Capital Improvement Plan

Program Description

The Capital Improvement Plan (CIP) is designed to identify capital expenditures for the next ten years and to plan appropriately for how to complete those projects within projected revenues and staffing capacity. The plan includes the replacement and rehabilitation of existing capital assets as well as the acquisition or construction of new capital assets.

Definition of Capital Expenditures

Capital expenditures, or capital outlays, are cash outlays by NapaSan that result in the acquisition or construction of a capital asset. A capital asset is any asset of significant value (over $5,000) that has a useful life of over one year. Examples include land, buildings, machinery, vehicles and equipment. All capital assets acquired or constructed are included in the Capital Improvement Plan. Land is always considered a capital asset, regardless of value.

Capital Plan Development Process

Annually, NapaSan updates its Ten-Year Capital Improvement Plan. The plan undergoes several levels of review and alteration. First, a project is individually evaluated to determine whether it is necessary to do the project, or if a less expensive alternative is available. If the project is still the best alternative, then an evaluation is done to determine when the project should be done, based on the condition of the existing assets or the operational and maintenance needs for the project.

Management and supervisory staff also are provided an opportunity to identify new capital projects through the Project Charter process. New projects are proposed to the Capital Program Manager and the District Engineer who evaluate the projects and determine their need and level of priority. Once vetted through this process, new projects are added to the CIP as funding allows.

Vehicle Replacement Guidelines

NapaSan maintains a fleet of vehicles used solely for purposes related to the direct maintenance and operations of NapaSan. When a vehicle is purchased, it is identified at that time how long that vehicle should continue to serve its intended function, provided that the vehicle is maintained properly. The replacement of that vehicle is then scheduled in the Capital Improvement Plan, to ensure that NapaSan has adequately planned for the replacement costs associated with the vehicle.

Every year, a team of NapaSan staff reviews the list of vehicles owned by NapaSan and the replacement schedule. The team makes the following recommendations:

- Move vehicles back or forward on the replacement schedule based on the maintenance history of the vehicle and any current maintenance problems;
- Move vehicles back or forward on the schedule based on regulatory requirements (such as CARB requirements for diesel engines);
- Move vehicles between organizational units when the use of the vehicle changes;
- Identify whether a vehicle scheduled for replacement should be recommended for surplus, or when it could still be used effectively by another department; and
- Identify when service needs have changed that could necessitate that a vehicle be replaced by a different type of vehicle or not at all.

The combination vacuum truck was replaced in 2018.

Senior management reviews the recommendations of the Fleet Team, accepts or rejects recommendations, and incorporates accepted changes into the Ten-Year Capital Improvement Plan. All decisions to declare a vehicle surplus and replace the vehicle are brought to the NapaSan Board of Directors for approval, in accordance with procurement policy.

The replacement of fleet vehicles represents almost $6.65 million, or 2.7% of the entire Ten-Year Capital Improvement Plan. All revenues collected from the sale of any vehicles declared surplus is used to offset the cost of new vehicles.

Sources of Capital Expenditure Funding

There are several sources of funding for capital projects. NapaSan collects capacity charges on new development to pay for its share of expanding the collection and treatment systems. NapaSan also collects sewer service charges revenue in excess of operational needs to pay for replacement and rehabilitation projects. The fees collected as part of development plan review are used for capital projects, as well as grant and intergovernmental revenue.

Use of Capacity Charges for Expansion

NapaSan imposes a capacity charge on new development (see the Budget Summary section, page 31, for more information on this revenue source).

In August 2009, NapaSan completed a study of capacity charges. The study determined that from FY 1995/96 to FY 2007/08, there was significantly more money spent to provide new capacity (expansion) than there was capacity charge revenue collected. As of July 1, 2008, the expansion fund (capacity charges) was in deficit to existing ratepayers and the capital projects fund by $12.6 million.

