

Thermal-Oasis Active Transportation Project

Location Hydraulic Study

Prepared for:
Riverside County
Transportation Department

Prepared by:
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630



December 2021

1.0 Introduction

1.1 Purpose of Report

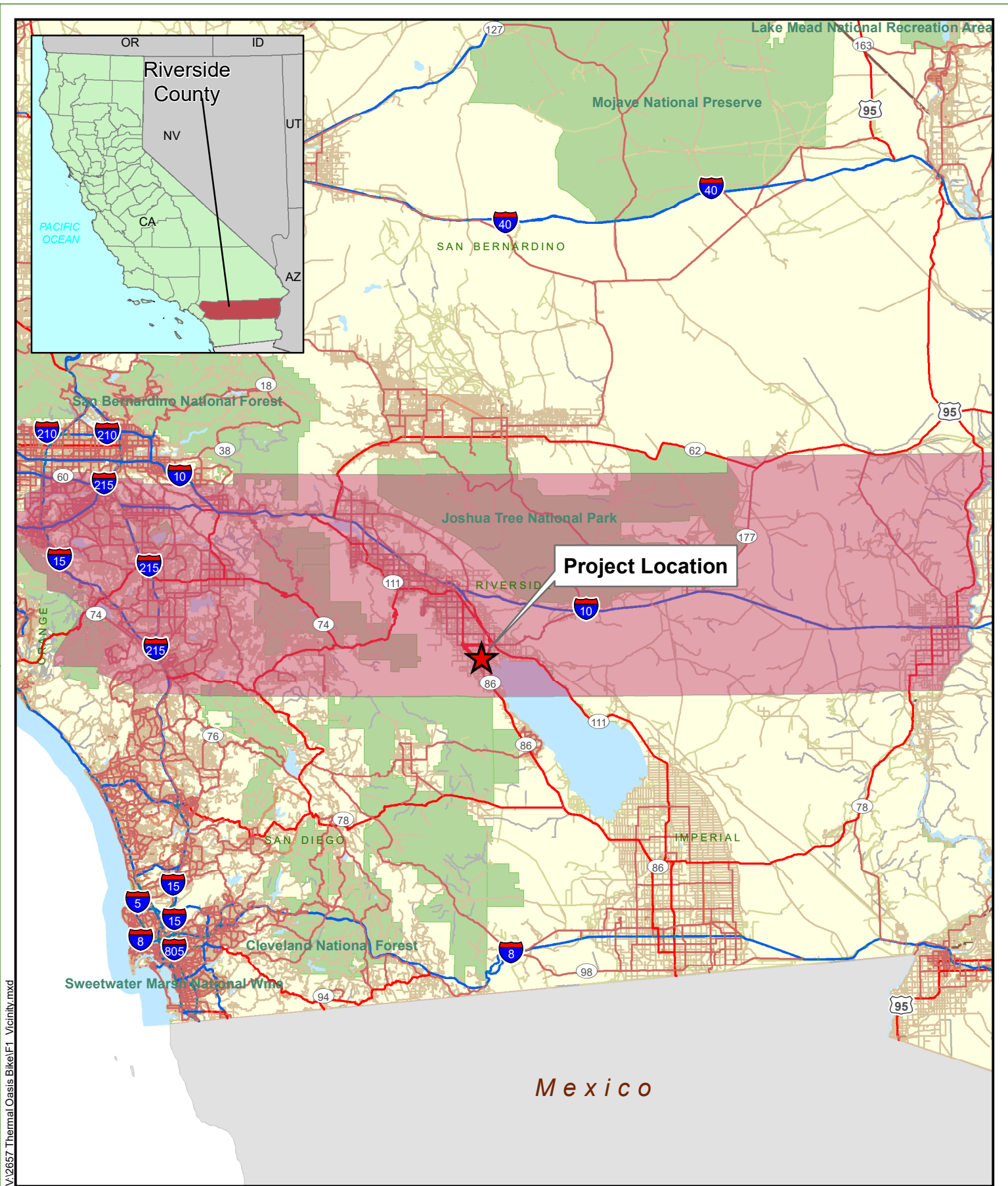
This report complies with Executive Order 11988, Floodplain Management, (May 24, 1977) which requires an assessment of any project that may encroach upon the base (100-year) floodplain. The purpose of the report is to evaluate whether the proposed project is in accordance with Title 23, Code of Federal Regulations (CFR), Part 650.111, entitled Location Hydraulic Studies. The regulations identify key items to be discussed in this report which are as follows: the significance of the risk or environmental impact, for all encroachments, the risks associated with implementation of the project, the impacts on natural and beneficial flood-plain values, and the discouragement of probable incompatible flood-plain development.

1.2 Project Description

The County of Riverside, in cooperation with the California Department of Transportation (Caltrans), proposes to construct approximately 14 miles of multi-function trail and sidewalk infrastructure in the communities of Thermal and Oasis in the eastern Coachella Valley, Riverside County. The general route is a multi-function trail loop that runs along 66th Avenue, Pierce Street, 74th Avenue and Harrison Street, with an additional segment extending north along Harrison Street to Echols Road and a sidewalk along Middleton Street between Harrison Street and 66th Avenue. An additional sidewalk would supplement the multi-function trail on the portion of 66th Avenue between Harrison Street and Tyler Street. Along a portion of 66th Avenue the trail alignment is anticipated to occupy a raised access path along an existing irrigation channel, owned and operated by the Coachella Valley Water District (CVWD) outside of the road right of way. The trail may also be placed along a CVWD canal on top of the adjacent levee at the intersection of Fillmore Street and 66th Avenue to its connection on Pierce Street, pending approval from CVWD to utilize this access road for the trail alignment. The project area encompasses both the potential trail alignment along the CVWD levee access road and the area along 66th Avenue and Pierce Street in the event that the trail cannot be placed adjacent to the canal. Similarly, the project area extends along Middleton Street, south of Harrison Street in the event the sidewalk is extended along this area to provide additional access to this commercial and residential area. See Figure 1 for the project vicinity and Figure 2 for the project location.

The proposed multi-function trail is a paved asphalt 10-foot-wide path situated primarily within road right of way with a minimum 5-foot buffer from the adjacent travel lanes. The proposed concrete sidewalk will be 5-foot-wide with adjacent street-side curb constructed at the edge of the existing travel lane.

Several crossings will be required at intersecting streets and driveways along the multi-function trail route. All crossings will be at-grade and controlled in accordance with existing traffic control measures, unless specific safety concerns dictate otherwise. Although the preferred multi-function trail route is planned along the inside of the overall street loop to minimize arterial street crossings, it is anticipated that the alignment may shift outside the loop in places. Any street crossings will be at-grade and appropriate traffic control will be installed.



