DEFERRED MAINTENANCE AND INFRASTRUCTURE BACKLOG

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: Matt Cano

SUBJECT: **STATUS REPORT ON DEFERRED MAINTENANCE AND INFRASTRUCTURE BACKLOG**

DATE: March 16, 2022

Approved  Date 3/23/22

RECOMMENDATION

a) Accept the status report on the City's Deferred Maintenance and Infrastructure Backlog, and
b) Accept the report to be presented every other year with the next reporting occurring in 2024.

OUTCOME

This report is intended to facilitate Committee discussion of the City's Deferred Maintenance and Infrastructure Backlog needs within the context of the upcoming budget process.

EXECUTIVE SUMMARY

This staff report provides an update on the City's Deferred Maintenance and Infrastructure Backlog (DMIB), as well as discusses near-term strategies being employed in an effort to minimize further increases to the backlog.

Overall, the DMIB totals roughly $1.7 billion in unfunded costs, with an additional $91.5 million needed annually in order to maintain the City's infrastructure.

Transportation Infrastructure continues to have the largest unfunded needs. This area, focusing on the City's street network, roadway lighting and right of way landscaping assets, has been successful in leveraging Federal, State and Regional funding to partially address the needs of the assets. With a much-improved funding situation, the one-time backlog associated with street

maintenance has stabilized, and should decrease as heightened maintenance levels occur in the coming years.

Similar to the 2021 report and with funding collected from tributary agencies and revenue from ratepayers, the Regional Wastewater Facility and Water Utility programs reported no unfunded needs at this time.

City Operated Buildings reported increases in one-time unfunded needs based on additional completed life cycle cost analysis reports.

The Parks, Recreation and Neighborhood Services Department (PRNS) continues to evaluate infrastructure backlog against baseline conditions established in 2013-2014 and is moving toward developing more detailed information.

The Airport continues to monitor and identify vertical and horizontal deferred maintenance backlog needs. The Department funded several one-time projects and completed additional deferred maintenance items within the Airport's 5-year Capital Improvement Program (CIP).

BACKGROUND

In October 2007, the first comprehensive report on the City's Deferred Maintenance and Infrastructure backlog was presented to the Transportation and Environment Committee and then to the full City Council in a special Study Session. This report analyzed the unfunded infrastructure and ongoing maintenance needs over a 5-year period for 14 discrete programs in the city. The 2007 report identified a one-time unfunded need of $915,000,000 and an ongoing unfunded need of $45,000,000. The report has been updated annually since that time. Starting 2022, staff recommends the report to be updated every two years going forward.

ANALYSIS

Staff has updated the 2021 backlog estimates to reflect more recent work and funds anticipated for inclusion into the 2022-2026 Proposed Capital Improvement Program (CIP). The current backlog of deferred needs is estimated at $1.7 billion with an additional $91.5 million needed annually.

Based on these updates, the following table summarizes the current state of the City's Deferred Maintenance and Infrastructure backlog. The costs in the chart below represent staff's best estimate based upon available data. Further analysis and refinement of these estimates would be required before funding is requested to address specific unfunded needs. Additionally, Attachment A provides the breakdown of General Fund versus Capital Fund capital needs that are one-time and ongoing.

Infrastructure Backlog (numbers in millions)

Program	One Time Backlog			Annual Ongoing Unfunded Needs		
	2021	2022	Change	2021	2022	Change
Airport	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
City Operated Buildings (1)	$230.8	$246.5	$15.7	$20.1	$20.1	$0.0
Cultural Facilities Operated by Others (OCA)	$17.8	$13.8	($4.0)	$3.6	$6.8	$3.2
Sports Facilities Operated by Others	$0.8	TBD	($0.8)	NONE	TBD	TBD
Convention Center and Cultural Facilities (TSJ)	$67.5	$73.5	$6.0	TBD	TBD	TBD
Fleet	$9.6	$7.7	($1.9)	$1.8	$1.4	($0.4)
Parks, Pools and Open Space (2)	$260.4	$284.9	$24.5	$35.5	$36.5	$1.0
Service Yards	$22.5	$14.1	($8.4)	$3.8	$0.7	($3.1)
Sanitary Sewer	$50.0	$50.0	$0.0	$0.7	$0.9	$0.2
Storm Sewer (3,4)	$180.0	$180.0	$0.0	$5.0	$5.0	$0.0
Information Technology (5)	$37.4	$47.5	$10.1	$7.9	$5.7	($2.2)
Radio Communications (6)	$6.0	$3.8	($2.2)	$1.7	$0.4	($1.3)
Transportation Infrastructure (4)	$845.5	$736.9	($108.6)	$12.7	$14.0	$1.3
Regional Wastewater Facility	NONE	$0.0	$0.0	$0.0	$0.0	$0.0
Water Utility	NONE	$0.0	$0.0	$0.0	$0.0	$0.0
Total	**$1,728.3**	**$1,658.7**	**($69.6)**	**$92.8**	**$91.5**	**($1.3)**

(1) Annual Ongoing $20.1M for Parks Buildings only, remaining facilities TBD.
(2) The one-time backlog number for parks and open space may change in future years as a result of the aging system and ongoing work to more clearly document the department backlog.
(3) On-going and one time needs for GSI are being evaluated and are anticipated to be included in future DMIB reports.

