Performance Measurement Report

Calendar Year 2017

Performance Measurements Using the "Effective Utility Management" Framework

NapaSan
Collection • Treatment • Recovery • Reuse

Issue Date: April 4, 2018

www.NapaSan.com

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More information about the Napa Sanitation District can be found at
www.NapaSan.com

Introduction

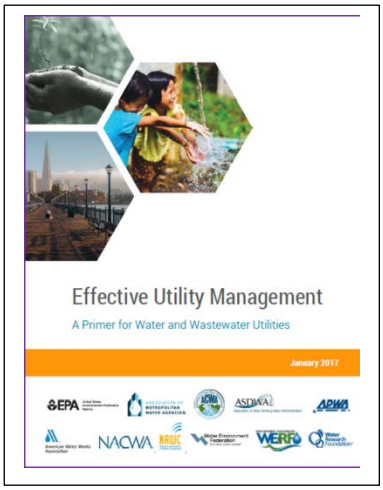
Introduction to the Report

This report is the eighth annual report by the Napa Sanitation District ("NapaSan")regarding its performance. It includes performance measures that, when taken as a whole, should give the reader a sense of how well the utility is performing and being managed. This report is prepared by management for use by NapaSan's Board of Directors and by the general public.

NapaSan has chosen to use the Effective Utility Management (EUM) framework for presenting this information. This framework is specific to water and wastewater utilities and provides for the possibility of comparing NapaSan to other wastewater utilities once more providers begin using EUM for measuring and reporting on performance.

About Effective Utility Management

Effective Utility Management (EUM) is a framework for evaluating water and wastewater utilities. In May 2007, six major water and wastewater associations and the United States Environmental Protection Agency agreed to support EUM collectively and individually throughout the water sector. EUM is designed to help utility managers make practical, systematic changes to achieve excellence in utility performance, and encapsulates the collective knowledge and experience of utilities leaders who are committed to helping improve water and wastewater management.



EUM has identified Ten Attributes of Effectively Managed Water Sector Utilities. This performance measurement report has been divided into those ten attributes, as they are intended to help utilities maintain a balanced focus on all important operational areas rather than quickly moving from one problem to the next.

More can be learned about Effective Utility Management by visiting the website www.waterEUM.org.

About Performance Measures

Performance measures are those things that are measured by an organization to evaluate the performance of that organization. There are several types of measures, including input, output, efficiency and effectiveness. Input and output measures tend only to capture the amount of work performed by departments or organizations. This report focuses on efficiency and effectiveness measures, and then only on the measures that are meaningful to management of NapaSan and that NapaSan has some ability (total or partial) to influence.

Quick-Glance Ratings

This report includes with every measure an analysis of how NapaSan is doing within that area. Additionally, next to each graph or qualitative measure is an icon to help the reader assess quickly how NapaSan is performing against that measure. Those icons are as follows:

"Satisfactory" (green star) – signifies that NapaSan has met its goals, or that the trend is positive.

"Watch" (orange diamond) – signifies that NapaSan is in danger of not meeting its goals, that the trend is indeterminate, or that there is insufficient data to make an assessment.

"Unsatisfactory" (red triangle) – signifies that NapaSan has not met its goals or that the trend is negative.

"No Measure" (purple circle with slash) – signifies that NapaSan has not developed a measurement for this performance indicator.

Executive Summary

This report is the eighth annual Performance Measurement Report produced by the Napa Sanitation District ("NapaSan"). The report is structured around the Ten Attributes of Effectively Managed Water Sector Utilities, as developed in Effective Utility Management.

This report will be used by management of NapaSan to identify specific trends or issues regarding the ten attributes. The Report is also intended to provide a partial answer to the question asked by the Board of Directors and the ratepayers alike, "Is NapaSan a well-run utility?" This document will be used by NapaSan's Board of Directors as a source of information for setting goals and priorities through the strategic planning and annual budget processes.

The following is a summary of performance measurements in this report.

Product Quality – NapaSan continues to meet or exceed regulatory compliance requirements at the wastewater treatment plant. Sanitary Sewer Overflows were rated "unacceptable" for 2017 due to a number and volume of overflows related to severe weather events. The trend line for the number of plugged main lines continued its 10-year downward trajectory. Recycled water quality improved over past years, particularly for chlorides, but remains on the "watch" list due to the 5-year trend.

Customer Service – The continued trend in reduced number of service calls due to NapaSan causes should result in more satisfied customers. The customer service surveys begun in 2011 appear to support this, with very high marks for the Collections crews. NapaSan met its stated customer service response time goals for service calls and for development review.

Employee and Leadership Development – Retirements have been as anticipated the past several years, with no turnover beyond what was expected. Anticipated retirements of 25% over the next five years has been anticipated and planned for. The employee survey, which measures job satisfaction among other things, was completed in 2017, with continued positive results. This past year, on-line safety training met its 90% target for both completion and timeliness. NapaSan has drafted several succession plans for key positions, with training enabled to support the plans, and training programs are in place to capture collection system and operations knowledge.

Operational Optimization – Over the past decade, the plant has generally remained steady in its consumption of electricity overall, as well as its use per million gallons treated, although this number is impacted by the drought with higher than usual concentrations. Greater demand for recycled water is contributing toward an upward climb in consumption, but this was expected with the recycled water system expansion. NapaSan's self-produced electricity was impacted by the cogeneration engine being offline in the last two months of 2016 and first two months of 2017 for planned major maintenance, but the overall percentage of self-generated electricity increased as the new solar array came online. Chemical consumption per million gallons treated decreased for the two high volume chemicals (sodium hypochlorite and polymer), both in overall quantity and in quantity per million gallons treated. Staff in

both Collections and Plant Maintenance have maintained or improved their ratios of planned maintenance verse corrective maintenance.

Financial Viability – The operating ratio was positive for the second year in a row, but is still on the "watch" list as the prior 8 years failed to reach the 1.0 benchmark. The current ratio and the days of cash on hand are sufficient to meet operating needs. The debt service coverage ratio is significantly higher than the required 125%, and NapaSan maintains adequate financial policies and internal controls. NapaSan's reserves are funded in accordance with financial policies. All of these factors were evaluated by Standard & Poor's and resulted in maintaining our AA rating, but with an enhanced outlook to "positive."

Infrastructure Stability – While NapaSan has not performed an inventory of critical assets in the past 5 years, it does maintain computer-based asset and condition information of its collection system and most components of the Soscol Water Recycling Facility. NapaSan came very close but did not quite meet its goals related to annual sewer main line condition assessments. NapaSan has been meeting its targets for spending on renewal & replacement projects, with increased investments in sewer renewal and rehabilitation efforts, significantly exceeding its 1.3% replacement goal for renewal & replacement and Inflow & Infiltration sewer projects in 2017. NapaSan is performing very well regarding collection system collapse rates. Inspections of restaurant to help prevent fats, oil and grease (FOG) problems in the collection system met the established target. NapaSan meet its sewer main line cleaning target for 2017, after failing to do so in 2016. Recycled water service availability was at 100%.

Operational Resiliency – The recordable incident rate in 2017 was just over 8 for the second year in a row, higher than the recent trend (therefore, on "watch"), but did not result in any lost time for the year. Vehicle accident rates were lower in 2017, but still too high in management's estimation and therefore also on "watch." The number of insurance claims rose from prior year, but the cost per claim declined, keeping this category on "watch" as well. NapaSan's Experience Modification Rate (a measure of the quantity and severity of workers compensation claims) rose to above the industry average to 104 ("unsatisfactory"), due to two significant claims in recent years, but will drop next year as these incidents roll out of the calculation. NapaSan maintains adequate Emergency Response Plans and practices them regularly. The cogeneration engine has been stable and reliable in recent years, with the only major downtime due to a planned major maintenance event at the end of 2016 and beginning of 2017. The uptime for all pumps at pump stations was added as a new measure in 2016, but there are still insufficient long-term metrics to evaluate at this time. Treatment plant capacity remains steady, with sufficient capacity at this time for planned growth in the community.

Community Sustainability – NapaSan has invested in meeting community needs, particularly with recycled water. NapaSan is involved in several community programs that encourage reduced potable water consumption and environmental protection and awareness, and has incorporated "green" practices into its capital planning. Greenhouse gas emissions, in the form of carbon dioxide from purchased energy, has seen a decrease in recent years, with a slight bump in emissions in 2016 and 2017 due to the cogeneration engine being offline for planned major maintenance. Recycled Water, biosolids and digester gas beneficial reuse remain high. As for service affordability, sewer service charges are still

significantly within the “low burden” rating established by the EPA, although it ticked up slightly in 2017 as rates increased. The Low Income Assistance Program saw an increase in usage in 2017 and now represents 2.36% of all single family and multi-family dwellings.

Water Resource Adequacy – This attribute, reinterpreted as a measure of recycled water adequacy, shows that NapaSan has both sufficient short-term and long-term adequacy to meet customer needs.

Stakeholder Understanding and Support – NapaSan continues to seek out customer input and engagement on various project, most recently to discuss the design, alignment and impacts of the Browns Valley Trunk project. NapaSan’s sewer service charges compare favorably to other provider’s rates, even with recent increases approved by the Board. NapaSan continued to provide plant tours, classroom presentations and public presentations to increase awareness of NapaSan’s mission and efforts. Media coverage for NapaSan was lower than usual, as there were no rate discussions in the prior year, but there was some negative coverage (press and Letters to the Editor) due to a visible sanitary sewer overflow during the winter storms in early 2017.

Summary of Measures and Ratings

More information about the specific measures and the rationale for the ratings can be found on the page number provided.

Attribute	Measurement	2017	Trend	Page
1. Product Quality	1-NPDES Compliance: Treatment for BOD and TSS Removal	★	★	17
	2-NPDES Compliance: Total Allowable BOD and TSS	★	★	18
	3-Sanitary Sewer Overflows (SSOs)	▲	★	19
	4-Volume of Sewage Overflow	▲	★	20
	5-Plugged Main Lines	★	★	21
	6-Recycled Water Quality	★	◆	22
2. Customer Service	1-Service Calls for District Plugged Laterals	★	★	25
	2-Service Call Response Time	★	★	26
	3-Development Review Response Time	★	★	27
	4-Customer Satisfaction	★	★	28
3. Employee and Leadership Development	1-Experience Turnover Rate	★	★	31
	2-Employee Satisfaction	★	★	32
	3-Total Training Hours	⊘	⊘	33
	4-Online Safety Training Hours	★	★	34
	5-Succession Planning	★	★	35
	6-Institutional Knowledge Capture	★	★	36
4. Operational Optimization	1-Electricity Self-Generation	★	★	39
	2-Electricity Consumption Efficiency	★	★	40
	3-Chemical Consumption	★	★	41
	4-Planned Maintenance Ratio-Collections	★	★	42
	5-Planned Maintenance Ratio-Treatment Plant	★	★	43
5. Financial Viability	1-Operating Ratio	★	◆	47
	2-Current Ratio and Days Cash on Hand	★	★	48
	3-Capital Expenses Compared to Operating Expenses	★	★	49
	4-Debt Service Coverage Ratio	★	★	50
	5-Financial Procedure Integrity	★	★	51
	6-Bond Rating	★	★	52
	7-Financial Reserves	★	★	53

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
6. Infrastructure Stability	1-Asset Inventory	Watch	Watch	57
	2-Renewal & Replacement of Assets	Satisfactory	Satisfactory	58
	3-Sewer Main Condition Assessment	Watch	Satisfactory	59
	4-Sewer Main Line Cleaning	Satisfactory	Satisfactory	60
	5-Food Service Establishment Inspections	Satisfactory	Satisfactory	61
	6-Sewer Main Renewal and Replacement	Satisfactory	Satisfactory	62
	7-Lower Sewer Lateral Renewal and Replacement	Satisfactory	Satisfactory	63
	8-Sewer Partial or Total Collapse Rate	Satisfactory	Satisfactory	64
	9-Recycled Water Service Availability	Satisfactory	Satisfactory	65
7. Operational Resiliency	1-Total Recordable Incident Rate	Watch	Satisfactory	69
	2-Vehicle Accident Rate	Watch	Watch	70
	3-Lost Time Hours	Satisfactory	Satisfactory	71
	4-Insurance Claims	Watch	Watch	72
	5-Experience Modification (XMOD) Rate	Unsatisfactory	Satisfactory	73
	6-Emergency Response Plans	Satisfactory	Satisfactory	74
	7-Uptime for Cogeneration Engine	Satisfactory	Satisfactory	75
	8-Uptime for Pumps at Pump Stations	Satisfactory	No Measure	76
	9-Resiliency Under Emergency Conditions: Power	Satisfactory	Satisfactory	77
	10-Resiliency Under Emergency Conditions: Staff	Satisfactory	Satisfactory	78
	11-Treatment Plant Capacity	Satisfactory	Satisfactory	79
8. Community Sustainability	1-Watershed-based Infrastructure Planning	Satisfactory	Satisfactory	83
	2-Green Infrastructure – Programs	Satisfactory	Satisfactory	84
	3-Green Infrastructure – New Infrastructure	Satisfactory	Satisfactory	85
	4-Greenhouse Gas Emissions – Purchased Energy	Satisfactory	Satisfactory	86
	5-Digester Gas Beneficial Reuse	Satisfactory	Satisfactory	87
	6-Recycled Water Beneficial Reuse	Satisfactory	Satisfactory	88
	7-Biosolids Beneficial Reuse	Satisfactory	Satisfactory	89
	8-Sewer Service Charge Affordability	Satisfactory	Satisfactory	90
	9-Low Income Billing Assistance	Satisfactory	Satisfactory	91
9. Water Resource Adequacy	1-Recycled Water Supply Adequacy	Satisfactory	Satisfactory	95
10. Stakeholder Understanding & Support	1-Stakeholder Consultation	Satisfactory	Satisfactory	99
	2-Public Education Presentations	Satisfactory	Satisfactory	100
	3-Comparative Rate Rank	Satisfactory	Satisfactory	101
	4-Recycled Water Comparative Rate Rank	Satisfactory	Satisfactory	102
	5-Media/Press Coverage	Satisfactory	Satisfactory	103

Performance Measurement Report

EUM Attribute #1

Product Quality

This attribute evaluates whether treated effluent, recycled water and residuals are processed in full compliance with regulatory and reliability requirements and consistent with customer, public health and ecological needs.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
1. Product Quality	1-NPDES Compliance: Treatment for BOD and TSS Removal	★	★	**17**
	2-NPDES Compliance: Total Allowable BOD and TSS	★	★	**18**
	3-Sanitary Sewer Overflows (SSOs)	▲	★	**19**
	4-Volume of Sewage Overflow	▲	★	**20**
	5-Plugged Main Lines	★	★	**21**
	6-Recycled Water Quality	★	◆	**22**

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

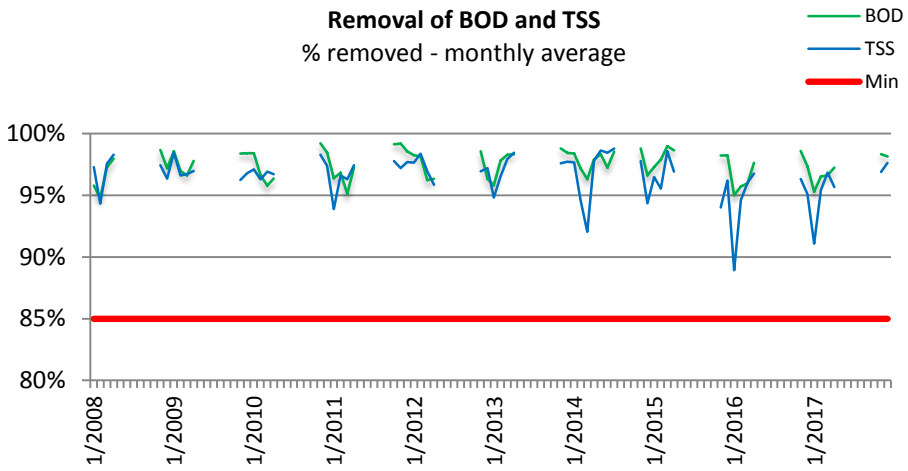
Measurement #1-1

NPDES Compliance: BOD and TSS Removal

Description

NapaSan is required under its NPDES permit to remove at least 85% of the biochemical oxygen demand (BOD) and total suspended solids (TSS) from the water received at the plant during the river discharge period (winter months). The chart shows the average monthly removal percentages for both BOD and TSS. The monthly average percentage removal must remain higher than 85% to stay in compliance with the permit.

Performance Data



Percentage of Days in Compliance

Year	Percent
2008	100%
2009	100%
2010	100%
2011	100%
2012	100%
2013	100%
2014	100%
2015	100%
2016	100%
2017	100%

Analysis

NapaSan remains in compliance with this NPDES Permit requirement for the percentage removal of BOD and TSS. NapaSan consistently removes over 90%, and often over 95% of these constituents from the influent during the months when NapaSan discharges to the Napa River.

Measurement #1-2

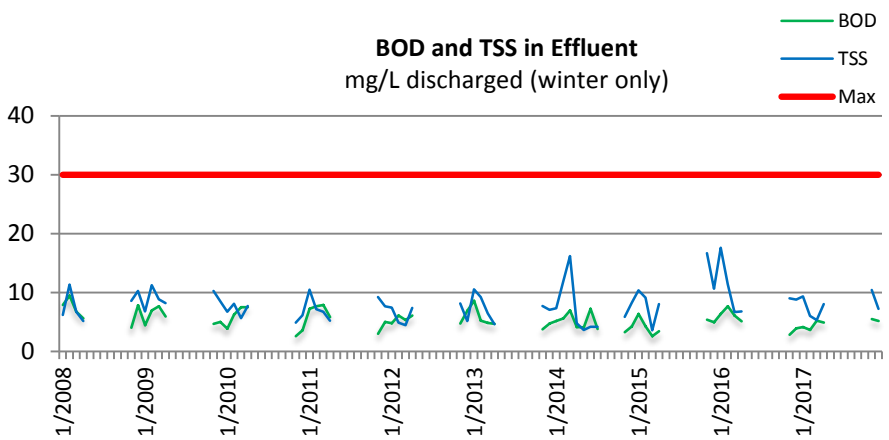
NPDES Compliance: Total Allowable BOD and TSS

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Description

NapaSan is required under its NPDES permit to remove biochemical oxygen demand (BOD) and total suspended solids (TSS) in its process so that the effluent to the river does not exceed 30 mg/L of either.

Performance Data



Percentage of Days in Compliance

Year	Percent
2008	100%
2009	100%
2010	100%
2011	100%
2012	100%
2013	100%
2014	100%
2015	100%
2016	100%
2017	100%

Analysis

NapaSan remains in compliance with this NPDES Permit requirement for the total allowable BOD and TSS in its effluent discharge to the Napa River.