V:\2657_Thermal Oasis Bike\F1_Vicinity.mxd

Source: ESRI 2008; Dokken Engineering 12/14/2020; Created By: ahale

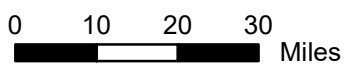
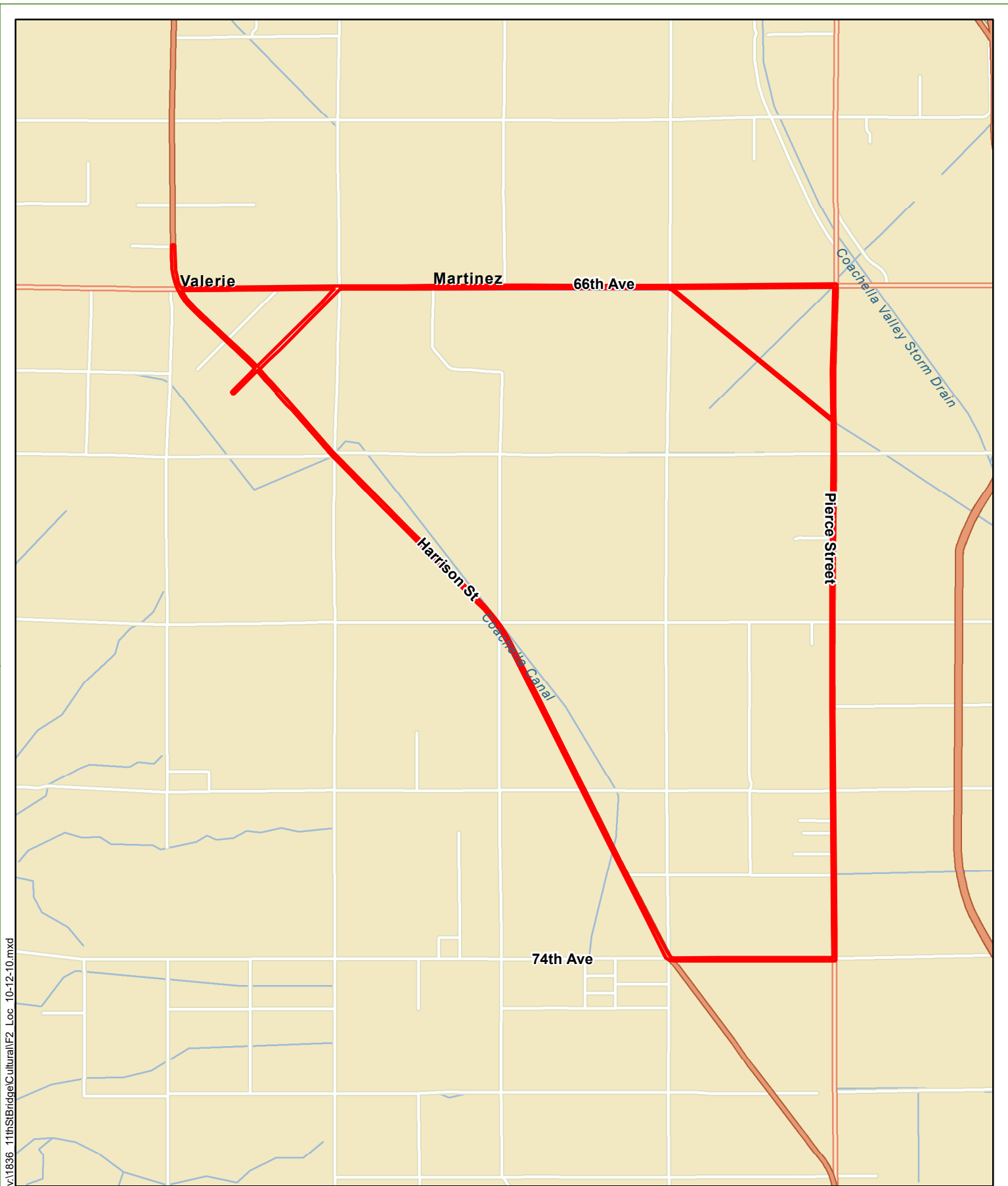


FIGURE 1
Project Vicinity

Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



\\1836_11thSI\Bridges\Cultural\F2_Loc_10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 12/14/2020; Created By: ahale

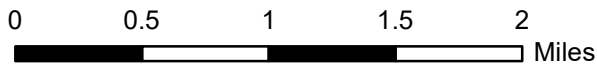


FIGURE 2
Project Location

Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

Bridges, culverts, or low water crossings will be required where the multi-function trail will traverse existing irrigation channels and other waterways. Where these facilities are implemented, the hydraulic impact to the existing facilities will be minimized. Bridges and other elevated crossings will be light-duty and will avoid the use of piers within waterways.

Drainage improvements will be designed to maintain current drainage patterns. The current drainage is typically comprised of half-street cross fall runoff which will be collected between the roadway and the trail and conveyed past the trail via culverts or at-grade crossings. No regional drainage facilities are anticipated to be impacted and no significant new drainage facilities are expected to be constructed.

Most of the multi-function trail alignment along Harrison Street, Pierce Street, and 74th Avenue will require earth fill to raise the trails to elevations appropriate for public use. The alignment along 66th Avenue likely will require less fill material but is not anticipated to require significant soil removal. It is expected that the project will require a net import of soil material.

Relocation and/or modification of existing utilities may be required at various locations throughout the project, including Imperial Irrigation District (IID) electric facilities, Coachella Valley Water District (CVWD) water and sanitary sewer facilities, CVWD/United States Bureau of Reclamation (USBR) irrigation facilities, CVWD/Caltrans drainage facilities, Frontier Communications telephone facilities and Charter Communications cable facilities.

1.3 Purpose and Need

Purpose

The purpose of the Thermal and Oasis Active Transportation Project (Project) is to:

- Accommodate and promote multi-modal mobility by creating an Americans with Disabilities Act (ADA)-compliant pedestrian/bicycle facility in the communities of Thermal and Oasis;
- Enhance pedestrian and bicycle safety in the project area by providing a separate multi-modal trail from vehicular traffic.

Need

Pedestrians and bicyclists use the paved shoulder or unpaved area directly adjacent to roadways within the project area as their path of travel in proximity to vehicular traffic. The Project is needed because the transportation network in the predominantly rural, agricultural area, lacks consistent pedestrian or bicycle facilities.