(4) Measure T investments may include $35M in Storm Sewer, $30M in Transportation Infrastructure's streetlights and bridges, and $300M in on-going pavement annualized over 10 years.
(5) Departmental technology needs not managed by the IT Department are not included in this number. Those items are presented separately, within departmental program costs and plans.
(6) The one-time backlog cost is to replace only the radios that will be no longer supported in July 2021. The annual ongoing need is based on replacing all SVRCS radios in the current 10-year contract with Motorola.

The One Time Backlog of deferred needs column describes the lump sum funding for which there is no approved funding source needed to restore a given asset to a satisfactory and serviceable condition rating. The Annual Ongoing Unfunded Needs column describes the additional funding needed to maintain the asset in satisfactory and serviceable condition or to establish a sinking fund for strategic asset maintenance or rehabilitation.

Below is a summary of the status and key changes from the prior year in each asset category. Included is information on the status of near-term actions that the City has taken or could take to reduce the Deferred Maintenance and Infrastructure Backlog, along with any discussion of future opportunities relating to the asset category.

Airport

The Facility & Engineering and Planning & Development Divisions of the Airport Department are responsible for maintaining buildings and pavement. These facilities include:

- 2 Runways, 4 parallel taxiways, 14 cross taxiways, aprons and service roads (Airport Operating Area);
- 1 Fire Department building (ARFF);
- 1 Police Department building (SJPD Airport Division);
- 6 Terminal Area Buildings (A-Plus, Terminals A and B, FIS, T/A Baggage Claim, Central Plant);
- 11 Miscellaneous support buildings;
- Smaller support buildings for maintaining building structure only;
- 3 Public Parking Garages; and
- 4 Surface Parking Lots

The Airport is funded by a combination of funding sources that may either be used for capital improvements or repayment of debt service for capital improvements: Federal Grants (FAA), Passenger Facility Charges (PFC), Customer Facility Charges (CFC), and General Airport Revenue.

The Airport tracks physical assets, horizontal and vertical, utilizing two computer-based systems as well as specialized studies. For the pavement assets (horizontal), the Airport utilizes "MicroPaver" computer software for condition assessment and prioritization and Infor EAM is

utilized for building condition assessments (vertical). Special studies and consultants are used to supplement these two programs as well as in-house resources.

The last major upgrade and improvement to the Airport campus was completed in June of 2010 and six temporary gates were added in 2019; these assets are requiring additional maintenance to continue operating at the established efficiency levels. Maintenance items are categorized, prioritized, and addressed within the Airport's 5-year CIP as funding permits. The Airport currently has no infrastructure backlog.

Additional structures outside the terminal zone are primarily used in support of aviation functions, such as parts storage and tenant maintenance activities. The Airport Master Plan Update including a new CEQA Environmental Impact Report (EIR) was approved by the City Council on April 28, 2020, and identified existing facilities requiring replacement to maximize the land use and allow the construction of modernized terminal facilities.

Critical pavement areas that are maintained by the Airport include taxiways, runways, and aircraft parking areas within the Airport Operations Area (AOA) and the public right-of-way surfaces. The Airport maintains a Pavement Maintenance and Management program to prioritize, plan and track maintenance activities for the Air Operations Area (AOA). This program is an industry-accepted, best management practice for identifying pavement life and cost estimates for planning purposes. Typically, airports that serve commercial aircraft traffic have used various "cut-off" points, a critical Pavement Condition Index (PCI) value, at which a pavement section requires rehabilitation. Generally, a Critical PCI of 70 for runways, 60 for taxiways and aprons, and 55 for shoulders and roadways is accepted throughout the industry. Preventive maintenance activities such as crack and joint sealing and patching are recommended for pavements that have a PCI greater than the critical PCI identified.

Overall, the pavement network at the Airport had an area weighted PCI value of 85 (on a scale of 0-100, 100 being zero maintenance required) based upon the last study conducted in 2016. An updated pavement study is expected in the current fiscal year.

