RESOURCE MANAGEMENT AGENCY
COUNTY OF TULARE
AGENDA ITEM

AGENDA DATE: May 8, 2018

Public Hearing Required	Yes	☐	N/A	☒
Scheduled Public Hearing w/Clerk	Yes	☐	N/A	☒
Published Notice Required	Yes	☐	N/A	☒
Advertised Published Notice	Yes	☐	N/A	☒
Meet & Confer Required	Yes	☐	N/A	☒
Electronic file(s) has been sent	Yes	☒	N/A	☐
Budget Transfer (Aud 308) attached	Yes	☐	N/A	☒
Personnel Resolution attached	Yes	☐	N/A	☒
Agreements are attached and signature line for Chairman is marked with tab(s)/flag(s)	Yes	☐	N/A	☒

CONTACT PERSON: Celeste Perez PHONE: (559)624-7010

SUBJECT: Presentation of the Tulare County Bridge Improvement Program

REQUEST(S):

That the Board of Supervisors:

Receive a Presentation on the Tulare County Bridge Improvement Program.

SUMMARY:

Tulare County is responsible for the maintenance of 355 bridges (measuring 20-ft and longer) on County roads. Several bridges were constructed prior to 1960, and are nearing the end of their service life. Tulare County has implemented a “Bridge Improvement Program” with the goal of addressing the County’s aging bridge inventory. This program is intended to repair or replace existing bridges that are considered either “Functionally Obsolete” and/or “Structurally Deficient”. Substantial progress has been made in the previous year on the program and staff would like to update the Board on the current activities. Following is a summary of the program:

Tulare County’s “Bridge Improvement Program” is predominantly funded by the Federal Highway Administration’s (FHWA) Highway Bridge Program (HBP). The HBP is a nationwide program that provides funding for our nation’s bridges that are in need of rehabilitation, repair or replacement. Supplemental funding for the program is through the County’s local Measure R transportation funding.

Typically, federally funded projects require a local match as a condition for receipt of federal funds. However, in 2010 the California Department of Transportation (Caltrans) received approval from FHWA for the use of approximately $5.7 billion of “toll credits” to be applied to federally funded bridge projects in lieu of local match

requirements. The intent of the "toll credit" program is to accelerate the delivery of "off-system" bridge projects; projects typically neglected by the HBP. "Off-system" bridges are defined as those that carry streets and roads that are functionally classified as urban/rural local streets and roads.

Through prior Board action, the County has programmed 30 bridges to receive federal funding as part of the County's "Bridge Improvement Program," 24 of these are "off-system" bridges and are eligible to receive 100% funding through the HBP. The remaining "on-system" bridges receive 88.53% of their costs through the HBP, with the remaining 11.47% (matching funds) provided by Measure R. The estimated cost to address all 30 bridges is approximately $73,700,000, of which HBP funds would cover $71,500,000 and Measure-R funds would cover the remaining $2,200,000.

Part of the County's "Bridge Improvement Program" also includes bridge preventive maintenance for bridges over 20-ft. The purpose of bridge preventive maintenance is to extend the service life of bridges considered to be in generally good condition, by implementing preventive maintenance measures such as protective deck treatments, joint seal repairs or scour mitigation repair, before costly or major bridge rehabilitation or repair is required. Of the County's 355 bridges over 20-ft, approximately 91 are eligible for preventive maintenance. The estimated cost to address various items of work for these 91 bridges is approximately $12,025,000, of which HBP funds would cover $10,646,000 (88.53%) and Measure-R funds would cover the remaining $1,379,000 (11.47%).

In addition, Resource Management Agency staff proposes to develop a Bridge Preventive Maintenance Program (BPMP) for bridges under 20-ft in length. Bridges and culverts with a total length less than 20-ft do not qualify for federal funding, therefore Tulare County is responsible for 100% of the cost to manage and maintain these structures (including the cost to rehabilitate or replace the structures). Staff anticipates $200,000 in Measure R funds needed to develop the County's under 20-ft BPMP. This would include a full inventory of bridges under 20-ft, an assessment of the maintenance needs, and a prioritization of these projects.

