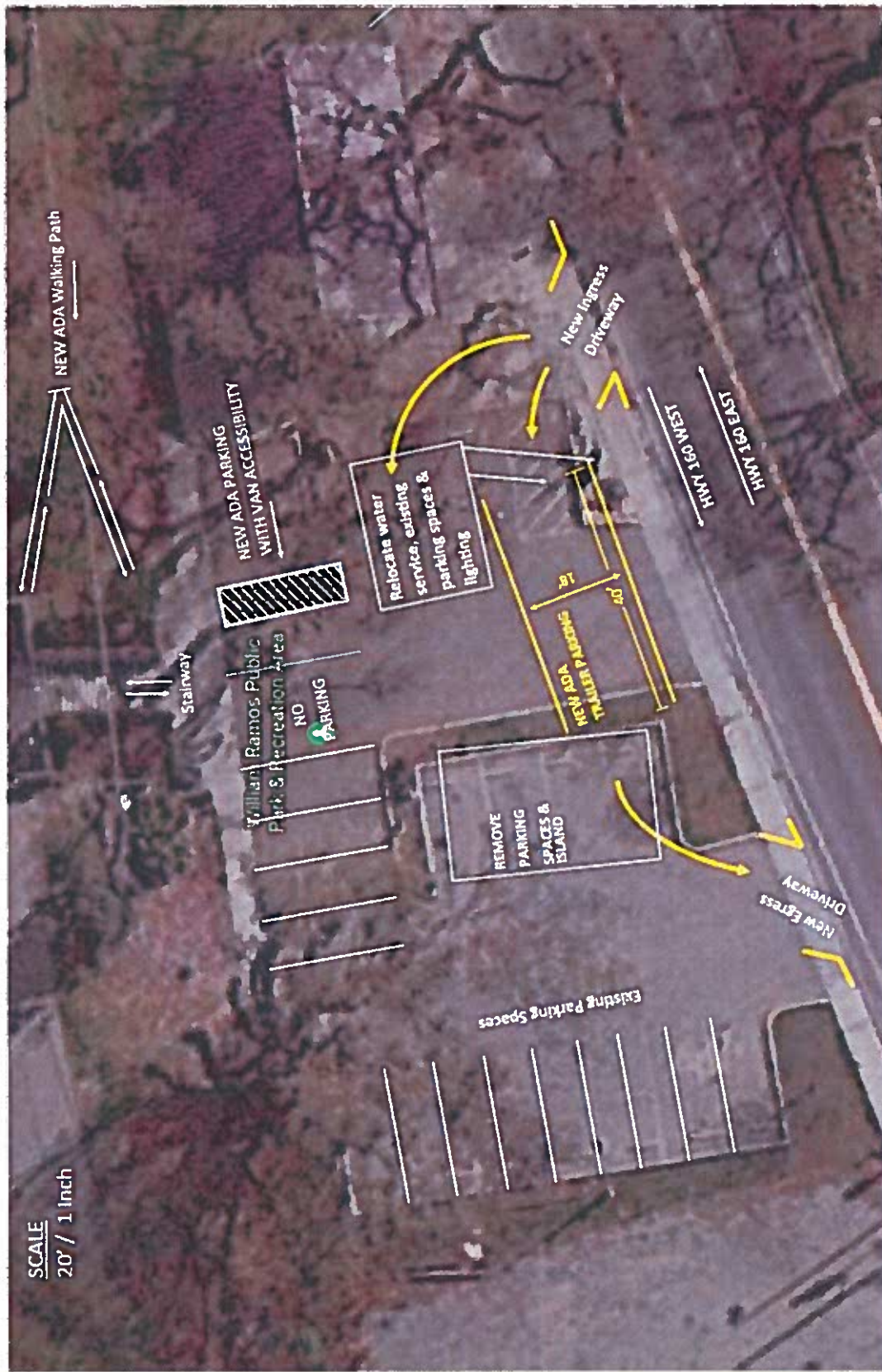
The City shall approve use of the auxiliary parking site south of the project area for the exclusive use of the BLF, beginning on or before the date BLF construction begins and ending no less than 20 years after completion of BLF construction.

Exhibit A – Concept Design for facility





**Exhibit B – Concept design for parking near ramp**



# City of Isleton

City Council  
Staff Report

DATE: April 26, 2022

ITEM#: 7.C

CATEGORY: Old Business

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## **ORDINANCE 2022-001 AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ISLETON COMPLIANCE WITH MANDATORY SB1383 NON-EXEMPT COMPONENTS EDIBLE FOOD PROGRAM REQUIREMENTS, CALGREEN RECYCLING REQUIREMENTS AND REPORTING REQUIREMENTS; 1<sup>ST</sup> READING**

### **SUMMARY**

Resolution 2022-001 was adopted on October 12, 2021 to affirm an exemption from the requirements of mandatory organics collection services associated with SB 1383. The California Climate Pollutant Reduction law, Senate Bill 1383 is to reduce disposal of organic wastes in landfills, including edible foods. This Bill also is to reduce greenhouse gas emissions.

The City is exempt from the food collection requirements; however other components of SB 1383 are still applicable to the City beyond the solid waste arena. The State is requiring all agencies comply with implementing a food recovery program. To that end various City and County departments are moving forward with steps to be in compliance with the non-exempt components of the law that fall in their area of responsibility, including:

- Edible Food Recovery Program (exemption: Stores & restaurants are below minimum size for requirements).
- CalGreen Building Standards and Model Water Efficient Landscaping Ordinance (Community Development)
- Recycled Paper Product Procurement (Administration)
- Records maintenance and submittal of reports to CalRecycle (Public Works/Compliance)

### **DISCUSSION**

The Department of Resources Recycling and Recovery (CalRecycle) requires the Cities to adopt an Ordinance to be in compliance with the non-exempt components of the law that fall in their area of responsibility.

CalRecycle administers a program to provide opportunities for the support of new and expanded edible food recovery and food waste prevention projects (food recovered for people or source reduction) in California. Projects must reduce the amount of food being disposed in landfills, thereby helping to achieve the state's short-lived climate pollutant goals.



CalRecycle estimates Isleton is eligible for an estimated \$20,000 funds to implement and maintain the program. Note the City has received an exemption from the residential requirements. Also, the stores and restaurants in Isleton are exempt from the Edible Food Recovery Program as they are below minimum size for requirements. Staff is requesting City Council adopt Ordinance 2022-001 to comply with the other listed SB 1383 non-exempt components and to maintain eligibility for future grant funds.

**FISCAL IMPACT**

The City will receive \$20,000 to implement, regulate, inspect and maintain an Edible Food Recovery Program.