2.0 Existing Conditions

2.1 Setting

The proposed trail alignment is located in both the communities of Thermal and Oasis. The general land use consists of rural agricultural land. There is a CVWD-owned irrigation channel that runs along 66th Avenue. The terrain is relatively flat and there are large regions of open space.

Although the majority of land use is agricultural and open space, there are several schools and a few single dwelling homes in the project area. Oasis Elementary is located at the intersection of Harrison Avenue and 74th Avenue. The campus containing Toro Canyon Middle School, Desert Mirage High School, and Las Palmitas Elementary School is located at the intersection of 66th Avenue and Tyler Street. Also, there is a gas station and a small market located just south of the intersection of Harrison and 66th.

The Coachella Valley Stormwater Channel (Whitewater River) lies to the east of the project site. This channel is approximately 20.3 miles in length and outfalls into the Salton Sea.

2.2 Traffic

Although the project is not located on a roadway facility, the project is adjacent to Harrison Street, Pierce Street, 74th Avenue, and 66th Avenue. All of these roads are rural two-lane roads that provide emergency supply and evacuation, emergency vehicle access, school bus, and mail routes.

2.3 Base Flood and Floodplain

The Federal Emergency Management Agency (FEMA) created a Flood Insurance Study (FIS) in 2018 for Riverside County and Incorporated Areas. The Flood Insurance Rate Maps (FIRMs) for this study show that the source of the floodplain at the project site is the Coachella Valley Stormwater Channel (Whitewater River) and that most of the trail is within floodplain Zone A and AE.

Zone A and Zone AE are defined as a special flood hazard area with a one percent chance of flooding in any given year. Zone A regions do not have base flood elevations or detailed hydraulic analyses provided in FEMA's FIS. Zone AE regions do have base flood elevations and hydraulic analysis provided in FEMA's FIS.

The majority of the project is located in areas where detailed studies were not conducted, and as such detailed hydraulic data is not available for the project. The eastern edge of the project briefly enters into the flood Zone AE, which does have hydraulic data. At this location, the 100-year peak flow is approximately 47,000 cfs and the 100-year water surface elevation is approximately -200 ft.

There are various levees along the Coachella Valley Stormwater Channel (Whitewater River) to aid in flood control. Levees that are in compliance with current standards are recognized by FEMA and levees not in compliance with current standards are not. The

levees along the Coachella Valley Stormwater Channel are not levees that meet current standards and as such are not recognized by FEMA and do not protect the surrounding area adequately for the 100-year flood.

3.0 Risk Assessment

3.1 Risk Associated with Implementation

The Federal Highway Administration (FHWA) defines risk as being measured by the potential for:

- Property damage upstream and downstream of the facility caused by flooding.
- Damage or loss of the proposed facility due to flooding.
- Interruption of traffic due to flooding.
- Loss of life during the service life of the facility.

The floodplain encroachment for the project is described as approximately 14 miles of multi-modal trail and approximately 1.5 miles of sidewalk. The proposed trail, sidewalk additions, and associated improvements represent an encroachment of approximately 46,000 cubic yards (CY) of fill within a floodplain that contains a volume of approximately 52,000,000 CY of floodwater (0.09%). This has the potential to increase water surface elevations by approximately 0.0009 feet (0.01 inches).

Because the project is located in an existing floodplain, there is an existing risk of damage to existing properties in the project area. The project improvements will have a negligible impact to the water surface elevations in the floodplain and will therefore not increase the potential for damage to the primarily agricultural land and minimal development adjacent to the project.

The proposed improvements are being constructed over a mile from the active flow channel, in the portion of the floodplain that primarily experiences floodwater storage. Therefore, the project has minimal risk to large flows and velocities causing damage to the improvements.

The roadways adjacent to the project are currently inundated by the 100-year floodplain and as such may experience some interruption of traffic due to flooding. Because the proposed project will not have a significant impact on the inundation levels or duration of the 100-year flood, the project will not affect the current interruption of traffic due to flooding.

The proposed facilities encourage alternate modes of transportation such as walking and biking and are not anticipated to be used during flood events. Loss of life is not expected during the service life of the proposed facilities.

3.2 Impacts on Floodplain Values

Natural and beneficial floodplain values are defined by the FHWA to include, but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor

recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance and groundwater recharge. Of these beneficial floodplain values, the following are applicable to this project: open space, natural moderation of floods, water quality management, and groundwater recharge.

Open Space: The proposed project will construct a bike trail and provide additional sidewalk, both of which are extensions of the existing roadway prism. The open space in the floodplain, which is primarily agricultural usage, will not be significantly impacted by the addition of the bike path during construction nor during the post-project condition.

Natural Moderation of Floods: Much of the proposed improvements are at grade and the new encroachment represented by the proposed improvements is expected to result in a negligible impact to water surface elevations in the floodplain (0.01 inches). As a result, the floodplain will continue to have substantial ability to moderate flooding, both during construction and after the project is completed.

Water Quality Management: The project will create a multimodal trail and sidewalk that facilitates alternative modes of travel and is therefore not anticipated to create an increase in traffic volume in the project area. Therefore, the completed trail is not expected to increase pollutant loads from highway runoff from the project site. During construction, Best Management Practices for erosion and sediment control will reduce potential impacts to water quality. Significant impacts to water quality are therefore considered minimal and negligible for the project.

Groundwater Recharge: The proposed project will create a sidewalk and multimodal trail, which will increase the total new impervious area within the floodplains by 18 acres. Because the predominant land use in the project area is open space agricultural land and the increase in impervious area is negligible in comparison to the overall project area, the potential small loss of groundwater recharge is not considered significant. The use of pervious pavement could be used to mitigate the minimal loss of groundwater recharge potential in the area.

3.3 Support of Incompatible Development

Incompatible floodplain development is defined as development that is not consistent with a community floodplain development plan (FHWA Technical Advisory T 6640.8A, 1987). Riverside County has a General Plan that details overall policies and management guidance for development in Riverside County. The Riverside County General Plan specifies the following rules for development located at a greater risk of flood impacts (policies S 4.1-4.11):

- Minimize fill, floodproof building and structures in accordance with the Building Code.
- Maintain existing drainage patterns, watercourses, and channels.
- Address negative impacts to floodplains created by a development.

The proposed project will provide a multimodal trail and sidewalk to improve pedestrian and bicycle connectivity within the communities of Thermal and Oasis but will not alter the roadway nor change the existing land use of the surrounding area. To be consistent with the Riverside County policies, the project will minimize fill, and will not alter existing drainage patterns, watercourses, and channels. The project may have bridge structures where the trail crosses channels or waterways. In those instances, the structures will be protected from damage due to floodwaters. The project will not negatively impact floodplain values as discussed in Section 3.2. As a result, the proposed Thermal-Oasis Active Transportation Project is determined to be consistent with the forementioned development policies.