Staff also proposes to replace four (4) under 20-ft bridges. Three (3) timber bridges and one (1) concrete bridge are in need of replacement for several reasons, including but not limited to: degraded structural condition, limited load carrying capacity, narrow deck geometry, and history of accidents and required routine maintenance. If replaced, Tulare County would be responsible for 100% of the bridge costs and staff anticipates $3,360,000 in Measure R funds needed to design and construct the four under 20-ft bridges.

The presentation will also cover the issue of ground and bridge subsidence along the Friant-Kern Canal in the segment of the canal starting approximately 3.5 miles west of Terra Bella and extending for approximately 3.75 miles downstream. The County is working with the Friant Water Authority (FWA) to address 5 different bridges impacted by subsidence along this stretch of the canal and developing

short-term and long-term solutions to this unique challenge. For additional information from FWA on this topic, see attachment B – FWA Subsidence Brochure.

FISCAL IMPACT/FINANCING:

There is No Net County Cost to the General Fund.

Funding for the "Bridge Improvement Program" will come from FHWA's Highway Bridge Program and Measure R.

As the "Bridge Improvement Program" progresses, staff will work with the Tulare County Transportation Authority to program Measure R Bridge Program funds of approximately $2,200,000 in local match funding for "on-system" HBP bridges and $1,379,000 in local match funding for the HBP Bridge Preventive Maintenance Program. If approved, Measure R will provide $200,000 to implement the County's under 20-ft BPMP and $3,360,000 to replace four under 20-ft bridges. In total, staff proposes that Measure R will provide $7,160,000 to leverage approximately $86,000,000 in total bridge work throughout the County.

LINKAGE TO THE COUNTY OF TULARE STRATEGIC BUSINESS PLAN:

This project will enhance the safety and security of the public by improving the transportation infrastructure for both the general population in the region and the motorists using this facility.

ADMINISTRATIVE SIGN-OFF:

Reed Schenke
Director

RS:jv

Cc: Auditor-Controller
County Counsel
County Administrative Office (2)

Attachment(s): Attachment A – Bridge Improvement Program Map
Attachment B – FWA Subsidence Brochure

BEFORE THE BOARD OF SUPERVISORS
COUNTY OF TULARE, STATE OF CALIFORNIA

IN THE MATTER OF PRESENTATION OF THE TULARE COUNTY BRIDGE IMPROVEMENT PROGRAM) **Resolution No. _____**

UPON MOTION OF SUPERVISOR _____, SECONDED BY SUPERVISOR _____, THE FOLLOWING WAS ADOPTED BY THE BOARD OF SUPERVISORS, AT AN OFFICIAL MEETING HELD MAY 8, 2018, BY THE FOLLOWING VOTE:

AYES:
NOES:
ABSTAIN:
ABSENT:

ATTEST: MICHAEL C. SPATA
COUNTY ADMINISTRATIVE OFFICER/
CLERK, BOARD OF SUPERVISORS

BY: _____
Deputy Clerk

* * * * * * * * * * * * * * * * * * *

Received a Presentation on the Tulare County Bridge Improvement Program.

Attachment A

Bridge Improvement
Program Map

Attachment A

Bridge Improvement Program Map

Completed Bridge Projects

1. M319 Kaweah River
2. A416 Kings River
3. R56 Packwood Creek
4. R148 Outside Creek
5. R182 Deep Creek
6. R224 Deer Creek
7. D39 Traver Canal

In-Progress Bridge Projects

8. A364 Cottonwood Creek
9. A392 Sand Creek
10. M375A Mineral King
11. D129 Sand Creek
12. Bear Creek Rd
13. A424 Traver Canal
14. M348 S. Fork Kaweah River
15. R204 Wutchumna Ditch
16. A174 Friant-Kern Canal
17. D112 Bates Slough Road
18. D112 N. Branch Tule River
19. A376 Traver Canal
20. A428 Sand Creek
21. A108 Lakeland Canal

Programmed Bridge Projects

22. BPMP (Various Locations)
23. R16 Homeland Canal (A)
24. R16 Homeland Canal (B)
25. M109 White River
26. R204 Friant-Kern Canal
27. A196 Friant-Kern Canal
28. A152 Tule River
29. D238 Deer Creek
30. Springville Ave, Porter Slough
31. A120 Friant-Kern Canal
32. A32 Friant-Kern Canal
33. D112 Elk Bayou
34. D112 N. Branch Tule River
35. A436 Friant-Kern Canal
36. M220 Bear Creek
37. R138 Alta Canal
38. D152 Murray Creek

