



The purpose of the **Asset Management Plan (AMP)** is to help the Sacramento Area Sewer District (SASD) sustainably manage its assets while meeting its service levels. The AMP accomplishes this by projecting costs, examining performance, and identifying where to focus efforts. It also serves as a reference by including information on all assets owned and operated by SASD. The AMP is updated annually as part of SASD’s Business Planning cycle. Other documents, such as the Sewer System Management Plan, the System Capacity Plan, and the Long Term Financial Plan, may affect or be affected by the AMP. For example, the gaps identified in the Asset Management Plan can influence the development of the Strategic Action Plan business initiatives.

Ultimately, the Asset Management Plan provides information for management to make informed decisions and to identify opportunities for improvement.

2021 OFFICIAL COUNTS

278 SQUARE MILE SERVICE AREA



324 SASD PERSONNEL



67,000 SASD MANHOLES



TOTAL EQUIVALENT SINGLE FAMILY DWELLINGS



301,000 SERVICE CONNECTIONS



3,100 MILES OF MAIN LINES



APPROXIMATE POPULATION SERVED

1.2 MILLION PEOPLE



1,500 MILES OF LOWER LATERALS




342,000 TOTAL NUMBER OF CUSTOMER ACCOUNTS



80 MILES OF FORCE MAINS



105 PUMP STATIONS



OUR MISSION

To **PROTECT** public health and the environment by efficiently and effectively collecting sewage for **OUR COMMUNITY**

OUR VISION

Setting the bar for **ESSENTIAL** sewage collection services



The Levels of Service help quantify SASD’s performance in meeting its service commitments to its stakeholders. SASD’s service level performance is reported monthly and is used to identify the factors and the business practices affecting underperformance and overperformance. In 2021, SASD met all seven of the seven Board-approved monthly service level targets.

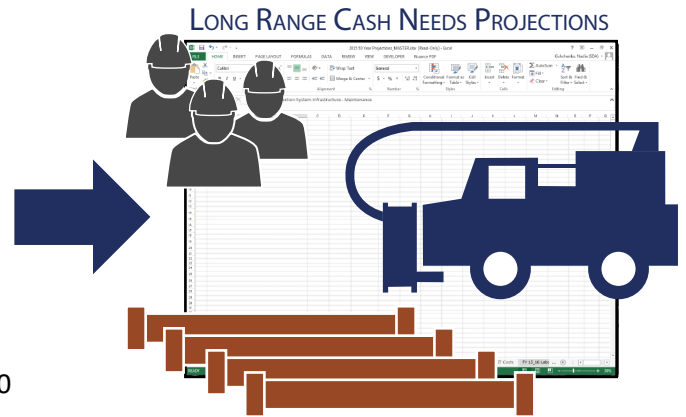
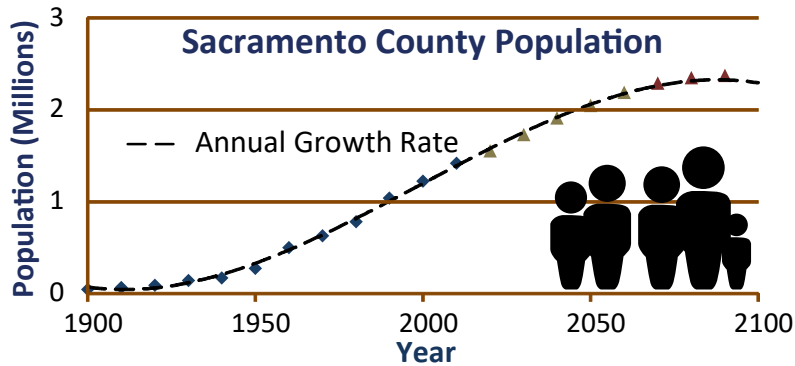
2021 RESULTS

	<p>SERVICE CALL RESPONSE TIME</p> <p>Target Goal: SASD staff will arrive onsite within 2 hours of a customer service request call for 95% of all service calls occurring within any calendar month.</p>	<p>Target: 95%</p> <p>2021 Average: 99%</p> <p>Target Met</p>	
	<p>SERVICE RESTORATION TIME</p> <p>Target Goal: SASD staff will restore service within four hours of receipt of the customer call for 90% of all service interruptions occurring within any calendar month. The on-time window is extended to six hours when excavation of the lower lateral is needed.</p>	<p>Target: 90%</p> <p>2021 Average: 96%</p> <p>Target Met</p>	
	<p>DEVELOPMENT SUBMITTAL REVIEW TIME</p> <p>Target Goal: SASD staff will return comments within the review time standards for 90% of all complete developer submittals within any calendar month.</p>	<p>Target: 90%</p> <p>2021 Average: 97%</p> <p>Target Met</p>	
	<p>CUSTOMER SATISFACTION</p> <p>Target Goal: 90% of customers responding to the survey will rate the service they received as good or excellent.</p>	<p>Target: 90%</p> <p>2021 Average: 95%</p> <p>Target Met</p>	
	<p>MAIN LINE OVERFLOW RATE</p> <p>Target Goal: A target of 0.45 sewer overflows per 100 miles of sewer lines.</p>	<p>Target: 0.45</p> <p>2021 Average: 0.29</p> <p>Target Met</p>	
	<p>LOWER LATERAL OVERFLOW RATE</p> <p>Target Goal: A target of 7.3 sewer overflows per 100 miles of sewer lower lateral lines.</p>	<p>Target: 7.3</p> <p>2021 Average: 4.1</p> <p>Target Met</p>	
	<p>BACKUPS INTO STRUCTURES RATE</p> <p>Target Goal: A target of 0.64 events per 10,000 connections to SASD’s system.</p>	<p>Target: 0.64</p> <p>2021 Average: 0.56</p> <p>Target Met</p>	