The Riverside County General Plan has more detailed Area Plans that breakdown development policies specific to each region. The communities of Thermal and Oasis fall under the Eastern Coachella Valley Area Plan, which has a connective bike and multimodal trail plan to provide active transportation options. Per Figure 9 of the Eastern Coachella Valley Area Plan, the proposed project's multimodal trail and sidewalk is in accordance with the planned trail and bikeway development. As a result, the proposed improvements are consistent with the Eastern Coachella Valley's community floodplain development plan and will not support incompatible floodplain development.

3.4 Minimization of Floodplain Impact

For the project, temporary impacts due to construction activity will be minimized through the implementation of standard construction Best Management Practices and any additional measures specified in the regulatory permits obtained for this project. Permanent floodplain impacts are not anticipated (see the discussion provided in Section 3.2).

3.5 Restoration and Preservation of Floodplain Values

Floodplain values will be preserved because the project is not expected to influence impacts to floodplain values. See the discussion provided in Section 3.2.

3.6 Alternatives to Significant Encroachment

A significant encroachment is defined in the Federal-Aid Highway Program Manual (Volume 6, Chapter 7, Section 3, Subsection 2) as a highway encroachment that would involve one or more of the following during construction or flooding:

- Significant potential for interruption or termination of a vehicular emergency or evacuation route.
- Significant risk (i.e. loss of property or life).
- Significant adverse impact on natural or beneficial floodplain values.

During construction, disruption to emergency supply/vehicle access and/or evacuation routes is not expected because the multimodal trail and sidewalk installation will allow for the adjacent roadways to remain open to traffic during construction. During flood conditions, the impact to water surface elevations in the project area will be negligible (0.01

inches) and will not change the nature and duration of flooding disruptions that occur during large storm events in the existing condition.

The risk to life and property due to the proposed floodplain encroachment is considered negligible during construction because construction activities are not anticipated to occur during flooding conditions. Forecasts would allow for workers and equipment to be evacuated prior to any flood conditions that would cause a risk to life and property. Similarly, during flood conditions, the risk to life and property due to the proposed floodplain encroachment is considered negligible because the anticipated impact to water surface elevations is insignificant (0.01 inches) and would therefore not contribute to the loss of life or property beyond what is possible in the existing condition. Refer to the discussion in Section 3.1.

The project is located in a floodplain that contains in excess of 52,000,000 CY of volume and the net new encroachment of the project is proposed to be approximately 46,000 CY (approximately 0.09% of the overall volume). This results in an insignificant impact to water surface elevations in the floodplain (0.01 inches) and is therefore considered to have a negligible effect on the floodplain values associated with the implementation of the project (refer to the discussion in Section 3.2).

3.7 Alternatives to Longitudinal Encroachment

A longitudinal encroachment is defined by the FHWA to be an encroachment that is parallel to the direction of flow. The project is located within the Coachella Valley Stormwater Channel (Whitewater River) floodplain, approximately 1 mile from the main flow channel. At this distance, the project resides outside the active flow area and is subject to relatively stationary ponding. As such, the proposed project does not represent a longitudinal encroachment.

References

Federal Emergency Management Agency (FEMA). Flood Insurance Study, Riverside County, California, and Incorporated Areas. March 6, 2018.

National Flood Insurance Rate Map (NFIP). Flood Insurance Rate Map, Riverside County, California, and Incorporated Areas. March 6, 2018.

Federal Highway Administration (FHWA). Federal-Aid Highway Program Manual - Title 23, Code of Federal Regulations (CFR). November 15, 1979.

Federal Highway Administration (FHWA). Technical Advisory T 6640.8A. October 30, 1987.

Riverside County. County of Riverside General Plan. August 6, 2019.

Riverside County. Eastern Coachella Valley Area Plan. May 5, 2021.

United States Department of Agriculture (USDA). Environmental Compliance Floodplain Management Executive Order 11988. May 24, 1977.

LOCATION HYDRAULIC STUDY FORM

Dist. 8 Co. RIV Rte. N/A Project ID ATPL-5956(273)
Federal-Aid Project Number: N/A

Floodplain Description:

The Coachella Valley Stormwater Channel floodplain is located in Riverside County and encompasses an area of approximately 32,324 acres.

1. Description of Proposal *(include any physical barriers i.e. concrete barriers, sound walls, etc. and design elements to minimize floodplain impacts)*
Riverside County in conjunction with the California Department of Transportation (Caltrans), is proposing to build a multi-functional trail and various segments of sidewalk through the unincorporated communities of Thermal and Oasis.

2. ADT: Current N/A Projected N/A

3. Hydraulic Data: Base Flood Q100= 47,000 CFS
WSE100= -200 feet *The flood of record, if greater than Q100:*
Q= N/A CFS WSE= N/A
Overtopping flood Q= N/A CFS WSE= N/A

Are NFIP maps and studies available? NO _____ YES X

4. Is the highway location alternative within a regulatory floodway?
NO X YES _____

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain.

Potential Q100 backwater damages:

A. Residences? NO X YES _____
B. Other Bldgs? NO X YES _____
C. Crops? NO X YES _____
D. Natural and beneficial Floodplain values? NO X YES _____

"Natural and beneficial flood-plain values" shall include but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

6. Type of Traffic:

A. Emergency supply or evacuation route? NO _____ YES X
B. Emergency vehicle access? NO _____ YES X
C. Practicable detour available? NO _____ YES X
D. School bus or mail route? NO _____ YES X

7. Estimated duration of traffic interruption for 100-year event hours: 0

8. Estimated value of Q100 flood damages (if any) – moderate risk level.

A. Roadway \$ 0
B. Property \$ 0
Total \$ 0

9. Assessment of Level of Risk Low X
Moderate _____
High _____

For High Risk projects, during design phase, additional Design Study Risk Analysis may be necessary to determine design alternative.

LOCATION HYDRAULIC STUDY FORM cont.

Dist. 8 Co. RIV Rte. N/A K.P. N/A
Federal-Aid Project Number: N/A
Project ID ATPL-5956(273) Bridge No. N/A

PREPARED BY:

Signature:

I certify that I have conducted a Location Hydraulic Study consistent with 23 CFR 650 and that the information summarized in items numbers 3, 4, 5, 7, and 9 of this form is accurate.