State of California Department of Resources Recycling and Recovery	
SB 1383 Local Assistance Grant Program FY 2021-22 - Funding Estimates	
Jurisdiction Name	Estimated Funding Amount
<b>Sacramento</b>	
Citrus Heights	\$ 116,192
Elk Grove	\$ 234,644
Folsom	\$ 108,968
Galt	\$ 35,275
<b>Isleton</b>	<b>\$ 20,000</b>
Rancho Cordova	\$ 105,504
Sacramento	\$ 677,363
Sacramento County	\$ 775,495

**RECOMMENDATION**

Staff is recommending that the City Council adopt Ordinance 2022-001 compliance with mandatory Senate Bill 1383 and to receive funding for the Edible Food Recovery Program and any future grant funds.

**ATTACHMENTS**

1. Ordinance 2022-001 An Ordinance of the City Council of the City of Isleton Compliance with Mandatory SB 1383 Non-Exempt Components Edible Food Program Requirements, CalGreen Recycling and Reporting Requirements
2. Calrecycle Jurisdiction Food Recovery Programs

Prepared by: Diana O'Brien, Administrative Assistant  
 Reviewed by: Charles Bergson, City Manager  
 Submitted by: Yvonne Zepeda, Deputy City Clerk

## **ORDINANCE 2022-01**

### **AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ISLETON COMPLIANCE WITH MANDATORY SB1383 NON-EXEMPT COMPONENTS EDIBLE FOOD PROGRAM REQUIREMENTS, CALGREEN RECYCLING REQUIREMENTS AND REPORTING REQUIREMENTS**

**WHEREAS**, the City of ISLETON, California ("City") is a municipal corporation, duly organized under the constitution and laws of the State of California; and

**WHEREAS**, Assembly Bill 939 of 1989, the California Integrated Waste Management Act of 1989 (California Public Resources Code Section 40000, et seq., as amended, supplemented, superseded, and replaced from time to time), requires cities and counties to reduce, reuse, and recycle (including composting) solid waste generated in their jurisdictions to the maximum extent feasible before any incineration or landfill disposal of waste, to conserve water, energy, and other natural resources, and to protect the environment; and

**WHEREAS**, Assembly Bill 341 of 2011 places requirements on businesses and multi-family property owners that generate a specified threshold amount of solid waste to arrange for recycling services and requires the City to implement a mandatory commercial recycling program; and

**WHEREAS**, Assembly Bill 1826 of 2014 requires businesses and multi-family property owners that generate a specified threshold amount of solid waste, recycling, and organic waste per week to arrange for recycling services for that waste, requires the City to implement a recycling program to divert organic waste from businesses subject to the law, and requires the City to implement a mandatory commercial organics recycling program; and

**WHEREAS**, SB 1383, the Short-lived Climate Pollutant Reduction Act of 2016, requires the California Department of Resources Recycling and Recovery (CalRecycle) to develop regulations to reduce organics in landfills as a source of methane. As adopted by CalRecycle, these SB 1383 regulations (SB 1383 Regulations) place requirements on multiple entities including the City, residential households, commercial businesses and business owners, commercial edible food generators, haulers, self-haulers, food recovery organizations, and food recovery services to support achievement of statewide organic waste disposal reduction targets, and

**WHEREAS**, the SB 1383 Regulations require the City to adopt and enforce an ordinance or other enforceable mechanism to implement relevant provisions of the SB 1383 Regulations, and

**WHEREAS**, this Ordinance implements the requirements of AB 341, AB 1826, and the SB 1383 Regulations.

THE CITY COUNCIL OF THE CITY OF ISLETON, CALIFORNIA, DOES  
HEREBY ORDAIN AS FOLLOWS:

**SECTION 1.** Chapter 5.04 of the of the ISLETON Municipal Code:

**Definitions**

For the purposes of this Chapter, the following words, terms, phrases, and their derivations have the meanings given herein. Terms defined elsewhere in Title 7 shall have the same meanings herein unless expressly defined in this Chapter. When consistent with the context, words used in the present tense include the future tense, and words in the singular number include the plural number.

- A. "CalRecycle" means California's Department of Resources Recycling and Recovery, which is the Department designated with responsibility for developing, implementing, and enforcing SB 1383 Regulations on Cities (and others).
- B. "California Code of Regulations" or "CCR" means the State of California Code of Regulations. CCR references in this Article are preceded with a number that refers to the relevant Title of the CCR (e.g., "14 CCR" refers to Title 14 of CCR).
- C. "City Enforcement Official" means the city manager, or other executive in charge or their authorized Designee(s) who is/are partially or wholly responsible for enforcing the ordinance.
- D. "Commercial Business" or "Commercial" means a firm, partnership, proprietorship, joint-stock company, corporation, or association, whether for-profit or nonprofit, strip mall, industrial facility, or a multifamily residential dwelling, or as otherwise defined in 14 CCR Section 18982(a)(6). A Multi-Family Residential Dwelling that consists of fewer than five (5) units is not a Commercial Business for purposes of implementing this Chapter.
- E. "Commercial Edible Food Generator" includes a Tier One or a Tier Two Commercial Edible Food Generator as defined in Sections 7-1B-1(O O) and 7-1B-1(PPP) of this Chapter or as otherwise defined in 14 CCR Section 18982(a)(73) and (a)(74). For the purposes of this definition, Food Recovery Organizations and Food Recovery Services are not Commercial Edible Food Generators pursuant to 14 CCR Section 18982(a)(7).
- F. "Compliance Review" means a review of records by the City to determine compliance with this Chapter.
- G. "Community Composting" means any activity that composts green material, agricultural material, food material, and vegetative food material, alone or in combination, and the total amount of feedstock and Compost on-site at any one

time does not exceed 100 cubic yards and 750 square feet, as specified in 14 CCR Section 17855(a)(4); or, as otherwise defined by 14 CCR Section 18982(a)(8).