As the population changes, SASD adapts its management and utilization of assets accordingly. Some of these demands are identified and projected in the Long Range Cash Needs Projections and the Long Term Financial Plan. These documents identify the factors that influence demand and the effects on services.

DEMAND DRIVERS



SASD's data indicates there is a correlation between population growth and the installation of new main line pipes and laterals. As new lines are added, SASD forecasts an increase in maintenance activities. The Long Range Cash Needs Projections (LRCNP) help identify the future costs of meeting the needs of an ever-growing population. The Long Term Financial Plan identifies exterior influences that may affect SASD, such as the financial environment, regulatory requirements, third party lawsuits, and customer demands.

SOME SOLUTIONS TO INCREASING DEMAND

NON-ASSET BASED SOLUTIONS

FATS, OILS, AND GREASE (FOG) PROGRAM: The Program educates the public about FOG control to reduce SSOs. These efforts include public outreach through television, radio, a website, decals on vehicles, pamphlets in billing statements, and booths at local schools and events.



UNDER CAPACITY FAILURE MODE STRATEGY (UCFMS) INFILTRATION/ INFLOW (I/I) REDUCTION: SASD identified I/I targets that are used to trigger a system investigation. This allows SASD to proactively investigate the reduction of I/I in an effort to reduce capacity-related overflows.

TRAINING: A competency based program that identifies all aspects of a job, simplifies it into a training checklist, and provides a combination of classroom training and field training. The program ensures training is uniform, comprehensive, and traceable.





CANVASSING: Prework is done to increase efficiency. Door hangers are used to inform customers about upcoming work in their yard.



The Main Line portion of the Life Cycle Management section consists of Background Data, the Maintenance Plan, the Functional Renewal Plan, the Creation/Acquisition/Augmentation Plan, and the Disposal Plan.

Main Line Background Data

93.5% MADE OF VITRIFIED CLAY PIPE 	55% WITH 6" DIAMETER	42% OF MAIN LINES HAVE A REMAINING LIFE OF 61-100 YEARS
72% INSPECTED BY CLOSED CIRCUIT TELEVISION 	85% LOCATED IN THE STREET	59% ARE 5-10 FEET IN DEPTH

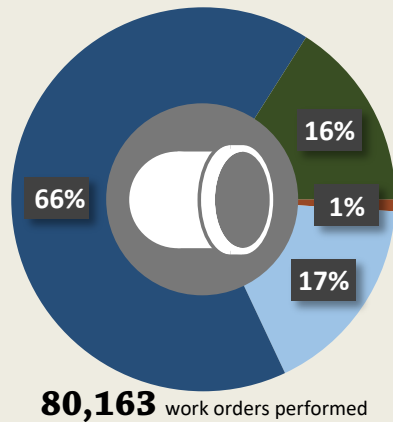
Maintenance Plan

This section outlines the maintenance strategies that are necessary to keep main lines operating, the statistics of work orders, and the trends of problems.

Work Order Statistics

The graph to the right shows the ratio of the different types of work performed on Main Lines in FY 20-21.

- Preventive Maintenance
- Predictive Maintenance
- Corrective Maintenance
- Response



Conveyance Statistics

SASD CONVEYED **29,620,000,000** GALLONS OF WASTEWATER IN 2021.

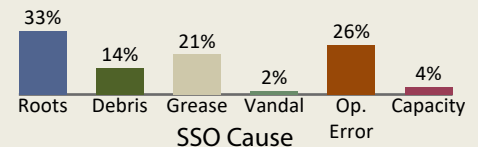
THE MAIN LINE SPILL VOLUME THAT WAS NOT RECOVERED: **28,639** GALLONS, OR 0.0001%.