As new projects are completed, their benefit to existing users and to new development is evaluated, and a split of expenses between the two is assigned. At the end of the fiscal year, the deficit is adjusted based on the amount of revenue received in capacity charges and the amount of capital expenditure for expansion projects. The following represents a summary of this accounting:

Actual	
Beginning Deficit (7/1/08)	($12,607,167)
FY 2008/09 – Revenues	1,387,193
FY 2008/09 – Expansion Projects	(1,663,801)
FY 2009/10 – Revenues	600,664
FY 2009/10 – Expansion Projects	(2,191,370)
FY 2010/11 – Revenues	2,183,802
FY 2010/11 – Expansion Projects	(2,811,161)
FY 2011/12 – Revenues	3,330,418
FY 2011/12 – Expansion Projects	(4,208,445)
FY 2012/13 – Revenues	2,693,047
FY 2012/13 – Expansion Projects	(2,171,064)
FY 2013/14 – Revenues	3,635,826
FY 2013/14 – Expansion Projects	(7,447,155)
FY 2014/15 – Revenues	3,341,297
FY 2014/15 – Expansion Projects	(10,657,234)
FY 2015/16 – Revenues	3,252,412
FY 2015/16 – Expansion Projects	(1,832,349)
FY 2016/17 – Revenues	5,359,233
FY 2016/17 – Expansion Projects	(703,992)
Ending Deficit (6/30/17)	($20,509,844)

Estimated/Projected	
Beginning Deficit (7/1/17)	($20,509,844)
FY 2017/18 – Revenues	6,276,000
FY 2017/18 – Expansion Projects	(1,954,000)
FY 2018/19 – Revenues	4,614,600
FY 2018/19 – Expansion Projects	(6,463,620)
Projected Ending Deficit (6/30/2019)	($18,036,864)

The aeration basin panels were replaced in 2017.

A budget deficit and situation where expenses on expansion projects exceeds revenues means that the current ratepayers in the system are paying more than their allocated share of capital expenses, as the deficit is made up using sewer service charges and other revenues from operational sources.

A copy of the Capacity Charges Report for Fiscal Year 2016/17 can be found in Appendix F of this budget document.

Changes from Prior CIP

The CIP was amended by the Board after initial adoption twice during FY 2017/18, first to carry forward the budgets of unfinished projects from the prior year and then again to move the replacement of the vacuum combination truck forward in the CIP from FY 18/19 into the current year. Other changes were made on the General Manager's approval, moving budget from one project to another. The following is a summary of the significant changes made to the CIP during the last fiscal year, not counting carry forwards of uncompleted capital projects:

- Add the replacement of the vacuum combination truck (vehicle #529) (CIP 18738) with a budget of $575,000.
- Combined a number of different Treatment-Equipment and Treatment-Structures projects into the 2018 Plant Project (CIP 18736) with a budget of $1,500,250.
- Established a new project (CIP 18737) to replace a flash mixer in the plant, for $45,000.
- Purchase a new Permaliner Picote machine for use when lining pipes (CIP #18735) for $20,000.
- Repair the Pond 1 Electrical Transformer that was unanticipated (CIP #18739), for $25,000.
- In several projects, either reduced or increased the project budget to meet actual bid or costs. The net impact of the adjustments to the CIP was neutral.

Summary of FY 2018/19 Capital Projects

The following is a summary of FY 2018/19 capital projects. **Dollar amounts noted are the amount budgeted for FY 2018/19, and not the entire amount of the project.** For complete financial information, see the table of projects that follows, starting on page 84.

Collection System – Collection System projects represent significant and routine replacement or rehabilitation of existing pipeline or equipment. These projects are designed to replace or improve assets to extend their useful lives or to improve their function by reducing how rainwater and groundwater can enter the collection system. Major projects beginning or continuing this year include the Browns Valley Trunk project, the Summer 2018 Sewer Rehabilitation project, the Summer 2019 Sewer Rehabilitation project, and the 66" Trunk rehabilitation project. This category also includes the implementation of the collection system asset management software. Collection system projects for the fiscal year total $13,599,100.

Collection System Equipment – The Collection Department will be replacing one of its trucks used for the "811 Call Before You Dig" locate service. Total equipment cost is $35,400.

Lift Stations – Lift stations are pump stations within the sewer collection system. In FY 2018/19, the West Napa Pump Station replacement project will begin, and a pump in the Stonecrest Pump Station will be rebuilt. Lift Station capital projects for the year total $5,245,000.