- H. "Compost" has the same meaning as in 14 CCR Section 17896.2(a)(4), which stated, as of the effective date of this Article, that "Compost" means the product resulting from the controlled biological decomposition of organic Solid Wastes that are Source Separated from the municipal Solid Waste stream, or which are separated at a centralized facility.
- I. "Compostable Plastics" or "Compostable Plastic" means plastic materials that meet the ASTM D6400 standard for compostability, or as otherwise described in 14 CCR Section 18984.1(a)(1)(A) or 18984.2(a)(1)(C).
- J. "Container Contamination" or "Contaminated Container" means a container, regardless of color, that contains Prohibited Container Contaminants, or as otherwise defined in 14 CCR Section 18982(a)(55).
- K. "C&D" means construction and demolition debris.
- L. "Designee" means an entity that the City contracts with or otherwise arranges to carry out any of the City's responsibilities of this Article as authorized in 14 CCR Section 18981.2. A Designee may be a government entity, a hauler, a private entity, or a combination of those entities.
- M. "Direct Service Provider" means a person, company, agency, district, or other entity that provides a service or services to City pursuant to a contract or other written agreement or as otherwise defined in 14 CCR Section 18982(a)(17).
- N. "Edible Food" means food intended for human consumption, or as otherwise defined in 14 CCR Section 18982(a)(18). For the purposes of this Chapter or as otherwise defined in 14 CCR Section 18982(a)(18), "Edible Food" is not Solid Waste if it is recovered and not discarded. Nothing in this Chapter or in 14 CCR, Division 7, Chapter 12 requires or authorizes the Recovery of Edible Food that does not meet the food safety requirements of the California Retail Food Code.
- O. "Enforcement Action" means an action of the City to address non-compliance with this Chapter including, but not limited to, issuing administrative citations, fines, penalties, or using other remedies.
- P. "Excluded Waste" means hazardous substance, hazardous waste, infectious waste, designated waste, volatile, corrosive, medical waste, infectious, regulated radioactive waste, and toxic substances or material that facility operator(s), which receive materials from the City

and its generators, reasonably believe(s) would, as a result of or upon acceptance, transfer, processing, or disposal, be a violation of local, State, or Federal law, regulation, or ordinance, including: land use restrictions or conditions, waste that cannot be disposed of in Class III landfills or accepted at the facility by permit conditions, waste that in City's, or its Designee's reasonable opinion would present a significant risk to human health or the environment, cause a nuisance or otherwise create or expose City, or its Designee, to potential liability; but not including de minimis volumes or concentrations of waste of a type and amount normally found in Single-Family or Multi-Family Solid Waste after implementation of programs for the safe collection, processing, recycling, treatment, and disposal of batteries and paint in compliance with Sections 41500 and 41802 of the California Public Resources Code. Excluded Waste does not include used motor oil and filters, household batteries, universal wastes, electronic waste, and/or latex paint when such materials are defined as allowable materials for collection through the City's collection programs and the generator or customer has properly placed the materials for collection pursuant to instructions provided by City or its Designee for collection services.

- Q. "Food Distributor" means a company that distributes food to entities including, but not limited to, Supermarkets and Grocery Stores, or as otherwise defined in 14 CCR Section 18982(a)(22).
- R. "Food Facility" has the same meaning as in Section 113789 of the Health and Safety Code.
- S. "Food Recovery" means actions to collect and distribute food for human consumption that otherwise would be disposed, or as otherwise defined in 14 CCR Section 18982(a)(24).
- T. "Food Recovery Organization" means an entity that engages in the collection or receipt of Edible Food from Commercial Edible Food Generators and distributes that Edible Food to the public for Food Recovery either directly or through other entities or as otherwise defined in 14 CCR Section 18982(a)(25), including, but not limited to:
  - a) A food bank as defined in Section 113783 of the Health and Safety Code;
  - b) A nonprofit charitable organization as defined in Section 113841 of the Health and Safety code; and
  - c) A nonprofit charitable temporary food facility as defined in Section 113842 of the Health and Safety Code.

A Food Recovery Organization is not a Commercial Edible Food Generator for the purposes of this Chapter and implementation of 14 CCR, Division 7, Chapter



12 pursuant to 14 CCR Section 18982(a)(7).

If the definition in 14 CCR Section 18982(a)(25) for Food Recovery Organization differs from this definition, the definition in 14 CCR Section 18982(a)(25) shall apply to this Chapter.

- U. "Food Recovery Service" means a person or entity that collects and transports Edible Food from a Commercial Edible Food Generator to a Food Recovery Organization or other entities for Food Recovery, or as otherwise defined in 14 CCR Section 18982(a)(26). A Food Recovery Service is not a Commercial Edible Food Generator for the purposes of this Chapter and implementation of 14 CCR, Division 7, Chapter 12 pursuant to 14 CCR Section 18982(a)(7).
- V. "Food Scraps" means all food such as, but not limited to, fruits, vegetables, meat, poultry, seafood, shellfish, bones, rice, beans, pasta, bread, cheese, fats, oils, grease, and eggshells.
- W. "Food Service Provider" means an entity primarily engaged in providing food services to institutional, governmental, Commercial, or industrial locations of others based on contractual arrangements with these types of organizations, or as otherwise defined in 14 CCR Section 18982(a)(27).
- X. "Food-Soiled Paper" is compostable paper material that has come in contact with food or liquid, such as, but not limited to, compostable paper plates, paper coffee cups, napkins, pizza boxes, and milk cartons.
- Y. "Food Waste" means Food Scraps.
- Z. "Gray Container" has the same meaning as in 14 CCR Section 18982(a)(28) and shall be used for the purpose of storage and collection of Gray Container Waste. The body and lid of the 'Gray Container' is black in color for 35, 64, or 95-gallon residential and commercial Solid Waste carts. The body of the 'Gray Container' is blue in color and the lid of the container is black in color for commercial 2, 3, 4, and 6 cubic yard Solid Waste bins.
- (AA) "Grocery Store" means a store primarily engaged in the retail sale of canned food; dry goods; fresh fruits and vegetables; fresh meats, fish, and poultry; and any area that is not separately owned within the store where the food is prepared and served, including a bakery, deli, and meat and seafood departments, or as otherwise defined in 14 CCR Section 18982(a)(30).
- (BB) "Inspection" means a site visit where the City reviews records, containers, and an entity's collection, handling, recycling, or landfill disposal of Organic Waste or Edible Food handling to determine if the entity is complying with requirements set forth in this Chapter, or as otherwise defined in 14 CCR Section 18982(a)(35).
- (CC) "Large Event" means an event, including, but not limited to, a sporting event

or a flea market, that charges an admission price, or is operated by a local agency, and serves an average of more than 2,000 individuals per day of operation of the event, at a location that includes, but is not limited to, a public, nonprofit, or privately owned park, parking lot, golf course, street system, or other open space when being used for an event. If the definition in 14 CCR Section 18982(a)(38) differs from this definition, the definition in 14 CCR Section 18982(a)(38) shall apply to this Chapter.