Building Facilities

The Facility Management Division of Public Works supports maintenance, operations, and capital improvements at over 400 City buildings and structures, comprising more than 5 million square feet. These buildings are broken up into three different categories in this report as follows:

- City Operated Buildings
    - 36 Fire Department Buildings;
    - 3 Police Buildings;
    - 23 Libraries;
    - 47 Community Centers;
    - 251 Park Facility Buildings;

  - 3 City Hall Buildings;
  - 2 ESD Buildings

- Cultural Facilities Operated by others
  - 6 Cultural Facilities;
- Convention Center and Cultural Facilities
  - 7 Facilities Operated by Team San Jose (TSJ);
- Sports Facilities Operated by others
  - 3 Sports Facilities

The major building systems and equipment within facilities constructed within the last 15 - 20 years are rapidly reaching their fully functioning serviceable lives. These facilities have been designed and constructed with technologically advanced and sophisticated equipment that has enhanced the user experience and increased functionality of the facilities, but has also increased long-term costs as well as increased maintenance frequencies to preserve the asset.

Compounding this advancement in asset complexity, previous budget deficits and shortfalls from sources generally used to fund capital maintenance activities have forced reductions that have left insufficient resources to meet the needs of the facilities for day-to-day maintenance. Even as a portion of this funding has been restored, the deferred work continues to increase, which can lead to infrastructure failures prior to the expected serviceable life. In addition, an increased number of facilities and square footage through newer acquisitions, while continued staffing deficiencies and shortage of funding, have added to the challenge of properly and promptly making needed corrective or preventative maintenance repairs or system replacements.

The Facilities Management Division of Public Works, when available and funded, continues to conduct facility condition assessments to determine the current status of building systems, projected end of life, and cost estimates for repair and replacement. These assessments have historically been conducted through third party specialists at a cost. Until such assessments can be further funded, scheduled, and analyzed, this report will use building assessments and estimates completed to date, and make use of other best available data.

City Operated Buildings

The current backlog for deferred maintenance in building facilities is estimated at $246.5 million**,** which includes approximately $179.4 million for Parks Buildings. Additionally, many significant City owned facilities are in need of re-assessment due to the data being almost a decade old. It is likely that current backlog is higher but will need to be further evaluated when resources are available. The remainder of the backlog needs are derived from a combination of the building assessment work completed to date by in-house staff and a small number of third-party building assessments.

The preventive maintenance program is very important and provides proper maintenance of assets in order to prolong the useful life of building systems. The focus of the program has been 1) the completion of work items that address life safety needs, and 2) the preservation of assets. However, recognizing the need for cost saving measures, the funding allocation for preventive maintenance activities in the Facilities Management Division has been reduced in recent years. Although not an ideal situation, cost savings were achieved through the increase of cycle times for maintenance activities related to the preservation of assets. In the short term, these reductions will result in a slightly higher rate of equipment failures needing corrective action. Over the long term, the result of these reductions will accelerate the need for full equipment replacement as aged equipment reaches the end of its useful life more quickly.

Cultural Facilities Operated by Others

These facilities, totaling over 900,000 square feet, include those listed in the following table.

Cultural Facilities	Estimated Five-Year Rehabilitation Need
Children's Discovery Museum	$2,600,000
Tech Museum	$1,750,000
History San Jose Facilities	$3,150,000
Museum of Art	$2,550,000
Hammer Theatre	$7,789,000
Mexican Heritage Plaza	$1,000,000
Total Budget Need	**$18,839,000**
Cultural Facilities Capital Maintenance Reserve	$28,849
Additional Anticipated Funding Through 2023-2027	$5,000,000
Remaining Unfunded Need	**$13,810,151**

The current estimated rehabilitation need through FY 2026-27 has been recently updated to approximately $13.8 million. Within this overall estimate, the History San Jose funding needs have increased significantly due to major rehabilitation work identified for the Firehouse building, as well as roofing, painting, electrical, and repairs needed on various buildings onsite. Also, the estimates listed for the Children's Discovery Museum have decreased due to capital allocations already received for the elevator, skylight, and paving projects, and have decreased for the Tech Museum due to previous allocations received for the new fire alarm project.

In FY 2014-15 the City Council approved an allocation of Transient Occupancy Tax (TOT) growth above the 2013-2014 levels toward capital replacement and maintenance at various cultural facilities including the San José Museum of Art, Tech Museum of Innovation, Hammer Theatre, History San José, School of Arts and Culture at Mexican Heritage Plaza, and Children's

Discovery Museum. This funding stream has been an important tool to address the deferred maintenance and infrastructure backlog.

As part of the 2017-2018 Adopted Budget, the City Council approved changes to Cultural Facilities Capital Maintenance Reserve funding to help resolve the ongoing General Fund shortfall, eliminating the allocation of annual Transient Occupancy Tax (TOT) growth above base 2013-2014 levels and instead committing $450,000 annually. As part of the 2019-2020 Adopted Budget, the annual allocation to the reserve was increased to $850,000. While the previous TOT increment that built up reserve levels and the annual contributions since 2017-2018 have provided significant resources, the reserve levels are now nearly exhausted. Beginning in 2022-2023, the only dedicated funding for cultural facilities capital improvements is the annual $1,000,000 allocation.

