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BEFORE THE
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

HEARING ON THE MATTER OF
CALIFORNIA DEPARTMENT OF WATER RESOURCES AND UNITED STATES
BUREAU OF RECLAMATION REQUEST
FOR A CHANGE IN POINT OF DIVERSION
FOR CALIFORNIA WATER FIX.

PART TWO TESTIMONY OF ROBERT GRANBERG, P.E.

This testimony is offered on behalf of the City of Stockton ("City" or "Stockton").

I. INTRODUCTION

I currently serve as the Assistant Director of Stockton’s Municipal Utilities
Department (MUD) and have done so since 2013. A detailed description of my
background and qualifications are included in my testimony for Part One and my
resume. (See Exhibits STKN-010, STKN-011.) My testimony for Part Two will
summarize the impacts from the California WaterFix Project ("WaterFix" or "Project") to
the City's Regional Wastewater Control Facility (RWCF), compliance with the National
Pollution Discharge Elimination System (NPDES) permit for the RWCF, and the public
interest. In summary, there is substantial evidence that the Project will cause adverse
impacts to the water quality of the San Joaquin River, which will require Stockton to
invest in additional wastewater treatment processes, increase the potential for NPDES
permit violations and more stringent NPDES permit terms, degrade public trust
resources, and increase health risks to Stockton’s residents. The Department of Water
Resources (DWR) and U.S. Bureau of Reclamation (collectively referred to as
"Petitioners") have neither acknowledged these impacts, nor identified mitigation
measures that would address them. By failing to address these impacts, the Petitioners
have shifted the burden of mitigating the impacts of WaterFix on to Stockton.

II. STOCKTON'S REGIONAL WASTEWATER CONTROL FACILITY

The City owns, operates, and maintains wastewater collection and treatment
facilities that serve the entire Stockton Metropolitan Area population under the waste
discharge requirements / NPDES permit issued by the Central Valley Regional Water
Quality Control Board (Central Valley Water Board).

The City's RWCF is a wastewater treatment plant located in southwest Stockton
providing primary, secondary, and tertiary levels of treatment. The RWCF consists of
headworks, primary sedimentation, trickling filters (biotowers), secondary clarifiers,
facultative ponds, treatment wetlands, nitrifying biotowers, dissolved air flotation,
filtration, chlorine disinfection, and dechlorination prior to discharge of tertiary treated
effluent to the San Joaquin River just upstream of Rough and Ready Island. The
location of the RWCF is shown on Exhibit STKN-001. Solids handling consists of
anaerobic digestion producing methane gas for cogeneration, solids dewatering, and
disposal as soil amendment for non-food producing agricultural uses. Permitted
discharge is 55 million gallons per day (MGD). Average dry weather discharge (July
through September) in 2017 was 24.6 MGD. Wastewater treatment and discharge to the
San Joaquin River is, and will continue to be, one of the essential services that the City
provides to its residents.

The RWCF operates under a NPDES permit (No. CA0079138) and consequently
is subject to regulation based on numerous applicable water quality standards.
(Exhibit STKN-020; Exhibit STKN-055 is a true and correct copy of Attachment F of
Central Valley Water Board Order R5-2014-0070-03, NPDES No. CA0079138.) The
City has made considerable investments in its wastewater treatment processes to
achieve the effluent and receiving water limitations and other requirements set forth in its
NPDES permits. In 2008, the City invested tens of millions of dollars in ammonia
removal treatment. As a result of the 2014 NPDES permit renewal, the City must
implement another major requirement to reduce total nitrogen in its discharge to the
San Joaquin River. The improvements currently being designed for nitrogen removal will
cost the City $74.6 million. This is the cost today to comply with a nitrogen removal
criteria based on current water quality conditions. If San Joaquin River or downstream
Delta water quality conditions worsen due to the Project, as evidence submitted in Part 1
of these proceeding suggests, Stockton may be faced with even more stringent
discharge limitations through the NPDES permitting process that translate into further
treatment requirements, which are not known at this time and have not been evaluated
and considered by Petitioners in their Project impact analysis, or in any evidence
submitted to date in this proceeding, to the level that would adequately inform the State
Water Resources Control Board (State Water Board), Stockton, and other potentially
impacted parties.