- (DD) "Large Venue" means a permanent venue facility that annually seats or serves an average of more than 2,000 individuals within the grounds of the facility per day of operation of the venue facility. For purposes of this Chapter and implementation of 14 CCR, Division 7, Chapter 12, a venue facility includes, but is not limited to, a public, nonprofit, or privately owned or operated stadium, amphitheater, arena, hall, amusement park, conference or civic center, zoo, aquarium, airport, racetrack, horse track, performing arts center, fairground, museum, theater, or other public attraction facility. For purposes of this Article and implementation of 14 CCR, Division 7, Chapter 12, a site under common ownership or control that includes more than one Large Venue that is contiguous with other Large Venues in the site, is a single Large Venue. If the definition in 14 CCR Section 18982(a)(39) differs from this definition, the definition in 14 CCR Section 18982(a)(39) shall apply to this Chapter.
- (EE) "Local Education Agency" means a school district, charter school, or county office of education that is not subject to the control of city or county regulations related to Solid Waste, or as otherwise defined in 14 CCR Section 18982(a)(40).
- (FF) "Multi-Family Residential Dwelling" or "Multi-Family" means of, from, or pertaining to residential premises with five (5) or more dwelling units. Multi-Family premises do not include hotels, motels, or other transient occupancy facilities, which are considered Commercial Businesses.
- (GG) "MWELO" refers to the Model Water Efficient Landscape Ordinance (MWELO), 23 CCR, Division 2, Chapter 2.7.
- (HH) "Non-Compostable Paper" includes but is not limited to paper that is coated in a plastic material that will not breakdown in the composting process, or as otherwise defined in 14 CCR Section 18982(a)(41).
- (II) "Non-Local Entity" means the following entities that are not subject to the City's enforcement authority, or as otherwise defined in 14 CCR Section 18982(a)(42):

1. Federal facilities located within the boundaries of the City, including the ISLETON Post Office building.

2. State agencies located within the boundaries of the City, including all Public school locations.

- (JJ) "Non-Organic Recyclables" means non-putrescible and non-hazardous recyclable wastes including but not limited to bottles, cans, metals, plastics and glass, or as otherwise defined in 14 CCR Section 18982(a)(43).
- (KK) "Notice of Violation (NOV)" means a notice that a violation has occurred that includes a compliance date to avoid an action to seek penalties, or as otherwise defined in 14 CCR Section 18982(a)(45) or further explained in 14 CCR Section 18995.4.
- (LL) "Organic Waste" means Solid Wastes containing material originated from living organisms and their metabolic waste products, including but not limited to food, green material, landscape and pruning waste, organic textiles and carpets, lumber, wood, paper products, printing and writing paper, manure, biosolids, digestate, and sludges or as otherwise defined in 14 CCR Section 18982(a)(46). Biosolids and digestate are as defined by 14 CCR Section 18982(a).
- (MM) "Organic Waste" means Solid Wastes containing material originated from living organisms and their metabolic waste products, including but not limited.
- (NN) "Organic Waste Generator" means a person or entity that is responsible for the initial creation of Organic Waste, or as otherwise defined in 14 CCR Section 18982(a)(48).
- (OO) "Paper Products" include, but are not limited to, paper janitorial supplies, cartons, wrapping, packaging, file folders, hanging files, corrugated boxes, tissue, and toweling, or as otherwise defined in 14 CCR Section 18982(a)(51).
- (PP) "Printing and Writing Papers" include, but are not limited to, copy, xerographic, watermark, cotton fiber, offset, forms, computer printout paper, white wove envelopes, manila envelopes, book paper, note pads, writing tablets, newsprint, and other uncoated writing papers, posters, index cards, calendars, brochures, reports, magazines, and publications, or as otherwise defined in 14 CCR Section 18982(a)(54).
- (QQ) "Prohibited Container Contaminants" means the following: (a) discarded materials placed in the Blue Container that are not identified as acceptable Source Separated Recyclable Materials for the City's Blue Container; (b) discarded materials placed in the Green Container that are not identified as acceptable Source Separated Green Container Organic Waste for the City's Green Container; (c) discarded materials placed in the Gray Container that are acceptable Source Separated Recyclable Materials and/or Source Separated Green Container Organic Wastes to be placed in City's Green Container and/or

Blue Container; and, (d) Excluded Waste placed in any container.

(RR) "Recovered Organic Waste Products" means products made from California, landfill- diverted recovered Organic Waste processed in a permitted or otherwise authorized facility, or as otherwise defined in 14 CCR Section 18982(a)(60).

(SS) "Recovery" means any activity or process described in 14 CCR Section 18983.1(b), or as otherwise defined in 14 CCR Section 18982(a)(49).

(TT) "Recycled-Content Paper" means Paper Products and Printing and Writing Paper that consists of at least 30 percent, by fiber weight, postconsumer fiber, or as otherwise defined in 14 CCR Section 18982(a)(61).

(WW) "Regional Agency" means regional agency as defined in Public Resources Code Section 40181.

(XX) "Regional or County Agency Enforcement Official" means a regional or county agency enforcement official, designated by the City with responsibility for enforcing the ordinance in conjunction or consultation with City Enforcement Official.

(YY) "Restaurant" means an establishment primarily engaged in the retail sale of food and drinks for on-premises or immediate consumption, or as otherwise defined in  
in  
14 CCR Section 18982(a)(64).

(ZZ) "Route Review" means a visual Inspection of containers along a Hauler Route for the purpose of determining Container Contamination, and may include mechanical Inspection methods such as the use of cameras, or as otherwise defined in 14  
CCR Section 18982(a)(65).

(AAA) "SB 1383" means Senate Bill 1383 of 2016 approved by the Governor on  
September 19, 2016, which added Sections 39730.5, 39730.6, 39730.7, and 39730.8 to the Health and Safety Code, and added Chapter 13.1 (commencing with Section 42652) to Part 3 of Division 30 of the Public Resources Code, establishing methane emissions reduction targets in a Statewide effort to reduce emissions of short-lived climate pollutants as amended, supplemented, superseded, and replaced from time to time.

(BBB) "SB 1383 Eligible Mulch" means mulch eligible to meet the Annual Recovered Organic Waste Product Procurement Target, pursuant to 14 CCR Chapter 12 of Division 7. This SB 1383 Eligible Mulch shall meet the following conditions for the duration of the applicable procurement compliance year, as specified by 14 CCR Section 18993.1(f)(4):

1. Produced at one of the following facilities:
  - (a) A compostable material handling operation or facility as defined in 14 CCR Section 17852(a)(12), that is permitted or authorized under 14 CCR Division 7, other than a chipping and grinding operation or facility as defined in 14 CCR Section 17852(a)(10);
  - (b) A transfer/processing facility or transfer/processing operation as defined in 14 CCR Sections 17402(a)(30) and (31), respectively, that is permitted or authorized under 14 CCR Division 7; or,
  - (c) A solid waste landfill as defined in Public Resources Code Section 40195.1 that is permitted under 27 CCR Division 2.
2. Meet or exceed the physical contamination, maximum metal concentration, and pathogen density standards for land application specified in 14 CCR Sections 17852(a)(24.5)(A)1 through 3, as enforced by Section 6-3-708(a).

