Water Quality Technical Memorandum

Kamm and Alta Intersection Improvements

City of Dinuba, California

District 6 - Caltrans

September 2022

4CREEKS

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1. Introduction and Project Description

The City of Dinuba will provide improvements to the intersection and the extending streets of Kamm Avenue (Avenue 408) and Alta Avenue (Road 80) by converting the current intersection into a roundabout and widening Kamm Avenue. This improvement will extend the roadway across the Dinuba Town Ditch. The Ditch is going to be piped underground within the limits of the new right of way (ROW). After crossing Kamm Avenue, the Ditch will return to the surface with a new outfall structure. Partial funding for this project is provided by the Congestion Mitigation and Air Quality Improvement Program (CMAQ). The project is located in the southern portion of Dinuba (See Figure 1). The site can be found on the *Reedley* U.S. Geological Survey (USGS) 7.5-minute quadrangle in Sections 17,18, 19, and 20 of Township 16 South, Range 24 East (Figure 2).

The project will involve removing existing roads, irrigation systems (including the existing culvert under Kamm Avenue), and orchards. Construction will include piping the existing Dinuba Town Ditch underground and installing an outfall structure, the placement of aggregate base and pavement, the extension of sewer and stormwater lines through the intersection, concrete curbs and gutters, concrete sidewalks, concrete median island, street light installation, street signage installation, and landscaping. Roadway detours and/or lane closures may be used to control traffic during construction.

This project will be a necessary improvement to Kamm and Alta Avenues with a new high school being constructed in the southwest corner of the intersection. It will allow a safer and more efficient route for vehicles and pedestrians going to and past the high school.

The purpose of this memorandum is to review and evaluate the potential short- and long-term water quality impacts on the Dinuba Town Ditch that may result from the construction of the proposed project. The document also includes a discussion of the proposed project, the physical setting of the project area, and the regulatory framework concerning water quality; it also provides data on surface water and groundwater resources within the project area and the water quality of these waters, describes water quality impairments and beneficial uses, and identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potential adverse impacts.