Trends

The work performed on SASD assets can directly affect SASD's ability to prevent Sanitary Sewer Overflows (SSOs). The graph below shows the Main Line SSOs that SASD reported to the California Integrated Water Quality System (CIWQS). The definitions for the categories are as follows:
 CATEGORY 1 - SSO that reaches surface water and/or drainage channel, or a separate storm sewer system and is not recovered.
 CATEGORY 2 - SSO of 1000 gallons or greater that does NOT reach surface water, drainage channel, or a separate storm sewer system unless the entire SSO is fully recovered.
 CATEGORY 3 - SSO of less than 1000 gallons that does NOT reach surface water or a drainage channel.

- CATEGORY 1:** 17 Overflows, 59,497 gal, 52% Recovered
- CATEGORY 2:** 2 Overflow, 6,306 gal, 99% Recovered
- CATEGORY 3:** 87 Overflows, 7,598 gal, 96% Recovered

2021 Main Line Caused SSO Data





Functional Renewal Plan

SASD has a condition-based functional renewal plan. Proactive condition assessments are performed through TV inspections. Generally, the TV inspection initiates maintenance decision-making policies to determine if functional renewal is necessary.



The Lower Laterals portion of the Life Cycle Management section consists of Background Data, the Maintenance Plan, the Functional Renewal Plan, the Creation/Acquisition/Augmentation Plan, and the Disposal Plan.

Lower Lateral Background Data

98% WITH  DIAMETER	72% ARE LESS THAN 50 YEARS OLD	29% UNKNOWN MATERIAL	INSPECTED BY CLOSED-CIRCUIT TELEVISION (CCTV) 
	AVERAGE REPLACEMENT VALUE: STREET: \$7,700 EASEMENT: \$4,400		

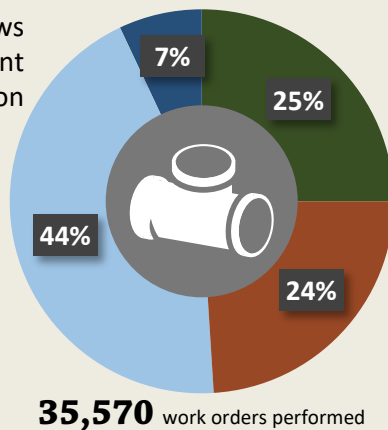
Maintenance Plan

This section outlines the maintenance strategies that are necessary to keep lower laterals operating, the statistics of work orders, and the trends of problems.

Work Order Statistics

The graph to the right shows the ratio of the different types of work performed on Lower Laterals in FY 20-21.

- Preventive Maintenance
- Predictive Maintenance
- Corrective Maintenance
- Response



Conveyance Statistics

SASD CONVEYED **29,620,000,000** GALLONS OF WASTEWATER IN 2021.

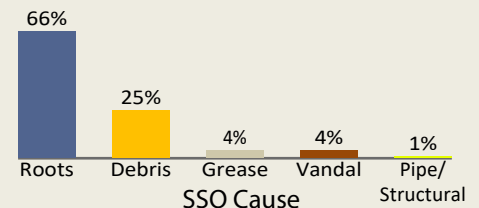
THE LOWER LATERAL SPILL VOLUME THAT WAS NOT RECOVERED: **37,386** GALLONS, OR 0.0001%.

Trends

The work performed on SASD assets can directly affect SASD's ability to prevent Sanitary Sewer Overflows (SSOs). The graph below shows the Lower Lateral SSOs that SASD reported to the California Integrated Water Quality System (CIWQS).

2021 Lower Lateral Caused SSO Data

- CATEGORY 1:** 53 Overflows, 42,523 gal, 25% Recovered
- CATEGORY 2:** 4 Overflows, 10,571 gal, 85% Recovered
- CATEGORY 3:** 697 Overflows, 36,492 gal, 90% Recovered



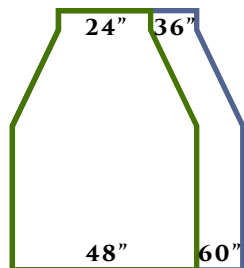
Functional Renewal Plan

SASD has a condition-based functional renewal plan. Proactive condition assessments are performed through TV inspections. Generally, the TV inspection initiates maintenance decision-making policies to determine if functional renewal is necessary.

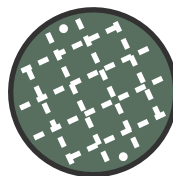
The Manhole portion of the Life Cycle Management section consists of Background Data, the Maintenance Plan, the Functional Renewal Plan, the Creation/Acquisition/Augmentation Plan, and the Disposal Plan.

Manhole Background Data

59%
ARE LESS
THAN
51 YEARS
OLD



MANHOLE ENTRANCES:
24" OR 36"
DIAMETER
MANHOLE
BARRELS:
48" OR 60" **DIAMETER**



66% OF MANHOLES
HAVE A DEPTH
OF 10' OR LESS

2021 AVERAGE
REPLACEMENT VALUE:
48" & <16' DEEP: \$10,000
48" & >16' DEEP: \$17,000



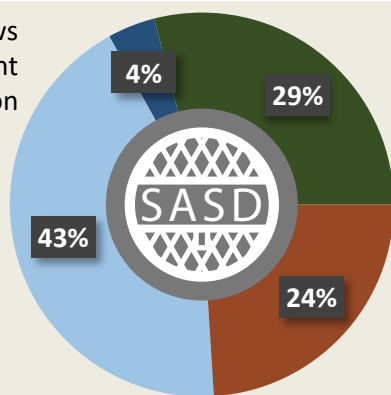
Maintenance Plan

This section outlines the maintenance strategies that are necessary to keep manholes operating, it displays the statistics of work orders, and the trends of SSO-related problems.