(CCC) "SB 1383 Regulations" or "SB 1383 Regulatory" means or refers to, for the purposes of this Chapter, the Short-Lived Climate Pollutants: Organic Waste Reduction regulations developed by CalRecycle and adopted in 2020 that created 14 CCR, Division 7, Chapter 12 and amended portions of regulations of 14 CCR and 27 CCR.

(DDD) "State" means the State of California.

(EEE) "Supermarket" means a full-line, self-service retail store with gross annual sales of two million dollars (\$2,000,000), or more, and which sells a line of dry grocery, canned goods, or nonfood items and some perishable items, or as otherwise defined in 14 CCR Section 18982(a)(71).

(FFF) "Tier One Commercial Edible Food Generator" means a Commercial Edible Food Generator that is one of the following:

1. Supermarket.
2. Grocery Store with a total facility size equal to or greater than 10,000 square feet.
3. Food Service Provider.
4. Food Distributor.
5. Wholesale Food Vendor.

If the definition in 14 CCR Section 18982(a)(73) of Tier One Commercial Edible Food Generator differs from this definition, the definition in 14 CCR Section 18982(a)(73) shall apply to this Chapter.

(GGG) "Tier Two Commercial Edible Food Generator" means a Commercial Edible Food Generator that is one of the following:



1. Restaurant with 250 or more seats, or a total facility size equal to or greater than 5,000 square feet.
2. Hotel with an on-site Food Facility and 200 or more rooms.
3. Health facility with an on-site Food Facility and 100 or more beds.
4. Large Venue.
5. Large Event.
6. A State agency with a cafeteria with 250 or more seats or total cafeteria facility size equal to or greater than 5,000 square feet.
7. A Local Education Agency facility with an on-site Food Facility.

If the definition in 14 CCR Section 18982(a)(74) of Tier Two Commercial Edible Food Generator differs from this definition, the definition in 14 CCR Section 18982(a)(74) shall apply to this Chapter.

(HHH) "Wholesale Food Vendor" means a business or establishment engaged in the merchant wholesale distribution of food, where food (including fruits and vegetables) is received, shipped, stored, prepared for distribution to a retailer, warehouse, distributor, or other destination, or as otherwise defined in 14 CCR Section 189852(a)(76).

#### **Requirements for Commercial Edible Food Generators**

- A. Tier One Commercial Edible Food Generators must comply with the requirements of this Section 7 - 1 B - 5 commencing January 1, 2022, and Tier Two Commercial Edible Food Generators must comply commencing January 1, 2024, pursuant to 14 CCR Section 18991.3.
- B. Large Venue or Large Event operators not providing food services, but allowing for food to be provided by others, shall require Food Facilities operating at the Large Venue or Large Event to comply with the requirements of this Section, commencing January 1, 2024.
- C. Commercial Edible Food Generators shall comply with the following requirements:
  1. Arrange to recover the maximum amount of Edible Food that would otherwise be disposed.
  2. Contract with, or enter into a written agreement with, Food Recovery Organizations or Food Recovery Services for: (a) the collection of Edible Food for Food Recovery; or, (b) acceptance of the Edible Food that the Commercial Edible Food Generator self-hauls to the Food Recovery Organization for Food Recovery.
  3. Shall not intentionally spoil Edible Food that is capable of being recovered by a Food Recovery Organization or a Food Recovery Service.
  4. Allow City's designated enforcement entity or designated third party enforcement entity to access the premises and review records pursuant to 14

CCR Section 18991.4.

5. Keep records that include the following information, or as otherwise specified in 14 CCR Section 18991.4:
  - (a) A list of each Food Recovery Service or organization that collects or receives its Edible Food pursuant to a contract or written agreement established under 14 CCR Section 18991.3(b).
  - (b) A copy of all contracts or written agreements established under 14 CCR Section 18991.3(b).
  - (c) A record of the following information for each of those Food Recovery Services or Food Recovery Organizations:
    - (1) The name, address and contact information of the Food Recovery Service or Food Recovery Organization.
    - (2) The types of food that will be collected by or self-hauled to the Food Recovery Service or Food Recovery Organization.
    - (3) The established frequency that food will be collected or self-hauled.
    - (4) The quantity of food, measured in pounds recovered per month, collected or self-hauled to a Food Recovery Service or Food Recovery Organization for Food Recovery.
6. No later than March 31st of each year, commencing no later than February 1, 2023 for Tier One Commercial Edible Food Generators and February 1, 2025 for Tier Two Commercial Edible Food Generators, provide an annual Food Recovery report to the City that includes the following information:
  - (a) A copy of all contracts or written agreements established under 14 CCR Section 18991.3(b).
  - (b) The quantity of food, measured in annual pounds recovered, collected or self-hauled to a Food Recovery Service or Food Recovery Organization for Food Recovery.
  - (c) The name, address and contact information of the Food Recovery Service or Food Recovery Organization.
  - (d) Nothing in this Article shall be construed to limit or conflict with the protections provided by the California Good Samaritan Food Donation Act of 2017, the Federal Good Samaritan Act, or share table and school food

donation guidance pursuant to Senate Bill 557 of 2017 (approved by the Governor of the State of California on September 25, 2017, which added Article 13 [commencing with Section 49580] to Chapter 9 of Part 27 of Division 4 of Title 2 of the Education Code, and to amend Section 114079 of the Health and Safety Code, relating to food safety, as amended, supplemented, superseded and replaced from time to time).

### **Requirements for Food Recovery Organizations and Services**

- A. Food Recovery Services collecting or receiving Edible Food directly from Commercial Edible Food Generators, via a contract or written agreement established under 14 CCR Section 18991.3(b), shall maintain the following records, or as otherwise specified by 14 CCR Section 18991.5(a)(1):
1. The name, address, and contact information for each Commercial Edible Food Generator from which the service collects Edible Food.
  2. The quantity in pounds of Edible Food collected from each Commercial Edible Food Generator per month.
  3. The quantity in pounds of Edible Food transported to each Food Recovery Organization per month.
  4. The name, address, and contact information for each Food Recovery Organization that the Food Recovery Service transports Edible Food to for Food Recovery.
- B. Food Recovery Organizations collecting or receiving Edible Food directly from Commercial Edible Food Generators, via a contract or written agreement established under 14 CCR Section 18991.3(b), shall maintain the following records, or as otherwise specified by 14 CCR Section 18991.5(a)(2):
1. The name, address, and contact information for each Commercial Edible Food Generator from which the organization receives Edible Food.
  2. The quantity in pounds of Edible Food received from each Commercial Edible Food Generator per month.
  3. The name, address, and contact information for each Food Recovery Service that the organization receives Edible Food from for Food Recovery.
- C. No later than March 31st of each year, commencing March 31, 2023 Food Recovery Organizations and Food Recovery Services that have their primary address physically located in the City and contract with or have written agreements with one or more Commercial Edible Food Generators pursuant to 14 CCR Section 18991.3(b) shall report to the City the total pounds of Edible Food recovered in the previous calendar year from the Tier One and Tier Two Commercial Edible Food Generators they have established a contract or written agreement with pursuant to 14 CCR

Section 18991.3(b).