PRODUCT QUALITY

Measurement #1-3

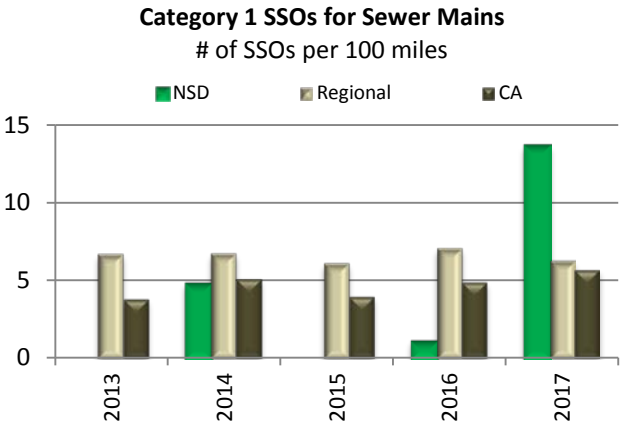
Number of Sanitary Sewer Overflows (SSOs)

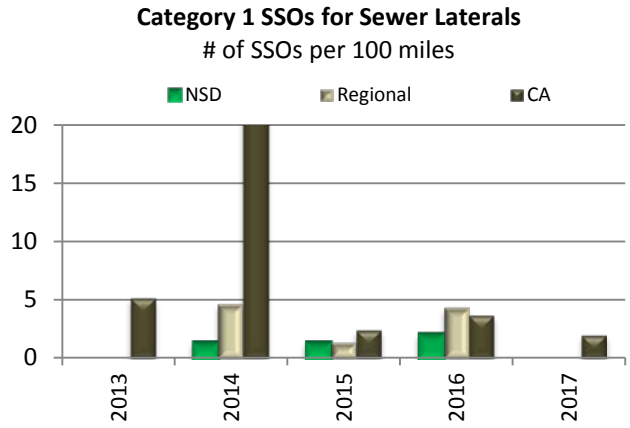
Rating	
Current Year	5-Year Trend
Unsatisfactory	Satisfactory

Description

NapaSan's goal is to maintain the sewer collection system so that there are no SSOs. Especially important is to prevent overflows that reach a creek, river or other body of water, or overflows that reach a storm drain and were not fully recovered, both of which are considered "Category 1 SSOs". While the overall goal is to prevent all overflows, the operational goal of NapaSan is to have fewer overflows than the industry average in the San Francisco Bay Region and in California as a whole.

Performance Data





Analysis

For the prior 4 years, NapaSan consistently performed better than the state and regional averages. In 2017, there were a number of severe winter storms in January and February that impacted the collection system and caused several overflows from sewer mains.

The CIP sewer I&I and rehabilitation project scheduled for Summer 2018 is focused on the basins where overflows occurred.

Measurement #1-4

Volume of Sanitary Sewer Overflows (SSOs)

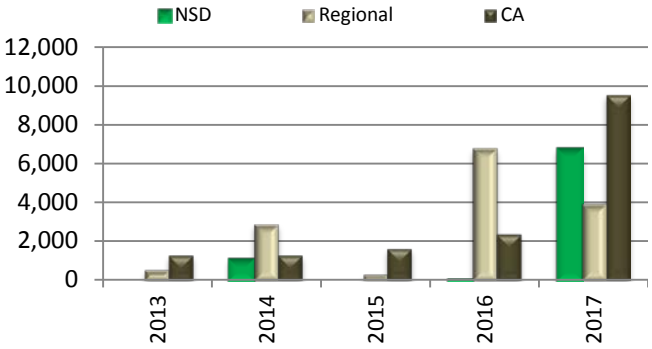
Rating	
Current Year	5-Year Trend
Unsatisfactory	Satisfactory

Description

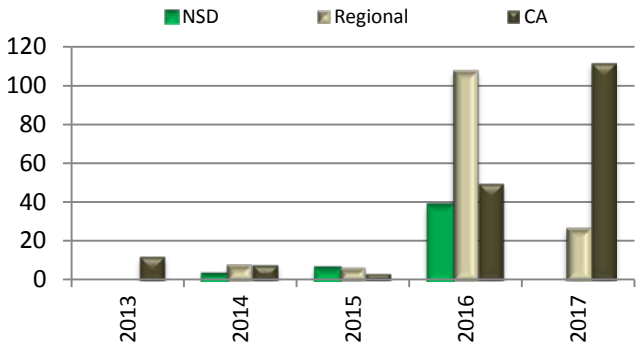
It is NapaSan's goal to prevent Sanitary Sewer Overflows. However, when an SSO occurs, the NapaSan strives to respond quickly to prevent as much spillage from reaching a body of water as possible. This measure is the volume (in gallons) of sewage spilled reaching surface water as a Category 1 SSO per 1,000 residents, and is compared to the San Francisco Bay Region and California statewide averages.

Performance Data

Category 1 SSOs from Sewer Mains
Gallons per 1,000 capita



Category 1 SSOs from Sewer Laterals
Gallons per 1,000 capita



Analysis

NapaSan has generally been very successful in keeping the amount of Category 1 sewage spilled per at levels significantly below the San Francisco Bay Region and California state averages. In 2017, there were significant rain events in January and February that contributed to higher than normal overflows for NapaSan and throughout the region and the state.

In the winter of 2017, eight storm events contributed to NapaSan overflows of just over 0.5 million gallons. To manage and prevent even greater volumes of overflows, Collection Department crews worked significant overtime hours moving water (using trucks and bypass equipment) from parts of the collection system that were over capacity to other parts that could handle the extra water. Staff estimates that these extraordinary actions during the storms prevented an additional 2.4 million gallons of sanitary sewer overflows from occurring.

Measurement #1-5

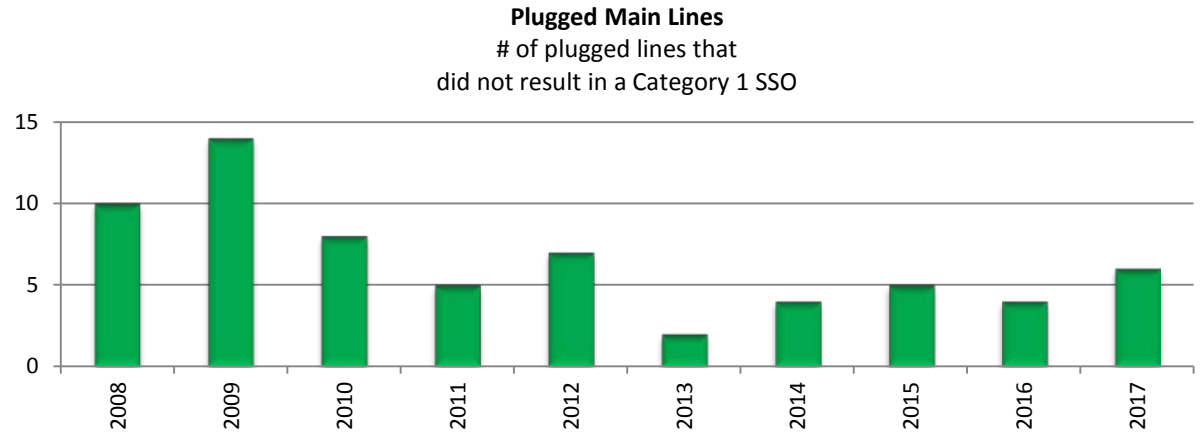
Plugged Main Lines

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Description

This is the number of sewer mains that were plugged and needed immediate attention, but did not result in a Category 1 Sanitary Sewer Overflow (SSO).

Performance Data



Analysis

There has been a positive trend in this measure over the past several years, as NapaSan has made increased investments and efforts toward preventive maintenance and prioritizing repairs.

Rating	
Current Year	5-Year Trend
Satisfactory	Watch

Measurement #1-6

Recycled Water Quality

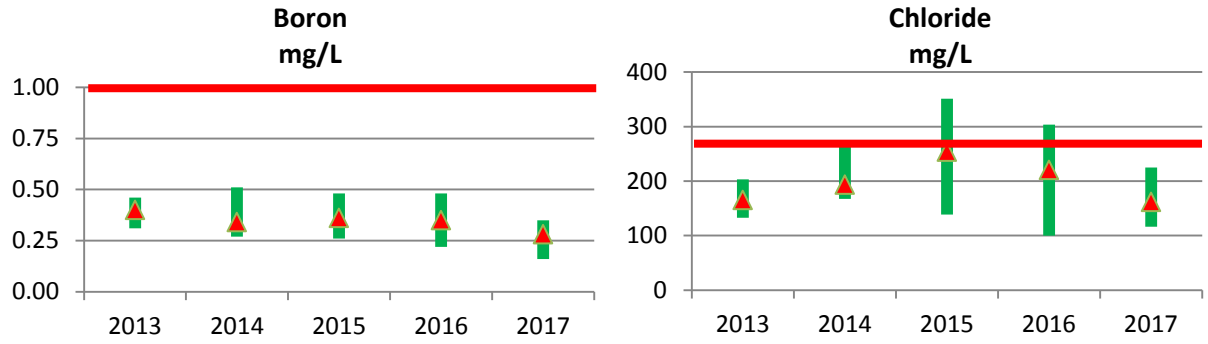
Description

These are two measures of recycled water constituents, chloride and boron. In a study of the impact of NapaSan's recycled water on wine grapes, it was noted that while maximum chloride levels for most winegrape varietals have yet to be determined, it appears that the most sensitive species can tolerate up to 262 mg/L of chloride. It was also noted that boron tends to develop injury (i.e., foliar burn) when concentrations are above 1 mg/L. The maximum thresholds noted in the charts are based on these study findings.

Performance Data

Indicates the range within the year indicates annual average

Indicates the maximum concentration for sensitive grape species



Analysis

Boron levels in NapaSan's recycled water historically have been below the levels generally considered harmful to winegrapes and other common foliage and turf irrigated by recycled water.

Chloride levels saw an upward trend from 2012 through 2015. Based on this trend, NapaSan staff took directed measures in 2015, 2016 and 2017 to reduce chlorides in the recycled water. These efforts included emergency repairs of collection system pipes and manholes showing infiltration of saline groundwater, as well as proactive enforcement of BMPs and local limits compliance with commercial and industrial customers. These efforts seem to have made a difference in reversing the trend of increased chlorides, but the measure remains on the "watch" list as more efforts are necessary to continue a downward trend.

EUM Attribute #2

Customer Service

This attribute evaluates whether NapaSan is providing reliable, responsive and affordable services in line with explicit, customer-accepted service levels.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
2. Customer Service	1-Service Calls for District Plugged Laterals	★	★	**25**
	2-Service Call Response Time	★	★	**26**
	3-Development Review Response Time	★	★	**27**
	4-Customer Satisfaction	★	★	**28**

CUSTOMER SERVICE

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

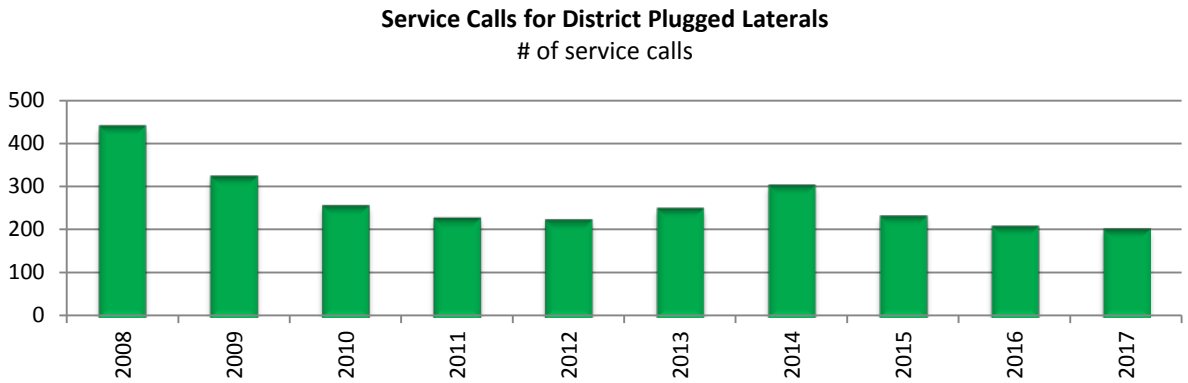
Measurement #2-1

Service Calls for District Plugged Laterals

Description

NapaSan uses the number of plugged laterals in its portion of the lateral as a proxy for determining customer complaints, as these problems lead to backups. The goal is to see a downward trend in this number.

Performance Data



Analysis

There has been a steady trend toward fewer service calls that were due to plugs in NapaSan's portion of the lateral. During the past several years, NapaSan has focused on preventive maintenance, partially in an effort to reduce these backups. These efforts have a long-term focus, but it appears that the number of NapaSan plugged laterals has decreased as a result of these efforts.

CUSTOMER SERVICE

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

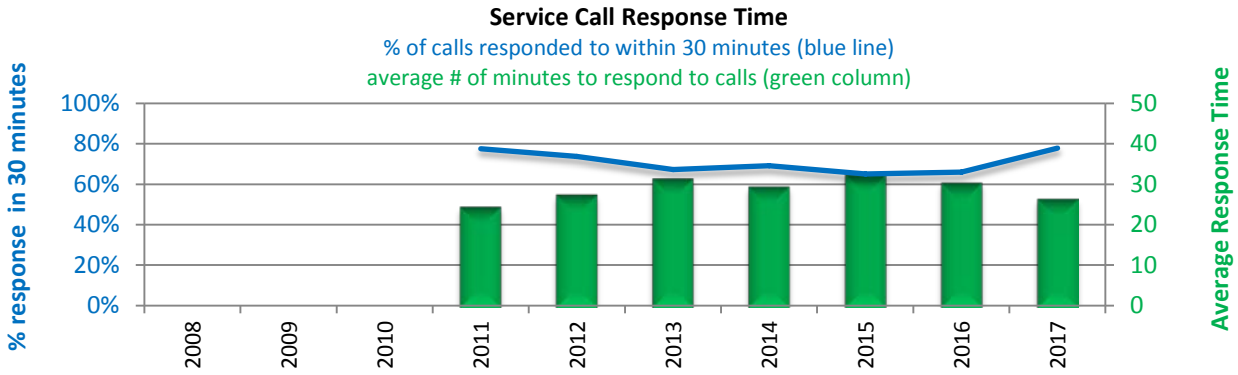
Measurement #2-2

Service Call Response Time

Description

NapaSan maintains a goal of responding to service calls for sewer backups by arriving at the site of the backup within 30 minutes of the call. This measure shows the percentage of calls that were initially responded to within 30 minutes and the average response time.

Performance Data



Analysis

NapaSan began collecting this data in 2010 and 2011 and could not be compiled for previous years from existing records. Over the past several years, the percentage of service calls responded to has dropped from 77% in 2011 to 65% in 2015, with a slight increase to 66% in 2016 and an increase back t 77% in 2017. The average response rate improved its average response time in 2017, down to 26 minutes.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

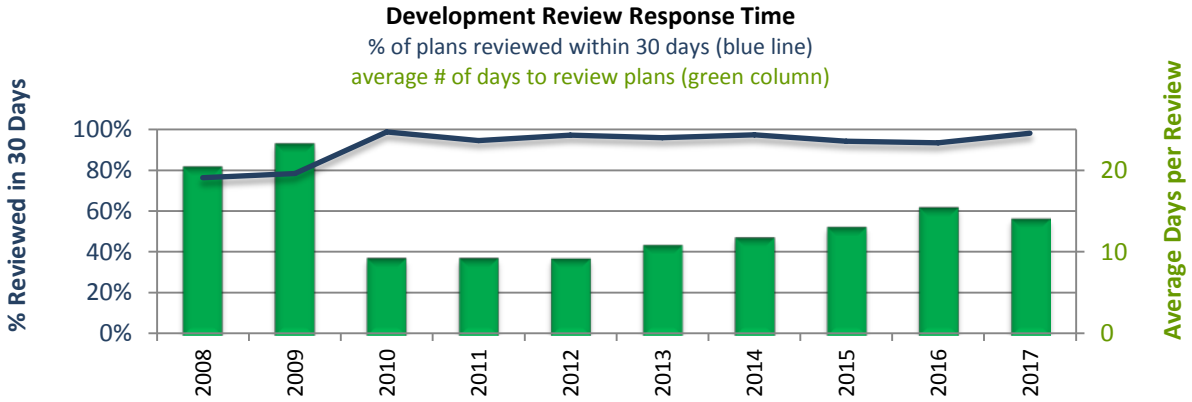
Measurement #2-3

Development Review Response Time

Description

NapaSan maintains a goal of completing review of development plans within 30 days of receipt of the plans. This chart shows the percentage of plans that were reviewed and returned within that goal.

Performance Data



Analysis

Over the past eight years, NapaSan met its goal of completing reviews within 30 days in 90% or more of submissions, while maintaining the average number of days to review plans at between 9 and 15 days, even as development plan submissions have increased significantly the past few years.

CUSTOMER SERVICE

Rating	
Current Year	5-Year Trend
★ Satisfactory	★ Satisfactory

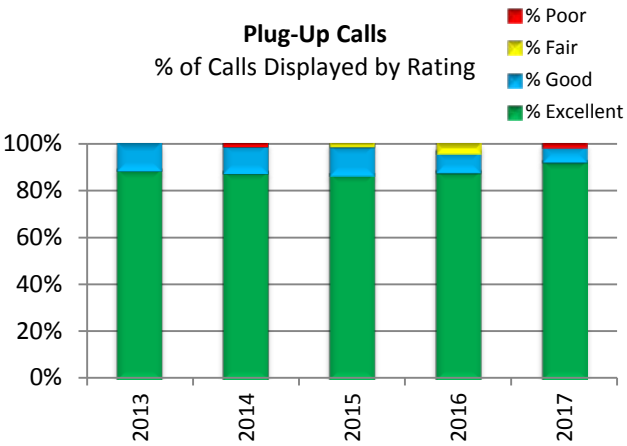
Measurement #2-4

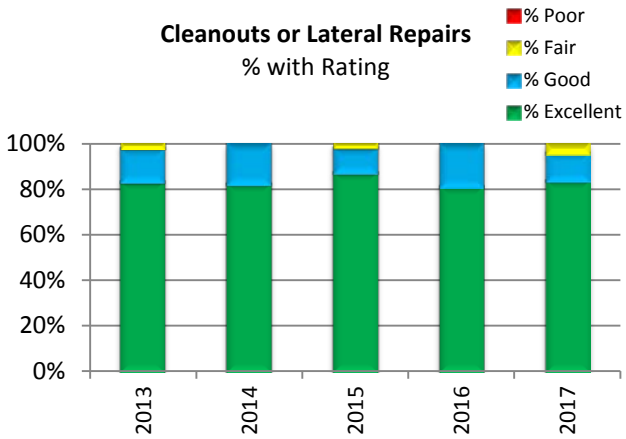
Customer Satisfaction

Description

This is the measure of how well NapaSan staff performed, according to the customer who was directly impacted by that work. Surveys were sent out for all plug-up calls and for any time NapaSan staff conducted a lateral repair or installed a cleanout that affected private property.

Performance Data





Analysis

The first chart is for interactions when the customer calls NapaSan for service to clear a plugged sewer line. The second is for the installation of sewer cleanouts or lateral replacements, where NapaSan initiates interaction and involves construction practices. Both measures show positively on NapaSan in 2017, with 99.1% of plug-up surveys and 95.9% of cleanout or lateral repair surveys reporting that NapaSan's service was either "Excellent" or "Good."

All survey responses with a rating of "Fair" or "poor" are followed up on to try to fix any issues that were identified by property owners, if possible.

EUM Attribute #3

Employee and Leadership Development

This attribute evaluates whether NapaSan recruits and retains a workforce that is competent, motivated, adaptive and safe-working. It evaluates whether employee institutional knowledge is retained and improved upon over time.