In addition, the operators at the Mexican Heritage Plaza, the Tech Museum, Hammer Theatre, and the Children's Discovery Museum are participating in a capital maintenance funding program. This program shifts a portion of their annual City subsidy into a separate account to specifically address minor capital funding needs.

Sports Facilities Operated by Others

San José Municipal Stadium was built in 1942 and is home to the minor league baseball team, the San José Giants. Solar4America Ice at San José (previously Sharks Ice) was built in 1994 and, in addition to serving as a practice facility for the Sharks, it is home to the San José State University hockey team and the San José Sharks junior teams. Expansion of the Ice Centre is anticipated to be complete in December 2022 at a total estimated cost of approximately $120 million, funded with proceeds of the 2020B Bonds. This expansion includes a fifth ice rink that will serve as a practice rink for the Barracuda and a sixth ice rink and three-story building that will serve as a competition rink for the Barracuda and provide medical office physical therapy space. The SAP Center opened in 1993 and is home to the San José Sharks professional hockey team. Annual discussions between the City, San Jose Arena Authority, San José Sharks, and San José Giants determine improvement needs and associated budget requests.

Convention Center and Cultural Facilities Operated by Team San Jose

These facilities are operated by Team San José on the City's behalf and total approximately 1.4 million square feet.

Facilities Operated by Team San Jose	Backlog
California Theater	$1,899,250
Center for Performing Arts	$42,439,360
Civic Auditorium	$3,342,680
Montgomery Theater	$1,532,240
Convention Center	$21,621,490
South Hall	$2,675,000
Total Backlog	**$73,510,020**

While life cycle condition reports are still under review for all facilities, preliminary one-time deferred maintenance costs were estimated at $72.2 million including a 7% market inflation and price adjustment comparing the market before COVID-19. Prior to the recent impacts of COVID-19 on the Transient Occupancy Tax (TOT) and Convention Center Facility District Special Tax (CCFD) revenues, sustained yearly revenue growth and transfers to the Convention and Cultural Affairs Capital Fund and the Convention Center Facilities District Capital Fund provided the City with some assistance to address the backlog of improvements to the Convention Center and theaters operated by Team San Jose. In 2018, the Convention Center Exhibit Hall Lighting and Ceiling Upgrade Project was completed at a total cost of approximately $21 million. The rehabilitation of the Civic Auditorium HVAC system at a cost of $5.5 million was also completed in 2018. The initial Convention Center Restroom Upgrades project was also completed in December 2019 at a cost of $2.3 million. An evaluation of phased rehabilitation needed for the Center for the Performing Arts is under development. An emergency request for upgrading the failing chiller, boiler and cooling tower for the Center for Performing Arts at a cost of $7.1 million is under consideration in February 2022. The ongoing unfunded backlog for the Convention Center and Cultural Facilities is still under development.

Fleet

The City's Fleet Management Program provides preventive maintenance, repairs, statutory inspections, acquisition, disposal and fueling services for a fleet inventory consisting of 2,916 vehicles and equipment that support public safety, public health, and general government operations citywide.

These vehicles and equipment are categorized as follows:

Category	Quantity
Police Patrol	505
Fire Front Line	126
General Fleet	1,485
Off Road Fleet	279
Other Equipment	521
Total	**2,916**

This year's vehicle and equipment inventory increased by 27 assets or 0.9% from last year's total of 2,889. The increases occurred primarily in the General Fleet category and were comprised of general fleet light duty vehicles. The City's fleet assets inventory will continue to "right-size" as the organization's overall service delivery systems adjust to the current and future budget reality of the City. As this "right-sizing" occurs, vehicles that are no longer needed for one program will be shifted to another to ensure the City is replacing the vehicles that are the oldest or no longer meet the City's current sustainability goals. This strategy helps extend the useful life of the entire vehicle and equipment inventory.

To assist in the overall management of the City's fleet asset inventory, Public Works utilizes an asset management software application called AssetWorks to monitor equipment utilization, maintenance and repair programs, and fuel management operations. AssetWorks provides the information and reporting to assist staff in maximizing the lifecycle of the City's investment in vehicle and equipment assets.

The current backlog for the entire Fleet Management Program is $7.7 million. Vehicles that provide support for General Funded activities have a current backlog of approximately $7.2 million. The current vehicle replacement funding in the General Fund for the General Fleet of $1.25 million leaves an additional ongoing need of $1.4 million each year to replace eligible vehicles if the annual funding is consistent. This has been a challenge for Fleet Management as the vehicle replacement funds are not consistent each fiscal year. In addition to the General Fund-only portion of the backlog, a backlog exists for vehicles that support special fund and capital efforts. This year's backlog includes $0.5 million for vehicle replacements in Special and Capital funds. This includes equipment at the Regional Wastewater Facility, vehicles supporting fee programs, and vehicles supporting capital programs. Public Safety vehicle funding has remained fully funded to ensure service. The replacement projections are calculated with vehicles reaching both age and mileage thresholds. There are a significant number of vehicles reaching age only that are not included in the backlog. It is important to consider, older vehicles cost significantly more to maintain. Replacing older vehicles regardless of miles results in lower operating costs, higher availability, cleaner emissions, greater safety features, and better fuel economy.