Strategies

The graph to the right shows the ratio of the different types of work performed on Manholes in FY 20-21.

- Preventive Maintenance
- Predictive Maintenance
- Corrective Maintenance
- Response



6,017 work orders performed

Conveyance Statistics

SASD CONVEYED
29,620,000,000 GALLONS
OF WASTEWATER IN 2021.

THE MANHOLE SPILL VOLUME
THAT WAS NOT RECOVERED:
26,114 GALLONS, OR 0.0001%.

Trends

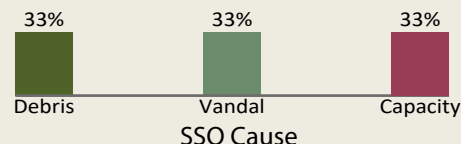
The work performed on SASD assets can directly affect SASD's ability to prevent Sanitary Sewer Overflows (SSOs). The graph below shows the Manhole SSOs that SASD reported to the California Integrated Water Quality System (CIWQS).

CATEGORY 1: 3 Overflows, 27,961 gal, 7% Recovered

CATEGORY 2: No Overflow

CATEGORY 3: No Overflow

2021 Manhole Caused SSO Data



Functional Renewal Plan

SASD has a condition-based functional renewal plan. Proactive condition assessments are performed through TV inspections. Generally, the TV inspection initiates maintenance decision-making policies to determine if functional renewal is necessary.



The Facilities Life Cycle Management section consists of Background Data, the Maintenance Plan, the Functional Renewal Plan, the Creation/Acquisition/Augmentation Plan, and the Disposal Plan.

Facilities Background Data

105 OPERATING PUMP STATIONS	80 MILES FORCE MAIN PIPELINES	SUBMERSIBLE PUMP STATIONS: 81	PUMP STATION AVERAGE REPLACEMENT VALUE: \$1,113,426
FORCE MAIN: MOSTLY 8", 10", OR 12" DIAMETER		PUMP STATIONS LESS THAN 51 YEARS OLD: 82%	

Maintenance Plan

This section outlines the maintenance strategies that are necessary to keep assets operating, the statistics of work orders, as well as trends of problems.

Work Order Statistics

The graph to the right shows the ratio of the different types of work performed on Pump Stations in FY 20-21.

- Preventive Maintenance
- Predictive Maintenance
- Corrective Maintenance
- Response

7,460 work orders performed

Conveyance Statistics

SASD CONVEYED
29,620,000,000 GALLONS
OF WASTEWATER IN 2021.

THE PUMP STATION SPILL VOLUME
THAT WAS NOT RECOVERED:
382,772 GALLONS, OR 0.0013%.

Trends

The work performed on SASD assets can directly affect SASD's ability to prevent Sanitary Sewer Overflows (SSOs). The graph below shows the Pump Station SSOs that SASD reported to the California Integrated Water Quality System (CIWQS).

CATEGORY 1: 1 Overflow, 489,494 gal, 22% Recovered

CATEGORY 2: No Overflow

CATEGORY 3: 2 Overflow, 1,339 gal, 61% Recovered

2021 Facility Caused SSO Data

SSO Cause


Functional Renewal Plan

SASD has a condition-based functional renewal plan. Proactive condition assessments are performed to determine if functional renewal is necessary.



The Vehicles and Equipment portion of the Life Cycle Management section consists of Background Data, the Maintenance Plan, the Functional Renewal Plan, the Creation/Acquisition/Augmentation Plan, and the Disposal Plan.

Vehicles and Equipment Background Data

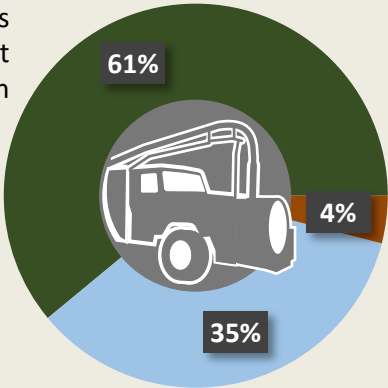
<div style="display: flex; justify-content: space-around; font-size: 2em; font-weight: bold;">2 1 2</div> <p>VEHICLES</p> <p>BUILT BETWEEN 1997 AND 2022</p>	<ul style="list-style-type: none"> • CARS, VANS, AND TRUCKS • MAINTENANCE TRUCKS 	<div style="display: flex; justify-content: space-around; font-size: 2em; font-weight: bold;">7 2</div> <p>PIECES OF EQUIPMENT</p> <p>BUILT BETWEEN 2000 AND 2021</p>	<ul style="list-style-type: none"> • FORKLIFTS • CONSTRUCTION EQUIPMENT • JETTER CARTS • TRAILERS • GENERATORS • PORTABLE PUMPS • BUCKET MACHINES
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Maintenance Plan

This section outlines the maintenance strategies that are necessary to keep vehicles and equipment operating and the future costs.