Satisfactory
Watch
Unsatisfactory
No Measure

Attribute	Measurement	2017	Trend	Page
3. Employee and Leadership Development	1-Experience Turnover Rate	★	★	31
	2-Employee Satisfaction	★	★	32
	3-Total Training Hours	⊘	⊘	33
	4-Online Safety Training Hours	★	★	34
	5-Succession Planning	★	★	35
	6-Institutional Knowledge Capture	★	★	36

EMPLOYEE AND LEADERSHIP DEVELOPMENT

Rating	
Current Year	5-Year Trend / Projection
★ Satisfactory	★ Satisfactory

Measurement #3-1

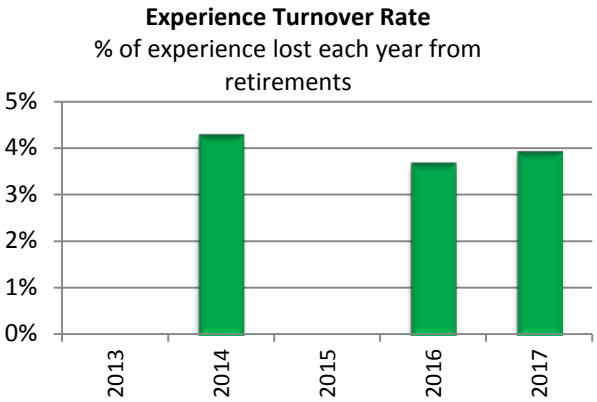
Experience Turnover Rate

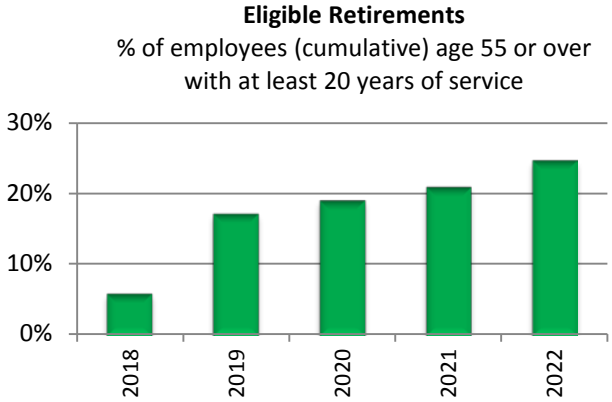
Description

Experience Turnover Rates is the percentage of years that employees retiring that year worked at NapaSan compared to the total number of years of experience for all employees. It measures the amount of experience lost in any given year due to retirements.

Eligible Retirements is the percentage of NapaSan employees at least age 55 with 20 or more years of service, and shows the potential for employee turnover in the next five years.

Performance Data





Analysis

Most employees who leave employment from NapaSan do so through retirement. Most retirements are known in advance and planned for. The experience turnover rate for 2013-2017 is in line with expectations. There were no retirements in 2013 and 2015.

The experience turnover rate from retirements at NapaSan is not a controllable measure, and as such this is not a performance measure as much as it is a data set that helps to inform whether there are trends in the workforce to which management needs to respond.

Over the next five years, NapaSan is expected to lose 25% of its workforce to retirements. This number is significant and indicates a need for management to do appropriate succession planning.

EMPLOYEE AND LEADERSHIP DEVELOPMENT

Rating	
Current Year	5-Year Trend
★ Satisfactory	★ Satisfactory

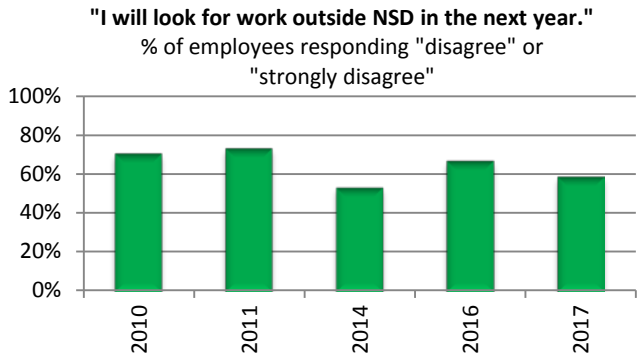
Measurement #3-2

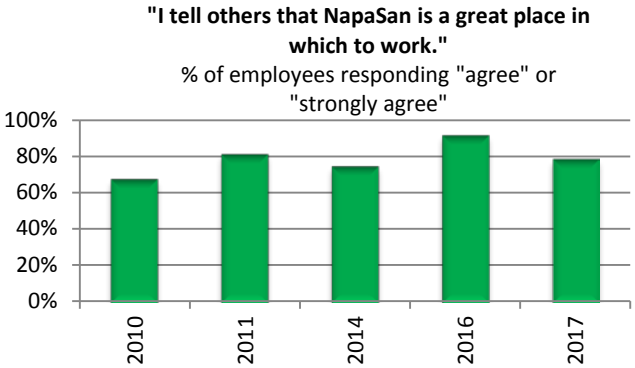
Employee Satisfaction

Description

The following charts show the response to three questions asked during employee surveys. These questions are designed to gauge employee satisfaction. A complete employee survey was conducted in 2010, 2011, 2014 and 2017. In 2016, employees were asked only the following questions.

Performance Data





Analysis

Fall 2010 was the first time the NapaSan surveyed its employees on about 60 attributes, including these three. In Fall 2011, 2014, and 2017 the complete survey was repeated. In 2016, employees were surveyed on only the four attributes included in this report.

From the survey results, it appears that employees feel valued and that they enjoy working at NapaSan. There was a slight decline in 2017 regarding employees looking for work outside of NapaSan in the next year, but consistent with numbers in the 2014 survey.

EMPLOYEE AND LEADERSHIP DEVELOPMENT

Rating	
Current Year	5-Year Trend
No data	No data

Measurement #3-3

Total Training Hours

Description

This is the total number of training hours provided to employees at NapaSan.

Performance Data

No Measure.

Analysis

It is the employee's responsibility to track hours necessary to maintain specific certifications. NapaSan currently does not track total training hours by employee. A future goal of NapaSan is to implement a system to track employee training.

EMPLOYEE AND LEADERSHIP DEVELOPMENT

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

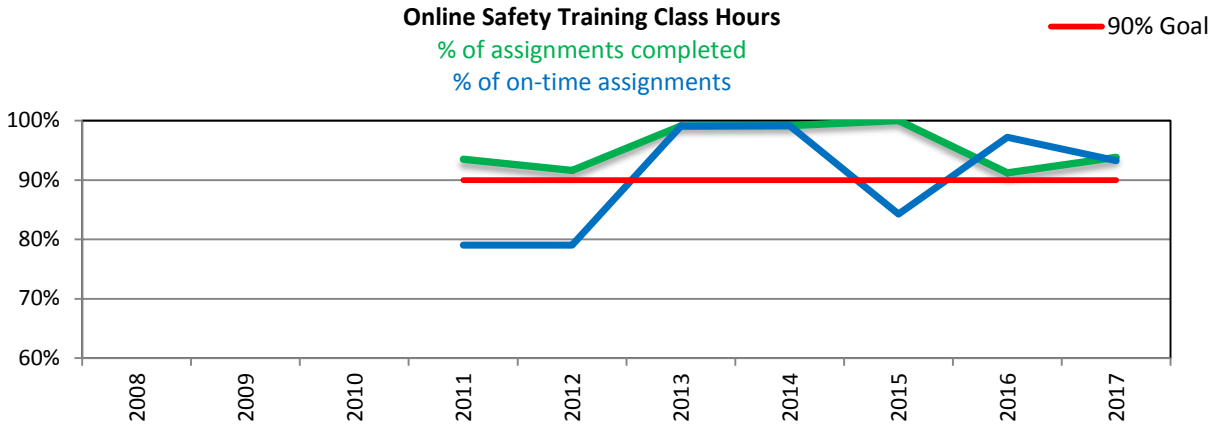
Measurement #3-4

Online Safety Training Completion

Description

This is the percentage of total online safety training class hours completed by staff, and the percentage that were completed prior to their due date. A goal of 90% or higher has been established for these metrics.

Performance Data



Analysis

The online safety program began in August 2006, but performance data was not available until 2011. This measure shows the completion rates and on-time completion rates for online safety classes. 2017 showed continued high performance in completing assignments on time, with both the one-time completion and the overall completion rates exceeding the 90% target.

EMPLOYEE AND LEADERSHIP DEVELOPMENT

Rating	
Current Year	10-Year Trend
Satisfactory	Satisfactory

Measurement #3-5

Succession Planning

Description

Percentage of key positions covered by long-term workforce succession plan.

Performance Data

Previously, seven (7) positions were identified as critical for the development of succession plans. NapaSan has developed formal succession plans for each position and has completed the necessary cross training associated with these plans.

In 2017, an eighth position was identified, Collection System Technician. Succession plan for that position is in the process of being completed.

Analysis

NapaSan completed succession plans for the following seven positions: Operations Services Director, Reclamation System Manager, Collection System Manager, Regulatory Compliance Manager, Human Resources Officer/Clerk of the Board, Senior Accountant and Safety, Training and Fleet Maintenance Officer. The succession plan for an eighth position, Collection System Technician, is currently being developed.

In addition to development of succession plans for the most critical positions at the District, NapaSan maintains other practices designed to capture institutional knowledge and maintain continuity during periods of staffing transition.

NapaSan has implemented the "Operator III Training Program" to increase operator knowledge and allow for the necessary skills to operate the plant's treatment processes and regulatory control on a day-to-day basis. The Plant Maintenance and Laboratory Supervisors have also trained staff sufficiently to provide coverage in the event of vacancy. The Collection Department has a cross-training process to ensure that all employees know how to do every job and use all of the equipment in the department.

NapaSan has developed a number of intern programs designed to provide experience and exposure to careers in wastewater treatment. These include an Operator-In-Training program, where up to 6 OITs volunteer in the treatment plant to get the hours needed for their state licenses. The Engineering Division has two interns that provide hands-on, real world experience to students studying for a career in engineering. And the Laboratory takes on two interns during the summer months to provide hands-on, real world experience to physical science students. All these efforts are designed to introduce students to wastewater professionals and encourage them to consider careers in wastewater.

EMPLOYEE AND LEADERSHIP DEVELOPMENT

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

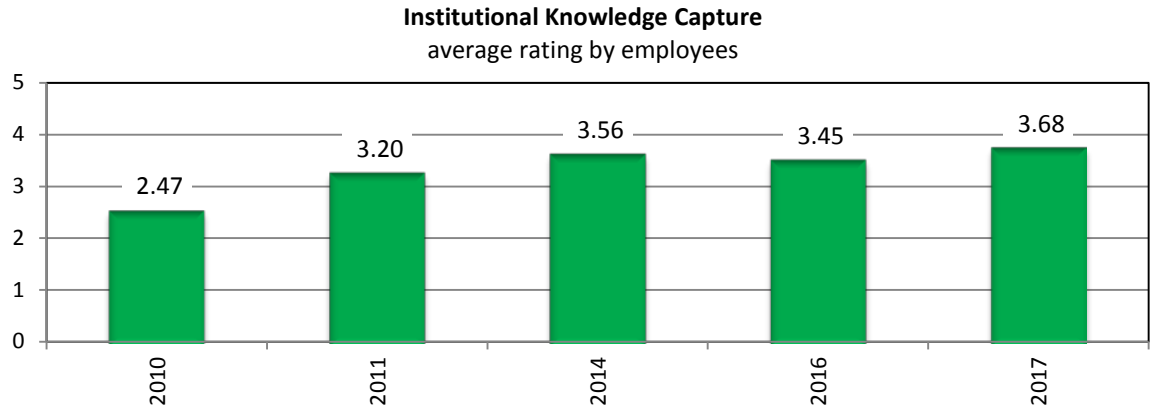
Measurement #3-6

Institutional Knowledge Capture

Description

Percent of employees who believe NapaSan is capturing critical institutional knowledge. In the Employee Survey, employees were asked to rate whether they agree or disagree with the following statement, "***Efforts are being made at NapaSan to capture the critical institutional knowledge that may be held by one employee in order to reduce the risk of losing that knowledge all together should the employee leave.***" The chart shows the average rating by employees on a 1-to-5 scale, where 1 is "strongly disagree" and 5 is "strongly agree."

Performance Data



Analysis

In 2010, 2011, 2014 and 2017, this question was included as part of a more comprehensive employee survey program. In 2016, the question was one of only four questions that employees were asked to give their opinions.

Since the beginning of surveying, NapaSan's actions in recording and retaining institutional knowledge have resulted in an increase in the belief by employees that meaningful efforts are being taken, although it appears that there is still room for improvement.

EUM Attribute #4

Operational Optimization

This attribute evaluates whether NapaSan ensures ongoing, timely, cost-effective, reliable and sustainable performance improvements in all facets of its operations.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
4. Operational Optimization	1-Electricity Self-Generation	★	★	**39**
	2-Electricity Consumption Efficiency	★	★	**40**
	3-Chemical Consumption	★	★	**41**
	4-Planned Maintenance Ratio-Collections	★	★	**42**
	5-Planned Maintenance Ratio-Treatment Plant	★	★	**43**

OPERATIONAL OPTIMIZATION

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

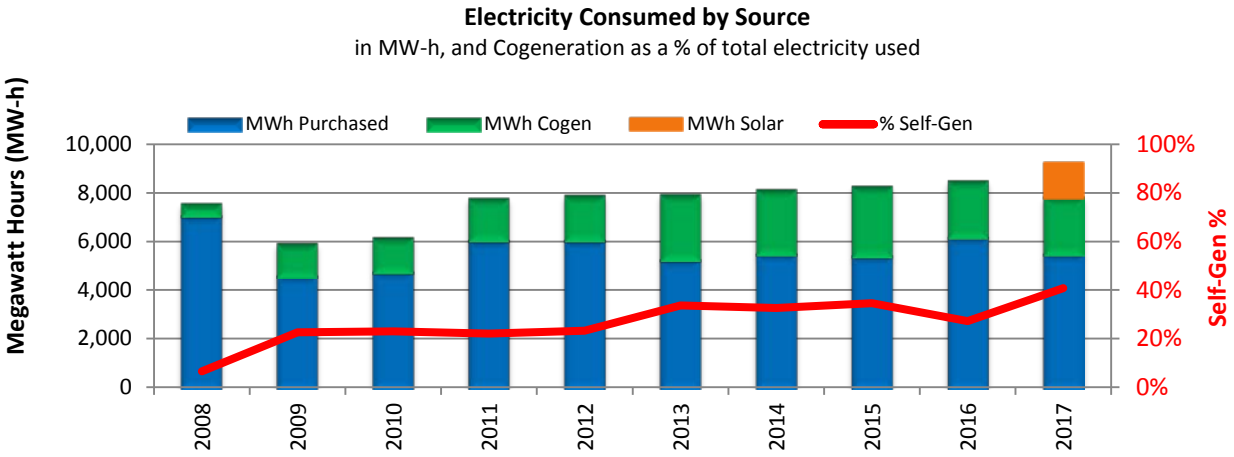
Measurement #4-1

Electricity Self-Generation

Description

Electricity is one of the largest expenses in the treatment process. The treatment plant uses a cogeneration engine ("Cogen") powered by captured and compressed biogas gas to create electricity. The goal is to generate as much electricity as possible from the Cogen system, to offset purchased electricity. In 2016, the NapaSan's solar array completed constructed, but did not come on line until the end of March 2017. This chart shows the total megawatt hours of electricity purchased, electricity produced by cogeneration, electricity produced by solar, and the percentage of total electricity that was self-generated (cogen and solar).

Performance Data



Analysis

The percent of electricity self-generation rose in 2017 from about 27% to almost 41%. The cogeneration engine was offline for November and December in 2016, and January, February and part of March in 2017, and solar came online starting at the end of March 2017, resulting in a drag on the total self-generation number for 2017. Electricity purchased from PG&E was still lower than in prior years, even with increased use of electricity at the facility due to the continuous service of both aeration basins and increase recycled water production.

It is expected that the amount of self-generated electricity will increase in 2018, with the solar power array and the cogeneration engine both in service for the entire year.

OPERATIONAL OPTIMIZATION

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

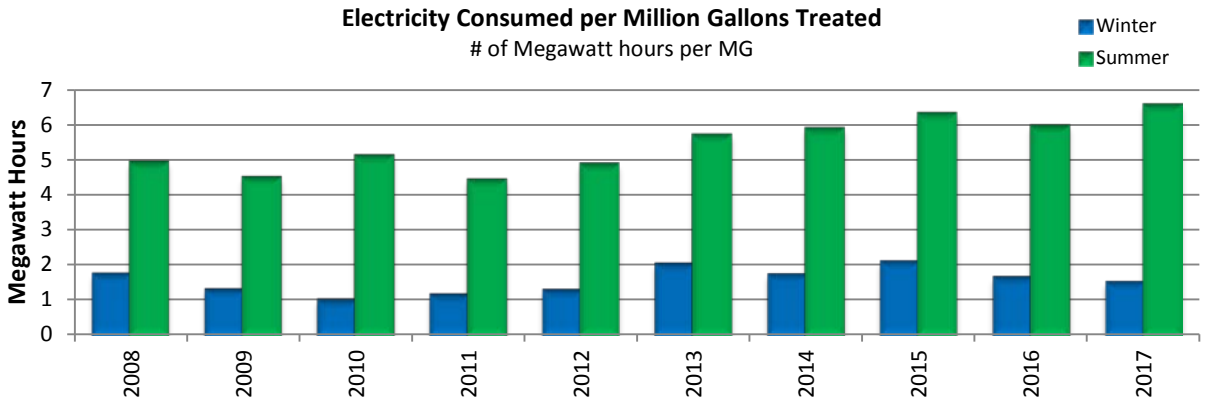
Measurement #4-2

Electricity Consumption Efficiency

Description

This chart shows overall electricity efficiency by measuring the amount of electricity consumed per million gallons of wastewater effluent. Winter months (November-April) represent wastewater processed and discharged to the river. Summer (May-October) represents wastewater processed to recycled water standards and either sold to customers or applied to spray fields.

Performance Data



Analysis

Electricity consumption per million gallons treated has increased slightly at the plant compared to 2011 and 2012, which may be drought related, as the same amount of solids need to be processed, but with lower flows. With increased rainfall in 2016 and 2017, the numbers show lower consumption per million gallons treated in the winter months.

The numbers since 2014 also represent a change in treatment technology from prior years as the plant shifted from using flocculating clarifiers to a dissolved air floatation clarifier, a process that uses more electricity to remove algae from pond water. Also new is the creation of two pressure zones in the recycled water pump station that has increased electricity usage. In 2017, both aeration basins (ABs) were operated during the summer months, instead of the usual practice of running only one, in an effort to reduce chlorides in recycled water. This change in process resulted in more air required for in the ABs, thus increasing electricity usage.

The diffuser replacement project completed in 2017 will help to decrease electricity use somewhat in the future.

OPERATIONAL OPTIMIZATION

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

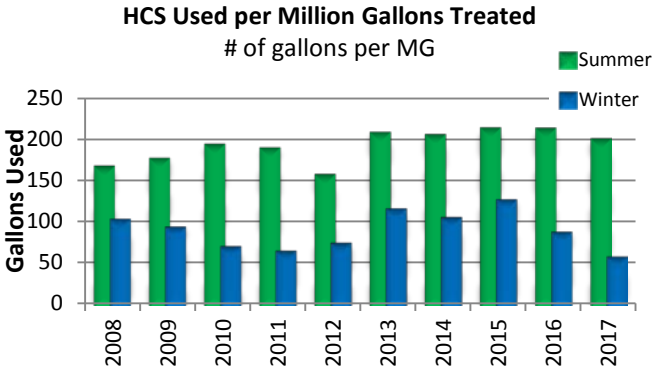
Measurement #4-3

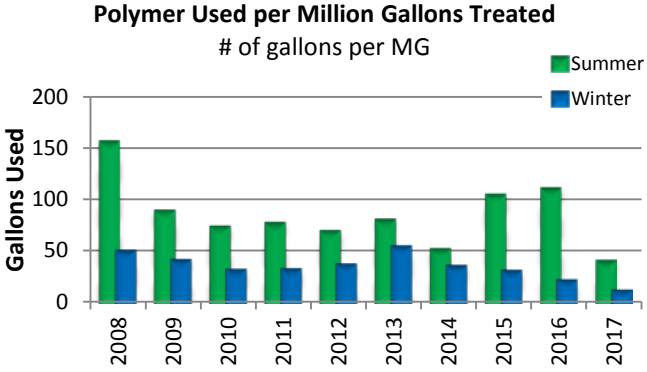
Chemical Consumption

Description

Chemicals are a significant cost in the wastewater treatment process. Two chemicals specifically make up a majority of the chemical budget – sodium hypochlorite (HCS) and polymer. HCS is used to disinfect water, while polymer is used to remove suspended solids and to "dewater" biosolids. Usage can fluctuate based on environmental conditions, the amount of wastewater processed and the type of processing (river discharge or recycled water production), so these have been represented using gallons of chemicals per million gallons processed for both the summer and winter seasons.