Stockton is unique in that its surface water rights are directly tied to the discharge
of its treated wastewater. The City diverts water to its Delta Water Supply Project Water
Treatment Plant (DWSPWTP) under Permit 21176, which contains Condition 15 that
limits the amount of water that Stockton may divert to the amount of wastewater
discharged from the City's RWCF. Condition 15 specifies:

The 15-day running average of diversions from the Delta under this permit shall be less than or equal to the 15-day running average of discharges of properly treated effluent discharged from the [RWCF] into the San Joaquin River. The term 'properly treated effluent' means effluent that meets the requirements of the Central Valley Regional Water Quality Control Board (Regional Water Board).

Therefore, Stockton's ability to divert a sustainable quantity of potable water under its Delta surface water right is dependent on its ability to comply with its NPDES permit. Further erosion of water quality due to the operation of the Project could jeopardize Stockton's ability to meet its NPDES permit conditions with a direct impact to its ability to divert water for potable water treatment and distribution, the cost of which would be burdened on its ratepayers. Those impacts could range from operational changes in the current water or wastewater treatment processes that result in additional power demand, chemical use or labor, to further treatment requirements potentially costing millions of dollars in additional capital and operation expenditures, to further limits on development that discourage business investment and result in a negative economic impact to the City and the region.

III. Effects to Water Quality

The potential effects of the proposed action on surface water in the Delta are of great significance to the City because alterations to the flows of the Sacramento and San Joaquin Rivers may negatively impact the quality of water in the San Joaquin River. As communicated repeatedly to Petitioners, the City is concerned with any decreases in San Joaquin River water quality at or downstream of its point of treated wastewater discharge that would further burden the City through more rigorous wastewater treatment standards applied through the NPDES permit process.

Based on my knowledge of NPDES permitting and wastewater treatment plant operations, it is my opinion that even seemingly small increases in the mass or concentration of various water quality constituents may cause the City to be unable to comply with its NPDES permit or force the City to add additional treatment processes at
a significant cost. The determination of the need for, and calculation of, effluent
limitations, is a function of various factors, including receiving water quality. In general,
the lesser the receiving water quality the more likely it is that there will be effluent
limitations for a constituent and the more stringent any effluent limitations are likely to be.
Also, wastewater treatment plant operators must respond promptly to changing
conditions, and substantial changes from day-to-day in the quality of RWCF effluent can
have adverse consequences on the City's ability to discharge treated wastewater.

a. Electrical Conductivity

Increased salinity, measured as electrical conductivity (EC), in Stockton's drinking
water system has a direct correlation to salinity in Stockton's wastewater discharge. The
City's NPDES permit limits treated wastewater discharge EC to a calendar year average
of 1,300 micromhos per centimeter (μmhos/cm). (Exhibit STKN-056 is a true and correct
copy of the City's most recent progress report on the annual salinity Pollution Prevention
Plan (PPP).) Any long-term increase in EC at the City's drinking water intake due to the
Project will have a detrimental effect on the City's ability to comply with its NPDES
permit, which in turn could limit Stockton's ability to divert under its water right
Permit 21176, result in a change in drinking water sources or in the addition of costly
treatment measures (such as reverse osmosis), and also contribute to the economic
impacts of turning away industrial development that may need capacity for discharge to
the City's sewer system.

As noted above, the City's wastewater NPDES permit limits salinity in the City's
treated wastewater discharge to the San Joaquin River and requires the City to prepare
and annually update a PPP for salinity in order to meet the requirements of Water Code
section 13263.3(d)(3). (Exhibit STKN-050.) The provisions of Water Code
section 13263.3 (Section 13263.3) specify that the PPP estimate all sources of salinity in
the publicly owned treatment works (POTW) influent, analyze the methods that could be
used to prevent the discharge of salinity to the POTW and the associated costs, and
impacts to implement a PPP. One source of salinity in the City's wastewater discharge
is the salinity in the City’s source water supply. (Exhibit STKN-021.) Whenever the salinity concentration of water at the intake increases above 110 milligrams per liter (mg/L), in order to meet demand for drinking water, the City is faced with the decision to forego diversions under its Delta water right, and either purchase water or pump groundwater, which is higher in salinity measured as Total Dissolved Solids (TDS). More frequent or larger increases in the salinity of the City’s potable supply, as may be caused by the WaterFix project, could force the City to implement expensive additional drinking water treatment, such as reverse osmosis.