A. Food Recovery Capacity Planning

1. Food Recovery Services and Food Recovery Organizations. In order to support Edible Food Recovery capacity planning assessments or other studies conducted by the City or its designated entity, Food Recovery Services and Food Recovery Organizations operating in the City shall provide information and consultation to the City, upon request, regarding existing, or proposed new or expanded, Food Recovery capacity that could be accessed by the City and its Commercial Edible Food Generators. A Food Recovery Service or Food Recovery Organization contacted by the City shall respond to such request for information within 60 days, unless a shorter timeframe is otherwise specified by the City.

**Requirements for Haulers and Facility Operators**

A. Requirements for Haulers

1. Exclusive franchised hauler providing residential, Commercial, or industrial Organic Waste collection services to generators within the City's boundaries shall meet the following requirements and standards as a condition of approval of a contract, agreement, or other authorization with the City to collect Organic Waste:

- (a) Through written notice to the City annually on or before March 15<sup>TH</sup> identify the facilities to which they will transport Organic Waste including facilities for Source Separated Recyclable Materials and Source Separated Green Container Organic Waste.
- (b) Transport Source Separated Recyclable Materials and Source Separated Green Container Organic Waste to a facility, operation, activity, or property that recovers Organic Waste as defined in 14 CCR, Division 7, Chapter 12, Article 2.
- (c) Obtain approval from the City to haul Organic Waste, unless it is transporting Source Separated Organic Waste to a Community Composting site or lawfully transporting C&D in a manner that complies with 14 CCR Section 18989.1, this Article, and City's C&D ordinance.

B. Requirements for Facility Operators and Community Composting Operations

1. Owners of facilities, operations, and activities that recover Organic Waste, including, but not limited to, Compost facilities, in-vessel digestion facilities, and publicly-owned treatment works shall, upon City request, provide information regarding available and potential new

or expanded capacity at their facilities, operations, and activities, including information about throughput and permitted capacity necessary for planning purposes. Entities contacted by the City shall respond within 60 days.

2. Community Composting operators, upon City request, shall provide information to the City to support Organic Waste capacity planning, including, but not limited to, an estimate of the amount of Organic Waste anticipated to be handled at the Community Composting operation. Entities contacted by the City shall respond within 60 days.
3. If the material is transported to an entity that does not have scales on-site, or employs scales incapable of weighing the Self-Hauler's vehicle in a manner that allows it to determine the weight of materials received, the Self-Hauler is not required to record the weight of material but shall keep a record of the entities that received the Organic Waste.

### **Procurement Requirements for City Departments, Direct Service Providers, and Vendors**

A. Direct Service Providers of landscaping maintenance, renovation, and construction shall:

1. Use Compost and SB 1383 Eligible Mulch, as practicable, produced from recovered Organic Waste, for all landscaping renovations, construction, or maintenance performed for the City, whenever available, and capable of meeting quality standards and criteria specified. SB 1383 Eligible Mulch used for land application shall comply with 14 CCR, Division 7, Chapter 12, Article 12 and must meet or exceed the physical contamination, maximum metal concentration and pathogen density standards specified in 14 CCR Section 17852(a)(24.5)(A)(1) through (3).
2. Keep and provide records of Procurement of Recovered Organic Waste Products (either through purchase or acquisition) to City, upon completion of projects. Information to be provided shall include:
  - (a) Through written notice to the City annually on or before March 15<sup>TH</sup> identify the facilities to which they will transport Organic Waste incl
  - (b) General description of how and where the product was used and if applicable, applied;
  - (c) Source of product, including name, physical location, and contact information for each entity, operation, or facility from whom the Recovered Organic Waste Products were procured;
  - (d) Type of product;



(e) (d) Quantity of each product, and

(f) Invoice or other record demonstrating purchase or procurement.

B. All vendors providing Paper Products and Printing and Writing Paper shall:

1. If fitness and quality are equal, provide Recycled-Content Paper Products and Recycled-Content Printing and Writing Paper that consists of at least 30 percent, by fiber weight, postconsumer fiber instead of non-recycled products whenever recycled Paper Products and Printing and Writing Paper are available at the same or lesser total cost than non-recycled items or at a total cost of no more than 10% of the total cost for non-recycled items.
2. Provide Paper Products and Printing and Writing Paper that meet Federal Trade Commission recyclability standard as defined in 16 Code of Federal Regulations (CFR) Section 260.12.
3. Certify in writing, under penalty of perjury, the minimum percentage of postconsumer material in the Paper Products and Printing and Writing Paper offered or sold to the City. This certification requirement may be waived if the percentage of postconsumer material in the Paper Products, Printing and Writing Paper, or both can be verified by a product label, catalog, invoice, or a manufacturer or vendor internet website.
4. Certify in writing, on invoices or receipts provided, that the Paper Products and Printing and Writing Paper offered or sold to the City is eligible to be labeled with an unqualified recyclable label as defined in 16 Code of Federal Regulations (CFR) Section 260.12 (2013).
5. Provide records to the City's Recovered Organic Waste Product procurement recordkeeping staff, in accordance with the City's Recycled-Content Paper procurement policy(ies) of all Paper Products and Printing and Writing Paper purchases within thirty (30) days of the purchase (both recycled-content and non-recycled content, if any is purchased) made by any division or department or employee of the City. Records shall include a copy (electronic or paper) of the invoice or other documentation of purchase, written certifications as required in Sections 6-3-708(b)(3) and 6-3-708(b)(4) of this Article for recycled-content purchases, purchaser name, quantity purchased, date purchased, and recycled content (including products that contain none), and if non-recycled content Paper Products or Printing and Writing Papers are provided, include a description of why Recycled-Content Paper Products or Printing and Writing Papers were not provided.