Performance Data





Analysis

Generally, chemical consumption per million gallons treated has reduced for most chemicals. The increase in HCS in the winter months from 2013 to 2015 may have been drought related, with increased flows in winter 2016 and winter 2017 helping to reduce the amount used per MG treated. Polymer use has been reduced significantly based on changes in standard operating procedures in the plant.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

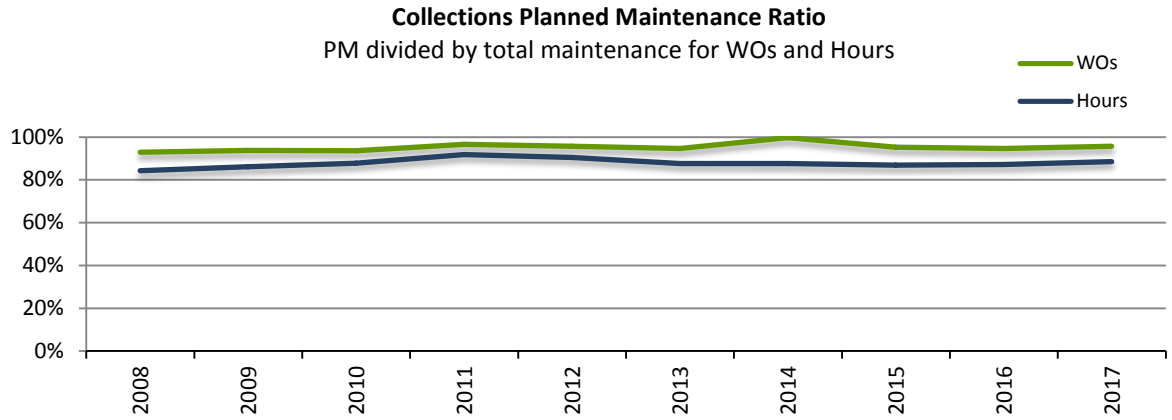
Measurement #4-4

Planned Maintenance Ratio – Collections

Description

This is the total number of staff hours spent on planned maintenance in the collection system divided by the total number of hours spent doing any maintenance activity (planned and corrective). Numbers closer to 100% means that the focus is on planned maintenance activities, rather than responding to emergency repairs.

Performance Data



Analysis

The collection system has consistently maintained a very high ratio of planned maintenance to total maintenance, both for the number of work orders and for the number of hours worked.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

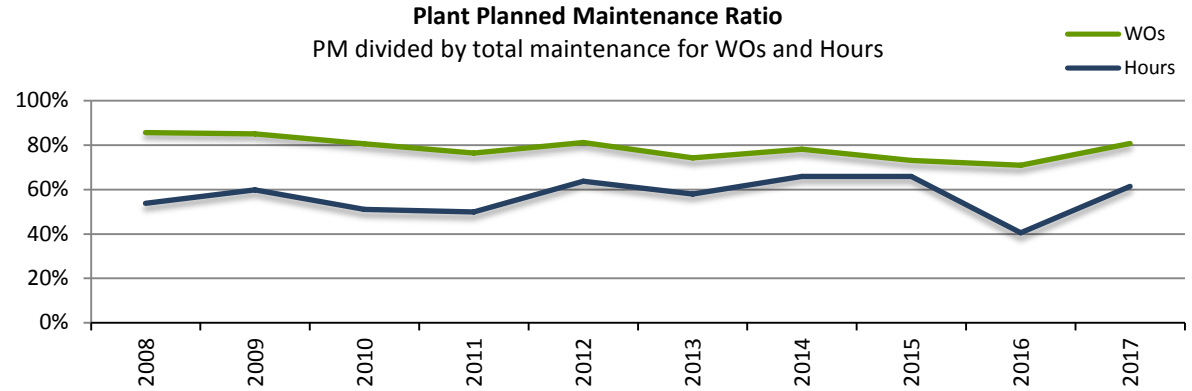
Measurement #4-5

Planned Maintenance Ratio – Treatment Plant

Description

There are two numbers here. The first is the percentage of the number of work orders (WOs) assigned to planned maintenance at the treatment plant divided by the total number of WOs for any maintenance activity (planned and corrective). The second is the same ratio, but uses the total number of hours worked instead of the number of work orders.

Performance Data



Analysis

The plant has been able to maintain a relatively consistent ratio of work orders, between 75% and 85% on preventive maintenance activities, and 15-25% on corrective maintenance activities. The ratio for hours is lower, as corrective maintenance items tend to take more time to complete than performing preventive maintenance. Overall, there is an upward trend in the number of hours spent doing preventive maintenance.

EUM Attribute #5

Financial Viability

This attribute evaluates whether NapaSan established and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. It evaluates whether NapaSan rates are adequate to recover costs, provides for reserves, maintains support from bond rating agencies, and plans and invests for future needs.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
5. Financial Viability	1-Operating Ratio	★	◆	**47**
	2-Current Ratio and Days Cash on Hand	★	★	**48**
	3-Capital Expenses Compared to Operating Expenses	★	★	**49**
	4-Debt Service Coverage Ratio	★	★	**50**
	5-Financial Procedure Integrity	★	★	**51**
	6-Bond Rating	★	★	**52**
	7-Financial Reserves	★	★	**53**

Rating	
Current Year	10-Year Trend
Satisfactory	Watch

Measurement #5-1

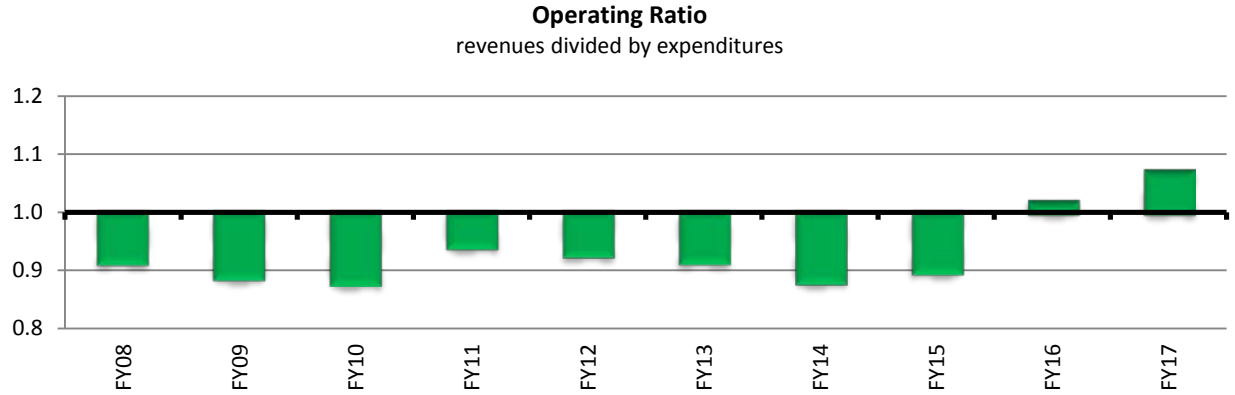
Operating Ratio

Description

This ratio is total operating revenue (sewer service charges, capacity charges, recycled water sales, etc., but excluding bond or debt proceeds) divided by total operating expenditures (including depreciation and debt service). This ratio shows whether the NapaSan is collecting enough revenue to operate and maintain the sewer and treatment systems at the current level of service, including the regular renewal and replacement of equipment and machinery. A ratio below 1.0 means there is insufficient revenue to cover operating expenses. A ratio above 1.0 means there is additional revenues above the cost of operations that is available for capital projects.

The ratio can fluctuate above and below 1.0, depending on the financial plan for the year, but a long-term trend of expenditures greater than revenues (a ratio of less than 1.0) is problematic and indicates that reserves are being used to finance capital projects and/or the ongoing expenses, and that a course correction is likely.

Performance Data



Analysis

In prior years, the operating revenue for NapaSan had been insufficient to cover the operating expenses. The ratio shows that the fee increased made by NapaSan has enabled the District to meet its current obligations and have sufficient revenues to pay for the renewal and replacement of its assets. The indicator will remains as “watch” for the 10-year trend until sufficient time has passed to show a sustained positive trend.

Rating	
Current Year	5-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #5-2

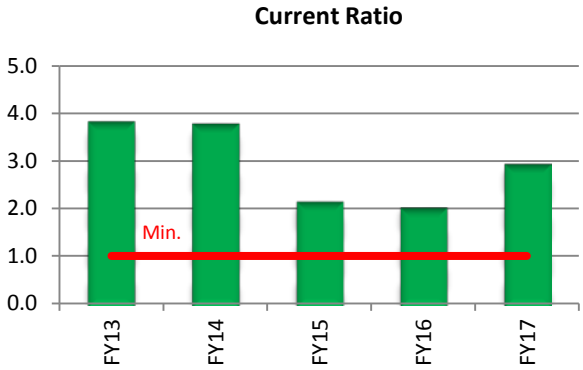
Current Ratio and Days Cash on Hand

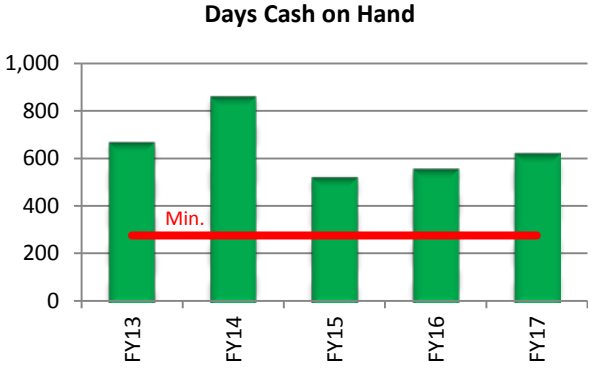
Description

The Current Ratio is a measure of short term liquidity. It is designed to evaluate the NapaSan's ability to pay current bills. The calculation consists of unrestricted current assets, excluding inventory and prepaid items, divided by current liabilities. A number of 1.0 means NapaSan has sufficient current assets to pay for current liabilities. The ratio here is based on assets and liabilities as of June 30.

Days Cash on Hand is a measure of how much cash NapaSan has to pay its operating expenses. It is calculated as the unrestricted cash and investments divided by operating expenses (excluding depreciation and amortization) divided by 365 days. It shows how many days NapaSan could operate before running out of cash. Based on cash flow modeling, NapaSan has a minimum target of 275 Days Cash on Hand.

Performance Data





Analysis

NapaSan needs to maintain a high Current Ratio and high Days Cash on Hand because of the nature of its revenue collection mechanism. While most expenses are spread out throughout the year, the majority of NapaSan's revenues come in only twice a year, in December and April, correspond with residential property tax payments. NapaSan needs to have sufficient current assets at the beginning of the fiscal year to pay for debt service payments due in August and for ongoing operating expenses through December, when it receives in the majority of its revenue. The data above shows that NapaSan has sufficient current assets to maintain the necessary Current Ratio and high Days Cash on Hand.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

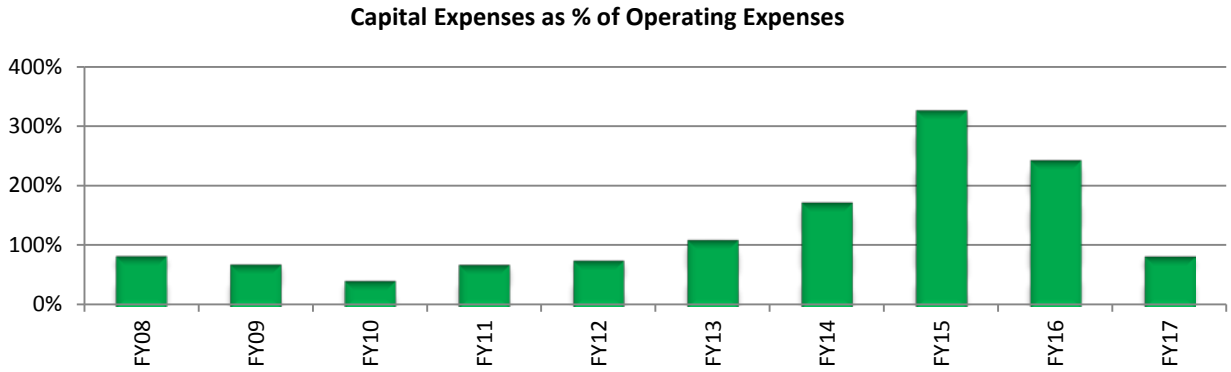
Measurement #5-3

Capital Expenses Compared to Operating Expenses

Description

Capital expenses as a percentage of operating expenses (less depreciation) is a measure that has meaning only when compared against itself over time, or compared to other similar agencies. An upward trend is indicative of an expansion period or a period focused on renewal and replacement of capital assets, while a downward trend is indicative of decreased growth or less investment in system renewal and replacement.

Performance Data



Analysis

More study is necessary to determine what an appropriate "baseline" or "target" number should be. Much of FY15 and FY16 capital expenses were bond-funded projects and the construction the MST and LCWD recycled water projects that were financed by other agencies. The FY17 percentage is slightly higher than the first five years in the trend analysis, and is expected to increase in the next several years as the Browns Valley Trunk Project begins construction and NapaSan invests additional resources into sewer rehabilitation.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

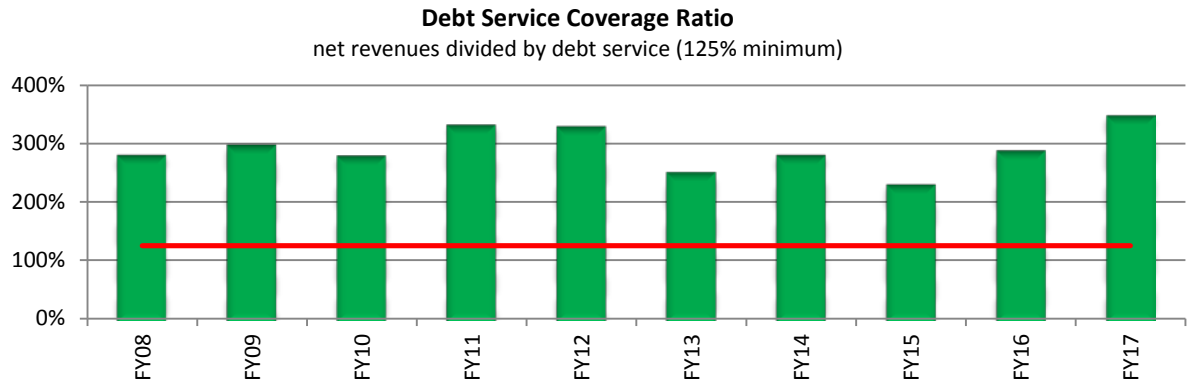
Measurement #5-4

Debt Service Coverage Ratio

Description

NapaSan is required by its debt covenants and financial policies to maintain a debt service coverage ratio of at least 1.25, or 125%. The calculation is made by adding all revenue sources and subtracting all operating expenses (excluding depreciation) to get net revenue. The net revenue (green bars) must be more than 125% (red line) of the sum of all debt service payments.

Performance Data



Analysis

NapaSan has consistently maintained a debt service coverage ratio higher than the 125% minimum requirement. This number is evaluated during each budget development and adoption process to ensure that this covenant is maintained. With the issuance of new debt, the ratio decreased in recent years. The ratio should stay steady and increase gradually until debt is again issued for future capital projects.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #5-5

Financial Procedure Integrity

Description

These are questions that gauge the presence of "best practices" and internal processes to ensure a high level of financial management integrity.

Performance Data & Analysis

- **Does NapaSan have financial accounting policies and procedures? (Y/N)**

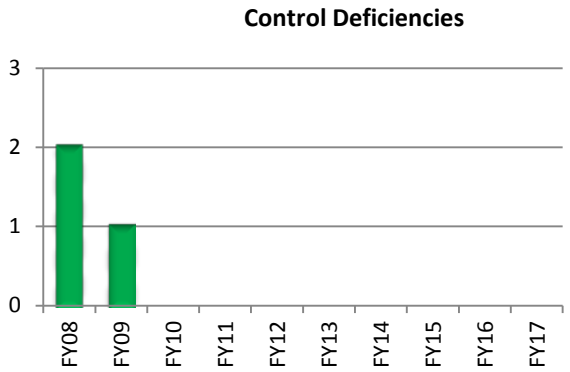
  Yes. Comprehensive policies were adopted in February 2007, and revised and updated in May 2010, May 2012 and February 2017.

- **Are the financial results and internal controls of NapaSan audited annually? (Y/N)**

  Yes. NapaSan is required to conduct an annual audit both by its bond covenants and by its accounting policies.

- **Have the number of control deficiencies and material weaknesses been reduced from previous audits? (Y/N)**

  Yes. The number of control deficiencies noted by the financial auditors in their management letters has decreased from two in FY08 to one in FY09 and none in the last eight fiscal years.



Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

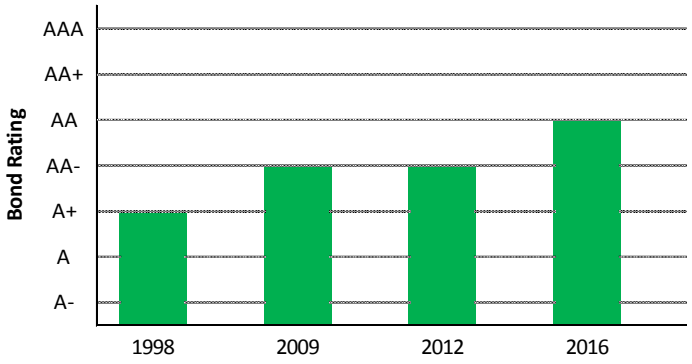
Measurement #5-6

Bond Rating

Description

Bond ratings are a general indicator of financial viability; however the rating is not entirely in NapaSan's control as ratings also take into consideration the condition of the local economy and the condition of the capital markets. A higher bond rating is desirable and can be viewed as one of several factors of financial health.

Performance Data



Analysis

When NapaSan refinanced most of its long term debt in 2009, Standard & Poor's upgraded the rating from "A+" to "AA-" for its fixed rate revenue bonds. In December 2012, S&P confirmed the rating of "AA-/Stable Outlook" for the issuance of new long term debt.

Standard & Poor's regularly evaluates NapaSan's financial position and updates its ratings for the existing debt. During its evaluation in 2016, S&P upgraded the existing 2012 Certificates of Participation (COPs) from "AA-" to "AA" with a "stable" outlook.

When the 2009B COPs were advance refunded in December 2017, S&P again evaluated NapaSan's credit worthiness. S&P maintained its "AA" rating while enhancing the outlook from "stable" to "positive."

"AA" rating means that NapaSan's debt is considered "High Grade/High Quality" in the bond market.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #5-7

Financial Reserves

Description

NapaSan maintains several reserves in accordance with financial policies and in support of its overall financial health.

Performance Data

- **Does NapaSan maintain an adequate Operating Reserve?**
  NapaSan maintains an Operating Reserve that is equal to 15% of annual operating expenses. This revenue serves to assist the District during emergencies and other events where additional cash may be necessary. This reserve is fully funded.

- **Does NapaSan maintain an adequate Cash Flow Reserve?**
  NapaSan maintains a cash flow reserve sized so that on July 1 of every year, there is enough cash to cover all operating expenses, including debt service, until mid-December, when sewer service charge revenues are remitted to the District from the County Assessor's office. This reserve is fully funded.