Parks, Recreation and Neighborhood Services

The Department of Parks, Recreation and Neighborhood Services manages parks, community centers and various properties throughout the city. Examples of the City's infrastructure assets under this category include:

- 209 Neighborhood and Regional Parks, three golf courses and numerous Open Space areas totaling 3,536 Acres;
- 47 Regional and Neighborhood Community Centers (Discussed above in the Building Facilities Section);

- 291 Playgrounds;
- 14 Dog Parks;
- 84.5 Tennis Courts;
- 20 Bocce Courts;
- 159 Basketball Hoops;
- 40 Outdoor Fitness Areas;
- 6 Aquatic Facilities;
- 7 Neighborhood and 1 Regional (Lake Cunningham) Skate Parks;
- 19 Community Gardens;
- 110 Athletic Fields Supporting Youth and Adult Soccer, Baseball, Softball, and T-Ball
- 61.67 Miles of Paved and Unpaved Trails ;
- 76 Trail and Park-Related Bridges;
- 7 Park Service Yards;
- San José Family Camp; and
- Happy Hollow Park & Zoo.

Within these facilities are numerous assets such as water fountains, benches, restroom buildings, irrigation piping and sprinkler heads. These items have not been specifically quantified yet but represent significant assets that contribute to the PRNS backlog.

Regional and neighborhood community centers, and other key building assets such as the buildings at Happy Hollow Park & Zoo, the Japanese Friendship Garden, and Overfelt Park are included in the building facilities section of this report. Backlog value on these assets is repeated here to provide an overall snapshot of PRNS information.

PRNS estimated infrastructure backlog needs at approximately $200.1 million as of FY 2013-14. That number is adjusted annually based upon asset lifecycles and unfunded liabilities. Table PRNS-1 shows the estimated backlog for various PRNS amenities. Staff continues to build on data collection and management to more accurately quantify and track backlog in specific asset classes. This improved data management may increase the overall infrastructure backlog estimate for the parks system.

Despite the 2022-2026 Adopted Capital Improvement Program budget of $355.3 million, the PRNS related infrastructure backlog continues to grow at a rate that exceeds available resources within the capital budget. PRNS will continue to explore alternative funding sources to offset both capital and operating expenses and reduce its DMIB burden.

TABLE PRNS-1
PRNS Asset Backlog Estimates

Park Component	Estimated Backlog
Park Grounds[1]	$ 123,057,000
Playgrounds	Future Calculations to be Extracted from Park Grounds and Regional Facilities
Sport Courts / Fields	
Pools	
Bridges	
Park Yards	$ 9,047,000
Trails	$ 17,219,000
Regional Facilities	$ 135,614,000
Park Component SubTotal	*$ 284,937,000*
Community Buildings[2]	$ 78,944,000
Other Buildings [2]	$ 96,973,000
Restrooms[2]	$ 3,516,000
Building Component SubTotal	*$ 179,433,000*
Total PRNS Backlog	**$ 464,370,000**

1. Value is estimated from 2013-2014 data and extrapolated to reflect increases due to inflation and decreases due to work completed. In future years this category will be separated into the other categories noted in the table such as playgrounds and sports courts.
2. These figures are included in the Building Facilities backlog section of this report.

A summary of each class is presented below.

Park Grounds
In the future, Park Grounds will become a more refined asset category as mentioned in the table notes above. Items in this category include assets such as hardscape, landscape, irrigation, lighting, and smaller assets that create the basic infrastructure of parks. Other larger asset categories may be broken out of Park Grounds including the items described below such as playgrounds, sports courts, pools, etc. Further development of infrastructure backlog costs will be developed as each asset category is distilled.

Playgrounds
In 2018, PRNS completed an inventory and developed GIS mapping of its playground assets. In 2019, PRNS acquired funding to renovate or replace 14 playgrounds, which will reduce the total number of playgrounds that have exceeded the target lifespan. Further effort is being made to assess playgrounds by investigating factors including age of equipment, manufacturer, and condition of structure. In 2021, staff piloted a capital park assessment to evaluate the condition of all playgrounds within the PRNS inventory. Further analysis is needed to convert this information into infrastructure backlog data.

Sport Courts
PRNS staff piloted an assessment project in 2019 to determine the condition of sports courts. The assessment process produced valuable data; however, further work is required to ensure the total inventory of sports courts have been assessed. Staff refined the assessment process in 2021 and will continue to evaluate individual inventory categories to quantify infrastructure backlog.