### **Compliance with CALGreen Recycling Requirements**

- A. Persons applying for a permit from the City for new construction and building additions and alternations shall comply with the requirements of this Section and all required components of the California Green Building Standards Code, 24 CCR, Part 11, known as CALGreen, as amended, if its project is covered by the scope of CALGreen. If the requirements of CALGreen are more stringent than the requirements of this Section, the CALGreen requirements shall apply.
- B. Project applicants shall refer to City's building and/or planning code for complete CALGreen requirements.
- C. For projects covered by CALGreen, the applicants must, as a condition of the City's permit approval, comply with the following:
  - 1. Where five (5) or more Multi-Family dwelling units are constructed on a building site, provide readily accessible areas that serve occupants of all buildings on the site and are identified for the storage and collection of Blue Container and Green Container materials, consistent with the three-container collection program offered by the City, or comply with provision of adequate space for recycling for Multi-Family and Commercial premises pursuant to Sections 4.408.1, 4.410.2, 5.408.1, and 5.410.1 of the California Green Building Standards Code, 24 CCR, Part 11 as amended provided amended requirements are more stringent than the CALGreen requirements for adequate recycling space effective January 1, 2020.
  - 2. New Commercial construction or additions resulting in more than 30% of the floor area shall provide readily accessible areas identified for the storage and collection of Blue Container and Green Container materials, consistent with the three-container collection program offered by the City's franchise waste hauler, or shall comply with provision of adequate space for recycling for Multi-Family and Commercial premises pursuant to Sections 4.408.1, 4.410.2, 5.408.1, and 5.410.1 of the California Green Building Standards Code, 24 CCR, Part 11 as amended provided amended requirements are more stringent than the CALGreen requirements for adequate recycling space effective January 1, 2020.
  - 3. Comply with CALGreen requirements and applicable law related to management of C&D, including diversion of Organic Waste in C&D from disposal. Comply with City's C&D regulations, and all written and published City policies and/or administrative guidelines regarding the collection, recycling, diversion, tracking, and/or reporting of C&D.

### **Model Water Efficient Landscaping Ordinance Requirements**

- A. Property owners or their building or landscape designers, including anyone requiring a building or planning permit, plan check, or landscape design

review from the City, who are constructing a new Single-Family, Multi-Family, public, institutional, or Commercial project with a landscape area greater than 500 square feet, or rehabilitating an existing landscape with a total landscape area greater than 2,500 square feet, shall comply with Sections 492.6(a)(3)(B) (C), (D), and (G) of the MWELO, including sections related to use of Compost and mulch as delineated in this Section.

The following Compost and mulch use requirements that are part of the MWELO are now also included as requirements of this Chapter.

Property owners or their building or landscape designers that meet the threshold for MWELO compliance outlined in 6-3-710(a) above shall:

1. Comply with Sections 492.6 (a)(3)(B)(C),(D) and (G) of the MWELO, which requires the submittal of a landscape design plan with a soil preparation, mulch, and amendments section to include the following:
    - (a) For landscape installations, Compost at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six (6) inches into the soil. Soils with greater than six percent (6%) organic matter in the top six (6) inches of soil are exempt from adding Compost and tilling.
    - (b) For landscape installations, a minimum three- (3-) inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, creeping or rooting groundcovers, or direct seeding applications where mulch is contraindicated. To provide habitat for beneficial insects and other wildlife up to five percent (5%) of the landscape area may be left without mulch. Designated insect habitat must be included in the landscape design plan as such.
    - (c) Organic mulch materials made from recycled or post-consumer materials shall take precedence over inorganic materials or virgin forest products unless the recycled post-consumer organic products are not locally available. Organic mulches are not required where prohibited by local fuel modification plan guidelines or other applicable local ordinances.
  2. The MWELO compliance items listed in this Section are not an inclusive list of MWELO requirements; therefore, property owners or their building or landscape designers that meet the threshold for MWELO compliance outlined in this Section shall consult the full MWELO for all requirements.
- B. If, after the adoption of this Article, the California Department of Water Resources, or its successor agency, amends 23 CCR, Division 2, Chapter 2.7, Sections 492.6(a)(3)(B) (C), (D), and (G) of the MWELO September 15, 2015 requirements in a manner that requires the City to incorporate the

requirements of an updated MWELo in a local ordinance, and the amended requirements include provisions more stringent than those required in this Section, the revised requirements of 23CCR, Division 2, Chapter 2.7 shall be enforced.

### **Inspections and Investigations by City**

- A. City representatives and/or its designated entity, including Designees, are authorized to conduct Inspections and investigations, at random or otherwise, of any collection container, collection vehicle loads, or transfer, processing, or disposal facility for materials collected from generators, or Source Separated materials to confirm compliance with this Article by Organic Waste Generators, Commercial Businesses (including Multi-Family Residential Dwellings), property owners, Commercial Edible Food Generators, haulers, Self-Haulers, Food Recovery Services, and Food Recovery Organizations, subject to applicable laws. This Section does not allow City to enter the interior of a private residential property for Inspection.
- B. Regulated entity shall provide or arrange for access during all Inspections (with the exception of residential property interiors) and shall cooperate with the City's employee or its designated entity/Designee during such Inspections and investigations. Such Inspections and investigations may include confirmation of proper placement of materials in containers, Edible Food Recovery activities, records, or any other requirement of this Article described herein. Failure to provide or arrange for: (a) access to an entity's premises; or (b) access to records for any Inspection or investigation is a violation of this Article and may result in penalties described.
- C. Any records obtained by a City during its Inspections and other reviews shall be subject to the requirements and applicable disclosure exemptions of the Public Records Act as set forth in Government Code Section 6250 et seq.
- D. City representatives, its designated entity, and/or Designee are authorized to conduct any Inspections or other investigations as reasonably necessary to further the goals of this Article, subject to applicable laws.
- E. City shall receive written complaints from persons regarding an entity that may be potentially non-compliant with SB 1383 Regulations, including receipt of anonymous complaints.

### **Enforcement**

- A. Violation of any provision of this Article shall constitute grounds for issuance of a Notice of Violation and assessment of a fine by a City Enforcement Official or representative. Enforcement Actions under this Chapter are issuance of an administrative citation and assessment of a fine. The City's procedures on imposition of administrative fines set forth in Title 1, Chapter 4 through Chapter 4 B are hereby incorporated in their entirety, as modified from time to time, and shall govern the imposition, enforcement, collection, and review of administrative citations issued to enforce this Chapter and any rule or regulation adopted pursuant to this Chapter, except as otherwise indicated in this Chapter.

B. Other remedies allowed by law may be used, including civil action or prosecution as misdemeanor or infraction. City may pursue civil actions in the California courts to seek recovery of unpaid administrative citations. City may choose to delay court action until such time as a sufficiently large number of violations, or cumulative size of violations exist such that court action is a reasonable use of City staff and resources.