- **Does NapaSan maintain a rate stabilization reserve to sustain operations during cycles of revenue fluctuation, in addition to operating reserves?**
  Reserves for rate stabilization and revenue fluctuation are not necessary at this time. The Operating Reserves functions to cover this need. Rate stabilization is not an issue given the current method of collecting sewer service charges as a flat rate on residential customers. This may need to be addressed in the future if and when recycled water revenues become a significant portion of NapaSan's annual revenues.

Analysis

Sewer service charges constitute about 78% of operating revenues, with the significant majority of that revenue coming from residential customers. SSCs are collected as an assessment on the property tax statements, and the majority of rate revenue is based on fixed charges, not on consumption. These structural factors combine to provide adequate revenue stability. The operating and cash flow reserves, as established in NapaSan's financial policies, are fully funded and sufficient to cover timing fluctuations in revenue collection without impacting operational readiness.

EUM Attribute #6

Infrastructure Stability

This attribute evaluates the condition of and costs associated with critical infrastructure assets, whether assets are maintained over the long term at the lowest possible life-cycle cost and at acceptable risk consistent with customer, community and regulator-supported service levels, and consistent with anticipated growth and system reliability goals. It evaluates whether asset repair, rehabilitation and replacement efforts are adequate to meet long-term sustainability goals.

Attribute	Measurement	2017	Trend	Page
6. Infrastructure Stability	1-Asset Inventory	◆	◆	57
	2-Renewal & Replacement of Assets	★	★	58
	3-Sewer Main Condition Assessment	★	★	59
	4-Sewer Main Line Cleaning	★	★	60
	5-Food Service Establishment Inspections	★	★	61
	6-Sewer Main Renewal and Replacement	★	★	62
	7-Lower Sewer Lateral Renewal and Replacement	★	★	63
	8-Sewer Partial or Total Collapse Rate	★	★	64
	9-Recycled Water Service Availability	★	★	65

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
 Watch	 Watch

Measurement #6-1

Asset Inventory

Description

This is the percent of NapaSan's critical assets that have been inventoried within the past 5-10 years.

Performance Data

Inventory is maintained with 2 asset management systems – one for Collections (Hansen) and one for the plant (MP2). Both systems track assets and condition assessments.

Analysis

NapaSan has not conducted a physical inventory of its assets in the past 5 years, although there are several systems that keep inventory of most of the assets. The Hansen database is updated regularly as repair work and condition assessment CATV work is completed. The MP2 database is populated with major assets, but still needs to be completed. All capital assets are also tracked in the Fixed Asset database used for financial reporting.

This functional area will improve as NapaSan implements its Asset Management Program.

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

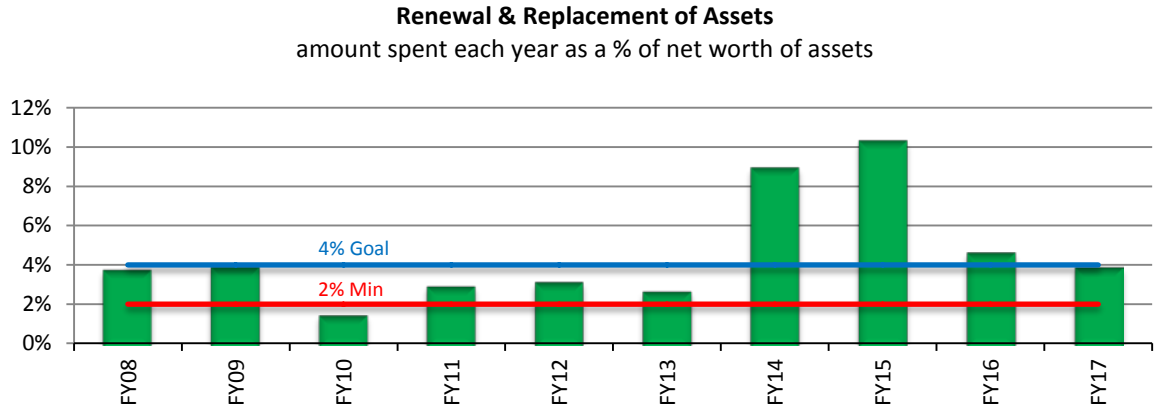
Measurement #6-2

Renewal & Replacement of Assets

Description

This graph shows the amount actually spent toward the renewal or replacement of capital assets divided by the total net worth of assets, shown as a percent.

Performance Data



Analysis

NapaSan strives to replace at least 2% and preferably 4% of the value of its assets, on average, annually, although this is not necessarily the best measure to determine whether the District is investing sufficiently in asset replacement and rehabilitation. The ratio was up in FY14 through FY16 due to replacement of the Influent Pump Station, and is anticipated to stay at or above the goal into the next several years as NapaSan continues to invest in replacement and rehabilitation of its sewer system.

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

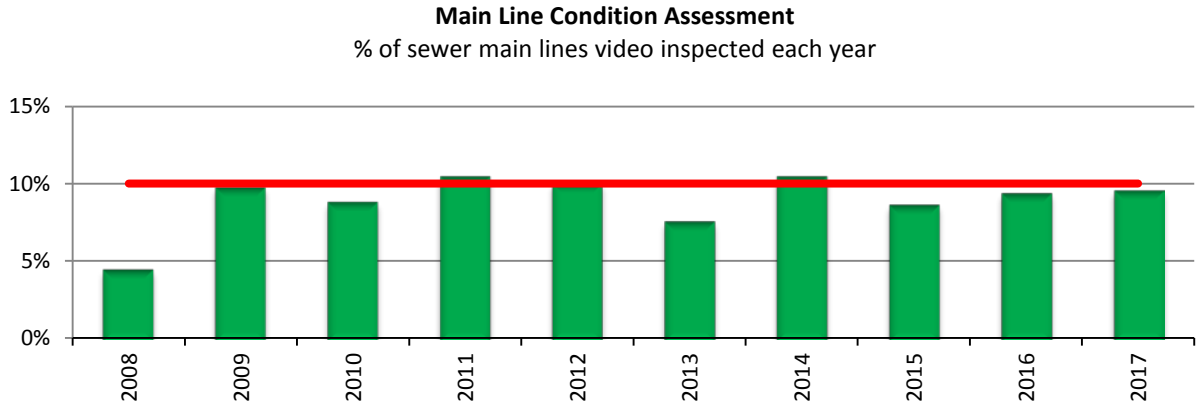
Measurement #6-3

Sewer Main Condition Assessment

Description

This graph shows the percent of sewer main lines that are video inspected each year and assessed for condition and maintenance problems.

Performance Data



Analysis

NapaSan has consistently met or come close to its goal of 10% annually. The 2013, 2015 and 2016 drops in assessments were due to fewer people than usual (injuries and position vacancies) able to complete this task. In 2015, there was also additional effort put toward system repairs (lateral and manhole repairs and replacements) in specific areas to keep ahead of the City's road paving schedule, which pulled staff away from this activity.

It is expected that this measure will change with the implementation of the Asset Management program. The current metric is a measure of activity, but does not provide any insight into whether NapaSan's program conducts assessment on the right pipes at the necessary time or at the appropriate intervals.

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

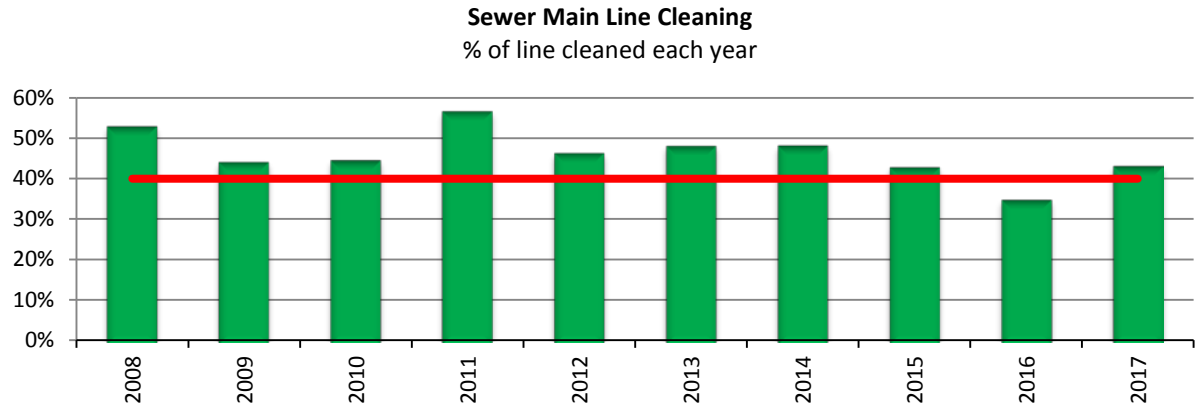
Measurement #6-4

Sewer Main Line Cleaning

Description

This chart shows the percentage of sewer main lines cleaned during the year, compared to the NapaSan's goal of 40% cleaned annually.

Performance Data



Analysis

Over the past decade, NapaSan has increased its efforts in preventive maintenance and cleaning of sewer mains, with the goal of cleaning the equivalent of 40% of its sewer mains every year. In 2016, NapaSan did not meet this goal because of staffing vacancies. This deficiency was corrected in 2017. Over the last ten years, the trend and results remain satisfactory.

It is expected that this measure will change with the implementation of the Asset Management program. The current metric is a measure of activity, but does not provide any insight into whether NapaSan's program is cleaning the right pipes at the necessary time or at the appropriate intervals.

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

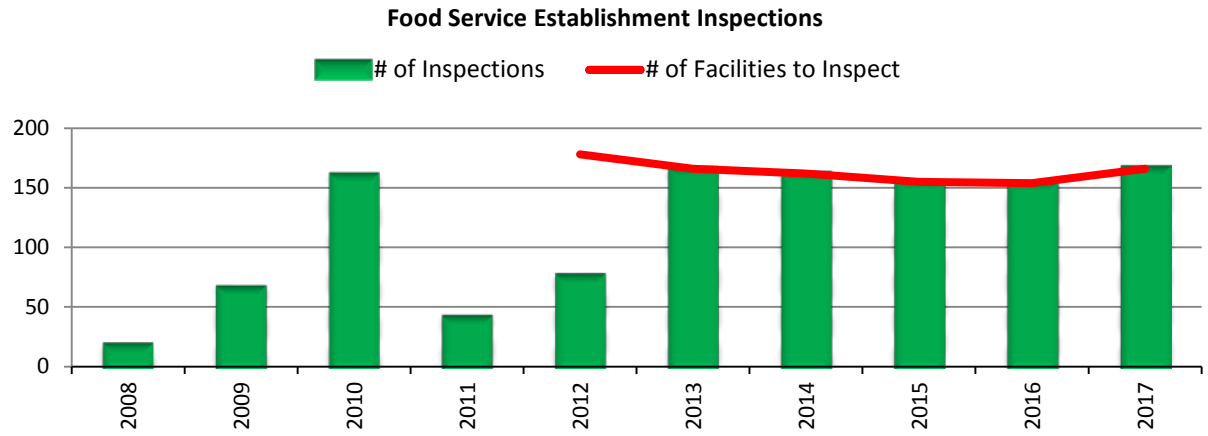
Measurement #6-5

Food Service Establishment Inspections

Description

Inspections ensure that restaurants and other Food Service Establishments (FSEs) are properly maintaining their grease interceptors and following Best Management Practices. Properly maintaining this equipment results in fewer corrective maintenance problems in the collections system. The goal is to inspect high risk FSEs more frequently than low risk FSEs, with a total inspection goal of at least 150 inspections annually. The overall objective is to reduce the number of severity of overflows caused by fats, oil and grease (FOG).

Performance Data



Analysis

In 2011, the Board adopted new Best Management Practices (BMPs) for fats, oil and grease management by food service establishments (FSEs). In 2012, the District increased its inspections for compliance with the District's Sewer Use Ordinance and with the BMPs. With concerted effort applied in this area, every restaurant with a grease trap or interceptor was inspected in the last five years.

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

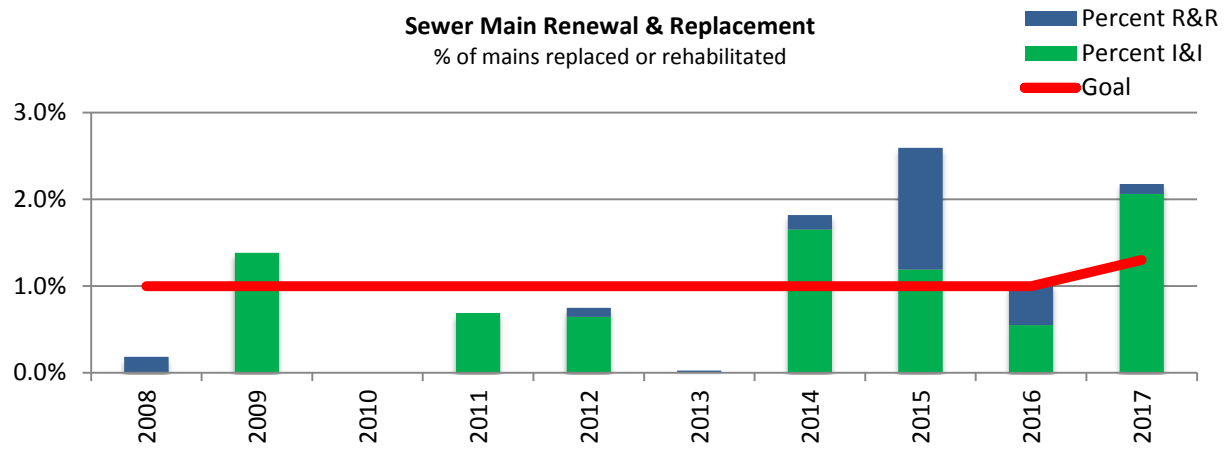
Measurement #6-6

Sewer Main Renewal & Replacement

Description

This graph shows the percent of sewer mains maintained by NapaSan that have been replaced or rehabilitated annually. Inflow and infiltration (I&I) projects are predominantly lining projects designed to decrease stormwater and groundwater intrusion into the sewer pipes. Rehabilitation and replacement (R&R) projects line or replace sewer pipes based on condition assessment showing them to be deteriorating and losing structural integrity.

Performance Data



Analysis

NapaSan has met its renewal and replacement target in the past four years, but has not reached this goal consistently over the past ten years. NapaSan has set future targets to increase the total replacement goal over the next five years to 2%, and has established future sewer service rates to meet this goal.

Year	Replacement Goal
2016	1.0%
2017	1.3%
2018	1.3%
2019	1.3%
2020	2.0%
2021	2.0%

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

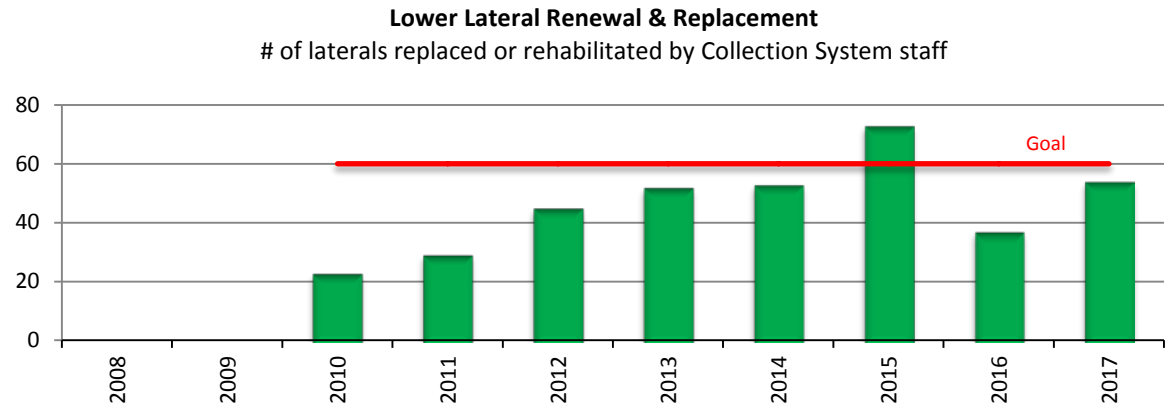
Measurement #6-7

Lower Sewer Lateral Renewal & Replacement

Description

This graph shows the number of lower sewer laterals maintained by NapaSan that have been replaced annually by the Collection Department, understanding that lower laterals are also replaced when sewer mains are replaced as part of capital improvement projects. The aspirational goal is for the Collection Department to rehabilitate or replace at least 60 lower laterals annually.

Performance Data



Analysis

NapaSan started keeping track of this metric in 2010 when it purchased the ability to line lower laterals itself, rather than contracting out. NapaSan has established an aspirational goal of rehabilitating or replacing 60 lower laterals annually, and has been making steady progress toward meeting the goal by developing new methods for preparing for the implementing lining projects. In 2016, the department had limited staffing to devote to this activity due to staffing vacancies. Those vacancies have since been filled.

In 2017, NapaSan Collection System staff completed a pilot I&I project to rehabilitate upper (private) laterals. This project was considerably more time consuming than the replacement lower (public) laterals, due to several factors, including the requirement to get home owner approval, the potential for multiple connection points into the upper lateral, and a variety of host pipe materials and conditions. While the total number of lateral replacements didn't quite meet the goal of 60, the efforts by the department to meet this goal and the additional time requirements for upper lateral replacements indicate a "satisfactory" performance.

INFRASTRUCTURE STABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

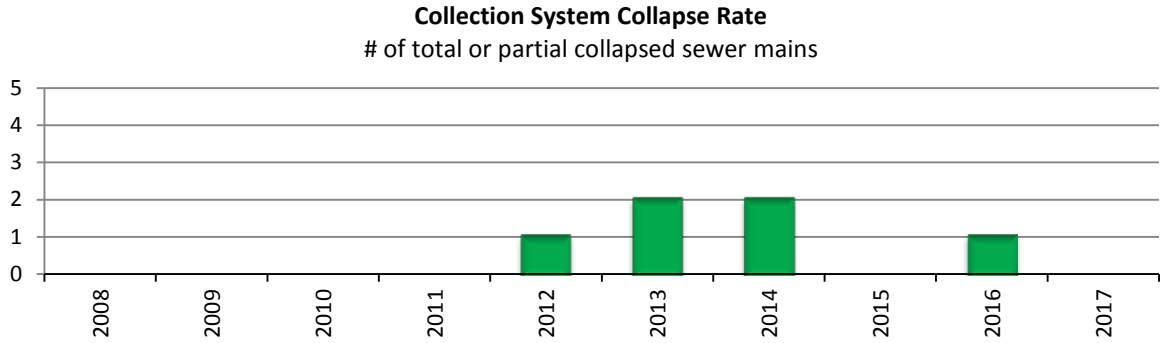
Measurement #6-8

Sewer Partial or Total Collapse Rate

Description

A sewer collapse is when a portion of sewer pipe warps or deflects in a way where the pipe itself obstructs sewer flow, as opposed to a blockage caused by sediment, grease, roots or some other foreign object.

Performance Data



Analysis

There have been only a handful of repairs in the past 10 years that were required because of collapsed sewer pipe. There have been only 6 collapses in the past decade, with no collapses in 2017.