Figure 1: Project Location Map

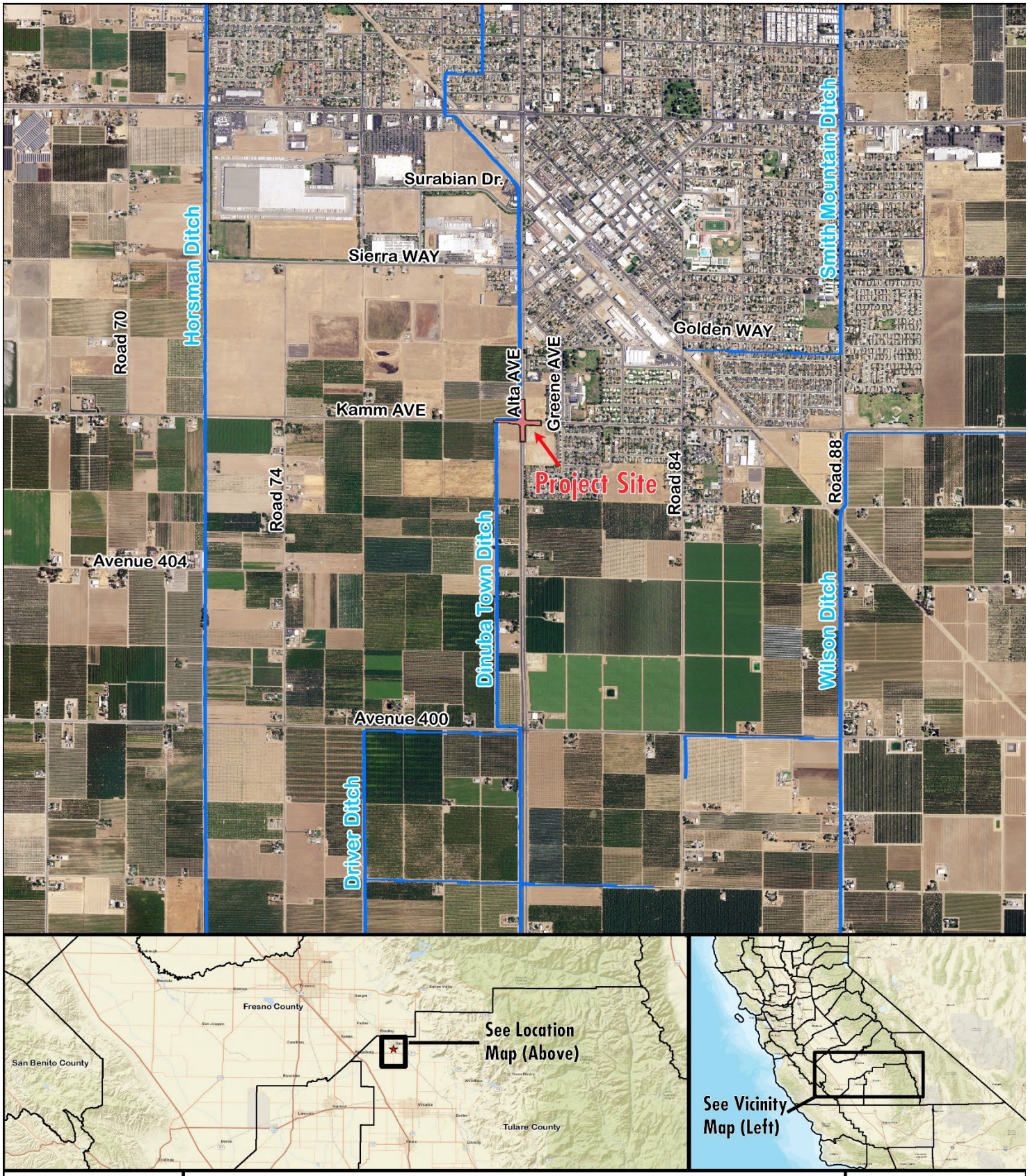
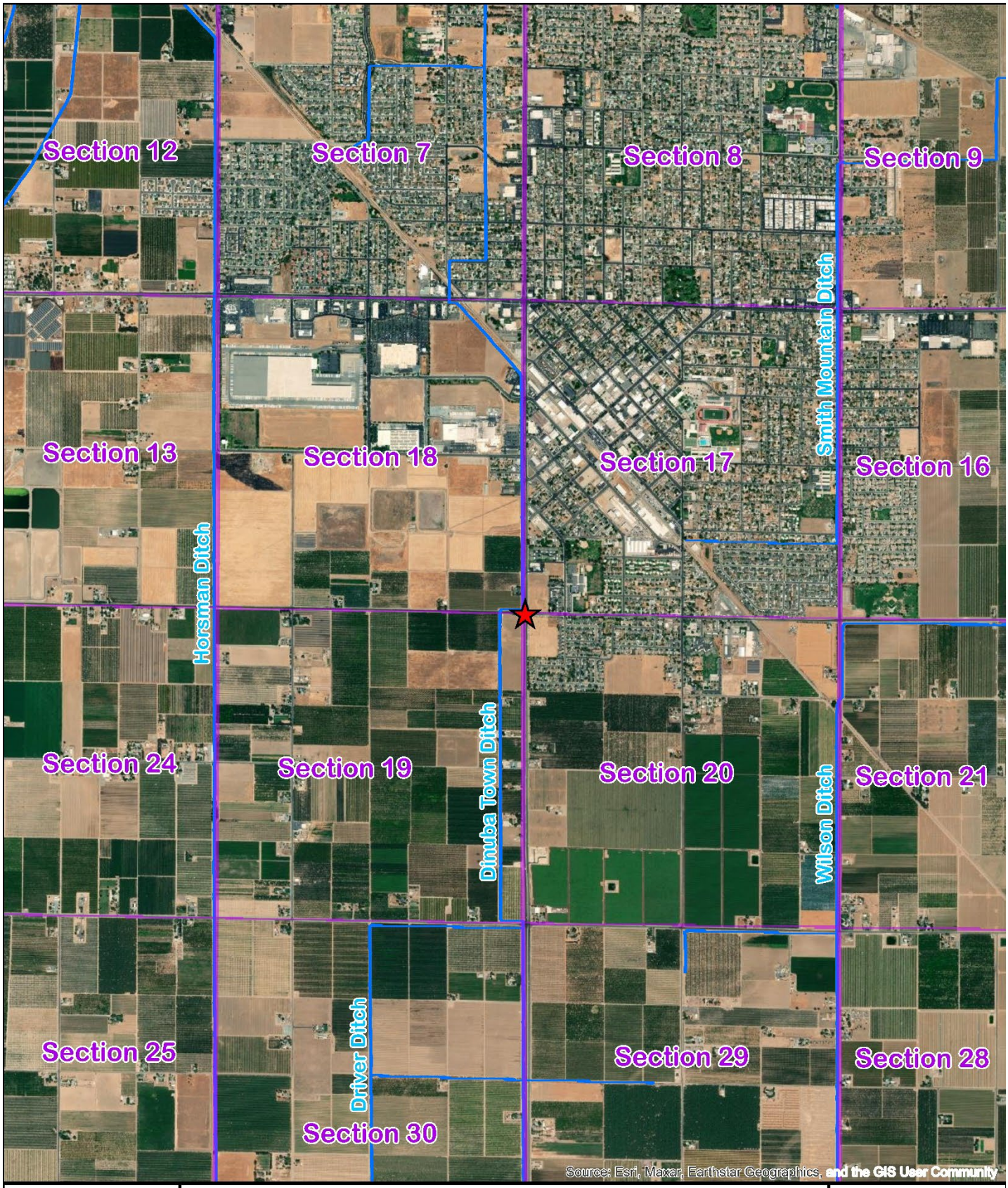


Figure 2: USGS Township Section Map



2. Regulatory Setting

The Project is located in the southern portion of Dinuba within the boundaries of the Tulare County Flood Control District (District). Within the District, Dinuba and the Project Site is within the Tulare-Fresno Unit (TFU). The TFU covers the area generally north of the Kaweah River irrigation service area and includes Wahtoke Creek and other small drainage areas north of Cottonwood Creek as well as Cottonwood Creek (Figure 3). Dinuba avoids the major drainage flows from the Sierra Nevada Mountains and Foothills. Flooding conditions in the Tulare-Fresno Unit are influenced significantly by the canal system of the Alta Irrigation District. This system discharges water directly to Cottonwood Creek and Kings River through terminal spill facilities.

Within the project area, the Dinuba Town Ditch measures approximately twenty-five feet wide and five feet in depth. Water from the Ditch would flow into Cottonwood Creek/Cross Creek (Figure 4), approximately nine miles southwest of the Project Site. Due to drainage for irrigation and lengthy distance, it is unlikely that water from the Ditch would make it to Cottonwood Creek.

