



Heritage Ranch Community Services District

4870 Heritage Road, Paso Robles, CA 93446

(805) 227-6230 ~ Fax (805) 227-6231

www.heritageranchcsd.com

MEMORANDUM

To: Board of Directors
From: Doug Groshart, District Engineer
Date: August 18, 2022
Subject: 5-Year Capital Improvement Program

As part of the District's upcoming water and sewer rate study to be conducted by Tuckfield Associates, Staff has prepared a 5-year Capital Improvement Program (CIP) for incorporation into the study's considerations. It is customary to develop and project key capital improvement projects anticipated to occur during this 5-year time period, as these overall costs must be incorporated into the water and sewer rate structures.

Overall CIP Considerations

Each Capital Improvement Program may have varying cost components and schedule considerations. This 5-year CIP will project expected timelines for when expenditures will occur within the 5-year timeline. Timelines may also be projected beyond to the 5-year window to provide the Board with an overall understanding of project duration and timeline. Expenditures that will occur beyond the 5-year timeframe may be projected during the next 5-year CIP/rate study to be conducted in subsequent years. For the purposes of this CIP, staff has considered projects from previous CIPs, current operational, maintenance and compliance-related issues, and future development within the District. We have divided the current and future projects between three time periods: 1-5 years, 6-10 years and 11-20 years. We have divided the projects in this way because, based on staffing and budgetary considerations, there are only so many projects the District can design, construct and pay for in a given time period. Projects included in the first category (1-5 years) have been deemed to be the most pressing. There may be other projects that arise within the next five years that will require attention. There may be projects that are currently categorized as 6-10 or 11-20 year projects that require higher prioritization within the next 5 years, but this is the best estimation we can currently provide.

"Soft" Costs versus "Hard" Costs.

"Soft" costs are defined as planning, environmental, engineering and administrative costs that are all necessary components of public improvement projects. "Hard" costs are the actual construction and equipment purchase costs associated with the Project. The soft costs are sometimes overlooked but are significant components of CIP overall project costs. Examples of soft costs include:

- **Administrative Costs/District staff time.** Some projects, especially those that may be funded by State or Federal monies, can often require considerable staff time and effort to administer projects to comply with financing agency requirements.
- **Environmental review.** All projects require compliance with the California Environmental Quality Act (CEQA). The environmental review required varies considerably, depending on the size and complexity of the Project, if the Project is new or “grass roots” compared to modification or upgrade to an existing facility, environmentally sensitive resources including plants and animal species, and other factors. The costs associated with environmental review can sometimes be difficult to ascertain. Simple public improvement projects, such as a water main replacement/upgrade, generally are exempt from CEQA, where environmental review for projects such as the WRRF could be considerably more complex and costly, and will depend heavily on the extent that construction may extend to “untouched” land.
- **Planning.** Depending on the nature of the Project, planning activities may be required. This can be as basic as general planning and logistical considerations for the Project, to detailed review of a Project relative to County land use and zoning requirements and securing a conditional use permit (CUP). In general, however, special district water and sewer facilities including building and grading activities are exempt from County jurisdiction and permits.
- **Survey and Geotechnical Work.** Some projects require survey and/or geotechnical work, depending on the nature of the project and the need for structural foundation work. In these instances, survey is necessary for the preparation of engineering plans suitable for public bidding. Geotechnical work will also be required, as new facilities will require structural concrete, foundations must be adequately designed to support equipment loads, and equipment must be adequately secured and protected against seismic movement.
- **Engineering.** Certain projects require engineering work to design facilities, such as pipelines, pump stations, treatment facilities, etc. Many public improvement projects require that plans be designed and stamped by a professional civil engineer licensed in the State of California. For many of the proposed projects, District staff will provide the lion’s share of the engineering. However, specialized projects or large scale projects (for example the WRRF project) will require outside consultants (managed by staff).
- **Public Bidding.** Publicly funded projects of \$25,000 value and greater must be bid in accordance with California contracting laws. Publicly bid projects have numerous requirements including prevailing wages, performance and payment bonds, public bid openings, bid evaluation, and other requirements. The District Engineer will typically represent the District in completion of the various public bid requirements. However, there may be certain situations where additional assistance is required.
- **Construction Management/Administration.** Depending on the nature, magnitude and complexity of the Project, construction management and administration support is needed. Activities may include administering the construction contract, progress payments, daily reports and inspections, coordination with specialty inspections such as soils testing, periodic site visits to assess general conformance with contract requirements, submittal reviews, responding to requests for information (RFIs),

developing punchlist, filing notice of completion, and numerous other functions. A third party engineering firm can provide CM services, and many times the same engineering company as the engineer of record (EOR) provides such services. The District Engineer will typically represent the District in completion of the Construction Management/Administration for the Capital Improvement projects. However, there may be certain situations where additional assistance is required.

