



Central Valley Regional Water Quality Control Board

04 November 2020

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EVALUATION OF WASTEWATER TREATMENT PLANT OPTIONS, TOWN OF PARADISE, BUTTE COUNTY

The Central Valley Water Board (Board) is a state agency charged with protecting water quality, and it fulfills its mission by issuing permits to regulate facilities whose discharges may affect surface water or groundwater quality, including wastewater treatment plants. The Board understands that the Town of Paradise (Town), which has historically relied on individual onsite waste treatment systems in its business district and residential areas, is pursuing a municipal sewer system to serve these areas due to numerous instances of onsite wastewater treatment system failures.

The Board continues to strongly support the development of a municipal sewer system for portions of the Town, since a dependable sewer system is vital to the reestablishment of businesses and residences. In an effort to help expedite and support these efforts, Board staff approached Town officials to offer assistance, particularly with respect to discussion of technical feasibility, environmental permitting, and opportunities for financial support.

The Board understands that the Town is currently considering two options: a new local wastewater treatment plant, or regionalization with the City of Chico's wastewater treatment plant. The attached memorandum provides a qualitative evaluation of the factors affecting the options. Informing this evaluation is the Board's decades of experience that local wastewater treatment plants of the type being considered by the Town consistently struggle to comply with applicable regulatory requirements to protect groundwater and surface water. Furthermore, reliance on a limited rate base to sustain long-term buildout also raises significant concerns regarding the ability to develop a financing plan that would be eligible for state financial assistance. Therefore, based on this preliminary evaluation, it is the opinion of the Board's technical staff that the regionalization option presents an objectively more sustainable long-term solution to the

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this preliminary evaluation, it is the opinion of the Board's technical staff that the regionalization option presents an objectively more sustainable long-term solution to the Town's wastewater infrastructure needs. Due to the apparent overwhelming advantages of the regionalization option, it is the Board's strong recommendation for the Town to conserve limited financial resources and focus its feasibility analysis on the regionalization option.

The Board remains committed to assisting the Town in recovering from the devastation caused by the Camp Fire, and we recognize these decisions weigh heavily on local leadership. Furthermore, we stand ready to review any new relevant information, including additional analyses that may strengthen the case for a local option. However, the Board felt compelled to offer this candid assessment because we understand that the stakes involved in these decisions are incredibly high for the Town, its residents, and its future.

We hope these comments are received constructively, and we look forward to continuing to assist with implementation of a successful sewer project service the Town. Please contact me at (530) 224-3213 or at clint.snyder@waterboards.ca.gov if you have any questions.



Clint E. Snyder, P.G.
Assistant Executive Officer

BJS: mb

cc by email:

Patrick Pulupa, Executive Officer, Central Valley Water Board, Sacramento
Joe Karkoski, Deputy Chief, Division of Financial Assistance, SWRCB
Bryan Smith, Supervising Engineer, Central Valley Water Board, Redding

Central Valley Regional Water Quality Control Board

TO: Clint E. Snyder, P.G.

FROM: Bryan J. Smith, P.E.
Supervising Water Resource Control Engineer
Redding Office

DATE: 4 November 2020

SUBJECT: QUALITATIVE EVALUATION OF FACTORS AFFECTING WASTEWATER TREATMENT PLANT OPERATIONS, LOCAL FACILITY VERSUS REGIONALIZATION, TOWN OF PARADISE, BUTTE COUNTY

The Town of Paradise (Town) is seeking to establish sanitary sewer service to its core downtown business area. The ability to expand the service area to include surrounding residential areas in the future would also be desirable. Two main options are being considered by the Town to treat and dispose of the sewage that would be collected from the service area. The first option is a new wastewater treatment plant that would be located in the general vicinity of the Town of Paradise, and the second option is regionalization with the City of Chico's existing wastewater treatment plant.

This memorandum provides a qualitative evaluation of the factors affecting the options. The following table compares the two options by assessing considerations under a set of five factors. Based on this evaluation, the option for regionalization of wastewater treatment and disposal is subjectively more favorable, and it is recommended that this preliminary position be taken by State and Regional Water Board executive leadership.