Increased salinity in the City’s source water has a direct effect on Stockton’s ability to comply with its NPDES permit, which establishes limits on the salinity in the City’s wastewater discharge. (Exhibit STKN-021.) This information was presented in the City’s March 17, 2017 comments to the State Water Board’s 2016 Phase 1 Bay-Delta Plan amendment and Substitute Environmental Document. As part of the City’s effort to control source water salinity, the City procured and incorporated the DWSPWTP water right into its supply and obtained a corresponding reduction in effluent salinity. (Exhibit STKN-040, pp. 7-9.) Increasing salinity in Delta source water for municipal and industrial use due to the Project has the potential to cause NPDES violations. If the City were required to fund additional treatment technology to reduce salinity in the water diverted from the Delta, that would necessarily increase treatment process and service costs and directly impact the City’s ability to serve its customer base, which includes a substantial number of economically disadvantaged persons.

b. Nitrate plus Nitrite

The City’s 2014 NPDES permit included a final effluent limitation for nitrate plus nitrite of 10 mg/L and a compliance date of June 1, 2024, based upon the Central Valley Water Board’s decision to protect the State Water Project from potential taste and odor impacts associated with algal blooms. The City’s Part 1 evidence demonstrated that the Project will result in a substantially higher proportion of San Joaquin River flow (poorer water quality) at the City’s RWCF discharge location. This change due to the Project’s
operations is likely to result in corresponding higher nitrate concentrations, which could
further burden the City by requiring further reductions in nitrate plus nitrite through future
NPDES permit limits. The City would have to construct additional facilities or treatment
processes to lower nitrate plus nitrite even further. This impact would further burden the
City’s ratepayers as the Petitioners have failed to address this issue through the
Project’s environmental analysis, leaving the City and its ratepayers to speculate on the
future of the City’s ability to adequately treat wastewater in a cost-effective and
environmentally responsible manner.

c. Dissolved Oxygen

The City’s NPDES permit limits Dissolved Oxygen (DO) to 6 mg/L from
September 1 through November 30 and 5 mg/L throughout the remainder of the year.
(Exhibit STKN-020.) The Project’s final environmental impact report/environmental
impact statement (EIR/EIS) discusses the occurrence of low DO concentrations
coinciding with periods of low flow conditions, indicating that flow, channel morphology
and nutrient loading in the San Joaquin River are important factors influencing DO
conditions in the Stockton Deep Water Ship Channel downstream of the City’s discharge
location. (Exhibit SWRCB-102, Final EIR-EIS Chapter 8 – Water Quality, pp. 8-51
to 8-52.) Future San Joaquin River conditions that result in lower river flow, or higher
nutrient loading in the Stockton Deep Water Ship Channel caused by Project operations,
could place a greater burden on the City through lower limits on ammonia nitrogen or
other oxygen demand through the NPDES permit process. The resulting need for
additional investment in treatment technology would unfairly burden City ratepayers by
forcing them to mitigate Project impacts. The Project EIR/EIS failed to analyze this
potential impact to Stockton and therefore is inadequate to inform the State Water
Board’s decision regarding the requested water rights change petition, including whether
the requested change will adversely affect water quality or whether it is in the public
interest.

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IV. CONCLUSION

Petitioners have failed to acknowledge and address the significant adverse impacts of WaterFix on the City, and have therefore, shifted the burden of responding to water quality impacts caused by the Project onto the City and its residents. NPDES permits for the RWCF are based on flows and water quality in the Delta. The WaterFix would alter those flows and cause water quality changes that would threaten Stockton's ability to comply with its NPDES permit and could force Stockton to invest in additional, expensive wastewater treatment processes. The costs for implementing additional wastewater treatment due to water quality degradation caused by the Project would be borne by the City's residents, a substantial proportion of whom are socioeconomically vulnerable. The City's concerns, and the concerns of the region as a whole, must be addressed before the change petition can be considered. It is in the public interest to deny the requested change petition, at least until more information relevant to the City's concerns is provided for review, and the appropriate assurances are provided (in the form of permit terms and conditions) that would avoid any harm to the City's water supply or its ability to comply with its NPDES permit, including potential harm should approval of the change petition lead to more stringent NPDES permit requirements.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 29th day of November, 2017 in Stockton, California.

[Signature]

Robert Granberg, P.E.