Soft costs are generally developed based on engineering judgment, cost data collected from experience and comparison of similar work in the Central Coast area, consultation with vendors and contractors, established budgetary unit prices for the work, and other reliable sources. Soft costs are budgeted for based on taking the hard construction costs and escalating by a factor of 1.4 or 40% when using all consultant staffing and no in-house staffing. As the District now has an in-house engineer, these soft costs can be greatly reduced, but should still be considered. The percentage can be adjusted based on the nature of the Project and whether it requires services such as environmental considerations, permitting/planning, additional consultants, special inspections, etc.

Financing and Funding Options

Certain CIP projects may be substantial enough to warrant financing. In some cases, there may be opportunities for both grant and loan options. Some potential opportunities for funding may include, but not be limited to:

1. State Revolving Funds (SRF) program
2. State Prop 1 grants.
3. USDA/RUS grant and loans (likely funding source for WRRF project)

Cost Basis

CIPs are generally expressed in “current” dollars, based on the Engineering News Record (ENR) Cost Index. This is an established cost index indicative of the value of the dollar in the current month/year indicated. The ENR Construction Cost Index used for this CIP (April 2022) is **12899**. In future years, in order to project costs in the current year, the ratio of current ENR Index divided by prior ENR Index, is multiplied by the historic cost to project future costs. For example, the ENR in January 2013 for a Project was **9437**, and the Engineer’s Opinion of Probable Cost for the Project was estimated at \$250,000 in Year 2013. The current value of the Project would be calculated as follows: $12899/9437 \times \$250,000 = \$341,713$.

For a 5-year CIP projection, the term of 5 years is relatively short, and the adjustment of capital costs during this time frame using an ENR Index or other tools is not as critical as when planning over a 20 year planning period (such as a master plan). However, should economic changes be significant during the time period, certainly the ENR Index should be applied. The rate consultant may have other means of adjusting costs as part of the Rate Study.

Cost Allocations to Future Growth

Some of the capital improvement projects are required in part to serve future growth, while other CIPs are mostly to serve existing customer needs. The District Engineer will work closely with

the rate consultant and General Manager to determine to what extent capital expenditures/projects should be paid for by future development. The distinction is that for an existing water or sewer facility that requires an upgrade or replacement of equipment, but it does not change capacity of the system (and is not required to be upsized as a result of future demands), the new development's established capacity charge would cover the cost of the CIP (essentially, the capacity charge established is calculated to "buy in" to that Development's fair share of the existing infrastructure). In the case where a capital project is needed to increase capacity to serve the new development, that will be paid for by the Developer at the time of Development.

Projects that directly benefit existing and future developments include:

- Water Resource Recovery Facility (WRRF) (designed to meet current and future demands)
- Potential Second Vertical Intake (helps to increase flow and quality of water for current and future demands)
- DBP Project (helps to increase water quality for current and future demands)

Implementation Schedules

A number of CIP projects will be relatively simple to implement, with little to no permitting, environmental review or engineering required. These projects can be implemented and completed within a short time frame within a single fiscal year. Other projects that will take over one year to complete include:

- WRRF
- Second Vertical Intake
- DBP Project

Water System Projects

Second Vertical Intake

A second vertical intake is recommended to increase water supply reliability to all customers, meet peak water production demands during summer months, and serve future demands. The capacity is envisioned to be approximately 150 gpm. The current yield of the existing gallery field is around 400 gpm. The newly installed vertical intake is also 150 gpm. This is a relatively high priority project for the District. Having limited sources to withdraw water from the Nacimiento River (horizontal gallery wells and new vertical intake) creates vulnerability to the water system in the event the gallery wells are inadvertently destroyed during high river flows, as has happened in recent past. The gallery wells also tend to lose hydraulic capacity due to plugging of the media surrounding them. The new vertical intake addressed both of these concerns, however additional flow capacity will improve system function, reliability and water quality. The new vertical intake would be drilled and installed upstream of the existing vertical intake, adjacent to the River near the existing PS1 facility. The Project will require drilling, pump design and installation, and programming. Although direct access to the River is not required, a Well Permit is required, and some environmental review will be required as part of the Project. A hydrogeologist, such as Cleath-Harris Geologists will design details of the well pack and

casing, and the District Engineer would design the well pump and overall equipping of the well. Having recently installed a similar project, and having much of the environmental and hydrogeological completed, this new vertical intake should come together more quickly than the previous project. This project has been carried over from the 2017 CIP.