C. Responsible Entity for Enforcement

1. Enforcement pursuant to this Chapter may be undertaken by the City Enforcement Official, which may be the city manager, the development services director, or their designated entity, legal counsel, or combination thereof.
2. Enforcement may also be undertaken by a Regional or County Agency Enforcement Official, designated by the City, in consultation with City Enforcement Official.
  - (a) City Enforcement Official(s) and Regional or County Agency Enforcement Official will interpret ordinance; determine the applicability of waivers, if violation(s) have occurred; implement Enforcement Actions; and, determine if compliance standards are met.
  - (b) City Enforcement Official(s) and Regional or County Agency Enforcement Official may issue Notices of Violation(s).

D. Process for Enforcement

1. City Enforcement Officials or Regional or County Enforcement Officials and/or their Designee will monitor compliance with the ordinance randomly and through Compliance Reviews, Route Reviews, investigation of complaints, and an Inspection program. Section 7-1B-12 establishes City's right to conduct Inspections and investigations.
2. City may issue an official notification to notify regulated entities of its obligations under the ordinance.
3. City shall issue a Notice of Violation requiring compliance within 60 days of issuance of the notice.
4. Absent compliance by the respondent within the deadline set forth in the Notice of Violation, City shall commence an action to impose penalties, via an administrative citation and fine, pursuant to the City's Administrative Citation ordinance in Title 1, Chapter 4 through Chapter 4B.

Notices shall be sent to "owner" at the official address of the owner



maintained by the tax collector for the City or if no such address is available, to the owner at the address of the dwelling or Commercial property or to the party responsible for paying for the collection services, depending upon available information.

#### 5. Penalty Amounts for Types of Violations

Consistent with Section 1-4-5, the penalty levels are as follows:

- (a) For a first violation, the amount of the base penalty shall be \$100 per violation.
- (b) For a second violation, the amount of the base penalty shall be \$200 per violation.
- (c) For a third or subsequent violation, the amount of the base penalty shall be \$500 per violation.

#### 6. Compliance Deadline Extension Considerations

The City may extend the compliance deadlines set forth in a Notice of Violation issued in accordance with Section 7-1B-13 if it finds that there are extenuating circumstances beyond the control of the respondent that make compliance within the deadlines impracticable, including the following:

- Acts of God such as earthquakes, wildfires, flooding, and other emergencies or natural disasters;
- Delays in obtaining discretionary permits or other government agency approvals; or,
- Deficiencies in Organic Waste recycling infrastructure or Edible Food Recovery capacity and the City is under a corrective action plan with CalRecycle pursuant to 14 CCR Section 18996.2 due to those deficiencies.

#### E. Appeals Process

Consistent with Section 1-4A-30 through 1-4A-48, persons receiving an administrative citation containing a penalty for an uncorrected violation may request a hearing to appeal the citation. A hearing will be held only if it is requested within the time prescribed and consistent with City's procedures in the City's codes for appeals of administrative citations. Evidence may be presented at the hearing. The City will appoint a hearing officer who shall conduct the hearing and issue a final written order.

#### F. Education Period for Non-Compliance

Beginning January 1, 2022 and through December 31, 2023, City or its Designee

will conduct Inspections, Route Reviews or waste evaluations, and Compliance Reviews, depending upon the type of regulated entity, to determine compliance, and if City determines that Organic Waste Generator, Self-Hauler, hauler, Tier One Commercial Edible Food Generator, Food Recovery Organization, Food Recovery Service, or other entity is not in compliance, it shall provide educational materials to the entity describing its obligations under this Article and a notice that compliance is required by January 1, 2022, and that violations may be subject to administrative civil penalties starting on January 1, 2024.

#### G. Civil Penalties for Non-Compliance

Beginning January 1, 2024, if the City determines that an Organic Waste Generator, Self-Hauler, hauler, Tier One or Tier Two Commercial Edible Food Generator, Food Recovery Organization, Food Recovery Service, or other entity is not in compliance with this Article, it shall document the noncompliance or violation, issue a Notice of Violation, and take Enforcement Action pursuant to Section 7-1B-13, as needed.

#### Effective Date

This Chapter shall be effective 30 days from the date of passage.

**SECTION 2.** Chapter 5.04 adding Compliance with CalGreen Recycling Requirements Persons applying for a permit from the City for new construction and building additions and alternations shall also comply with the requirements of Section 7-1B-10 (Compliance with CALGreen Recycling Requirements) found in Chapter 1B (Organic Waste Disposal Reduction) of Title 7 (Health and Sanitation)."

**SECTION 3.** Chapter 5.04 the Isleton Municipal Code is hereby amended to add Section Compost and Mulch Use Requirements.

Property owners or their building or landscape designers, including anyone requiring a building or planning permit, plan check, or landscape design review from the City, who are constructing a new Single-Family, Multi-Family, public, institutional, or Commercial project with a landscape area greater than 500 square feet, or rehabilitating an existing landscape with a total landscape area greater than 2,500 square feet shall comply with the requirements of Section 7-1B-11 (Model Water Efficient Landscaping Ordinance Requirements) found in Chapter 1B (Organic Waste Disposal Reduction) of Title 7 (Health and Sanitation)."

**SECTION 4. CEQA.** The City Council finds that this Ordinance is exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Sections 15061(b)(3) and 15308 on the grounds that it can be seen with certainty that the enhanced solid waste regulations, as provided for in this Ordinance will not have a significant effect on the environment and that the new requirements, which strengthen requirements for the handling of solid waste, represent actions by a regulatory agency (the City) for the protection of the environment.

**SECTION 5. Severability.** If any section, subsection, subdivision, sentence, clause, phrase, or portion of this Ordinance for any reason is held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance. The City Council hereby declares that it would have adopted this Ordinance, and each section, subsection, subdivision, sentence, clause, phrase, or portion thereof, irrespective of the fact that any one or more sections, subsections, subdivisions, sentences, clauses, phrases, or portions thereof be declared invalid or unconstitutional.

**SECTION 6. Effective Date.** This Ordinance shall take effect and be in force thirty (30) days after its passage.

**SECTION 7. Publication.** The Deputy City Clerk shall certify to the adoption of this Ordinance and shall post or publish this Ordinance as required by law.

**PASSED, APPROVED AND ADOPTED** at a regular meeting of the City Council of the City of ISLETON this \_\_\_\_\_ day of \_\_\_\_\_, 2021, by the following vote:

Ayes:

Noes:

Absent:

\_\_\_\_\_  
Eric Pene, Mayor

ATTEST:

\_\_\_\_\_  
Yvonne Zepeda, Deputy City Clerk