_____ Date _____
District Hydraulic Engineer (capital and 'on' system projects)

Pamela Dalton-Walling Date 12/01/21
Local Agency/Consulting Hydraulic Engineer (local assistance projects)

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development?
NO X YES _____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

I certify that item numbers 1, 2, 6 and 8 of this Location Hydraulic Study Form are accurate and will ensure that Final PS&E reflects the information and recommendations of said report:

_____ Date _____
District Project Engineer (capital and 'on' system projects)

Mike Heath Date 12/01/21
Local Agency Project Engineer (local assistance projects)

CONCURRED BY:

I have reviewed the quality and adequacy of the floodplain submittal consistent with the attached checklist, and concur that the submittal is adequate to meet the mandates of 23 CFR 650.

_____ Date _____
District Project Manager (capital and 'on' system projects)

[Signature] Date 12/1/21
Local Agency Project Manager (Local Assistance projects)

[Signature] Alberto Vergel de Dios Date 12/07/2021

District Local Assistance Engineer (or District Hydraulic Branch for very complex projects or when required expertise is unavailable. Note: District Hydraulic Branch review of local assistance projects shall be based on reasonableness and concurrence with the information provided).

I concur that the natural and beneficial floodplain values are consistent with the results of other studies prepared pursuant to 23 CFR 771, and that the NEPA document or determination includes environmental mitigation consistent with the Floodplain analysis.

Aaron Burton Date 12/7/2021
District Senior Environmental Planner (or Designee)

Note: If a significant floodplain encroachment is identified as a result of floodplains studies, FHWA will need to approve the encroachment and concur in the Only Practicable Alternative Finding.

SUMMARY FLOODPLAIN ENCROACHMENT REPORT

Dist. 8 Co. RIV Rte. N/A K.P. N/A

Federal-Aid Project Number (*Local Assistance*) N/A

Project No.: ATPL-5956(273) Bridge No. N/A

Limits: The floodplain is bound extends past the main channel and flows onto the surrounding agricultural land.

Floodplain Description: The Coachella Valley Stormwater Channel floodplain is located in Riverside County and encompasses an area of approximately 32,324 acres.

- | | No | Yes |
|---|----------|----------|
| 1. Is the proposed action a longitudinal encroachment of the base floodplain? | <u>X</u> | ___ |
| 2. Are the risks associated with the implementation of the proposed action significant? | <u>X</u> | ___ |
| 3. Will the proposed action support probable incompatible floodplain development? | <u>X</u> | ___ |
| 4. Are there any significant impacts on natural and beneficial floodplain values? | <u>X</u> | ___ |
| 5. Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain. | <u>X</u> | ___ |
| 6. Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q). | <u>X</u> | ___ |
| 7. Are Location Hydraulic Studies that document the above answers on file? If not explain. | ___ | <u>X</u> |

PREPARED BY:

District Project Engineer (*capital and 'on' system projects*)

Date _____

Mike Heath

Date 12/01/21

Local Agency Project Engineer (*local assistance projects*)

CONCURRED BY:

District Project Manager (*capital and 'on' system projects*)

Date _____

Alberto Vergel de Dios

Alberto Vergel de Dios

Date 12/07/2021

District Local Assistance Engineer (*Local Assistance projects*)

I concur that impacts to natural and beneficial floodplain values are consistent with the results of other studies prepared pursuant to 23 CFR 771, and that the NEPA document or determination includes environmental mitigation consistent with the Floodplain analysis.

Aaron Burton

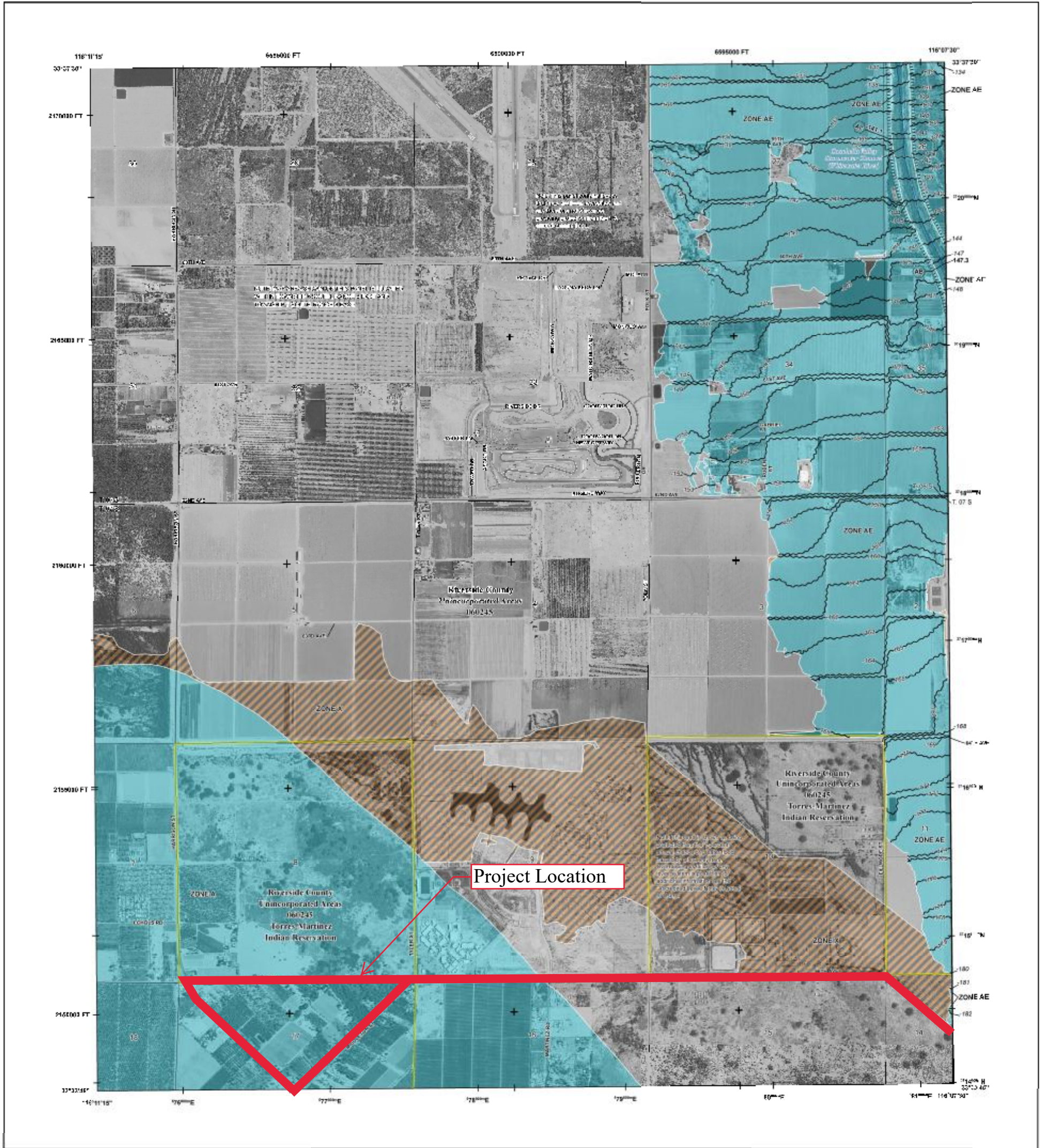
Date 12/7/2021

District Senior Environmental Planner (*or Designee*)

Note: If a significant floodplain encroachment is identified as a result of floodplains studies, FHWA will need to approve the encroachment and concur in the Only Practicable Alternative Finding.