Strategies

The graph to the right shows the ratio of the different types of work performed on vehicles and equipment in FY 20-21.



Strategy	Percentage
Preventive Maintenance	61%
Corrective Maintenance	35%
Response	4%

3,631 work orders

Fleet maintenance vendors maintain and repair SASD-owned vehicles and equipment.

To maintain its vehicle and equipment assets SASD has proactive strategies to prevent failures, such as Fleet Scheduled Maintenance.

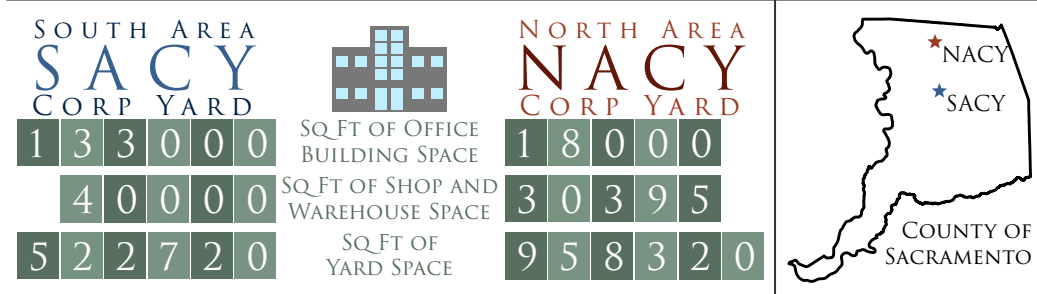
Functional Renewal Strategy

SASD has a condition-based functional renewal strategy. SASD does not functionally renew vehicle and equipment assets based solely on the asset's age and useful life. Proactive condition assessments are done by SASD's Fleet staff. Generally, results from the latest condition assessment could initiate a BCE to be performed to determine whether functional renewal is necessary. A BCE on a vehicle and equipment asset typically considers maintenance history and cost, downtime, upcoming repairs, current defects, deteriorating components, trade-in value, mileage, age, and useful life.