INFRASTRUCTURE STABILITY

Measurement #6-9

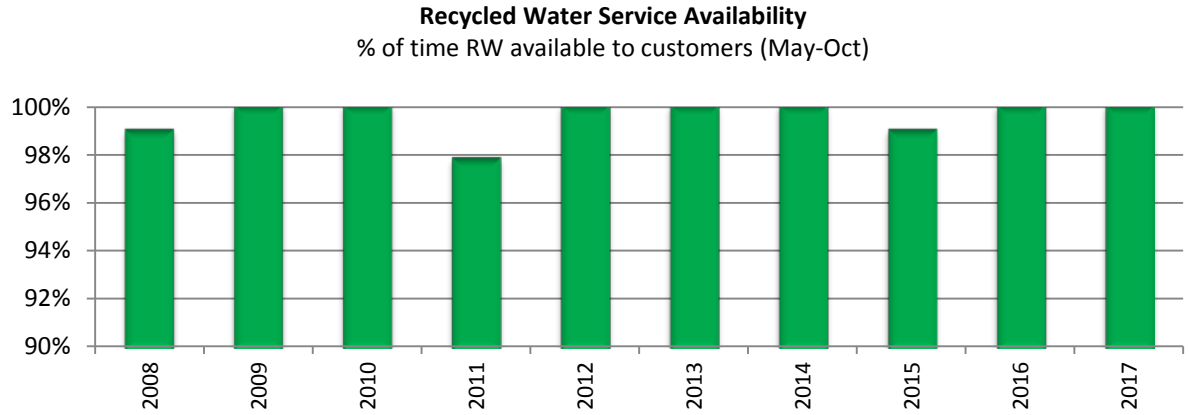
Recycled Water Service Availability

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Description

This is the percentage of days from May 1 through October 31 that there is no interruption in recycled water delivery.

Performance Data



Analysis

The availability of summer recycled water has been at least 98% for the past decade. In 2011, the system was down for 4 days to repair a leak in a recycled water main line, and down for two days in 2015.

EUM Attribute #7

Operational Resiliency

This attribute evaluates whether NapaSan leadership and staff work together to anticipate and avoid problems, whether they proactively identify, assess, establish tolerance levels for, and effectively manage a full range of business risks (including legal, regulatory, financial, environmental, safety, security, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
7. Operational Resiliency	1-Total Recordable Incidence Rate	◆	★	69
	2-Vehicle Accident Rate	◆	◆	70
	3-Lost Time Hours	★	★	71
	4-Insurance Claims	◆	◆	72
	5-Experience Modification (XMOD) Rate	▲	★	73
	6-Emergency Response Plans	★	★	74
	7-Uptime for Cogeneration Engine	★	★	75
	8-Uptime for Pumps at Pump Stations	★	⊘	76
	9-Resiliency Under Emergency Conditions: Power	★	★	77
	10-Resiliency Under Emergency Conditions: Staff	★	★	78
	11-Treatment Plant Capacity	★	★	79

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
Watch	Satisfactory

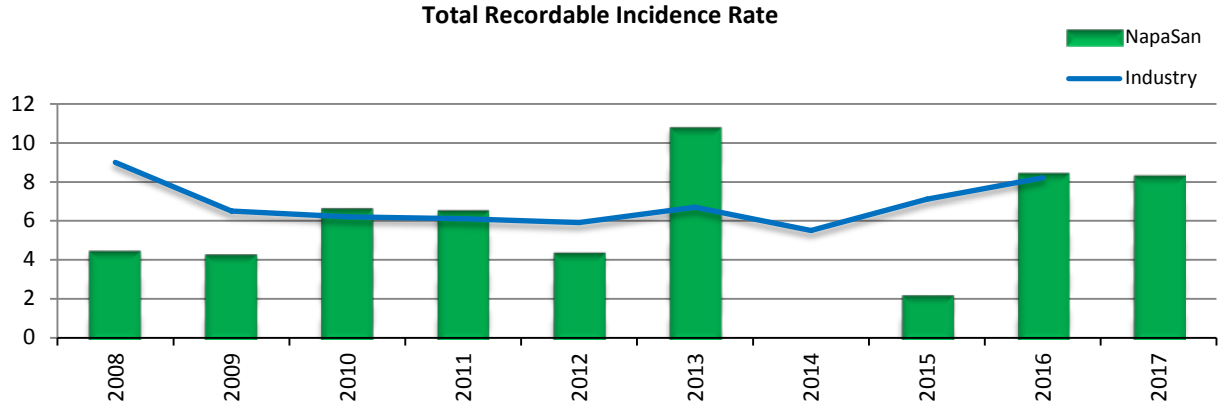
Measurement #7-1

Total Recordable Incidence Rate

Description

This is the number of work-related injuries and illnesses times 200,000 divided by the number of employee hours worked. This is a standard formula used by OSHA to normalize data. The 200,000 represents 100 employees working 40 hours per week, 50 weeks per year, and provides for the comparability of incidence rates.

Performance Data



Analysis

NapaSan is compared here to the "Local Government – Utility - Water, Sewage and Other Systems" industry category as reported by the U.S. Bureau of Labor Statistics. Over the past 10 years, NapaSan's incidence rate has generally been lower or comparable to the national average, with the exception of 2013. While the 2017 national data is not available, it is likely that 2017 NapaSan performance is about the same as the national average. The annual performance is rated as "watch," as it is higher than the 10-year average but remains comparable to the national average.

Rating	
Current Year	4-Year Trend
Watch	Watch

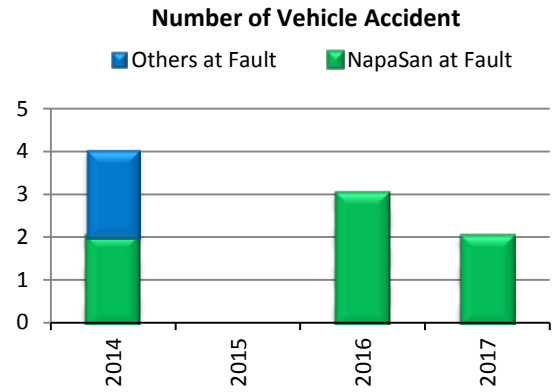
Measurement #7-2

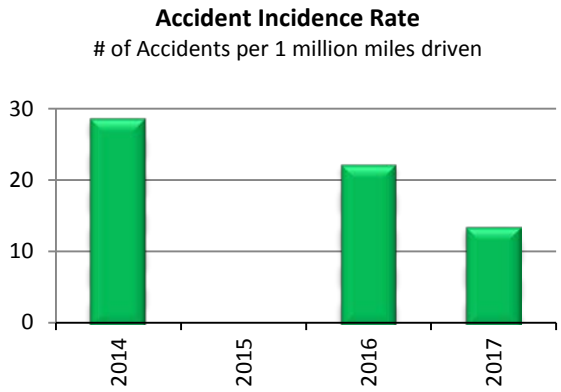
Vehicle Accident Rate

Description

This measure evaluates the number of vehicle accidents involving NapaSan vehicles that resulted in an insurance claim by either party involved. The data is divided into accidents where a NapaSan employee was at fault, and accidents where others were at fault, based on the incident investigation. Zero "NapaSan at Fault" accidents is the goal, but a determination of what level would be acceptable has not been made.

Performance Data





Analysis

NapaSan has compiled this data back to 2014. There were 2 vehicle accidents in 2014, no vehicle accidents in 2015, three vehicle accidents in 2016, and two in 2017 where a NapaSan employee was at fault for the accident. There is insufficient data to determine a trend for this measure, and a determination of what is acceptable or unacceptable has not yet been made. Therefore, a rating of "watch" has been provided to this measure.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

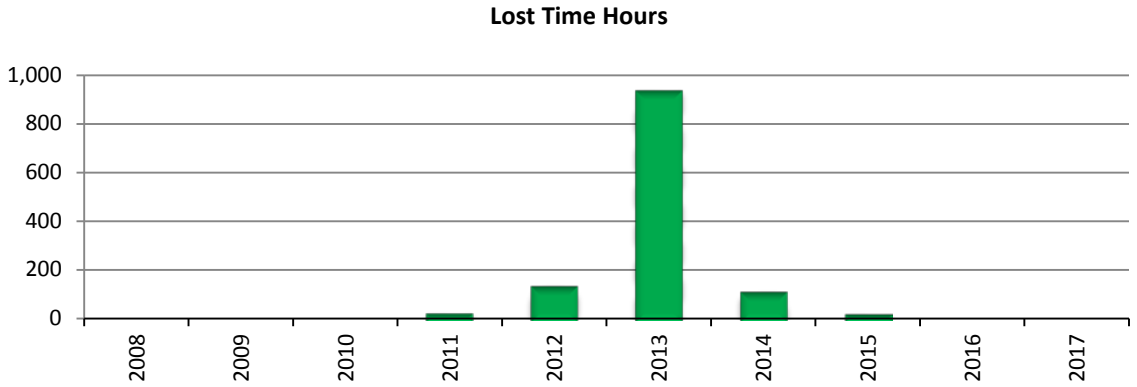
Measurement #7-3

Lost Time Hours

Description

This is the number of hours that a worker could not work due to a work-related injury or illness. Lost time begins to accrue once an employee misses one full day of work.

Performance Data



Analysis

NapaSan did not have a lost time accident from 2005 through 2010. The District continues to have exceptionally low lost time due to workplace injury or illness. In 2012, there was 1 lost time injury. The 2012 injury resulted in significant lost time in 2013. The 2014 hours are related to the same injury in 2012. While the increases from 2012 to 2014 appear to be significant, the fact that they are related to one incident in 2012 has a mitigating impact on the rating. In 2015, there was one injury resulting in 8 hours of lost time and in 2016 and 2017, there were no loss time accidents.

Rating	
Current Year	10-Year Trend
Watch	Watch

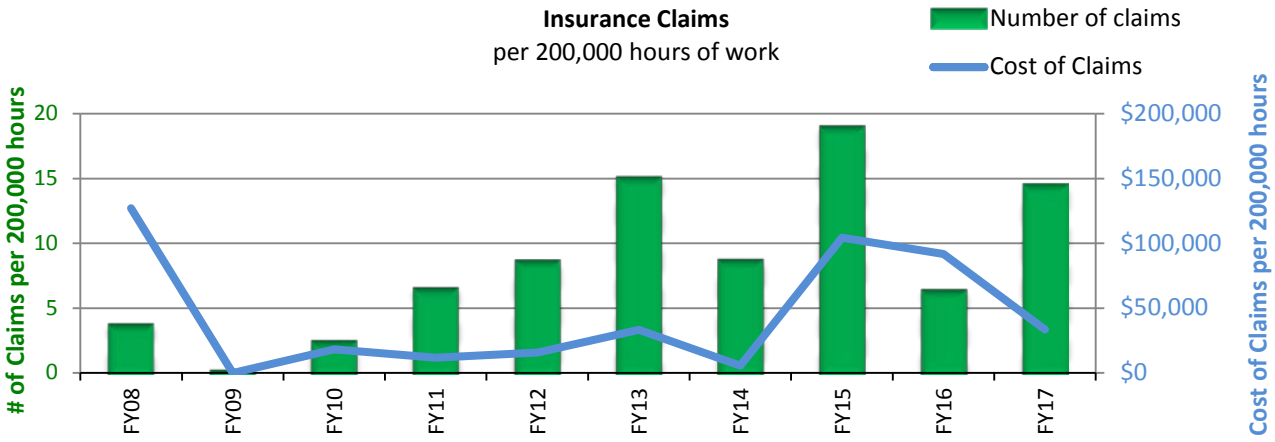
Measurement #7-4

Insurance Claims

Description

This is the number of and total amount paid out for general liability and automobile liability claims per 200,000 hours worked (the equivalent of 100 employees working one year). It is a standard practice to convert claims in this way to allow for comparison across organizations and industries, as it normalizes the data so that small and large organizations can be compared on an equal basis.

Performance Data



Analysis

After a period of relatively constant and low rates of insurance claims per year, NapaSan has seen a significant increase in the past several years, from one claim in 2010 to seven claims in 2013 and nine in 2015. Claims reduced in 2016, but were back up in 2017, while the average amount paid per claim (normalized) reduced in 2017 to a level more consistent with history.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
Unsatisfactory	Satisfactory

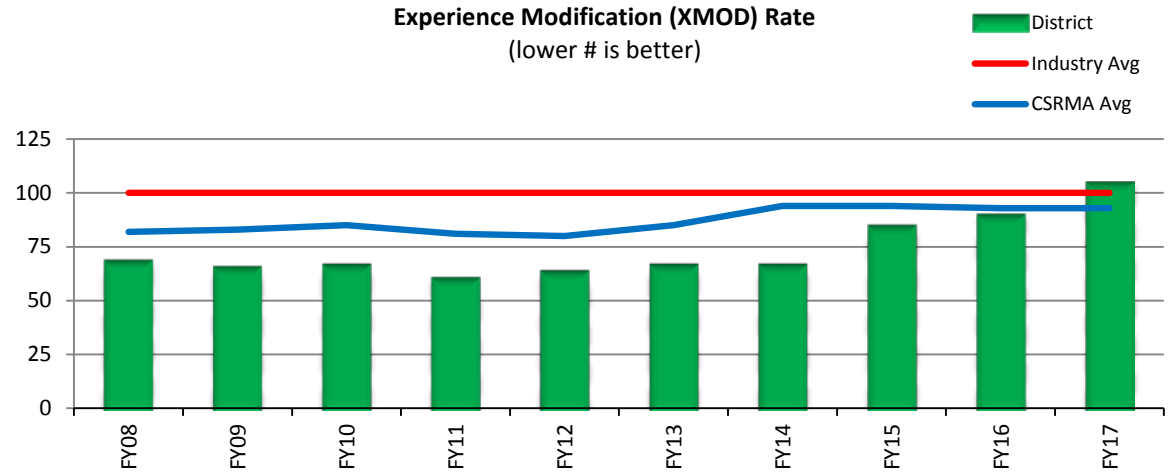
Measurement #7-5

Experience Modification (XMOD) Rate

Description

This is the rate used by the workers compensation insurance company to determine NapaSan's workers compensation experience. One hundred is considered the industry average. Numbers over 100 mean that NapaSan has more claims than the industry average, while numbers below 100 are better than the average. CSRMA is the insurance pool NapaSan is in for Workers' Compensation claims and includes only sanitation districts in the state of California.

Performance Data



Analysis

Through the implementation of several safety programs at NapaSan, NapaSan's XMOD rate has remained lower than the industry average and the Worker's Comp insurance pool representing similar facilities in California.

The increases from FY15 through FY17 are the result of lost time from two incidents in 2013, as the impacts of these incidents on the XMOD is delayed and smoothed over three years. The XMOD rating is expected to drop in FY18 to 68, as the Worker's Comp experience that goes into the calculation is known.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #7-6

Emergency Response Plans

Description

Are Emergency Response Plans in place for the following? (Y/N)

Performance Data

- **Treatment Plant:** Yes
- **Lift Stations:** Yes
- **Collections:** Yes
- **Administration:** Yes

Analysis

Emergency Response Plans for the plant and lift stations are in place, and are trained and practiced regularly. The Collection System staff has plans and equipment for system bypasses, and conducts training on this equipment regularly.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

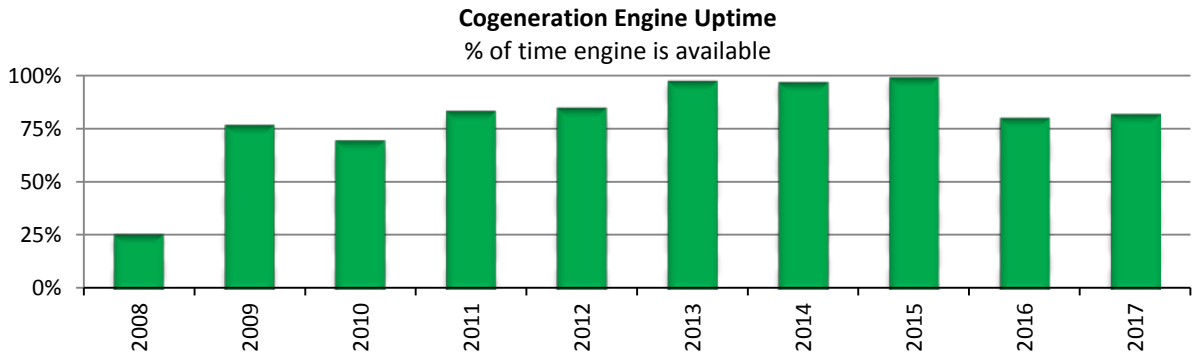
Measurement #7-7

Uptime for Cogeneration Engine

Description

The cogeneration engine ("Cogen") is critical equipment to reduce purchased electricity demand. The use of this equipment also reduced the need to operate the boiler. Increased boiler operation would require extensive and costly upgrades to the boiler to meet air quality standards.

Performance Data



Analysis

Since 2009, NapaSan has maintained the Cogen at an optimal level to provide for significant uptime. With increased FOG (fats, oils and grease) deliveries at the FOG receiving station in recent years, more biogas has been produced allowing for even greater operating efficiencies for the Cogen unit. The Dystor membrane over the day storage tank was damaged in late 2014, but staff was able to continue to capture biogas for use in producing energy.

In late 2016 and early 2017, the Cogen unit was out of service (November to March) for planned major maintenance. Absent the planned shutdown, the engine uptime was satisfactory.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
Satisfactory	No data

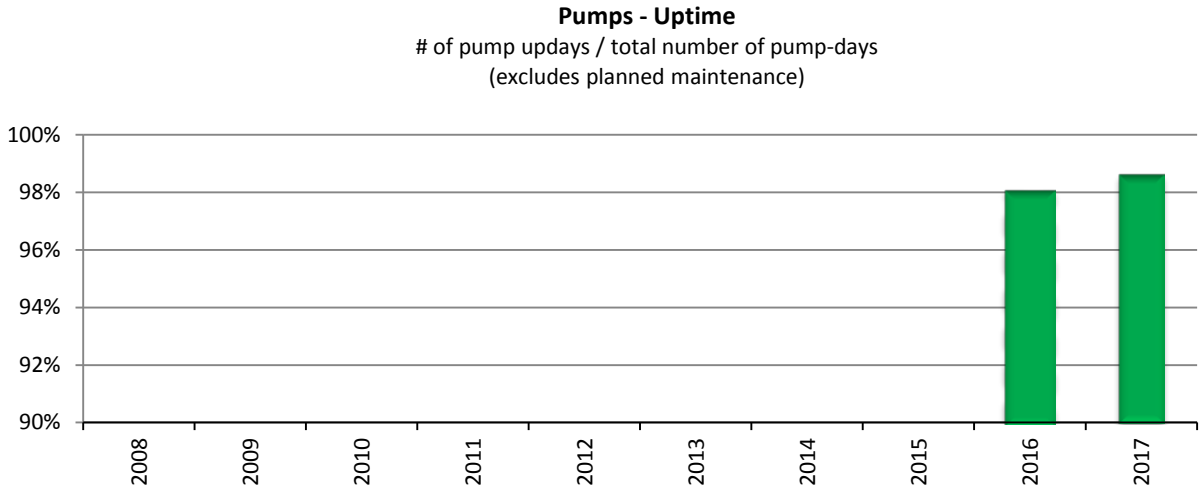
Measurement #7-8

Uptime for Pumps at Pump Stations

Description

There are currently 28 major pumps maintained. Nine are in collection system pump stations, 12 are involved in treatment, and 7 are used in recycled water distribution. These pumps represent the major backbone of infrastructure needed to collect, treat and reuse wastewater. Each pump station has multiple pumps for redundancy, as an engineered mitigating measure to increase resiliency. The regular maintenance of the pumps is also a mitigating action taken by NapaSan to increase resiliency. This metric looks at the unplanned maintenance on these pumps as a measure of NapaSan's maintenance activity's impact on pump resiliency.

Performance Data



Analysis

2016 was the first year that this data has been calculated and reported in total for the 28 major pumps in the system. There is an average 98.0% uptime for these pumps in 2016 and 98.6% in 2017. Because of the lack of historical data, it is not feasible to determine a trend rating at this time.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #7-9

Operational Resiliency under Emergency Conditions – Power

Description

This is the number of hours that backup power is available at the treatment plant (including the Influent Pump Station) and at the other three pump stations in the collections system.