Dinuba's drainage infrastructure (Figure 5) consists of surface runoff to streets (curbs and gutters) and entry into subsurface pipelines that terminate at pump stations discharging to surface ditches or at small retention basins. The system is divided into sixteen subsystems. New development and rural uses on the edges of the city are outside of these subsystems and drain into retention ponds. The existing drainage systems are in general need of substantial pipeline upsizing and/or replacement due to inadequate capacities. Additionally, the existing pump stations located at the terminus points of established pipeline systems do not have adequate capacity to accommodate the flows that would be transported by the upsized pipelines recommended in the Master Plan. Existing pump station capacities cannot be increased due to discharge limitations prescribed in an agreement entered into between the City and the Alta Irrigation District. This leads to undeveloped areas (proposed for future development) will be served by permanent retention/detention facilities.

Figure 3: Tulare-Fresno Unit Drainage Flows, Source: Tulare County Flood Control District, Flood Control Master Plan

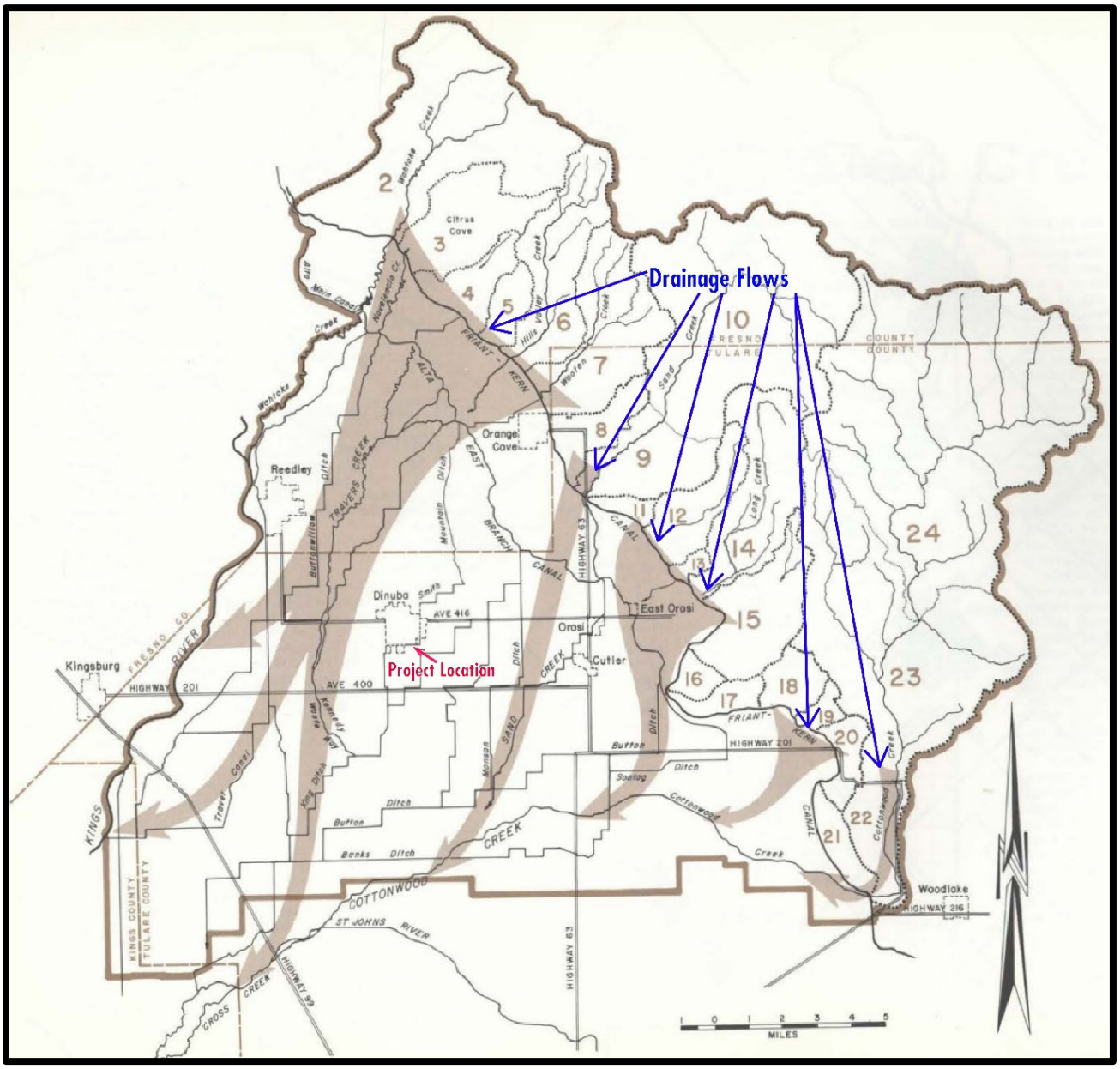


Figure 4: Ditch Flow Routes, Source: Tulare County Flood Control District, Flood Control Master Plan