Cost Allocation: As mentioned above, the vertical intake will benefit all residents, in part for water supply reliability, but also to meet future and peak summer demands. The existing units at Heritage Ranch total 1,971 units. Full build-out is 2,900 units. This means that the community is 68% built out at this time. It would be reasonable to estimate that future development should pay for 32% of the total cost of the project.

Estimated Cost: \$225,000

Estimated Schedule:

- Environmental Review - 3 months
- Design/Bid Process - 3 months
- Construction - 3 to 5 months (critical path item likely pump lead time)

Pressure Reducing Valves (Equestrian, Waterview and Meadowlark)

The isolation valves located in the Equestrian Road pressure reducing valve vault do not shut off completely. Due to this, one of the pressure reducing valves was not able to be re-built by Cla-Val. The project would consist of replacing all four isolation valves and the two Cla-Vals. Before this happens, Staff needs to determine if the existing main line valve for Equestrian at G-14 is functional. If it is not, a new valve needs to be inserted by hot tapping the line. The estimated cost for the installation of a new isolation valve, if necessary, is \$25,000. Staff will work with a local contractor to install the equipment.

The isolation valves located in the lower Water View PRV vault do not shut off completely. Any maintenance or repair requires approximately ten customer's water service to be shut off while repairs/maintenance is performed. The project consists of replacing the shut off valves and installing two new Cla-Vals. Staff will work with local contractor to install the equipment.

This project is a combination of projects previously on the 2017 CIP.

Estimated Cost: \$175,000

Estimated Schedule:

- Design/Bid Process - 3 months
- Construction - 2 to 3 months (critical path item likely PRV lead time)

Rebuild Treated Water Pumps

This project involves rebuilding the remaining three pumps located at pump station three and four. Rebuilding the pumps will yield more flow (GPM) and efficiency. This project has been carried over from the 2017 CIP.

Estimated Cost: \$50,000

Estimated Schedule: 1 to 2 months per pump (critical path item likely pump parts lead time)

Pump Station Covers

This project involves the installation of pump covers/weather protection at pump stations 1, 2 and 3. units are envisioned to be pre-fabricated sheds that are installed by outside contractors. This project has been carried over from the 2017 CIP.

Estimated Cost: \$85,000

Estimated Schedule:

- Design/Fabrication - 3 months
- Construction – 2 to 3 months

Media Replacement in WTP Filters

This Project consists of removing and replacing the existing media in three of the four filters at the WTP. This is an ongoing project. One filter has been completely refurbished by Operations Staff and is back online with greatly improved functionality and runtime between backwash cycles. This project will provide for the refurbishment of the remaining three filters. Operations Staff may complete the remaining three filters, however the budgetary pricing assumes that the work will be performed by an outside contractor with assistance from Operations Staff.

Estimated Cost: \$60,000

Estimated Schedule:

- Construction - 3 to 6 months (critical path item likely Staff/Contractor availability)

Upgrade SCADA System

The existing SCADA system at the WTP requires complete replacement. The existing software platform is no longer supported, and the existing programming is antiquated and does not allow for modification by Operations Staff. Staff has contacted several vendors and consultants and all have recommended a changeover from the existing Lookout software to Ignition. This project will consist of the replacement of the existing SCADA software, hardware and programming at the WTP. Additionally, the new system will integrate all of the pumping stations into the SCADA to allow for remote monitoring and control.

Estimated Cost: \$300,000

Estimated Schedule:

- Design/Bid - 3 months

- Construction - 3 to 5 months (critical path item likely computer hardware)

DBP/Compliance-related Project

The District has been making various additions and modifications to its water supply and treatment systems in order to come into compliance with Disinfectant By-Product (DBP) requirements. The new vertical intake has improved water quality, as has the refurbishment of one of the WTP filters. Currently, Staff is working with a new chemical to improve the coagulation and flocculation of organics in the raw water. As this is an iterative process, and it takes time to see if modifications will have impact on DBP levels, it is not clear what, if any, additional project(s) will be required to achieve compliance. This project may involve any combination of adjustments to the existing plate settler, GAC, pH adjustment, additional chlorination locations throughout the system, UV, etc. Currently, the CIP includes a budgetary estimate of \$1,000,000 dedicated to this potential project, but without knowing the actual project, pricing and schedule are difficult to estimate.