ATTACHMENT A:

FEMA FIRM MAPS



FLOOD HAZARD INFORMATION

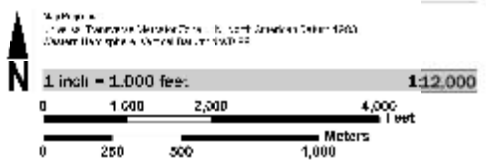
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard. Areas of 1% annual chance flood with average depth less than one foot or with total water area of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
	NO SCREEN
	Areas of Minimal Flood Hazard Zone A
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer
	Avulsed bed or partially avulsed levee, Dike or Hoopwell
	Un-avulsed levee, Dike or Hoopwell
	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information regarding this map, please contact the Federal Emergency Management Agency (FEMA) at 1200 K Street, NW, Washington, DC 20548. For more information on the National Flood Insurance Program, please visit www.fema.gov. This map is a reproduction of the original map and is not a substitute for the original map. The original map is available for purchase from the National Flood Insurance Program. This map is a reproduction of the original map and is not a substitute for the original map. The original map is available for purchase from the National Flood Insurance Program. This map is a reproduction of the original map and is not a substitute for the original map. The original map is available for purchase from the National Flood Insurance Program.

SCALE



PANEL LOCATOR



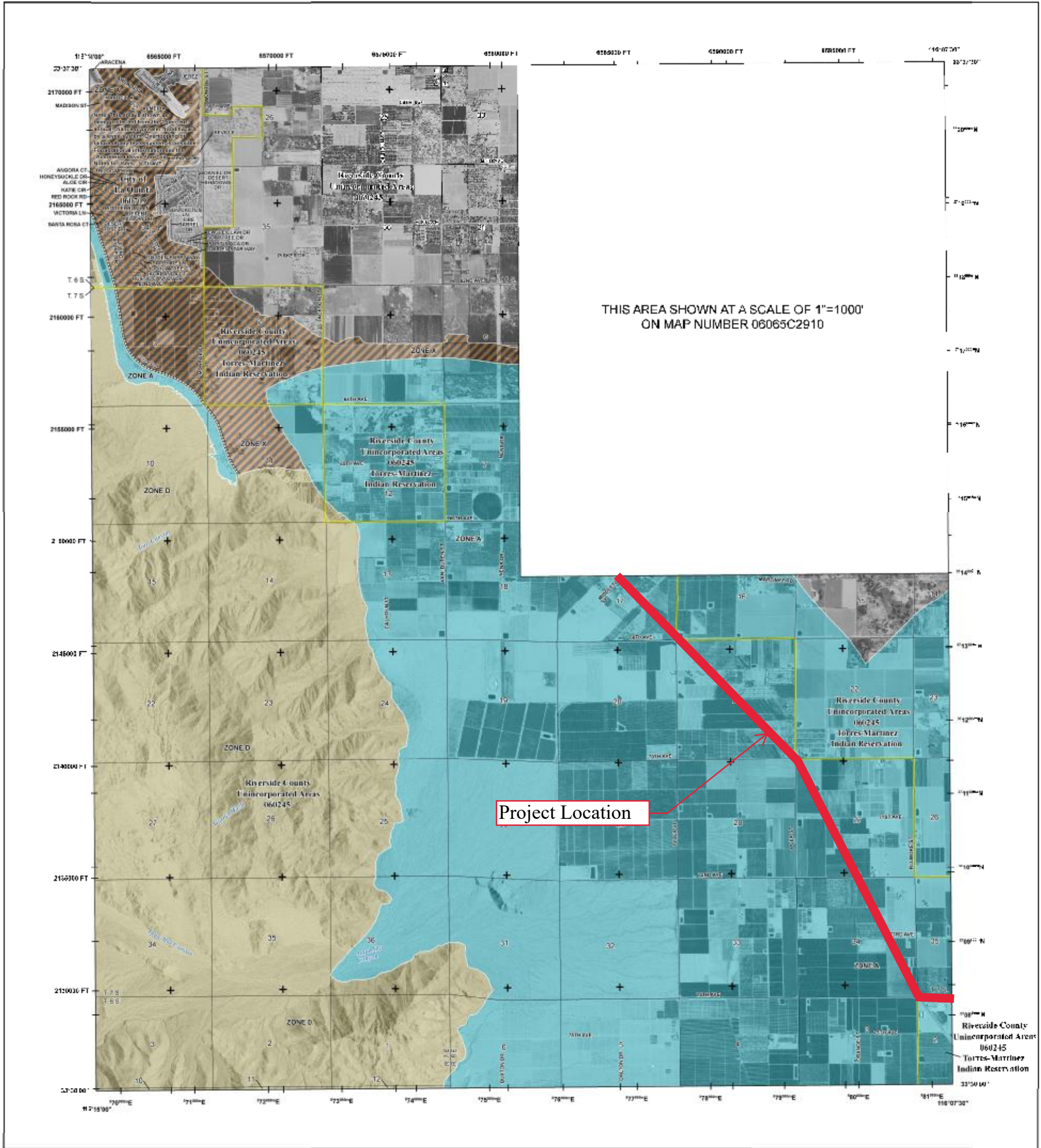
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
RIVERSIDE COUNTY, CALIFORNIA
 and Incorporated Areas
Panel 2910 of 3805

FEMA

Panel Contains:
 COMMUNITY: Riverside County
 NUMBER: 06065C2910H
 PANEL SUFFIX: H