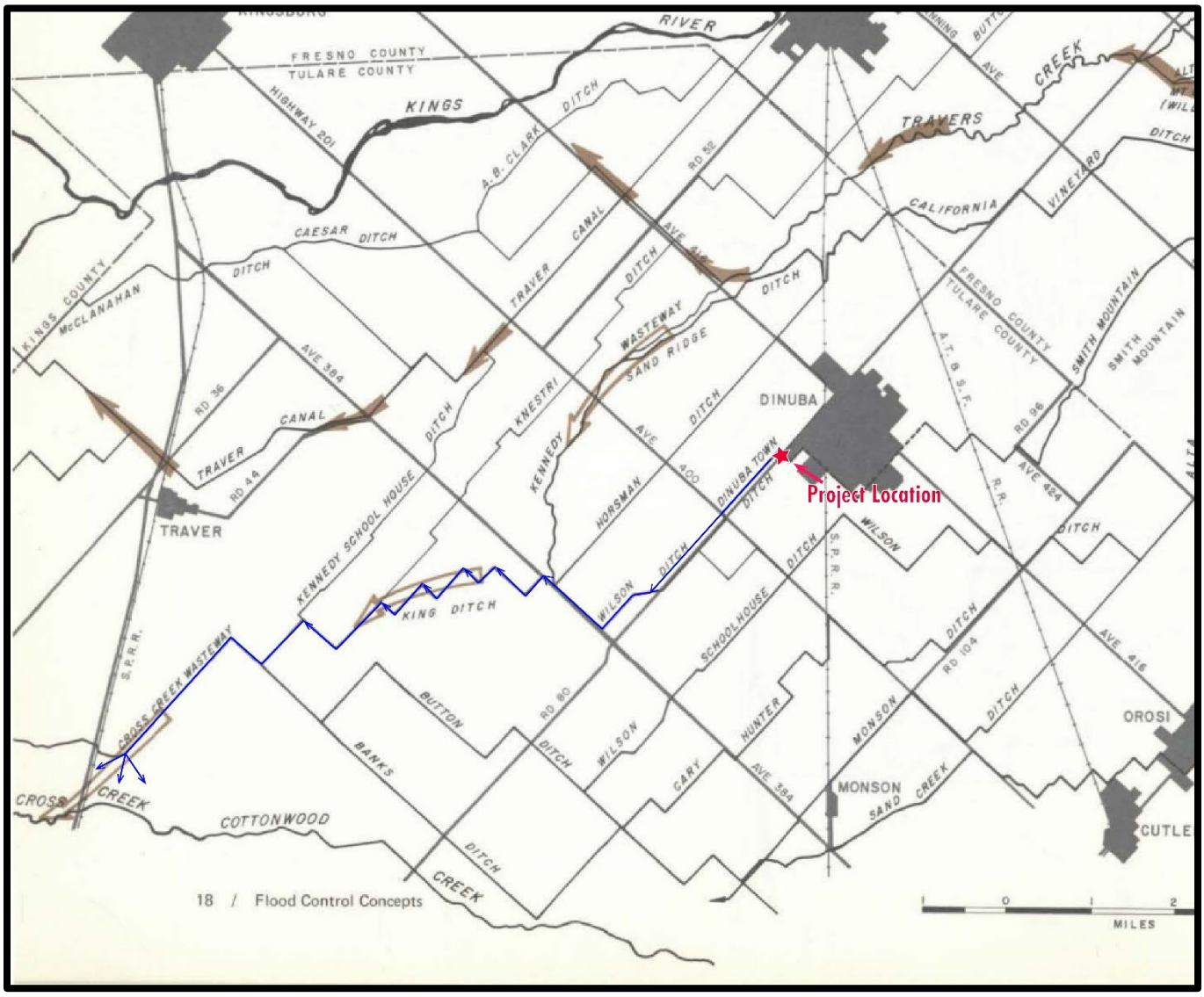
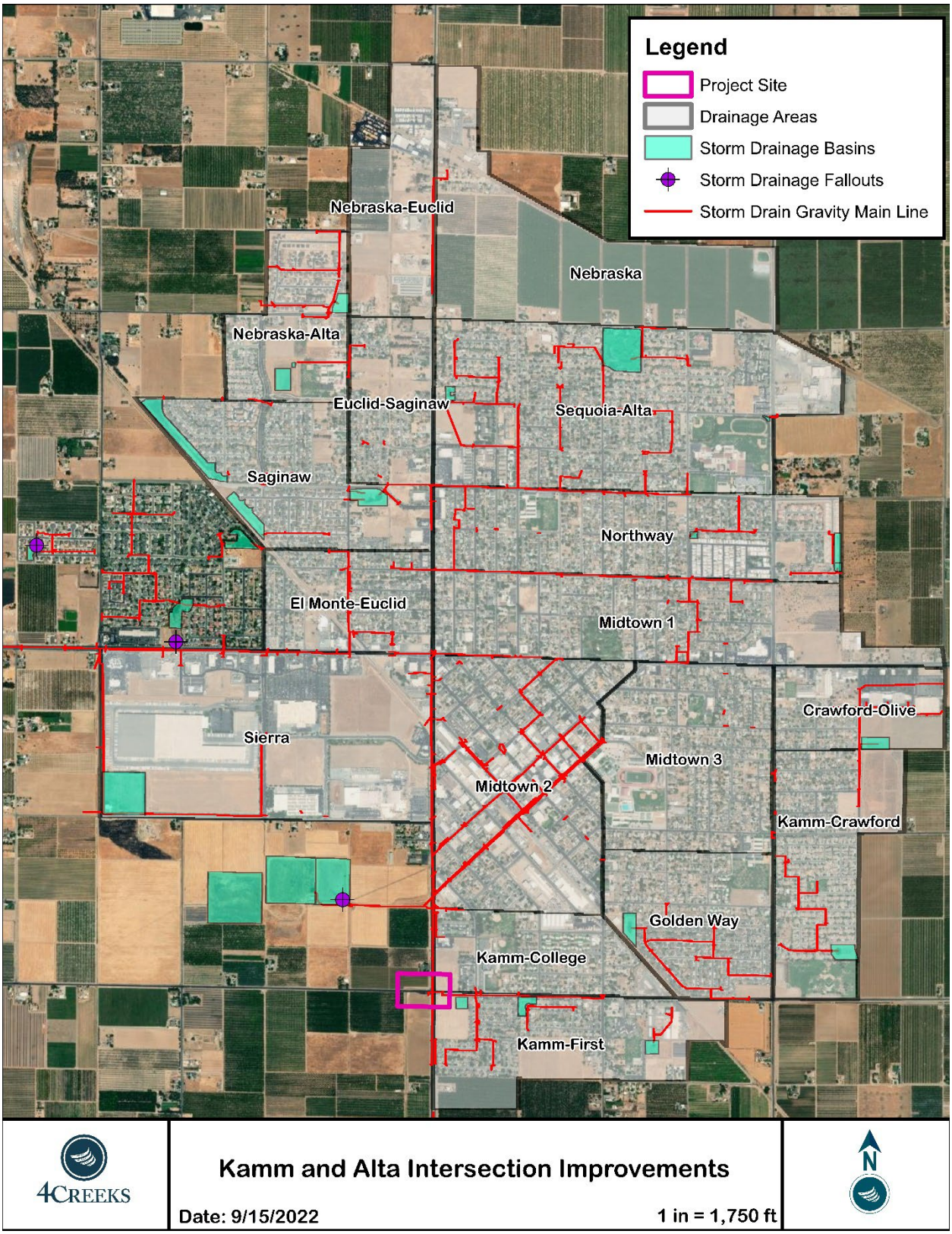