Treatment – FY 2018/19 includes the first full year of a three year project to design and construct a mechanical dredge in Pond 1. Capital costs in this area total $600,000 for this fiscal year.

Treatment – Equipment – These projects include a

Ten-Year CIP Summary

	FY 2018/19	10-Year CIP
Collection System	$13,599,100	$150,174,600
Collection System Equipment	35,400	4,690,900
Lift Stations	5,245,000	9,713,500
Treatment	600,000	5,800,200
Treatment Equipment	1,513,800	19,159,600
Treatment Structures	4,005,000	30,977,300
SCADA	250,000	1,130,200
Recycling-District	627,600	3,768,900
Recycling-Expansion	150,000	8,971,200
Other	359,800	9,401,600
Total	**$26,385,700**	**$243,788,000**

number of equipment replacements, most notable of which are projects to replace and improve the plant water ("3W") system, replace two 10" portable pumps, rehabilitate the primary clarifiers, install a backup 12 kV electrical line to the Influent Pump Station, and complete the rebuild of one of the neuros blowers. The total FY 2018/19 expenditure is $1,513,800.

Treatment Plant – Structures – There are three projects associated with the structures at the treatment plant. They include the second year of a three-year project to replace headworks equipment, the completion of the 2018 Treatment Plant projects, and the initial design phase of a replacement for the Pond Transfer Structures between Pond 2 and Pond 3. The total FY 2018/19 expenditure is $4,005,000.

SCADA – SCADA is the hardware and software that is used to operate the treatment plant. In FY 2018/19, there is a network security study and master plan scheduled to begin, with $250,000 budgeted for FY 2018/19.

Recycling-District – This section includes projects and equipment necessary for NapaSan to maintain its fields, distribute recycled water, and land apply biosolids. FY 2018/19 includes construction of a recycled water truck fill station on the Coombsville line and the replacement of the VFD at the Jameson Pump Station. The total FY 2018/19 expenditure is $627,600.

Recycling-Expansion – This section includes projects to expand the recycled water distribution system into the community, or expand the treatment capabilities at the plant. Expenses here include continued efforts through the North Bay Water Reuse Project to apply for and manage federal and state grants and the extension of the recycled water system. Total FY 2018/19 budget is $150,000.

Other – Development technical support is the capitalization of staff time spent reviewing the plans and inspections associated with contributed capital. Other expenses in the category include the replacement of audio-visual equipment in the conference rooms, a District-wide fence repair project, the replacement of the trailer used by the Confined Space Entry Team, and replacement of the fleet passenger vehicle. Total for FY 2018/19 is $359,800.

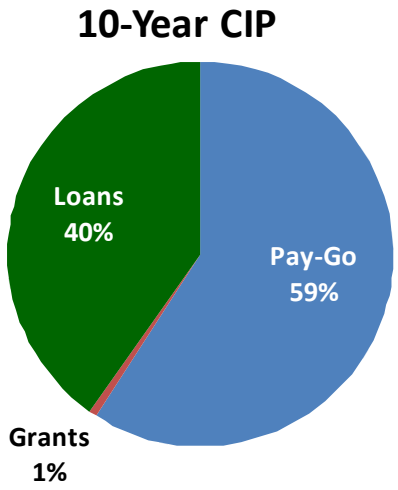
FY 2018/19 Partner-Funded Projects

NapaSan has partnered with Napa County to construct the truck fill station along the Coombsville Road recycled water line. The project is being funded entirely by Napa County from Community Facilities District proceeds.

10-Year Capital Project Funding Summary

The following table summarizes the 10-Year Capital Improvement Plan by the type of funding. "Pay-Go" refers to pay-as-you-go financing, meaning that the projects are funded from existing resources, either cash on hand or from annual revenue sources such as sewer service charges or capacity charges. "Grant" refers to funding from

	Pay-Go	Grants	Loans
FY 18/19	66.3%	1.4%	32.3 %
FY 19/20	62.1%	-	37.9%
FY 20/21	79.3%	-	20.7%
FY 21/22	82.2%	-	17.8%
FY 22/23	46.7%	0.1%	53.2%
FY 23/24	21.4%	0.2%	78.4%
FY 24/25	41.9%	4.1%	54.0%
FY 25/26	100%	-	-
FY 26/27	100%	-	-
FY 27/28	100%	-	-



any federal, state or local government that does not have to be repaid. "Loans" refers to any long-term financing, such as revenue bonds, Certificates of Participation, State Revolving Fund loans, or federal loans.