Sport Fields
In 2019, staff-initiated investigations into grass sport field conditions by reviewing as-built construction drawings, interviewing maintenance staff, and reviewing aerial imagery of sport fields. This early data exploration helped PRNS staff understand the complexity of renovation needs in both turf and irrigation assets but, was not conclusive in developing a set criteria to assist in prioritizing renovation needs. The approach to sport field renovation will be further developed into a long-term plan for field and irrigation renovations.

Pools
The city of San José currently operates six pools and aquatic facilities. While this is a small quantity, these assets are an important feature to the communities they serve. The pools and associated infrastructure will require further research to determine the unique funding needs each pool requires. PRNS continues to pursue funding to perform evaluations of all pools and related infrastructure to quantify infrastructure backlog. When funding is secured, a citywide pool assessment study will be initiated.

Pedestrian Bridges
The current inventory of 76 pedestrian bridges includes bridges found in parks and along trails. In collaboration with the Department of Public Works, bridges are inspected annually to determine the condition of infrastructure. PRNS works closely with DPW and plans to continue process development in gathering, interpreting and advancing workplans and cost estimates.

Park Yards
In 2019, staff completed a study of park yards, which are service yards locates within various parks in the City, to determine both infrastructure backlog and future reconstruction needs at each location. The total funding need for park yards is approximately $47 million, with $9 million estimated as infrastructure backlog. Infrastructure backlog includes pavement replacement, fencing, facility security, etc. and, in two cases, replacement of portable buildings that are past their useful life.

Trails
In 2020, PRNS piloted an in-house trail assessment project to determine the condition and funding needs of the trail system. The project produced valuable data; however, complications arose in determining total trail length as the department transitions from an old reporting system into a GIS based system. In 2021, staff refined the trail assessment process and validated trail reaches and total distances. The data has been used to develop workplans and inform capital budget planning, however, has not yet revealed any trends in infrastructure backlog. Staff will continue to evaluate trails as an independent category.

Regional Facilities
Similar to Park Grounds, Regional Facilities will change over time. Asset categories will be organized based off their character, not their location. The basic park infrastructure, such as hardscape, landscape, and lighting, of Regional Facilities will find its home in Park Grounds and all other larger assets will be grouped in their individual asset categories. Playgrounds, as an example, will be organized in the Playground category, Sports Courts will belong in Sports Courts. Regional Facilities will be eliminated at the end of this transition of categories in order to gain clarity and associate costs to independent asset categories rather than lumping into one category as was done in past years.

Service Yards

The four City service yards include 325,000 square feet of building space and over 1,800,000 square feet of property. The estimated backlog in each yard is included below:

Service Yard Facilities	Backlog
Central Service Yard	$ 4,095,000
Mabury Yard	$ 2,200,000
South Yard	$ 5,500,000
West Yard	$ 3,050,000
Total Budget Need	**$14,125,000**

Improvements at the service yards are funded through the Construction and Conveyance tax funds allocated to the Service Yards Fund and transfers from the General Fund. The Service Yards program is currently underfunded and a comprehensive life cycle analysis was completed in FY 2016-17. Capital improvement needs are warranted at these facilities on an annual basis, including, paving, mechanical, plumbing, HVAC, roofing and various modernization projects. The current funding levels will fall short in meeting the long-term deferred maintenance needs and the Administration has refinanced the Central Service Yard bond, reducing the overall funding request by $7.2M, to assist in major rehabilitation of existing infrastructure and addition of new equipment, including a new water main line, pavement replacement, HVAC system upgrade, new generator, perimeter security measures, and a fueling island for the facility.

Sanitary Sewer

The sanitary sewer collection system (based on updated 2019 GIS data to exclude sewer systems that were abandoned or owned by adjacent agencies or private developers) includes:

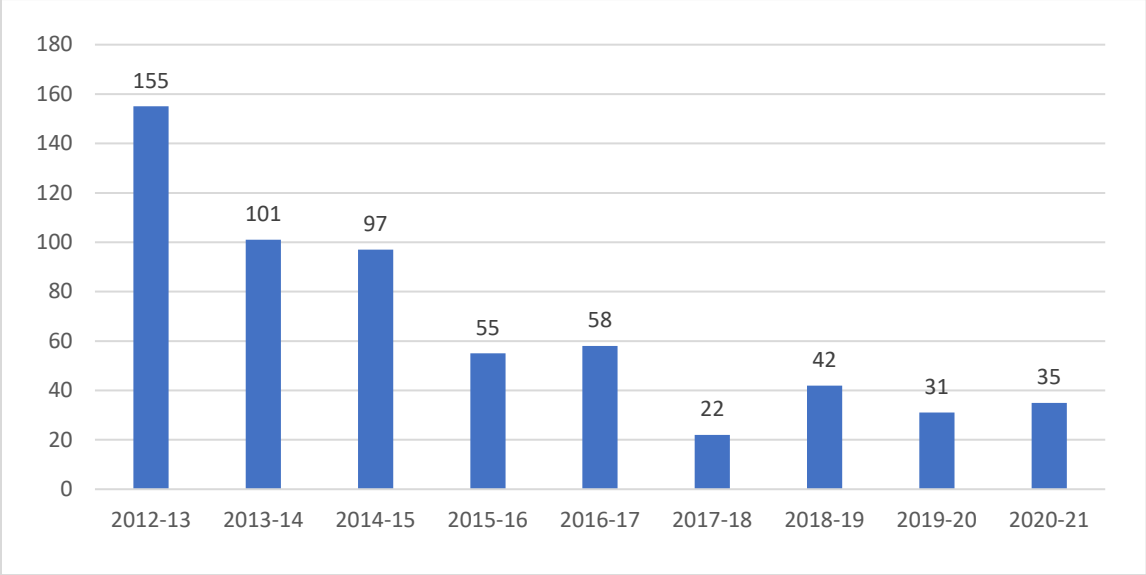
- 2,030 Miles of Sanitary Sewer Mains (6 inches to 90 inches in diameter)
- 10 Miles of Force Mains;
- 17 Pump Stations;
- 2 Filtration Stations;
- 1 Odor Control Dosing Station

- 39,469 Manholes; and
- 202,000 Lateral Connections.

Approximately 85% of the City sewer collection system is at least 40 years old. The Department of Public Works (DPW) is leading the implementation of a comprehensive Condition Assessment program for sanitary sewer pipes with the Department of Transportation's (DOT) assistance to determine the infrastructure improvement needs of the aging system. Data gathered from the Condition Assessment will be utilized by both departments to determine the capital projects necessary to maintain the service life of the system as well as operations and maintenance programs to ensure uninterrupted conveyance of sewage to the treatment plant.

In order to meet the more stringent regulatory requirements of the State Sanitary Sewer Systems-Waste Discharge Requirements (SSS-WDR), DOT has made significant investments for additional equipment, personnel, and contractual resources in the implementation of several critical Sanitary Sewer Overflow (SSO) reduction strategies over the past ten years. These strategies include increased sewer line cleaning productivity, proactive cleaning of problematic sewer lines, implementation of an SSO first responder program, chemical treatment or mechanical cleaning of sewer lines identified as having heavy root intrusion and growth, and continued collaboration with the Environmental Services Department (ESD) to address commercial areas that have evidence of excessive fats, oils, and grease (FOG) in their sewer mains. The State Water Resources Control Board is in the process of updating the SSS-WDR and the draft order released in February 2022 proposes many new requirements related to spill prevention and reporting. The fiscal impact of the new requirements is not yet known.

Since beginning the implementation of the SSO reduction strategies in 2011, DOT has recorded a consistent reduction in SSO occurrences.



The 35 SSOs are equivalent to approximately 1.7 SSOs per 100 miles of sewer main per year. The significant reduction in SSOs since FY2012-13 is attributed to the improvements made by DOT in the maintenance of the existing sewer system in conjunction with the DPW repair and rehabilitation projects identified through the Condition Assessment program and Sanitary Sewer Capital Improvement Projects. DOT continues to proactively enhance its maintenance program and will continue to evaluate the program's performance as it works towards keeping the SSO rate at fewer than 3 SSO events per 100 miles of sewer main annually.

Three main components critical to the optimal performance of the sanitary sewer system include:

1. Adequate sewer conveyance and treatment capacity that would meet the needs of the City's Envision San José 2040 General Plan;
2. Replacement/Rehabilitation program that would extend the useful life of the City's sewer assets;
3. Operations and Maintenance program that aligns with the City's core services while enhancing the SSO Reduction Program.

Sewer Capacity Needs

To manage system capacity needs, DPW staff has developed a trunk sanitary sewer system hydraulic computer model using InfoWorks ICM (Integrated Catchment Modeling) which includes sewers of 10 inches or larger in diameter. Staff uses a systematic process that incorporates population data, land use development and planning information, water use and flow monitoring data, and design criteria to estimate sewer flows in the model. The model is used to assess system performance for existing, near-term (5- to 10-year horizon) and long-term under dry and wet weather flow scenarios, identify areas for system improvements, and recommend capacity improvement projects. The completed Citywide Trunk Sewer System Master Plan and North San José Detailed Master Plan in 2013 (together as "Master Plan") identified 105 sewer capacity improvement projects totaling approximately $188 million (in 2013 dollars), of which about 75% of the projects, or $146 million, were to improve the existing system capacity. Since FY 2008-09, the City has included 53 of these projects into the multi-year CIP work plan, and to date, 47 of these projects have been completed.