Measure R Bridge Projects

39. BPMP (Various Locations)
40. A208 Cameron Creek
41. West Oakwood Dr
42. Stewart Dr
43. A430 Buttonwillow Ditch

Legend

- Friant-Kern Canal
- Major Rivers
- Highways
- Unincorporated Communities
- Incorporated Cities

Supervisorial Districts

- S-1: Kuyler Crocker
- S-2: Pete Vander Poel
- S-3: Amy Shuklian
- S-4: Steve Worthley
- S-5: Mike Ennis

0 4 8 16 Miles

Dinuba
Sultana
East Orosi
Cutler-Orosi
Kingsburg
London
Traver
Woodlake
Ivanhoe
Lemon Cove
Three Rivers
Patterson Tract
Goshen
Visalia
Farmersville
Exeter
Rancho Sierra
Tulare
Lindsay
Plainview
Strathmore
Springville
Woodville
Porterville
East Porterville
Tipton
Poplar-Cotton Center
Pixley
Terra Bella
Alpaugh
Earlimart
Ducor
Richgrove

Attachment B

Friant Water Authority (FWA) Subsidence Brochure

FRIANT
WATER AUTHORITY

SUBSIDENCE – A CRITICAL CHALLENGE TO FRIANT-KERN CANAL WATER DELIVERIES

The Friant Water Authority is facing a critical challenge right now -- one that has **reduced our ability to deliver water to many Friant Division Contractor's by nearly 60%.** It is a challenge that must be met today if we are to ensure our long-term commitment to delivering high-quality, dependable water, in the amounts needed by farmers and cities in the San Joaquin Valley.

Alarming Signs of Subsidence

Evidence of subsidence was noticed when, at full capacity, water in the canal was running up against bridges it would normally pass under quite easily.

The picture on the left shows water passing under the bridge at Road 96 as it likely looked prior to the most recent subsidence. The picture on the right shows water hitting the bridge at Road 96 under similar flow conditions.

A Legacy of Innovative Water Management

The Friant Division was designed to bring stability to the San Joaquin Valley's groundwater supply, which was threatened at the beginning of the 1900s by decades of groundwater pumping. The Friant Division's two canals – the Friant-Kern and the Madera – source high-quality surface water from the San Joaquin River that supports crops, cities, and groundwater recharge. This investment to establish the Friant Division has paid off by providing stable surface and groundwater supplies that created and sustain a world-class agricultural sector that in turn supports numerous communities and businesses. But in recent years, several challenges have reduced the ability of the Friant Division's existing infrastructure to serve its intended purposes.

The Challenge

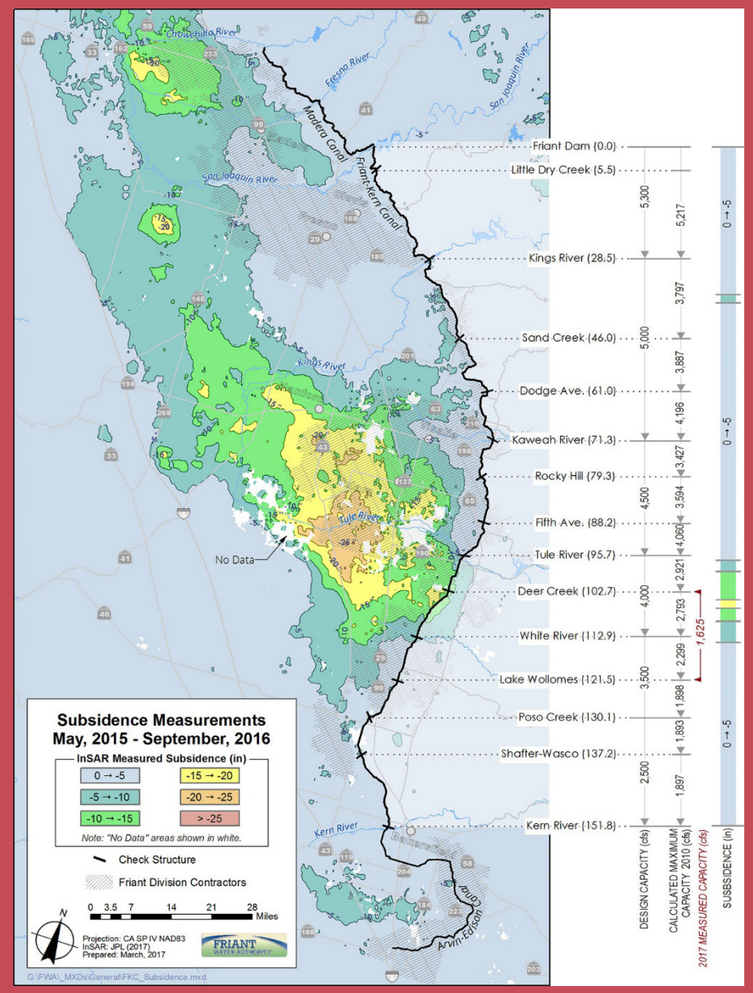
In early 2017, Friant Water Authority discovered a problem related to land subsidence that affects the Friant-Kern Canal's carrying capacity and its ability to deliver water to Friant contractors near the southern portion of the canal.