Performance Data

Treatment Plant	23.5 hours
West Napa PS	20.5 hours
Riverpark PS	40.0 hours
Stonecrest PS	47.5 hours

Analysis

These times indicate how long the facilities could operate during peak pumping without electricity from the grid and without additional deliveries of diesel fuel for the generators. During power outages longer than 20 hours, staff would be required to refuel the generator at West Napa Pump Station.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #7-10

Operational Resiliency under Emergency Conditions – Staff

Description

This is a measure of the ability for backup staff to cover critical operations and maintenance positions.

Performance Data

- **Collections:** All collection system workers are cross trained on tasks and equipment. Regular tasks are rotated to ensure continued familiarity with all tasks during emergency events. Of the twelve field workers, ten are on the standby rotation.

- **Plant Operations, Maintenance and Laboratory:** All critical staff positions have backup staff trained to complete all required tasks of that position, and supervisors are trained to complete all tasks within their work unit. The Plant Manager position has limited coverage by the Operations Supervisor.

- **Critical Positions:** For the most critical positions where this is no redundancy in employee coverage, plans have been developed that include instructions on how to perform time-sensitive or regulatory-required activities, including phone numbers of those who could help someone perform the tasks. All critical tasks have assigned backup personnel, and all backups have been trained on necessary procedures.

Analysis

There is significant cross training for critical operations and maintenance positions to ensure adequate coverage with the appropriate skills, experiences and certifications.

OPERATIONAL RESILIENCY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

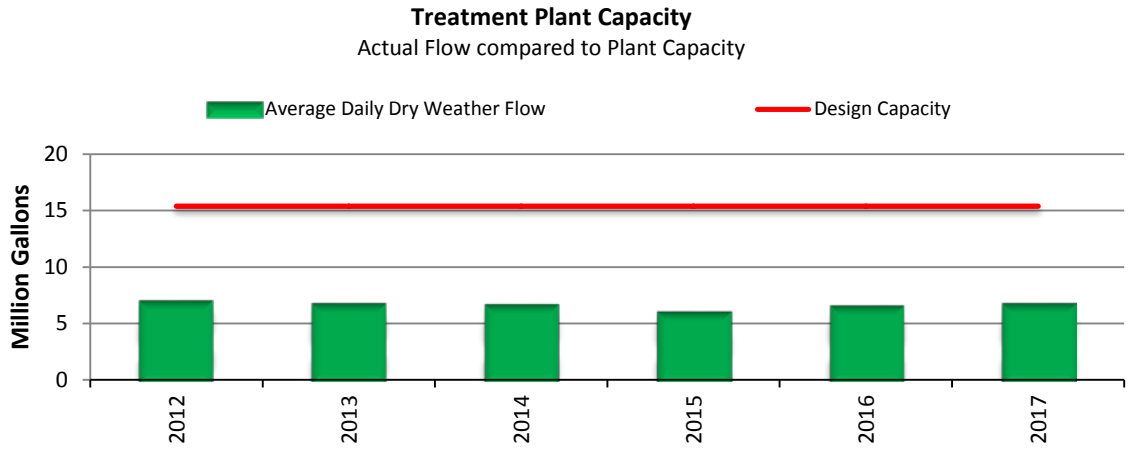
Measurement #7-11

Treatment Plant Capacity

Description

This measure evaluates the available treatment capacity in the treatment plant. NapaSan needs to maintain treatment capacity for future development. As flow increases, it is necessary to invest in capital projects to expand the treatment capacity. (Note that flow is only one component to evaluate when determining treatment capacity.)

Performance Data



Analysis

The flow into the plant has remained steady for several years. Even with growth in the community, the average daily dry weather flow has remained constant or even dropped slightly, due primarily to water conservation activities. There is sufficient treatment capacity at the plant to accommodate growth in the next several years.

EUM Attribute #8

Community Sustainability

This attribute evaluates whether NapaSan is explicitly cognizant of and attentive to the impact its decisions have on current and long-term future community and environmental health and welfare.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
8. Community Sustainability	1-Watershed-based Infrastructure Planning	★	★	**83**
	2-Green Infrastructure – Programs	★	★	**84**
	3-Green Infrastructure – New Infrastructure	★	★	**85**
	4-Greenhouse Gas Emissions – Purchased Energy	★	★	**86**
	5-Digester Gas Beneficial Reuse	★	★	**87**
	6-Recycled Water Beneficial Reuse	★	★	**88**
	7-Biosolids Beneficial Reuse	★	★	**89**
	8-Sewer Service Charges - Affordability	★	★	**90**
	9-Low Income Billing Assistance	★	★	**91**

COMMUNITY SUSTAINABILITY

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #8-1

Watershed-based Infrastructure Planning

Description

This measure addresses NapaSan's efforts to consider watershed-based approaches when making management decisions affecting infrastructure planning and investment options.

Performance Data

- Does the utility employ alternative, watershed-based approaches to align infrastructure decisions with overall watershed goals and potentially reduce infrastructure costs? (Y/N)

  Yes.

Analysis

NapaSan is investing in recycled water infrastructure greater than is necessary to meet the current needs of its ratepayers to avoid summer river discharge. This infrastructure has been directed toward locations within the watershed that are at risk of significant groundwater depletion, so that recycled water can offset the overdraft in these groundwater deficient areas.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #8-2

Green Infrastructure - Programs

Description

"Green infrastructure" includes both the built and natural/non-built environment. This measure assesses the extent to which NapaSan promotes or engages in practices that protect natural resources and the environment in its community programs.

Performance Data

- Has NapaSan explored green infrastructure approaches and opportunities that are aligned with the District's mandate, goals and objectives and community interests? (Y/N)

  Yes.

Analysis

NapaSan has implemented the following programs or practices:

- Recycled Water Delivery – sold to customers to offset the use of groundwater or city-provided potable water for irrigation.
- Toilet Rebate Program – to promote reduced potable water consumption.
- Clothes Washer Rebate Program – to encourage consumers to purchase appliances that use less potable water.
- Stream restoration – work with the local Resources Conservation District and schools to development and implement stream restoration and revegetation plans along creeks and streams on NapaSan property, to encourage habitat development and promote water quality.
- Regional Trails Support – work cooperatively with regional trail designers and advocates to connect a non-motorized multi-modal trail segment adjacent to the treatment plant.
- Pharmaceutical Disposal Program – works with local pharmacies to encourage proper disposal of medications.
- Fats, Oils and Grease (FOG) Receiving Station – accept grease from food service establishment grease interceptors, reducing the need to truck this waste to Oakland, and converting the waste into biogas that can be used to generate electricity.
- Recycle More Program – partner with the City of Napa on a curbside collection program to reuse items that otherwise might be disposed in landfill. This program includes free curbside collection of residential cooking oil which is used to make biodiesel.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #8-3

Green Infrastructure – New Infrastructure

Description

"Green infrastructure" includes both the built and natural/non-built environment. This measure assesses the extent to which NapaSan promotes or engages in practices that protect natural resources and the environment in the development of new infrastructure.

Performance Data

- Does NapaSan have procedures that incorporate green infrastructure approaches and performance into new infrastructure investments? (Y/N)

  Yes.

Analysis

NapaSan has implemented the following programs or practices:

- Green Building – the Administration/Engineering building and corporation yard incorporates "green" features and complies with the "green building" code.
- Electricity Self-Generation – NapaSan has studied ways to use the plant's resources (waste products, land) for the generation of alternative energy sources (methane, solar, wind, etc.). In 2012, NapaSan completed its Fats, Oil and Grease (FOG) Receiving Station that will result in the District generating significant amounts of its electricity needs.
- Solar Power – In 2015, NapaSan entered into a long-term contract for a private company to build a 1-megawatt photovoltaic solar array on District property, with the electricity generated being sold to NapaSan to offset electricity from PG&E. That project completed constructed in late 2016, with operation starting in March 2017.
- Lateral Lining System – NapaSan started using a trenchless system for lining laterals, which is used in lieu of digging trenches for the repair and replacement of laterals. This process reduces waste through reusing existing pipe rather than disposal, and reduces the use of asphalt, cement and rock to backfill the trench. There is also less diesel emissions from reduced backhoe and dump truck use.
- Pipe Bursting and Cured-in-Place Pipe (CIPP) Lining – NapaSan has developed a preference for pipe bursting or CIPP lining to replace or rehabilitate sewer mains, wherever feasible. These processes eliminate most of the trenching required, thus reducing landfill waste, reducing the use of rock, cement and asphalt to backfill, and reducing diesel emissions from associated equipment.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

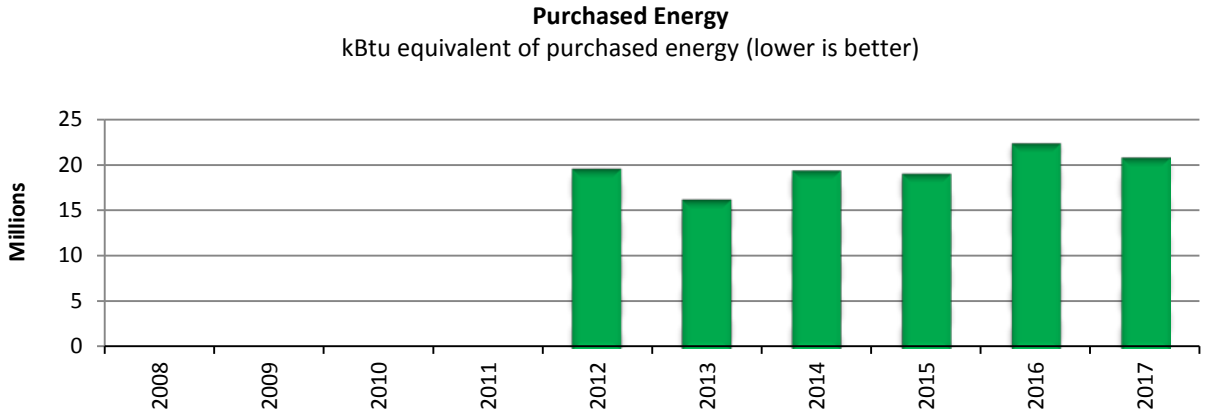
Measurement #8-4

Greenhouse Gas Emissions – Purchased Energy

Description

One source of greenhouse gas emissions is the generation of power. NapaSan's goal is to maximize its ability to produce its own heat and electricity and reduce the amount of energy that it purchases. The chart shows the amount of energy purchased from electricity (excluding from solar), natural gas, fuel oil and propane, converted to kBtu equivalents, used in the treatment plant.

Performance Data



Analysis

NapaSan started collecting this information in 2012. In 2017, the amount of purchased energy decreased primarily due to solar power coming on line at the end of March. This gain, however, was offset by the doubling of natural gas purchased and an increase in electricity purchased to run the boiler while the cogeneration engine was offline for a maintenance overhaul in January, February and March.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

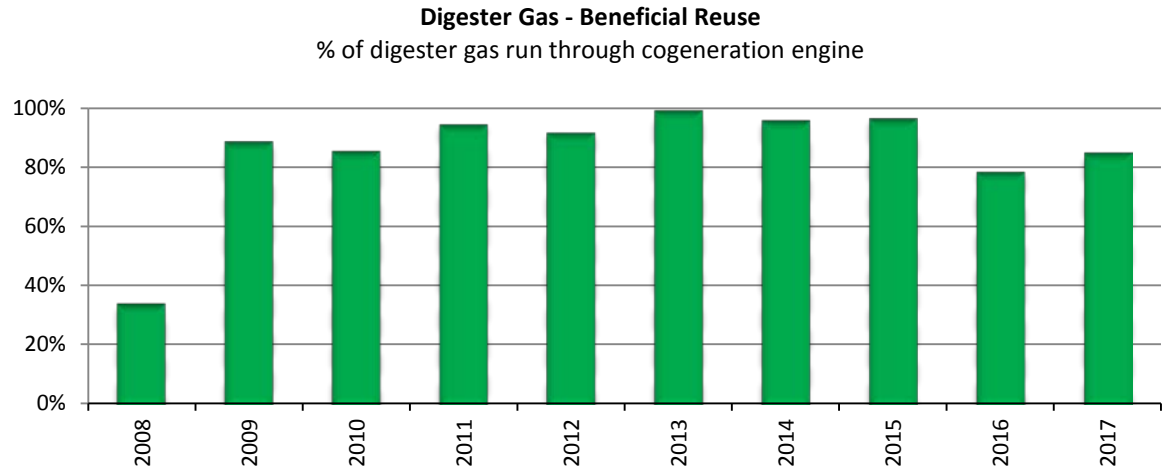
Measurement #8-5

Digester Gas Beneficial Reuse

Description

Biogas (predominantly methane) is a natural byproduct of anaerobic digestion and a greenhouse gas. By beneficially using the biogas as a fuel source to generate electricity, NapaSan avoids the need to dispose of the gas through flaring. This is a measure of the percentage of digester gas that is used as fuel in the cogeneration engine to create electricity and heat, as opposed to flaring the biogas.

Performance Data



Analysis

One of NapaSan's goals is to decrease the amount of digester gas flared (no beneficial reuse) and to increase the use of digester gas for electricity consumption through its cogeneration engine (beneficial reuse). Increased use of digester gas and decreased use of natural gas and purchased electricity will result in a net decrease in greenhouse gas emissions. The data shows a positive trend in putting the digester gas to beneficial reuse, with over 95% of digester gas being used in the cogeneration engine in the recent years. In late2016 and early 2017, the beneficial reuse dropped because the cogeneration engine was out of service for planned major maintenance. Absent that planned event, the beneficial reuse as satisfactory.

Measurement #8-6

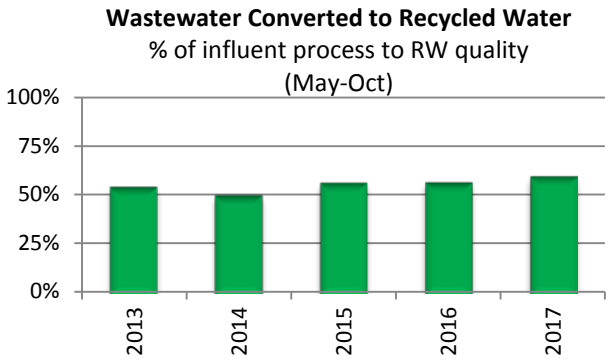
Recycled Water Beneficial Reuse

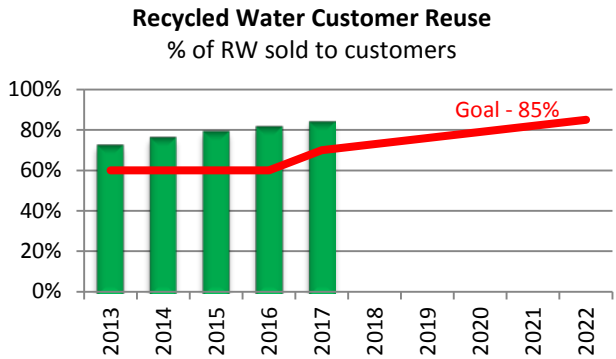
Rating	
Current Year	5-Year Trend
★ Satisfactory	★ Satisfactory

Description

The first metric is the percentage of influent from May through October that was treated to recycled water ("unrestricted tertiary disinfected") quality. This is a measure of how much of NapaSan's incoming wastewater was made available for recycling and put to beneficial reuse. The second metric is the percentage of recycled water created by the treatment plant that was sold to customers, instead of being used by NapaSan. This is a measure of how much of NapaSan's recycled water is being put to customer reuse.

Performance Data





Analysis

NapaSan has been consistently treating its influent during the irrigation system to recycled water quality and making it available to customers.

For the last five years, NapaSan has been investing in the design and construction of additional recycled water pipelines and expanding its recycled water treatment capacity. With the completion of those projects in 2016 and customers starting to convert their properties for recycled water use, it is expected that more of the water NapaSan receives during the irrigation season (May-October) will be treated to recycled water quality and delivered to customers in the next few years.

Measurement #8-7

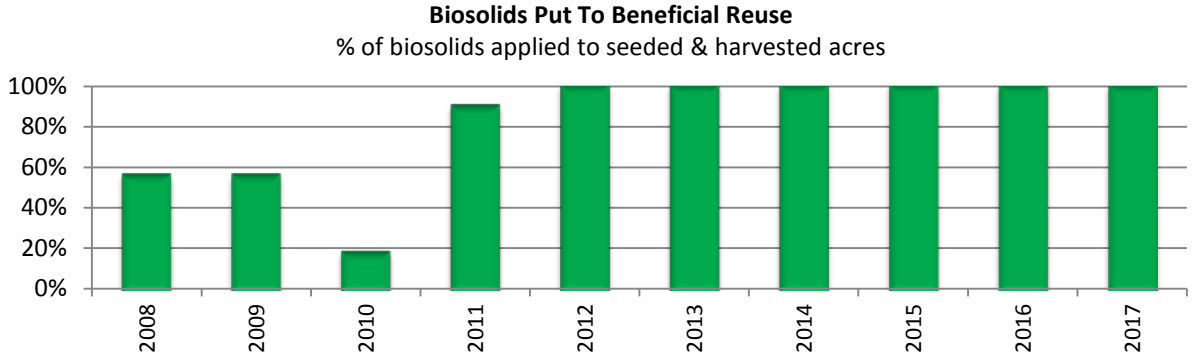
Biosolids Beneficial Reuse

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Description

Percentage of biosolids that are applied to land that is seeded and harvested for use by livestock or associated use, based on dry tons applied to acres.

Performance Data



Analysis

NapaSan's current program includes the agricultural application of biosolids for beneficial reuse on NapaSan owned or leased land. All lands applied with biosolids in 2012 to 2017 were seeded for beneficial reuse, either for agricultural commodities or as sheep grazing land.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

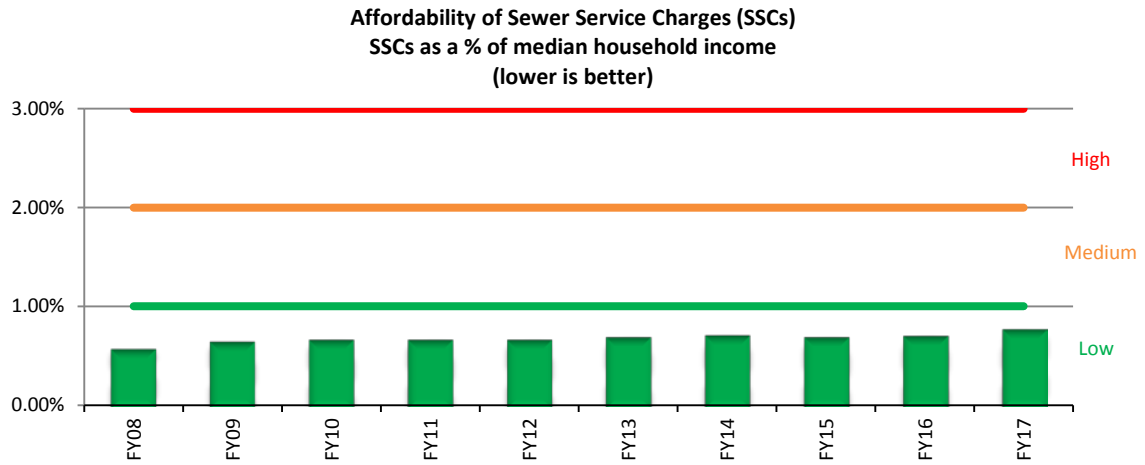
Measurement #8-8

Sewer Service Charges – Affordability

Description

Affordability is subjective. However, tracked over time, NapaSan can evaluate whether the sewer service charges (SSCs) are becoming more or less affordable as compared to median household incomes (MHI) for the Napa County, using U.S. Census Bureau data. The U.S. EPA's 1997 Financial Capability Assessment established that communities with sewer charges between 0% and 1% of MHI have a "low" financial burden, between 1% and 2% of MHI have a "medium" burden, and over 2% as having a "high" burden.