Figure 5: Dinuba Drainage Infrastructure



2.1 Federal Laws and Requirements

Clean Water Act (CWA)

Under the CWA, a number of federal, state, and local agencies have jurisdiction over specific activities that could affect stream channels, wetlands, and other water bodies. The CWA establishes the structure for regulating discharges of pollutants.

Section 401

Section 401 of the CWA requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. The proposed project would require that a 401 Water Quality Certification be obtained from the Central Valley RWQCB.

Section 402

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharges (except for dredge or fill material) of any pollutant into the waters of the United States. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and Municipal Separate Storm Sewer Systems (MS4s).

Section 404

Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. The U.S. Army Corps of Engineers (USACE) administer this permit program. The proposed project would not impact any waters of the U.S.; no Section 404 Nationwide Permit would be required.

National Pollution Discharge Elimination System (NPDES) Program

The State Water Resources Control Board (SWRCB) adopted Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ) on July 15, 1999. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. In compliance with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices (BMPs).

Municipal Separate Storm Sewer Systems (MS4)

As part of the NPDES program, U.S. EPA initiated a program requiring that entities having a Municipal Separate Storm Sewer System (MS4) apply to their local RWQCBs for

stormwater discharge permits. Dinuba is within the Central Valley Regional Water Quality Board (CVRWQCB). The municipal National Pollutant Discharge Elimination System (NPDES) stormwater permit (MS4 Permit) will be required if the Project discharges into land or groundwater. The project would be subject to the requirements of this permit.

Construction General Permit (CGP)

Construction General Permit (Order No. 2009-009-DWQ, as amended by 2010-0014-DWG and 2012-0006-DWQ), effective July 1, 2010, regulates stormwater discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. This project is subject to the CGP requirements, therefore will be required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP) and apply for a CGP permit to the CVRWQCB.

2.2 State Laws and Requirements

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. The Porter-Cologne Water Quality Control Act (1969) requires that each RWQCB formulate or adopt water quality control plans for all areas in the region. The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. The project would be subject to the requirements of this permit.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

2.3 Regional and Local Requirements

City of Dinuba Municipal Code

The Dinuba Municipal Code section 13.100 requires payments for all new developments that can increase water runoff. The payments are used for the construction of planned local drainage facilities for the removal of surface waters and stormwater.

Section 13.92 of the Municipal Code sets the standards for construction in flood zones. Standards for construction include anchoring, flood-resistant construction materials, and proper elevations.

City of Dinuba General Plan

The Dinuba General Plan contains the following policies relating to this memo.

- ***OSCR-3.10:*** Protect areas of natural groundwater recharge from land uses and disposal methods which would degrade groundwater quality. Promote activities which combine stormwater control, and water recharges.
- ***OSCR-3.11:*** The City will expand programs that enhance groundwater recharge in order to maintain the groundwater supply, including the installation of detention/retention ponds in new growth areas.
- ***PS-7.1:*** Continue to coordinate community irrigation ditch issues with Alta Irrigation District, private ditch companies, private landowners, and public agencies. Require that irrigation ditches be piped prior to development on adjacent property.
- ***PS-7.6:*** Design runoff drainage structures to decrease erosion.
- ***S-8.44:*** In flood-hazard areas, natural watercourses should be identified, and their flow capacities shall be preserved. This does not prohibit relocation. All grading, including relocation and agricultural grading, which can substantially affect natural drainage channels shall require a grading plan and City permit. The Director of Public Works shall review and approve the grading plan before work may be initiated.