Factors	Local WWTP	Regionalization
<u>Technical Considerations</u>		
Conveyance facilities.	Options such as the Miocene Canal would rely on existing infrastructure that is in poor condition or not of resilient design (e.g., wood-supported canal elements.) Complicated right-of-way acquisition likely involving numerous property owners.	A significant project, but relatively straight-forward and would use mostly public right-of-way.

Siting	Due to the topography, geology and hydrology of the Paradise area, finding a suitable site for both treatment and disposal would be difficult. Although several candidate sites have been identified, all have limitations and require further and time-intensive analysis before determining adequacy.	Existing facility with room for growth. Not constrained by poor siting conditions.
Sizing and scalability	Due to the uncertainty in projecting redevelopment rates and trends in Paradise, and the flows generated from redevelopment, it would be necessary to design for a maximum predicted rate, even though flows will ramp up gradually, and may never reach the maximum rate. This would result in a WWTP that is oversized, at least for much of its useful life. Furthermore, if additional service area into the residential areas are desired in the future, expansion of the WWTP and conveyance infrastructure would be needed. Depending on available Rights of Way and treatment/disposal areas, suitable additional areas may not be available. Further, treatment processes may not be easily scalable without substantial redesign and reconstruction of WWTP elements. Expansion of the WWTP to accommodate larger, future flows would be costly. Alternatively, building a larger WWTP and initially operating at reduced capacity is technically challenging, wasteful of energy, and unnecessarily costly.	Scalable. Pipeline to Chico can be cost-effectively sized to accommodate a large range of flows. Chico WWTP is relatively large and should be able to accommodate a range of flow options from Paradise, including low initial flows that ramp up over time. Chico WWTP treatment and disposal design is more flexible than a local Paradise WWTP
<u>Environmental Considerations</u>		
Groundwater impacts	Public health and groundwater impacts in the service area would be largely eliminated, however groundwater impacts are simply shifted to another location within the Paradise area, possibly resulting in even higher pollutant	Eliminates groundwater impacts from existing onsite waste treatment systems in the Paradise area that are largely due to geology and hydrology limitations (poorly suited soils, shallow bedrock, and high water table),

	loading density. Does not address the underlying challenges for wastewater disposal in the Paradise area due to geology and hydrology limitations.	and insufficient lot sizes. Better opportunity for higher treatment quality and better options for reuse of treated wastewater and disposal.
Recycled water opportunities.	Depending on the level of treatment, recycled water could be made available to users, however it is not clear if a sufficient number of users are available, or that a recycled water delivery system would be feasible.	The City of Chico already provides recycled water for waterfowl habitat uses, and City staff have stated that expanded recycled water use would be desirable and may be pursued in the future. Revenue generated through regionalization with Paradise could make recycled water projects more feasible for Chico. State and Federal grants and loans may also be available to help fund expansion of recycled water efforts, and a regionalized wastewater system may rank higher than competing systems for project selection and favorable terms for grants and loans.
Level of treatment	A high level of treatment can be achieved, but would be relatively costly given the low economy of scale.	A high level of treatment can be achieved, and synergy is created by increasing the existing economy of scale. Creates opportunities for improvement at the Chico WWTP including tertiary filtration, denitrification, flow equalization, Sacramento River diffuser discharge improvements, recycling for wetlands and groundwater supply augmentation.
<u>Economic/Financial Considerations</u>		
Small rate payer base.	Higher initial cost for construction must be supported by small ratepayer base. Similarly, operation and maintenance for a full scale WWTP would have to be supported by small initial ratepayer base. Financial assistance, if available, would help for construction phase.	Lower initial cost for construction, but still must be supported by small ratepayer base. Relatively low operations and maintenance costs. Financial assistance, if available, would help for construction phase.
Scalability of treatment capacity.	Not easily scalable. WWTP would be sized for currently-proposed collection system. Adding additional service area in the future	Scalable. Pipeline to Chico can be cost-effectively sized to accommodate a large range of flows. Chico WWTP is relatively