Performance Data



Analysis

The SSC as a percentage of Median Household Income (MHI) went up from FY07 to FY09, as expected, given the 15% annual fee increases during this time. The SSC as a ratio of MHI has remained steady for the past seven years at a rate well within the "low" financial burden range. The increase in SSC rates approved by the Board in March 2016 did result in a slight increase in FY17 (from 0.68% to 0.74%), but is expected to remain below 1% of MHI for the next several years.

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #8-9

Low Income Billing Assistance

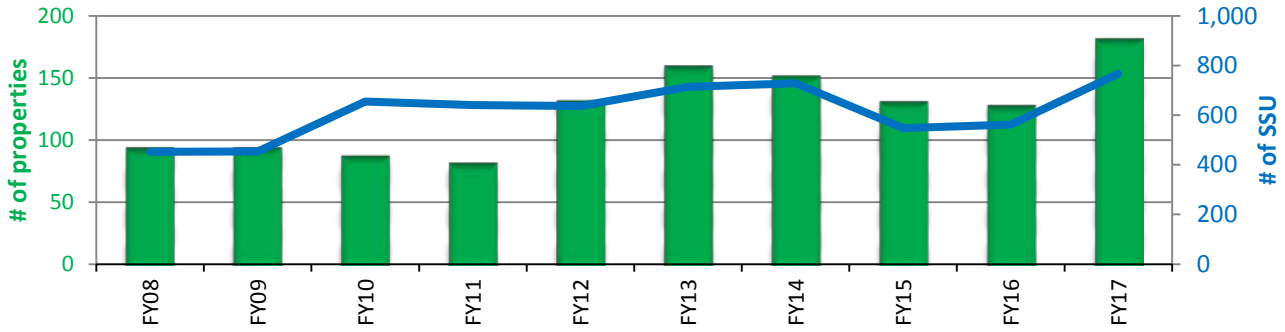
Description

This measures the number of households that are enrolled in the NapaSan's Low Income Assistance Program for annual sewer service charges. The number of individual properties in the program is graphed (green bars), as well as the number of Sewer Service Units (SSU) that those properties represent (blue line). These numbers are different, as there may be several low income housing units situated on a single property or tax lot. For example, a multi-family apartment complex that has 10 affordable housing units in it would count as 1 property and 10 SSUs in the chart.

Performance Data

Low Income Assistance Program

# of properties (green bar) and # of SSU (blue line)



Analysis

This program began in FY07. At the same time NapaSan began a process to increase sewer service charges by 15% per year for three years. In FY17, the program provided a reduction of $156.50 (28.2%) per household from the annual charges ($554.88). As anticipated with the economic climate, the number of properties partaking in this program increased from FY12 through FY14 from prior years. As the economy improved, the numbers in FY15 and FY16 reduced as expected. The increase in FY17 is due to increased community awareness of the sewer rates and the availability of the assistance program.

EUM Attribute #9

Water Resource Adequacy

This attribute evaluates whether recycled water availability is consistent with current and future customer needs through long-term supply and demand analysis.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
9. Water Resource Adequacy	1-Recycled Water Supply Adequacy	★	★	**95**

WATER RESOURCE ADEQUACY

Rating	
Current Year	5-Year Projection
★ Satisfactory	★ Satisfactory

Measurement #9-1

Recycled Water Supply Adequacy

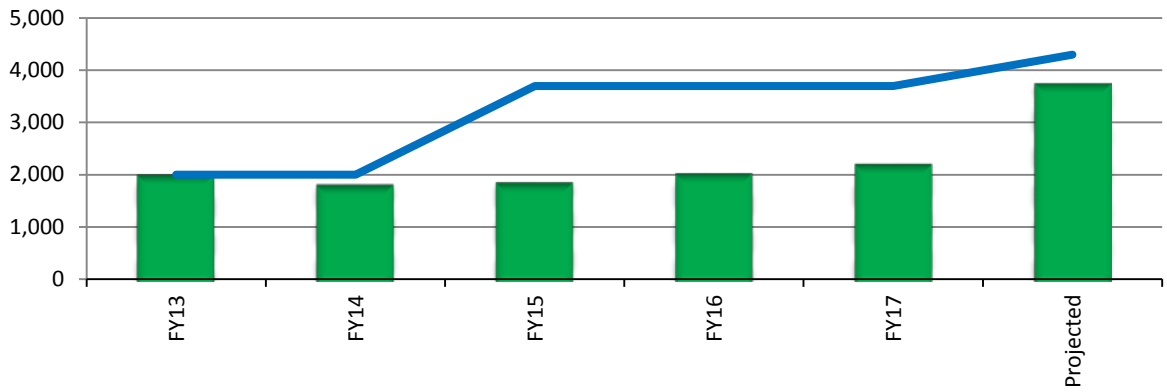
Description

This table shows the short-term actual recycled water usage in the most recent year and longer-term estimated demands on recycled water for a "typical" weather year for the months May through October. It compares these numbers to established Board Policy on the allocation of recycled water.

Performance Data

Recycled Water Supply Availability

Acre feet of RW delivered (green bar) and Acre feet of RW available (blue line)



Analysis

Up until 2015, NapaSan was only able to produce reliably about 2,000 AF of recycled water during the irrigation season (May-October), and during this time was successful in delivery the water to customers or for application on NapaSan property. In FY15, NapaSan completed construction of the recycled water system expansion at the treatment plant. This allowed NapaSan to deliver reliably about 3,700 AF of recycled water during the irrigation system. In FY16, NapaSan completed construction of 5 miles of recycled water pipeline in the MST area, and 9 miles of recycled water in the LCWD area. The expansion of pipeline to these areas allows for increased distribution, which is expected to reach the production capacity of NapaSan once new customers connect to the system.

EUM Attribute #10

Stakeholder Understanding and Support

This attribute evaluates whether NapaSan engenders understanding and support from oversight bodies, community and environmental interests, and regulatory bodies for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions. It also evaluates whether stakeholders are actively involved in the decisions that will affect them.

Satisfactory

Watch

Unsatisfactory

No Measure

Attribute	Measurement	2017	Trend	Page
10. Stakeholder Understanding & Support	1-Stakeholder Consultation	★	★	**99**
	2-Public Education Presentations	★	★	**100**
	3-SSC Comparative Rate Rank	★	★	**101**
	4-Recycled Water Comparative Rate Rank	★	★	**102**
	5-Media/Press Coverage	★	★	**103**

STAKEHOLDER UNDERSTANDING & SUPPORT

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #10-1

Stakeholder Consultation

Description

This measure addresses NapaSan's actions to reach out to and consult with stakeholders about District matters, including NapaSan's goals, objectives and management decisions.

Performance Data

- Does NapaSan identify stakeholders, conduct outreach, and actively consult with stakeholders about matters? (Y/N)

  Yes.

Analysis

NapaSan has consulted stakeholders and the general public on the following projects:

- **Browns Valley Trunk Project** (2017) – 2 public meetings and numerous one-on-one meetings with residents and business owners to discuss the alignment and project impacts.
- **Sewer Service Charge Rate Proposal** (2016) – public meetings, meetings with social clubs, meeting with the Napa Chamber of Commerce, and public hearings regarding recommended increase to the sewer service charge.
- **Sewer Service Charge Rate Study** (2015) – public meeting to specific stakeholders on a study recommending increase to the sewer service charges in 2016.
- **Winery Waste Forum** (2015) – Public meeting with interested stakeholders to discuss various options regarding winery waste that is trucked outside of Napa County for treatment or disposal.
- **Capacity Charge Methodology** (2014) – three public meetings and presentations to specific individuals on a study recommending changes to the methodologies used for calculating capacity charges for commercial buildings, restaurants and industrial users.
- **Recycled Water User Agreements** (2014) – Public meeting with current and future recycled water users, seeking input on the proposed new recycled water user agreements.
- **Winery Industrial User Permits** (2013) – public meetings and presentations to the Vintners Association and Chamber of Commerce on efforts to bring unpermitted wineries into the Industrial User program.
- **MST Recycled Water Pipeline** (2012 and 2013) – partnered with the County in their outreach efforts associated with the new recycled water pipeline in the MST area.
- **Recycled Water Rate Policy** (2011) – held public meetings and small meetings with interested stakeholders regarding the methodology and rate structure for recycled water rates.
- **Recycled Water Policy** (2010) – requesting written feedback from stakeholders, inviting stakeholders to present views to Board, presentation to Chamber of Commerce, soliciting feedback from general public via press release and website comment form.

STAKEHOLDER UNDERSTANDING & SUPPORT

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

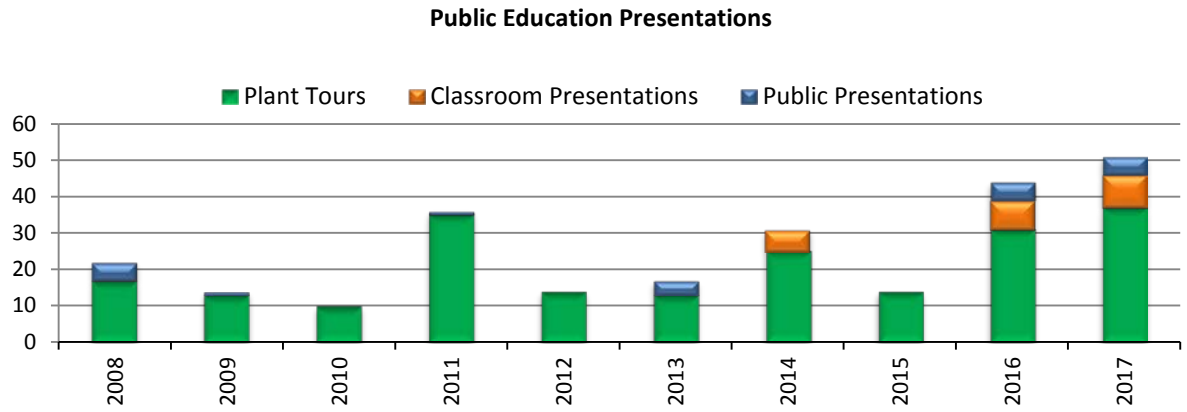
Measurement #10-2

Public Education Presentations

Description

This is a measure of the efforts by NapaSan to promote its activities and pollution prevention messages in the community. The measure includes the number of presentations to classrooms, presentations in other community forums, and the number of treatment plant tours.

Performance Data



Analysis

NapaSan provides free buses to schools that send teachers and students to the treatment plant for tours. However, the number of classroom tours can still be impacted by school funding by the school's ability to provide substitute teachers. As school funding has rebounded since the "great recession," there has been an uptick in plant tours and classroom presentations, with the decline in 2015 due to staffing issues at NapaSan. Plant tour numbers have also increased due to the new monthly public tours now being offer to the general public.

Rating	
Current Year	10-Year Trend
Satisfactory	Satisfactory

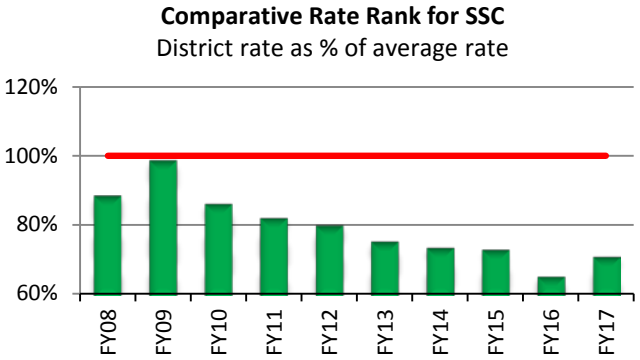
Measurement #10-3

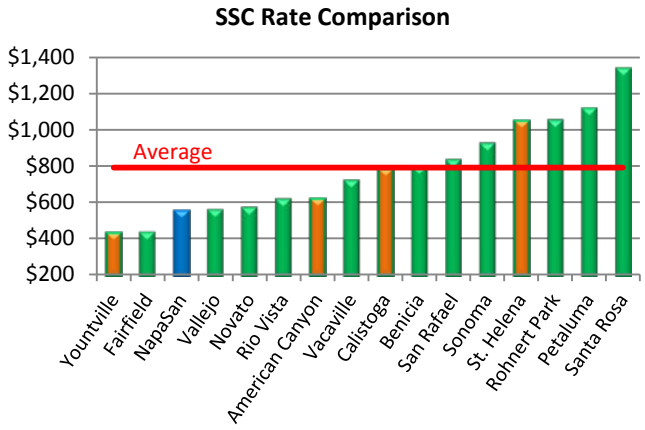
SSC Comparative Rate Rank

Description

This measure depicts how NapaSan's sewer service charge (SSC) compares to similar service providers in the region (i.e., local area wastewater providers with treatment and collection systems). The Comparative Rate Rank takes NapaSan's sewer service charge (SSC) and divides it by the average SSC for comparable wastewater providers in the region. A number over 100% means the District's rate is higher than the area average, while less than 100% means the District's rate is lower than the area average. A comparison of area sewer service charge rates is also provided.

Performance Data





Analysis

The three years of 15% increases from FY07 to FY09 saw NapaSan return to match the regional average SSC. Since then, other agencies have increased their SSCs at rates greater than NapaSan's, resulting in NapaSan's rate being lower than the regional average. While a lower than average rate is beneficial to rate payers, it may also be an indication that the rate is not keeping up with operational costs, maintenance demands and the necessary capital improvements.

In March 2016, the NapaSan Board approved an annual 15% rate increase for both FY17 and FY18 that should result in an increase in the comparative rate rank to about 78% of average.

Rating	
Current Year	5-Year Trend
★ Satisfactory	★ Satisfactory

Measurement #10-4

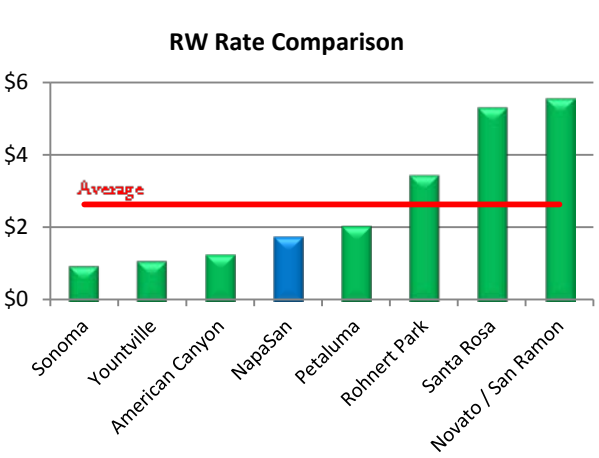
Recycled Water Comparative Rate Rank

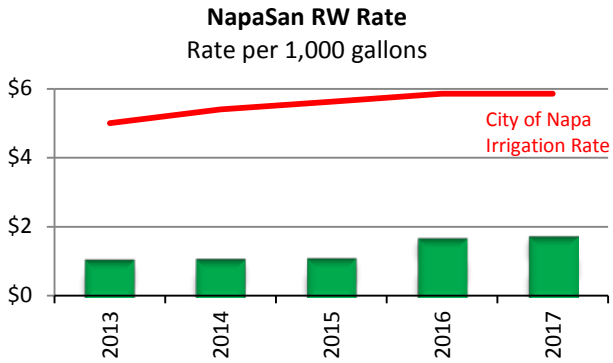
Description

This measure depicts how NapaSan's recycled water (RW) rate compares to similar service providers in the region (i.e., local area wastewater providers that make and deliver recycled water). Because of the different ways recycled water is priced, this measure normalizes the rates by assuming an agricultural user of 15 acre-feet per year (4,887,000 gallons). Any monthly or annual meter reading or fixed charge fees are added into the rate.

The second measure shows NapaSan's recycled water rate over time.

Performance Data





Analysis

In 2012, the NapaSan Board increased recycled water rates so that the rate was equal to the cost of recycled water treatment and distribution. In this way, neither sewer customers nor recycled water customers were subsidizing the other. That rate increase went into effect for calendar year 2016.

The 2017 calendar year rate ($1.62 per 1,000 gallons) is below the regional average for recycled water, and is considerably lower than the City of Napa's water rate for comparable uses ($5.86 per 1,000 gallons for inside city irrigation water customers). This difference creates and incentive for irrigation customers to invest in changing their systems to recycled water if and when recycled water becomes available.

STAKEHOLDER UNDERSTANDING & SUPPORT

Rating	
Current Year	10-Year Trend
★ Satisfactory	★ Satisfactory

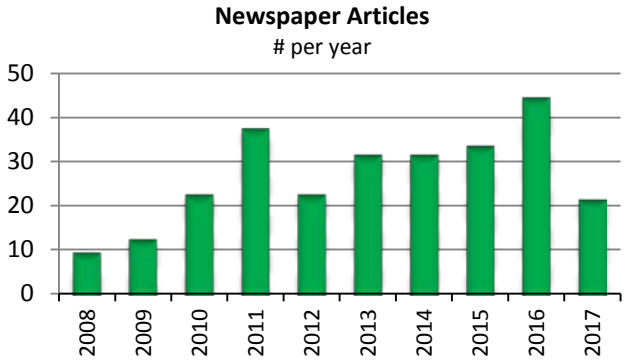
Measurement #10-5

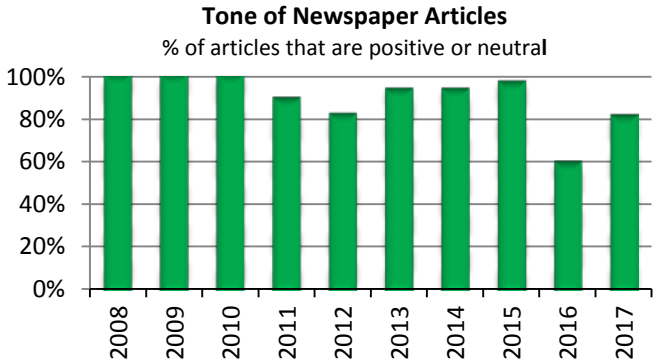
Media / Press Coverage

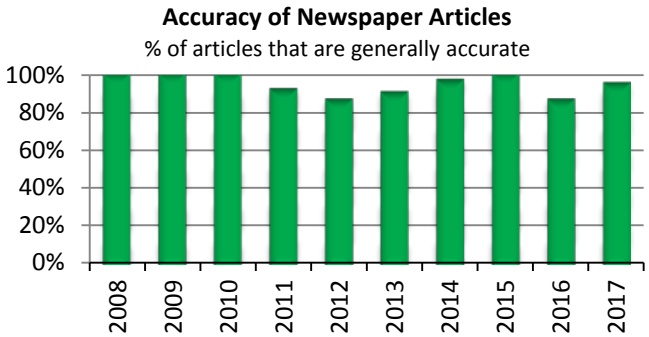
Description

This measure captures the print media portrayal of NapaSan in terms of awareness, accuracy and tone.

Performance Data







Analysis

The spikes in the number of articles in 2011 and 2016 were due to hearings regarding sewer service charge (SSC) increases that are required under California Proposition 218, which are required at least every 5 years. The jump in 2016 includes 19 Letters to the Editor regarding the SSC fee increase. In 2017, the quantity fell to 21, but still represents a solid number.

The tone of the articles have been overwhelmingly positive or neutral in tone recently, but saw a dramatic drop in 2016 due to the SSC rate increase. In 2017, there was one negative article in the newspaper regarding a significant sanitary sewer overflow, and three negative Letters to the Editor related to that incident.

All of the newspaper articles in were evaluated and determined to be factually accurate, and all but one of the Letters to the Editor were accurate. "Accuracy" can be subjective, so here it has been defined narrowly as meaning that there were no significant factual errors in the story that could cause a reader to misinterpret what was being reported.


Collection • Treatment • Recovery • Reuse
NapaSan