Unfunded or Delayed Projects

The Capital Improvement Plan includes projects that have been clearly identified and programmed. It also includes some "placeholder" projects, where the specific project has not been identified but there is money allocated nonetheless. These placeholders are included in the plan to recognize that there is the need to plan for future replacement and rehabilitation projects, even though the specific projects have not yet been scoped and planned. Providing a placeholder for these future projects will ensure that there are adequate resources to pay for these projects once they are known. As NapaSan further develops its Asset Management Program, these placeholders will be replaced with actual projects.

There are a few projects in this CIP where the start dates have been pushed out to begin in later years, as compared to last year's CIP:

- **Upper Lateral Rehabilitation – Pilots #4, #5 and #6** – Because there was insufficient rain during the 2017/18 winter, staff was unable to do "pre-construction flow monitoring" for these projects. Without this flow monitoring, it is not possible to determine whether the projects have a cost-effective impact on reducing I&I flow into the collection system. These projects have been delayed one year, with flow monitoring scheduled for winter 2018/19.
- The **Browns Valley Road Trunk** project start of construction has been delayed one year as a result of delays in funding through the SRF program.

Staff believes that these delays will not result in deferred maintenance scenarios, nor will the delays pose an unreasonable risk for system failure or permit violation.

Impact of Projects on Operating Budget

Many of the capital projects planned for FY 2018/19 are replacements and rehabilitations of existing capital assets, so it is not expected that these capital projects will have an impact on future operating budgets. However, some the FY 2018/19 capital projects will have a significant impact on the current and future NapaSan operations and maintenance budgets.

CIP 18702 – Collection System Asset Management Software project in the CIP includes the costs to procure and install the software. Additional future O&M costs include the ongoing software maintenance contracts, estimated at approximately $60,000 per year. However, this new software replaces two software systems currently in use that have ongoing software maintenance costs – Hansen ($5,600 per year) and MP2 ($4,700 per year – for a new impact to the operating budget of $49,700 annually.

The Rehabilitation projects and I&I projects in the Collection System are designed to decrease the amount of rainwater and groundwater that get into the system. This reduces future costs by reducing the need to build bigger pipes as well as reduces the amount of influent that the plant needs to treat. It also reduces the need for cleaning and root removal maintenance activities. The immediate, short-term savings have not been calculated, but should have a positive effect on the operating budget.

The Browns Valley Trunk project (CIP #14703) will increase the amount of sewer main that will need to be maintained in the Collection System. However, it is not significant enough in size to impact the staffing levels or other direct expenses in the Collection System operating budget.

The West Napa Pump Station Replacement (CIP #17711) is being designed to reduce the current electricity consumption by at least 20%. The estimated annual savings is $3,600 starting in FY 2020/21.

Net Impacts of Capital Projects on Operating Budget

CIP #	2018/19	2019/20	2020/21
18702	$0	$49,700	$49,700
17711	0	0	(3,600)
17735	0	0	8,000
Total	**$0**	**$49,700**	**$54,100**

The Pond 1 Dredge (CIP 13745) will contribute to increased biosolids that need to be dewatered, trucked to Jameson Ranch, and incorporated into the land. The amount will not be significant, as the materials will be incorporated into existing processes. Impact to the operating budget is predominantly from increased polymer for dewatering, and in electricity to operate the dredge. Estimated operating budget impact is $8,000 annually.

New recycled water reservoir liner installed in 2018.

The Recycled Water Truck Fill Station on Coombsville Road (CIP #18731) will require some periodic maintenance, which is estimated to be minimal in the first three years of operation. There are additional costs associated with the production and distribution of recycled water. However, these costs are offset by the collection of recycled water revenues from the site. As the revenue is estimated to offset the maintenance and operating costs of this facility, there is no estimated net financial impact.