Estimated Cost: \$1,000,000

Estimated Schedule:

- Environmental Review - 6 months
- Design - 3 to 6 months
- Construction - 3 to 6 months (critical path item likely equipment lead time)

Sewer System Projects

Water Resource Recovery Facility

This project is currently in the design phase with consultant WSC, Inc. under contract for the design and permitting of a new Water Resource Recovery Facility (WRRF). This new facility will treat current and future wastewater to meet regulatory requirements for disposal and/or recycling. As the project is still in preliminary design stages, the actual cost will depend upon the final design. The project is necessary to bring the District into compliance with State Water Board requirements and to increase capacity for future build-out.

Estimated Cost: \$10-\$15,000,000

Estimated Schedule:

- Environmental Review - 6 months
- Design – 2 years
- Construction – 2 years (critical path item likely equipment lead time)

Lift Station 3 Rehabilitation

The existing wetwell needs to be coated for corrosion protection, and existing piping and valves need to be replaced. Bypassing sewage around LS 3 will be the critical element to this Project. This may or may not require the installation of a new bypass manhole. If so, the Work may be addressed in two phases: 1) construct one bypass manhole immediately upstream of LS3 on the influent line coming from Black Horse Lane; and 2) implement the bypass, wetwell coating and valve/piping replacement work. The construction of the bypass manhole is expected to be relatively costly, so other options for bypass will be researched as well. If the bypass manhole is deemed necessary, the District Engineer will work with staff to prepare a simple sketch of the desired bypass manhole configuration. The installation is very deep at this location, on the order of 22 to 24 feet. The District Engineer will prepare plans and specifications for the wetwell coating, and valve/piping plans. The Lift Station Project will be implemented using standard design-bid-build protocol. Potentially, more than one lift station's refurbishment may be included in the final project. Staff will utilize additive alternates to the base project scope in an effort to optimize pricing for this project via economy of scale. The budgetary number below assumes a worst-case scenario where a bypass manhole is required.

Estimated Cost: \$425,000

Estimated Schedule:

- Design - 3 months
- Construction - 3 to 6 months (critical path item likely material lead time)

Lift Station 2 Rehabilitation

As with Lift Station 3, the existing wetwell needs to be coated for corrosion protection, and existing piping and valves need to be replaced. Bypassing of flows is also a critical issue with this lift station. Additionally, available space around LS 2 is more limited than LS 3. This project will be designed, bid and constructed similarly to LS 3 so there will be similar bid packages for both projects, allowing for more efficient bidding. As detailed above, depending on market conditions and contractor pricing, this project may be combined with LS 3.

Estimated Cost: \$125,000

Estimated Schedule:

- Design - 3 months
- Construction - 3 to 6 months (critical path item likely material lead time)

Collection System SCADA

Currently, the lift stations are not all connected to the central SCADA system for wastewater. Additionally, the software on the lift stations that are connected is no longer supported. This project will connect all 10 lift stations to a new central SCADA system which will allow Staff to

monitor and control lift stations remotely. The project will include new hardware, software and programming.

Estimated Cost: \$200,000

Estimated Schedule:

- Design - 3 months
- Construction - 3 to 6 months (critical path item likely computer hardware lead time)

Wastewater Collection System Model and Infiltration/Inflow Phase II

This Project consists of combined projects in order to best utilize outside consulting services. The creation of a wastewater collection system model will require site survey and system modeling. Infiltration/Inflow Phase II will require field work such as smoke testing and/or sewer video inspection. While these projects are not adding to the system infrastructure, they are deemed Capital Projects because the resulting recommendations from these studies may potentially yield future Capital Projects.

Estimated Cost: \$75,000

Estimated Schedule:

- Scoping/Consultant Selection - 3 months
- Design/Model - 3 to 6 months (critical path item likely consultant availability)

Additional Project

Electric Gate at Corp Yard

This Project consists of the design and installation of a new electric gate at the District's Corp Yard. This gate is necessary to increase security at the yard by preventing trespassing, theft, liability, etc. As the yard is used for both water and sewer, this project will be funded by both funds (40% Sewer, 60% Water).

Estimated Cost: \$50,000

Estimated Schedule:

- Design - 3 months
- Construction - 3 to 6 months (critical path item likely equipment lead time)