VERSION NUMBER: 2.3.1.2
 MAP NUMBER: 06065C2910H
 EFFECTIVE DATE: MARCH 6, 2018



FLOOD HAZARD INFORMATION

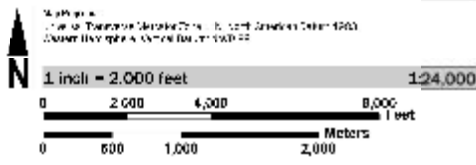
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SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with total height areas of less than one square mile Zone B
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
OTHER AREAS	NO SCREEN: Areas of Minimal Flood Hazard Zone A
	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Averaged or Partially Averaged Levee, Dike or Hoopwall
	Un-averaged Levee, Dike or Hoopwall
	Cross Sections with 1% Annual Chance Water Surface Elevation (WSE)
	Coastal Traverset
	Coastal Traverset Baseline
	Profile Baseline
	Hydrographic Feature
OTHER FEATURES	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information regarding the National Flood Insurance Program (NFIP) and the Flood Insurance Study (FIS) for Riverside County, California, please contact the Federal Emergency Management Agency (FEMA) at 475 Rte. 121, Room 5000, Silver Spring, MD 20910. For more information on the NFIP, please visit the FEMA website at www.fema.gov. This map is a product of the FIS for Riverside County, California, and is intended to provide information on the flood hazard areas for the community. The map is not intended to be used for any other purpose. The map is not a warranty, guarantee, or endorsement of any product or service. The map is not a contract. The map is not a representation of any fact. The map is not a statement of any opinion. The map is not a recommendation of any course of action. The map is not a prediction of any future event. The map is not a forecast of any future condition. The map is not a guarantee of any future result. The map is not a warranty of any future performance. The map is not a representation of any fact. The map is not a statement of any opinion. The map is not a recommendation of any course of action. The map is not a prediction of any future event. The map is not a forecast of any future condition. The map is not a guarantee of any future result. The map is not a warranty of any future performance.

SCALE



PANEL LOCATOR



FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP

RIVERSIDE COUNTY, CALIFORNIA and Incorporated Areas

Panel 2925 of 3805

COMMUNITY: LA QUENTA, CITY OF RIVERSIDE COUNTY

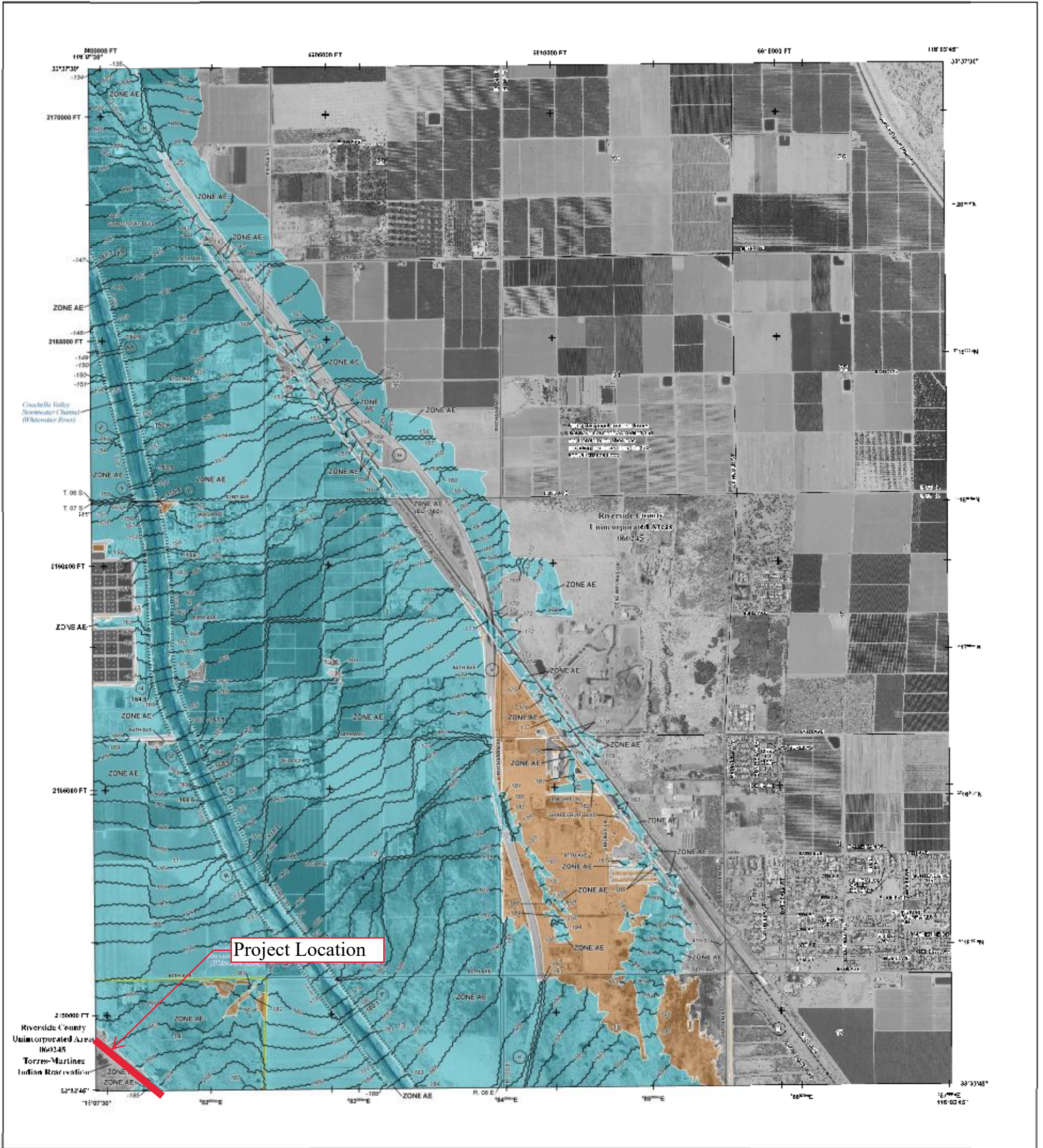
NUMBER: 06065C2925

PANEL SUFFIX: II

VERSION NUMBER: 2.3.1.2

MAP NUMBER: 06065C2925H

MAP REVISED: MARCH 6, 2018



FLOOD HAZARD INFORMATION

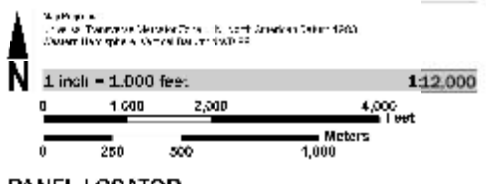
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with total hazard areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes Zone X
OTHER AREAS		NO SCREEN
		Areas of Minimal Flood Hazard Zone A
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert or Storm Sewer
		Avulsed bed or Partially Accumulated Levee, Dike or Hoopwell
		Unprotected Levee, Dike or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation (WSE)
		Coastal Traverset
		Coastal Traverset Baseline
		Profile Baseline
		Hydrographic Feature
OTHER FEATURES		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