	<p>would necessitate expansion of the WWTP and conveyance infrastructure. Depending on available Rights of Way and treatment/disposal areas, suitable additional areas may not be available. Further, treatment processes may not be easily scalable without substantial redesign and reconstruction of WWTP elements. Expansion of the WWTP to accommodate larger, future flows would be costly. Alternatively, building a larger WWTP and initially operating at reduced capacity is technically challenging, wasteful of energy, and unnecessarily costly.</p>	<p>large and should be able to accommodate a range of flow options from Paradise, including low initial flows that ramp up over time. Chico WWTP treatment and disposal design is more flexible than a local Paradise WWTP would be.</p>
Financial assistance.	<p>Likely to receive less favorable consideration, or outright denial, especially if regionalization has similar or better overall feasibility. May not comply with State and Regional Water Board policies supporting regionalization of wastewater services.</p>	<p>State and Regional Water Board policies support regionalization of wastewater services. Likely to satisfy more financial assistance criteria and receive more favorable consideration.</p>
Operations expertise	<p>Has lower economy of scale for staffing the WWTP. Many municipalities already have trouble recruiting and retaining qualified wastewater treatment plant operators. Could be relatively more costly and challenging, especially for an advanced treatment plant that would require high certification level operators.</p>	<p>Benefits from economy of scale and leverages Chico's existing operations staff expertise and pool of qualified operators.</p>
Mutual benefit opportunities	<p>Limited opportunity for mutual benefit or cost sharing.</p>	<p>Many opportunities for mutual benefit and cost sharing. For example, depending on timing, it may be possible to save pipeline installation costs and reduce disruption and environmental impact by partnering with effort to install potable water pipeline down the Skyway. Other opportunities include enhancing Chico initiatives such as recycled water and groundwater augmentation.</p>

<u>Policy/Regulatory considerations</u>		
Compliance with State and Regional Water Board Policy	Policy requires evaluation of regionalization opportunities. If regionalization is found to be feasible, then a local WWTP would not comply and may be denied. Proposal does allow for limited recycled water use, depending on level of treatment, but marketability of the recycled water may be low.	Inherently meets regionalization policy. Greater opportunities for recycled water use in the Chico area, and increases the economy of scale for producing and finding markets for recycled water. Creates opportunities for groundwater supply augmentation.
Environmental review	Requires significant and time-intensive effort to study multiple treatment plant sites. Analysis likely to show relatively more significant impacts with less ability to mitigate. Other environmental review considerations are neutral between the two options.	Analysis of pipeline route is relatively straight-forward and impacts are likely more easily mitigated. Other environmental review considerations are neutral between the two options.
Permit approvals	Due to inherent uncertainty in siting and other considerations, and due to greater impacts to undeveloped lands, a more technically involved and time-intensive process to secure permit approvals is anticipated. Also additional uncertainty, given policy compliance issues discussed above.	Due to the more straight-forward scope of a regionalization option, there would be more certainty in securing permit approvals, and correspondingly smaller timeframes expected.
Surface water discharge	One variant of the local WWTP option includes a surface water discharge. Initiating a new surface water discharge is contrary to the goal of the National Pollutant Discharge Elimination System program, and may not be supported by the Regional Water Board.	Does not initiate a new discharge to surface waters, but does have the potential to incrementally increase the volume of treated wastewater discharged to the Sacramento River. However, the benefits of this option include opportunities to leverage the increase economy of scale and develop recycled water projects, groundwater supply augmentation, increased WWTP treatment performance, and other beneficial projects.
<u>Political/Social considerations</u>		
Legislative and Agency support	Has potential for high level of support by State legislators representing the area, interested in helping the Paradise community rebuild after the devastating Camp	Has potential for initial opposition by State legislators representing the area, interested in helping the Paradise community rebuild after the devastating Camp Fire, but

	Fire. Has low Agency support due to potential inconsistency with existing plans and policies, especially regarding regionalization of utilities. Real concerns regarding the Town's ability to fund O&M costs post construction factor into low Agency support as well.	support may develop if regionalization option gains momentum and moves forward. Agency is supportive due to consistency with existing plans and policies, especially regarding regionalization of utilities, and reduced funding challenges post construction
Inter-jurisdictional coordination, and independence	Does not require coordination with City of Chico, and allows high level of independence.	Requires coordination with City of Chico, an inherent long-term relationship, and more limited independence.
Public support/opposition	May have more support by local community than the regionalization option. Both options would likely have a similar level of opposition based on environmental impacts and growth-inducing aspects.	May have less support in both communities than the local WWTP option. Both options would likely have a similar level of opposition based on environmental impacts and growth-inducing aspects.