Attachment: CIP 5-year Outlay

**HERITAGE RANCH COMMUNITY SERVICES DISTRICT
Water Capital Improvement Program 5 Year**

Project/Equipment	Description	Notes	Water CIP	Funding Source	5 Year CIP				
					2022/23	2023/24	2024/25	2025/26	2026/27
2nd Vertical Intake	Design/permits-environmental	Second vertical intake for improved reduction in TOC and subsequent DBPs	50,000	HRCSD cash reserves	0	50,000	0	0	0
	Construct		175,000	HRCSD cash reserves	0	0	175,000	0	0
Pressure Reducing Valves (Equestrian, Waterview and Meadowlark)	Replace isolation valves and rebuild/replace existing PRVs	Replace non-functioning equipment	175,000	HRCSD cash reserves	0	0	0	50,000	125,000
Rebuild Treated Water Pumps	PS 3 and 4, three pumps total	Improve overall pump efficiency	50,000	HRCSD cash reserves	0	0	0	50,000	0
Pump Station Covers	Design, bid	PS 1,2 and 3 to provide shade/sun protection	15,000	HRCSD cash reserves	0	0	15,000	0	0
	Construct		70,000	HRCSD cash reserves	0	0	0	70,000	0
Media Replacement in WTP Filters	Ongoing filter media replacement	3 of 4 remaining	60,000	HRCSD cash reserves	60,000	0	0	0	0
Upgrade SCADA System	New hardware, software, programming, telemetry and instrumentation	Phase 1 - Replace hardware/software and programming. Phase 2 - Telemetry to interconnect system components. Phase 3 - Instrumentation for advanced monitoring and control	300,000	HRCSD cash reserves	225,000	75,000			
DBP/Compliance-related Project	Research and Project Development for potential new project(s) to reduce DBPs to compliant levels	Phase 1 - Research and Project Development to determine best method for DBPs/compliance. Phase 2 - Installation of permanent solution, if necessary	1,000,000	HRCSD cash reserves, Possible Debt / Grant(s)	200,000	200,000	200,000	200,000	200,000
Electric Gate at Corp Yard (60% of Cost)	Design/Install new electric gate a Corp Yard	Need automatic gate for improved security and safety at Corp Yard. Split 60/40 between water/sewer	30,000	HRCSD cash reserves	0	0	30,000	0	0
Total Water			\$1,925,000		485,000	325,000	420,000	370,000	325,000
Funded Capital Reserves			\$1,925,000						
Funded Debt / Grant(s)			\$0						

**HERITAGE RANCH COMMUNITY SERVICES DISTRICT
Sewer Capital Improvement Program 5 Year**

Project/Equipment	Description	Notes	Sewer CIP	Funding Source	5 Year CIP				
					2022/23	2023/24	2024/25	2025/26	2026/27
Water Resource Recovery Facility	Design, bid		1,500,000	HRCSD cash reserves	600,000	600,000	300,000		
	Construct		TBD	Debt / Grant(s)		TBD	TBD	TBD	TBD
Lift Station 3 Rehabilitation	Recoating, replacing of piping and valving, possible bypass manhole required	Pricing assumes bypass manhole required	425,000	HRCSD cash reserves	25,000	150,000	0	125,000	125,000
Lift Station 2 Rehabilitation	Recoating, replacing of piping and valving, flow bypass likely required	As space is limited, bypass manhole is not currently considered. This project may be combined with LS 3.	125,000	HRCSD cash reserves	25,000	0	0	50,000	50,000
Collection System SCADA	Upgrade software/hardware at sewer lift stations. In combination with Water System SCADA, improve telemetry and instrumentation.	Phase 1 - Replace hardware/software and programming. Phase 2 - Telemetry to interconnect system components. Phase 3 - Instrumentation for advanced monitoring and control. May install telemetry upgrades first, concurrent with Water System telemetry upgrades.	200,000	HRCSD cash reserves	100,000	100,000	0	0	0
Wastewater Collection System Model and Infiltration/Inflow Phase II	Collection system model (topo survey required), field work for I/I (smoke testing, possible video inspection, etc.)	Model will allow for better conditioning of development approval with known modeled flows and areas needing improvements. I/I Phase II will assist with limiting wastewater flows due to I/I.	75,000	HRCSD cash reserves	75,000	0	0	0	0
Electric Gate at Corp Yard (40% of Cost)	Design/Install new electric gate a Corp Yard	Need automatic gate for improved security and safety at Corp Yard. Split 60/40 between water/sewer	20,000	HRCSD cash reserves	0	0	20,000	0	0
Total Sewer			\$2,345,000		825,000	850,000	320,000	175,000	175,000
Funded Capital Reserves			\$2,345,000						
Funded Debt / Grant(s)			TBD						

WATER AND SEWER CIP PROGRAM COMBINED	TOTAL	2022/23	2023/24	2024/25	2025/26	2026/27
FY Summary of Costs	\$4,270,000	\$1,310,000	\$1,175,000	\$740,000	\$545,000	\$500,000
Funded Capital Reserves	\$4,270,000	\$1,310,000	\$1,175,000	\$740,000	\$545,000	\$500,000
Funded Debt	TBD	TBD	TBD	TBD	TBD	TBD