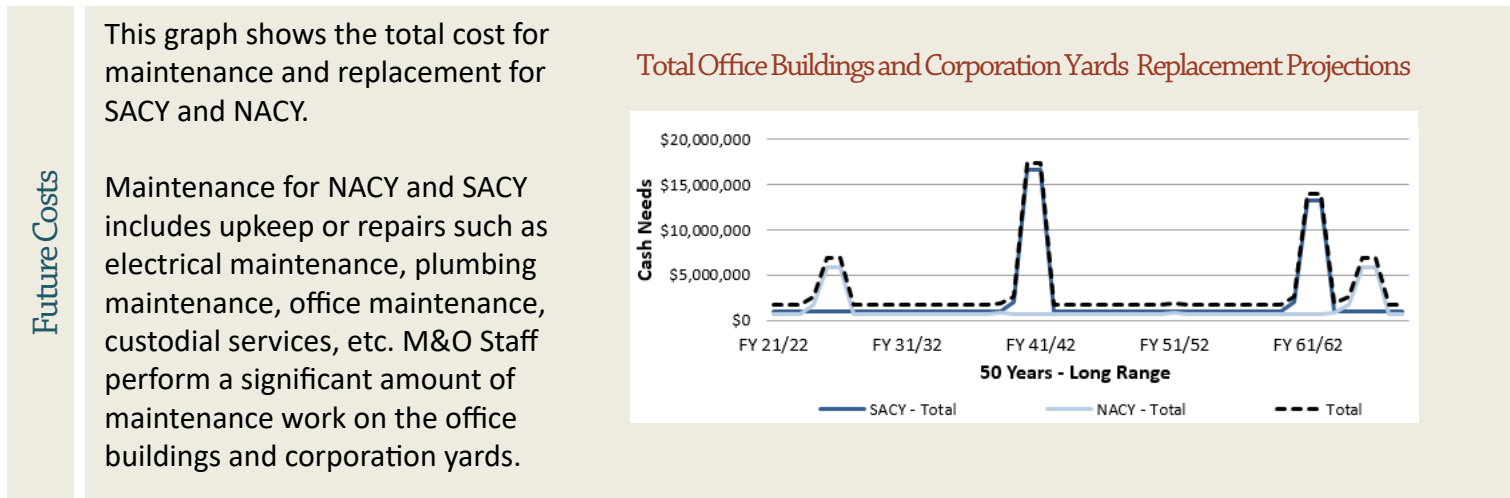
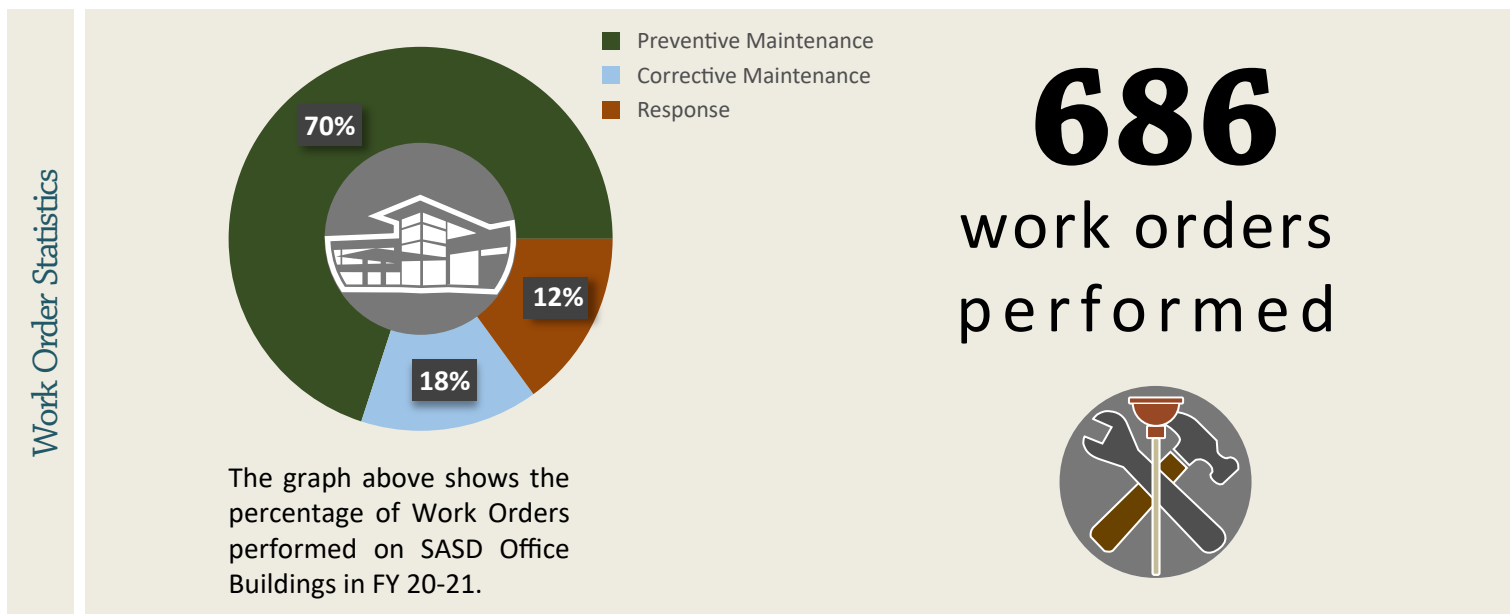
The Office Buildings and Corporation Yards portion of the Life Cycle Management section consists of Background Data, the Maintenance Plan, the Functional Renewal Plan, the Creation/Acquisition/Augmentation Plan, and the Disposal Plan.

Office Buildings and Corporation Yards Background Data



Maintenance Plan

This section outlines the maintenance strategies that are necessary to keep office buildings and corporation yards operating, it displays the statistics of work orders, and the functional renewal plan.





A comprehensive look at SASD’s financial makeup is important to accurately guide and fund for the future. SASD generates different financial documents throughout the course of the fiscal year. These include the Comprehensive Annual Financial Report, the Long Term Financial Plan, and the Final Budget. The illustration shows the information and financial issues that feed into and influence each other when funding SASD’s Mission and Vision.