3. Environmental Setting

3.1 Regional Setting

The Project area is currently the existing Kamm Avenue and Alta Avenue. The land surrounding the streets is mainly agricultural to the west and vacant land, which is planned for commercial development, to the east. The Dinuba Town Ditch crosses under the existing Kamm Avenue on the eastern side. The project proposes widening Kamm Avenue where it crosses the river and constructing a pipe to tunnel the ditch through.

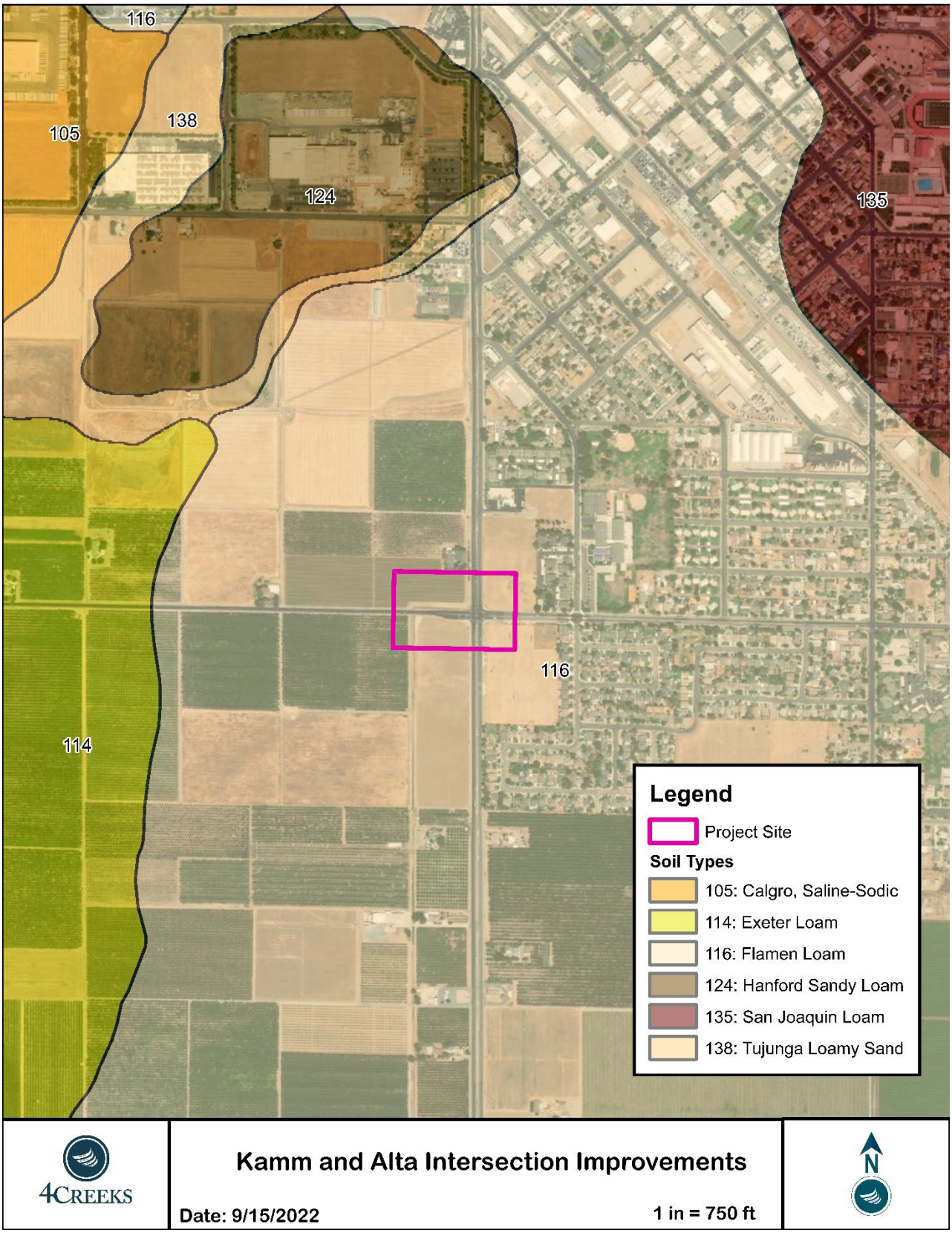
3.2 Land Use

The land surrounding the project site is zoned for Light Industrial to the Northwest, Community Commercial to the Northeast, and General Commercial to the Southeast. A new high school is under construction in the Southwest, one reason for the street upgrades.

3.3 Topography and Soils

The project area has generally flat topography at an elevation of approximately 332 feet above mean sea level and the surrounding area is relatively flat. The soil on and surrounding the site is Flamen loam, with 0 to 2 percent slopes (Figure 6).