For information only, this map is not intended to be used as a substitute for the FIS report or the FIS report's supporting documentation. The FIS report and supporting documentation are available in digital format at [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV).
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SCALE



PANEL LOCATOR



FEMA
National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM
 FLOOD INSURANCE RATE MAP**

**RIVERSIDE COUNTY,
 CALIFORNIA**
 and Incorporated Areas
 RWIR 2930 of 3805

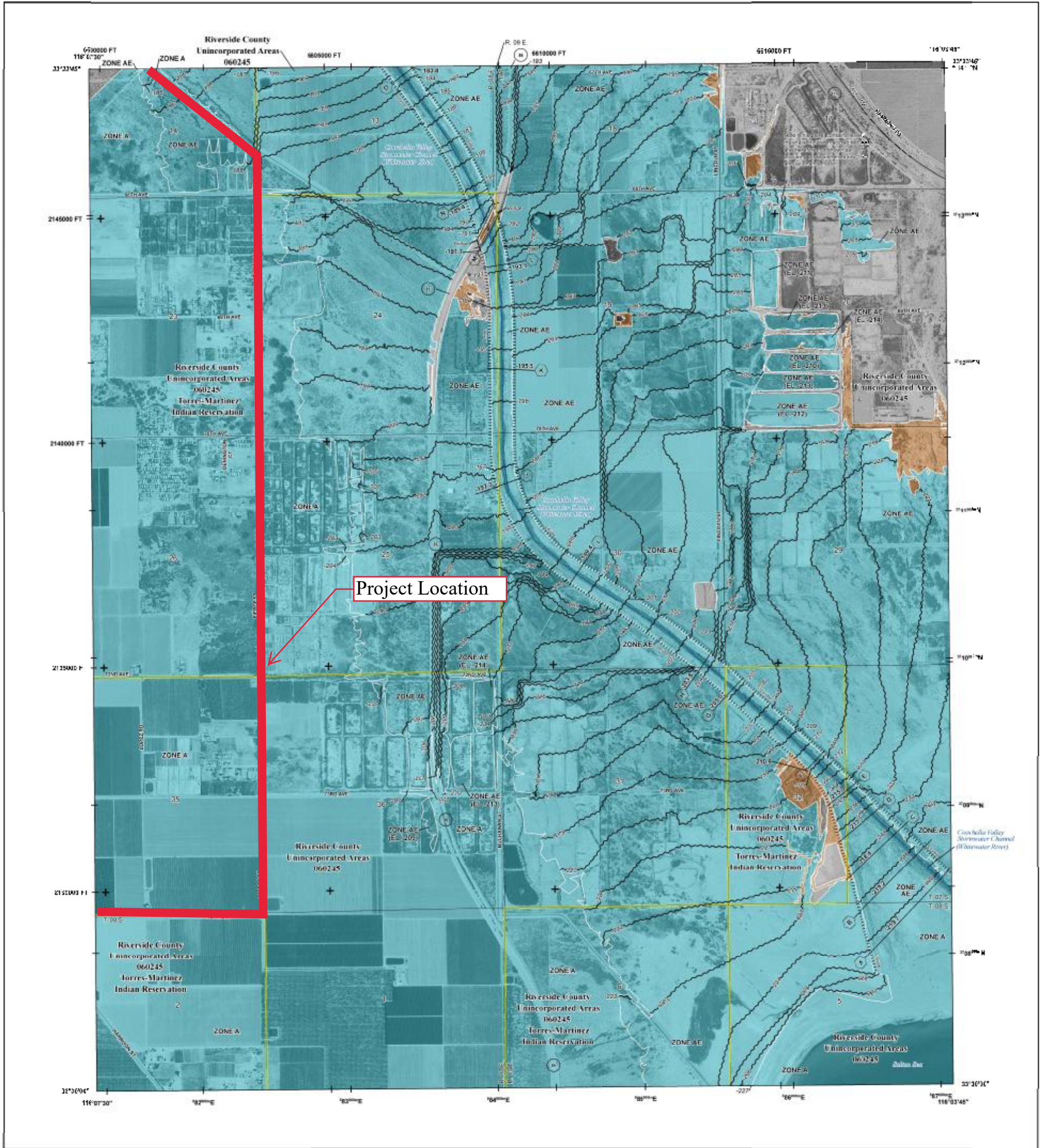
Panel Contains:
 COMMUNITY
 RIVERSIDE COUNTY

NUMBER PANEL SUFFIX
 060245 060245 H

VERSION NUMBER
 2.3.1.2

MAP NUMBER
 0606SC2930H

EFFECTIVE DATE
 MARCH 6, 2018



FLOOD HAZARD INFORMATION

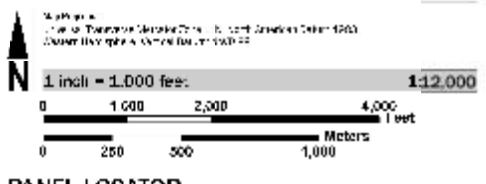
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
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	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with total high areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X1
	Area with Reduced Flood Risk due to Levee See Notes Zone X
	Areas of Minimal Flood Hazard Zone A
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert or Storm Sewer
	Approved or Partially Approved Levee, Dike or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

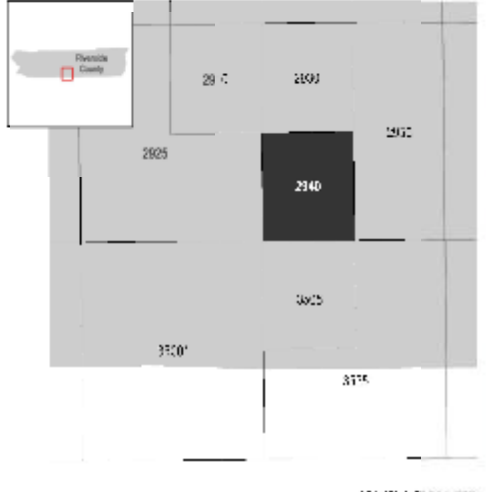
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SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
 RIVERSIDE COUNTY, CALIFORNIA and Incorporated Areas
 RWIR 2940 of 3805

Panel Contains:
 COMMUNITY: Riverside County
 NUMBER: 060245
 PANEL SUFFIX: H