FINANCIAL STATEMENTS

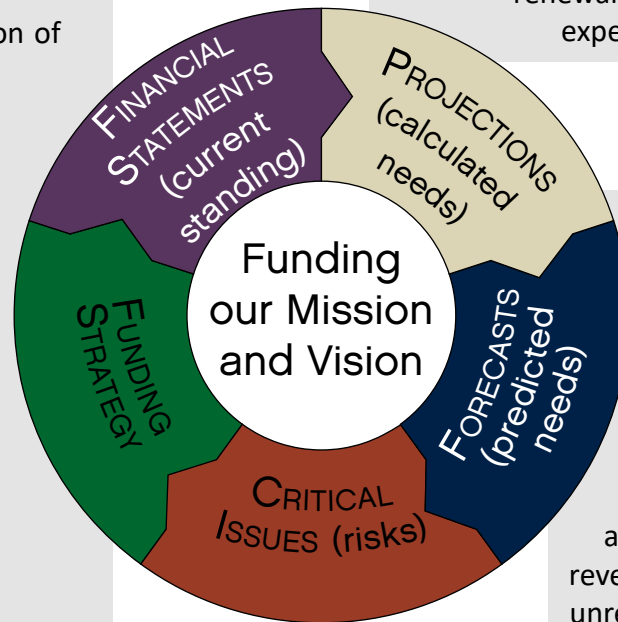
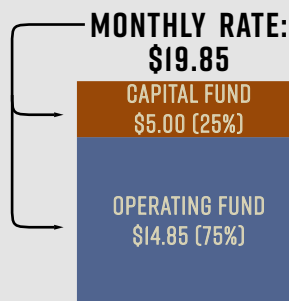
Financial indicators, such as bond ratings and Statements of Net Position, are used to analyze trends, measure the performance and financial stability of SASD, and to compare SASD’s financial performance measures to those of other similar organizations. These are detailed in SASD’s audited Comprehensive Annual Financial Reports (CAFR) and SASD’s annual budget documents.

PROJECTIONS

SASD projects its cash needs for the next 10 years and for the next 50 years. These projections evaluate the cash needs of all service groups, SASD’s expenditures, Capital, Revenue Bonds Debt Service, and SASD’s Reserve Accumulation. They also include information on routine maintenance, renewal, and new works expenditures.

FUNDING STRATEGIES

SASD is funded through a combination of user rates, development impact fees, miscellaneous revenue, and bonds. The monthly rate was last increased in FY 2010/11. These revenues are allocated into SASD’s Operating Fund and Capital Fund, as shown below.



FORECASTS

SASD’s forecasts focus on two areas: the assumptions and depreciation.

The assumptions are used to generate SASD’s Long Term Financial Plan and include categories such as revenue, debt service, reserves, unreserved cash, capital costs, and operating expenses. Depreciation is a method of recovering the cost of a tangible asset over its useful life. SASD uses the straight-line method and analyzes depreciation for operating expenses, capital assets, structures and improvements, equipment, and software.

CRITICAL ISSUES

SASD continues to hold a financially stable position where revenue, costs from customer growth, and operational costs grow moderately over the next few years. Even though there has not been a rate increase for the past ten years, SASD was able to pay down \$72 million of its outstanding debt in 2015. Unless critical issues or events occur over the next five years that significantly change current cost projections, customer rates are projected to remain at the current \$19.85 per month per ESD for several years of the forecast period.



The Asset Management Practices Summary Section details how SASD manages its assets. This includes the decision-making process and the management of finances and asset data.

Managing Finances

SASD complies with accounting standards and guidelines. Expenses and revenues are separated by Operating and Capital Funds.

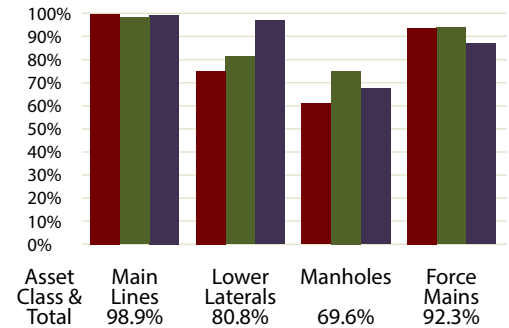
SASD Operating Fund	SASD Capital Fund
Expenses	Expenses
Salaries & Benefits	Services & Supplies
Services & Supplies	Depreciation & Amortization
Depreciation & Amortization	Other Charges
Other Charges	Debt Service (Principal and Interest)
Revenues	Revenues
Monthly Service Charges	Monthly Service Charges
Capital Labor	Impact fees - Relief
Other Revenue	Impact fees - Expansion
Interest Income	Other Revenue
	Interest Income

Managing Asset Data

SASD uses a Geographic Information System (GIS) as the primary source of asset data for all mapped assets (main lines, laterals, manholes, and force mains). This data is then pushed to all other applications that use mapped asset data. Data collection is prioritized by assigning a rank to asset attributes.