Figure 6: Soils Map



3.4 Regional and Local Hydrology

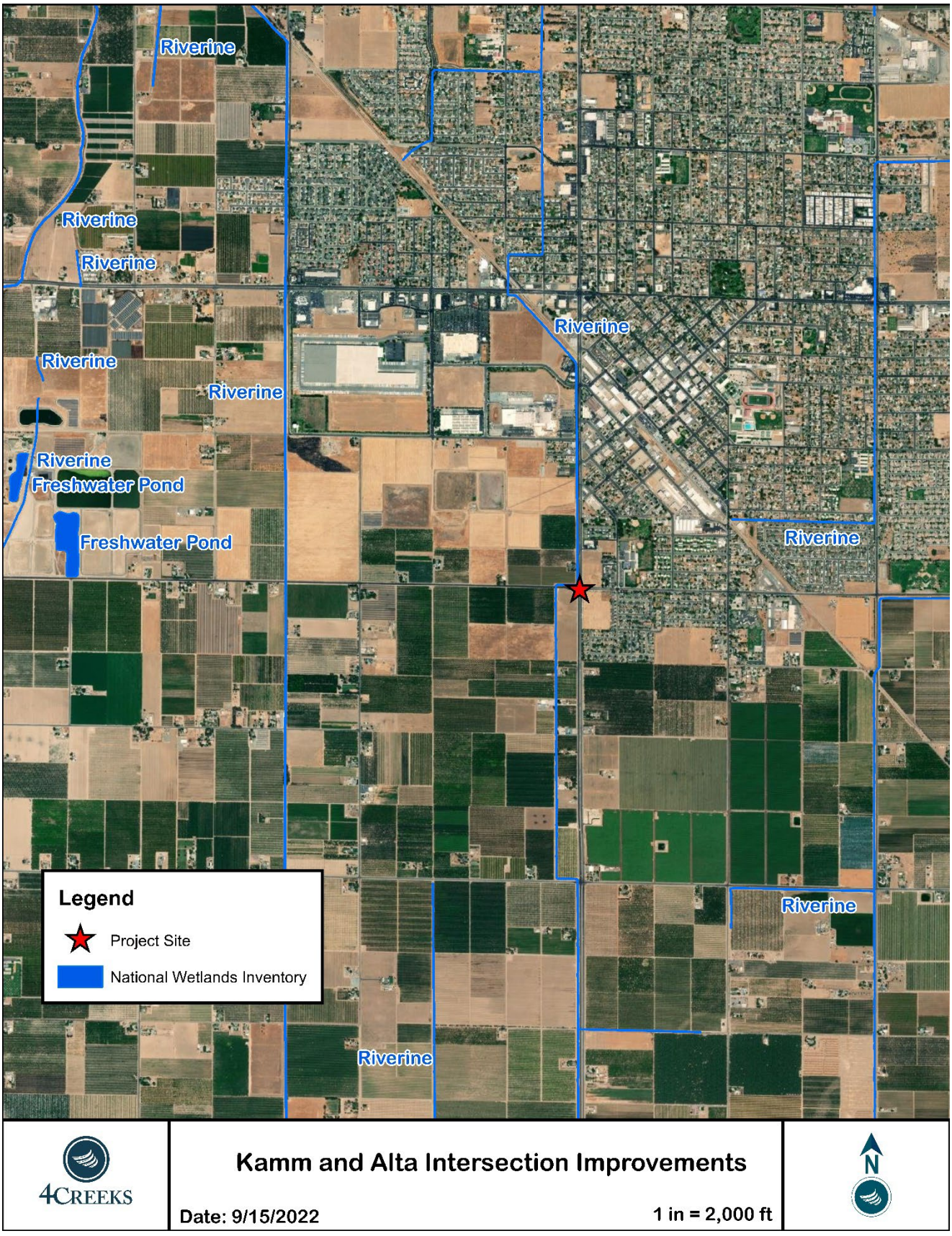
The San Joaquin Valley has a variety of water sources, including the Sierra snowpack, rivers, and groundwater. The Valley has typical hot and dry summers. The Pacific Ocean is the source of storm events that spread rain over the Valley and its foothills while covering the high Sierra Nevada Mountains with snow.

Snowmelt runoff and flood flows that are caused occasionally by heavy rains are captured behind the Pine Flat Dam on the Kings River, the Terminus Dam on the Kaweah River, and the Friant Dam on the San Joaquin River. These large flows are managed and stored for flood control as well as for spring and summer irrigation use by tens of thousands of valley farmers.

The project is in the Kings Subbasin aquifer of the San Joaquin Valley Groundwater Basin. The Subbasin is bounded by the San Joaquin River to the north, the Sierra Nevada foothills to the east, the South Fork of the Kings River to the south, and the Delta-Mendota and Westside Sub-basins to the west. Pumping water from the aquifer is vital for sustaining crops in places and at times when surface water is not available. Groundwater is also the main source of drinking water. The aquifer is not a limitless resource, and more water is currently being pumped out than is being replenished. However, this project will not involve a well or sewage disposal or result in a threat of aquifer contamination or hazard to public health.

There are no wetlands within or immediately adjacent to the project area according to the National Wetland Inventory (Figure 7). The project will not involve any work in wetlands. Within Dinuba, there are some small ponds, but the main water features are the network of agricultural canals and flood control channels that traverse the area. Numerous agricultural ponds, recharge basins, and other similar features also dot the surrounding area's landscape.

Figure 7: National Wetlands Inventory Map



3.5 Existing Water Quality

3.5.1 Surface Water Quality Objectives/Standards and Beneficial Uses

Surface water is not used in Dinuba. The City may explore future opportunities to purchase surface water. The Project is planning to widen the existing Kamm Avenue across the Dinuba Town Ditch. The Ditch is a man-made surface water delivery canal that delivers groundwater to rural and urban users. There are no natural water courses adjacent to the area. The Ditch is not listed as an impaired water body by the California Office of Environmental Health Hazard Assessment, nor does it appear on the 303(d) for any proposed TMDLs. However, Cross Creek, where water from the Ditch can potentially flow, is listed for high toxicity.