Subsidence and Canal Operations

The Friant-Kern Canal was designed as a gravity-fed facility and does not rely on pumps to move water. Subsidence (which is the gradual sinking of an area of land) has caused parts of the canal to sink in relationship to others parts. This negatively affects the canal's ability to convey water. When the land elevation lowers, the canal must be operated at a lower flow-stage to ensure that water doesn't overflow the banks.

Drought is the Driving Factor

From 2012-2017, California weathered its worst drought on record at the same time that increasingly stringent environmental regulations required more surface water to flow to the ocean. This forced San Joaquin Valley water users to rely heavily on groundwater supplies. In addition, in 2014 and 2015, the Bureau of Reclamation made a decision not to allocate to Friant Contractors their water supply from the San Joaquin River. This action caused most Friant districts to rely solely on groundwater resources to maintain their crops and protect decades of investments in what is among the highest-value, highest-production agricultural areas in the world.



The graphic shows the areas of subsidence along the Friant-Kern Canal and the degree to which canal capacity has been compromised from its original design.

The darker blue, green and yellow shown in the far left bar are the areas of highest subsidence along the Friant-Kern Canal. The area of greatest subsidence is between the Tule River and Lake Woollomes, particularly in the area of Deer Creek.

The graphic shows that in that section of the canal the current capacity has been reduced to only 40 percent of designed capacity, with a significant portion of that loss happening in the last 6 years.

For additional information, please contact :

Douglas DeFlitch
Chief Operating Officer

854 N. Harvard Ave.
Lindsay, CA 93247
(559) 562-6305
ddeflitch@friantwater.org

www.friantwater.org

What Does Canal Subsidence Mean to You?

It means that even in 2017 – one of the wettest years on record in the San Joaquin River basin – Friant Water Authority cannot physically move the amount of water we should be able to deliver to farms and communities on the San Joaquin Valley's eastside. It means that the Friant Division cannot operate to its full capability or in the way it was designed.

Is This a New Problem?

The Friant-Kern Canal's carrying capacity has been compromised by various factors, including subsidence, since it began operation in 1951. In the past, water managers could manipulate canal operations to help mitigate some of the lost capacity. However, the new problem that emerged in 2017 is driven by rapid and severe land subsidence in the Corcoran/Tulare Basin areas, which are adjacent to the Friant-Kern Canal near Deer Creek. During 2015-2016, land elevations have dropped by two feet near Corcoran. There is no way to operate the canal to eliminate impacts to water users caused by this amount of subsidence.

Impacts to Contractors

All Friant Contractors who rely on the Friant-Kern Canal will be affected by changes in operations necessary to cope with the subsidence problem as reduced capacity along the canal will likely impact long-standing transfer or exchange partnerships among Friant Contractors, which have helped to balance water supply throughout the Friant Division. The Contractors downstream from the subsidence area (including Arvin-Edison WSD, Shafter-Wasco ID, South San Joaquin MUD, Kern-Tulare WD, Delano-Earlimart ID, Terra Bella ID, Saucelito ID, and Tea Pot Dome WD) will be most affected, however, because they may not get the amount of water they want during the time they need it. This may require farmers to turn to groundwater to make up for the shortage, which could exacerbate the subsidence that is causing the problem in the first place.