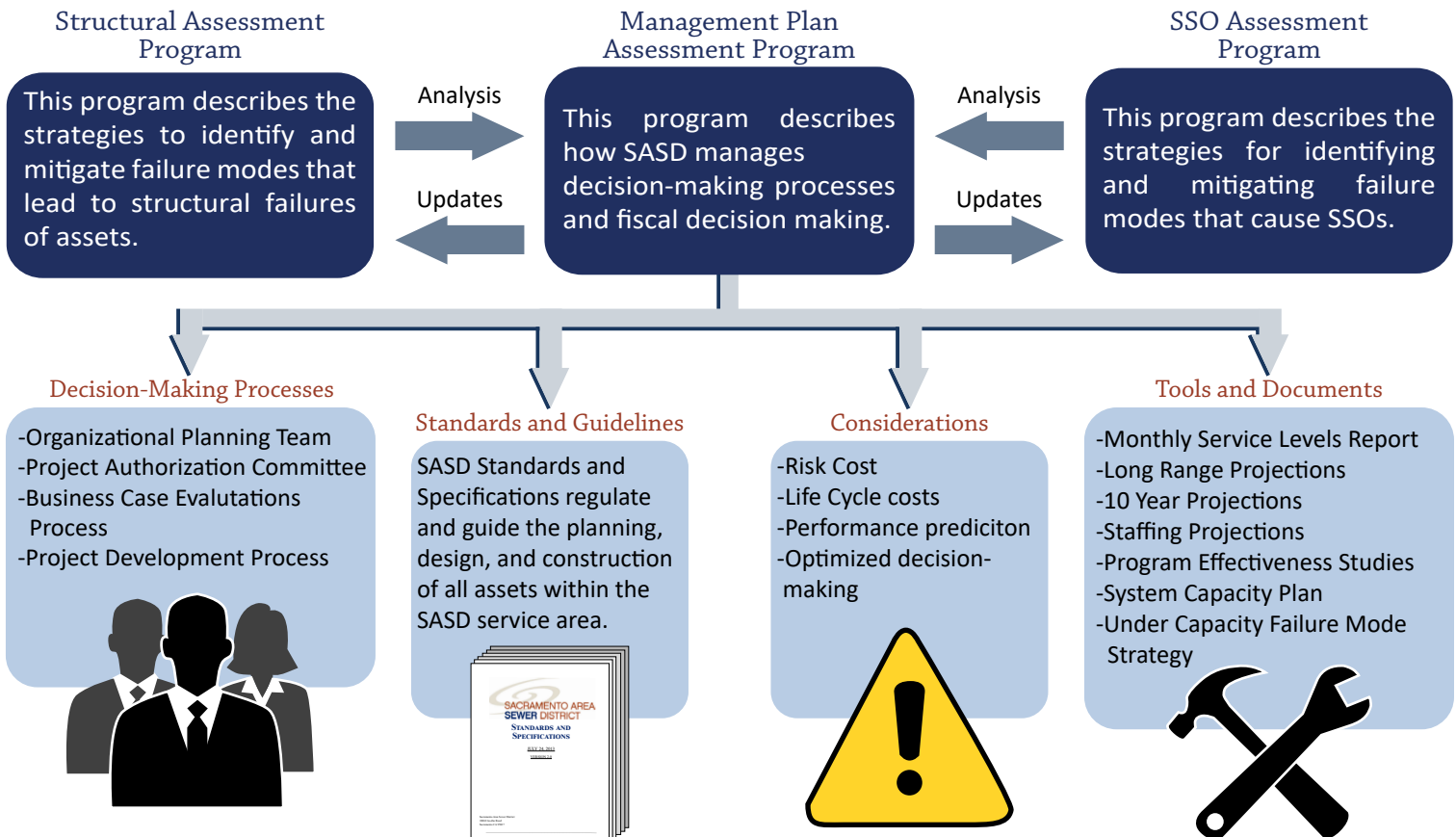
Data Completeness Scores

Importance Ranking	Rating Basis
1	Data is used in SSO or regulatory reporting.
2	Data is used to trigger program or strategy or maintenance.
3	Data is used for some other business need.



Decision Making

Most decisions are categorized into one of three main assessment programs. These programs include sections that explain why (strategies), when (policies), and how (procedures) business decisions are made.





The Continuous Improvement Program enhances the asset management processes and systems and data. It also supports the effective delivery of asset management outcomes.

1 WHERE ARE WE AND WHERE DO WE WANT TO BE?

In order to identify the appropriate levels, the following factors are considered: cost and benefits, legal requirements, customer expectations, the nature of assets, and risk. With these factors, SASD can determine the desired levels and whether the costs to advance the asset management practice outweighs the benefits.

2 WHAT NEEDS IMPROVEMENT?

In 2015, gaps were identified for consideration as a result of Business Initiative EFF-068. Since then, most gaps have been identified as Business Initiatives or as work to be performed on a day-to-day basis.

3 PRIORITIZE AND DEVELOP PROGRAM

In 2017, SASD completed a Five-Year Strategic Plan that will help frame business decisions and priorities through 2022. The Strategic Plan was developed by gathering input from a broad range of staff and stakeholders. Several clear themes emerged that helped identify SASD's strengths, areas for improvement, opportunities, challenges, and goals.

4 DELIVER PROGRAM

In the past, SASD's Business Plan was combined with a status update on business initiatives. SASD's Strategic Action Plan will replace the Business Plan. Much of the information is similar with some key differences: alignment with SASD's Five-Year Strategic Plan, exclusion of most background information, inclusion of a summary of SASD's progress towards goals, and inclusion of descriptions of completed activities and planned activities.

5 MONITOR OUTCOMES

Performance indicators and reports, like the Strategic Action Plan, detail the results of Business Initiatives, strategic plans, programs, and decisions.