3.5.2 Groundwater Quality Objectives/Standards and Beneficial Uses

The groundwater in Dinuba and the Project area is the sole water supply source. The water quality from the Kings Subbasin is sufficient to be used for drinking water, agricultural uses, and all other uses. The Kings Subbasin is designated as critically over-drafted. The Project construction will require a minimal amount of water for dirt compaction and will not affect the groundwater supply.

4. Potential Project Impacts

4.1 Short-Term Impacts During Construction

During Project construction, the new installation of the pipe will not interfere with the flow or distribution. All flows will be able to pass through during constriction via bypass pumping systems. The bypass pumping systems will be manned full-time by construction personnel to ensure flow remains consistent. To reduce the impact, the contractor will not initiate any work during the irrigation season, which varies annually.

Construction activities would involve soil-disturbing activities such as trenching, grading, and preparing the soil for the new piping for the Ditch. Disturbed soil would be exposed to wind and water-generated erosion. All disturbed soil and pipe bedding will be compacted to a minimum of 90% density to reduce erosion. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.

The disturbed area of the Project site does not discharge to a sensitive water body, either directly or indirectly. The receiving water risk is low.

4.2 Long-Term Impacts During Operation and Maintenance

Runoff pollution from Alta Avenue during operation can include dirt, rubber deposits, metal deposits, antifreeze, engine oil, and litter. However, with the Ditch being piped underground, and not returning to the surface until outside of the ROW, impacts from the street and vehicles will be minimal. A trash rack will be installed on the outfall structure when the Ditch returns to the surface to prevent any litter from continuing downstream. The pipe will be bedded in a minimum of three inches of sand below the pipe and a minimum of one foot above the pipe to prevent any pollutants from reaching the water inside the pipe. In addition, a locator tape marked "Caution Irrigation Pipeline Buried Below" will be placed on the surface above the pipe. The storm drainpipe materials and installation within the city street ROW shall meet the requirements of the 2007 Dinuba Public Works Improvement Standards.

4.3 Cumulative Impacts

The proposed action will not result in cumulative impacts on water quality or quantity. The project will not have any effect on water temperature, nutrient runoff, litter, invasive species, or any other potential impact.

5. Avoidance and Minimization Measures

Best Management Practices (BMPs) to address any potential impacts will be implemented during construction. An effective combination of erosion and sediment control BMPs shall be implemented and adequately working during all phases of construction. Measures will be taken to prevent run-on and runoff pollution, properly dispose of wastes, and train employees and subcontractors. Construction will begin outside of the irrigation season when the Ditch will be dry. Soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses. All areas disturbed by project activities shall be protected from washout or erosion. All drainage protective devices such as swales, interception ditches, protective berms, concrete channels, or other measures designed to protect improvements from runoff must be constructed before the construction of the project.

The amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking should be minimized by applying water or other dust palliatives, as necessary. Watering should occur at least twice a day with complete coverage, preferably in the late morning and after work is completed for the day. Covering small stockpiles or areas is an alternative to applying water. The stockpiles should be located a minimum of fifty feet away from concentrated flows of stormwater, drainage courses, and inlets. The stockpiles should be protected using a temporary perimeter sediment barrier. All

clearing, grading, earth moving, or excavation activities will cease during periods of high winds greater than twenty mph. Vehicles will be prohibited from being on non-active portions of the Project site. All vehicles on site will be limited to 15 MPH to reduce dust forming. The contractor shall maintain dust control on the site as specified by "Caltrans Standard Specifications 2015".

Stabilized construction access should be provided at entrances to reduce or eliminate the tracking of sediment onto public streets. Visible sediment tracking should be swept or vacuumed daily. For solid waste management from clearing and grubbing, BMPs would include providing designated waste collection areas and containers and arranging for regular disposal. For concrete waste management, the washout should be conducted offsite or in a designated area at least fifty feet from the Ditch.

Vehicle and equipment cleaning, fueling, and maintenance should be done offsite or in a designated, contained area only. The discharge of petroleum products or other excavated materials to surface water channels is prohibited. The Discharger shall notify the City of Dinuba immediately of any spill of petroleum products or other organic or earthen materials.

Following construction, all trenches will be filled to reduce any impact.

The Discharger shall maintain a copy of the supporting documentation at the project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors) performing work on the proposed project shall be adequately informed and trained regarding the conditions of the certification.

The project disturbs over one acre of soil, therefore a Water Pollution Control Program and SWPPP will need to be prepared by the contractor per Caltrans 2010 Standard Specification Section 13-2.

The Discharger shall notify the City of Dinuba immediately if any of the above conditions are violated, along with a description of measures it is taking to remedy the violation. By incorporating proper and accepted engineering practices and BMPs, the proposed project will not produce significant impacts on water quality during construction or its operation.

6. Permits Required

- Irrigation District Encroachment Permit
- City of Dinuba Encroachment Permit
- Tulare County Encroachment Permit
- A CDFW Section 1602 Streambed Alteration Permit/Agreement may be required.
- An RWQCB Section 401 Water Quality Certification may be required.

7. References

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