Before a master plan project was incorporated into CIP, it would be confirmed by sewer flow monitoring and subsequent computer modeling. As a result the project confirmation effort, about two dozen master plan projects were determined to be unnecessary. To date, all confirmed Master Plan projects addressing existing deficiencies have been incorporated into the multi-year CIP.

Staff is near completion for the all-pipe (6" and up) sewer system modeling analysis. Preliminarily, approximately 40 new capacity improvement projects of mostly small diameter pipes in estimated capital cost of $103 million would be added to the CIP work plan in future years. Staff will prepare a 20-year plan for the implementation of these projects. This will translate to approximately $5.0 million per year as infrastructure backlog for the next 20 years.

Sewer Rehabilitation and Condition Assessment Needs

DPW staff currently manages sewer video inspection data and coding standards utilizing InfoMaster to analyze and prioritize repair and/or rehabilitation work. DPW staff is currently managing several contracts to perform pipeline inspection utilizing closed circuit television. Likewise, DOT manages sewer video inspection and coding standards using GraniteNet as part of its operations and maintenance program to assist the SSCA program. Coupled with defect coding analysis and sewer repairs, 100% of the City's small diameter sewer collection system (under 12 inches in diameter) had been inspected and in the process of cleaning up some of the older assessment data and developing a longer term strategy to assess condition of larger diameter pipes. This progress is in alignment with the recommendations from the Pilot Sanitary Sewer Condition Assessment Program (SSCA) completed in 2011. Utilizing a risk-based analysis of statistic samples of the sewer system revealed the need to invest in frequent monitoring of the high-risk pipelines. The SSCA recommended an annual investment of $28 million for system rehabilitations in order to prevent the system from further deterioration. The SSCA also recommends a 10-year remote video inspection and analysis program for the collection system which equates to 10% annually. As the SSCA program continues, it is anticipated that additional funding may be needed to design and construct sewer infrastructure repair and rehabilitation projects identified in the SSCA program. Completion of these projects reduces the potential risk of SSOs due to structural deficiencies in the system and may augment the Operations and Maintenance program. As of October 2020, approximately 145 miles of sewer mains have been identified for repair and rehabilitate with the cost estimated to be $103.0 million. As more information is collected through the CCTV program, the number of defected pipes and repair needs may increase, and the recommended annual investment will be re-evaluated and reported in future years.

An Exfiltration Abatement Program was recently developed and implemented by DPW staff to identify sewer mains with high risk of sewage exfiltration (leaking out) potentially causing contamination of the storm drain system. DPW aims to repair/rehabilitate these sewer mains at a rate of 6.5 miles annually. Staff has revised its work plan to integrate the Exfiltration Abatement Program into the SSCA program to identify high-risk pipe in the system using video inspection.

Sanitary pump stations continue to age, and DPW and DOT are working together to estimate and secure funding needed for identified rehabilitation and repair. Staff will submit a funding request for 2022-2023 to cover the cost of the most urgent identified needs.

Staff receive a funding of $3M for the next 5 years and will start developing a new Interceptor Management Program for the interceptor system. The interceptor system consists of a series of parallel, large diameter pipelines that extend from 7th and Empire Street, north along 7th, 5th, and 4th Streets to Highway 101, and across Highway 101 along Zanker Road to the Regional Wastewater Facility located north of Highway 237. The Interceptor Management Program will include a condition assessment program which would remove accumulated debris, clean and evaluate the interceptors and prioritize the portions of pipe that may require rehabilitation and/or

repair. The program will also include the evaluation and rehabilitation of the City's soil bed filters that assist with removing odors and corrosive sewer gases from the interceptors. The soil bed filters are located at Canoas Garden and at Structure B on Zanker Road. Currently the facilities are outdated, not working efficiently, and in need of replacement or upgrading utilizing newer filter technology. The total cost related to the repair or rehabilitation of the interceptors and pertinent facilities is still under development.

Operations and Maintenance

DOT staff has been implementing several elements of the SSO Reduction Program that was developed to address the results of the 2010 EPA / San Francisco Regional Water Quality Control Board (SFRWQCB) audit. DOT staff is transitioning from the in-house developed, GIS-capable CMMS software to a new GIS-capable SalesForce-based Unity system which tracks maintenance history, work orders, inspections, and work performance efficiency. Recommendations after extensive analysis of available data have been incorporated into the planning and scheduling of O&M activities. This effort, in conjunction with procurement of additional O&M maintenance vehicles and equipment, has resulted in the steady decline in the repair backlog and in the number of SSOs. Last year, the 819 miles of sewer lines cleaned was slightly more than the 750 cleaned in FY 2019-2020 as staff adjusted to service delivery changes made to continue operation while reducing COVID-19 risks. In order to continue the implementation of the strategies, it is anticipated that additional funding may be necessary to further reduce the number of SSOs within the City.

Funding

The Sanitary Sewer Capital Program annual funding need is calculated based upon the results of the 2011 Sewer Condition Assessment Pilot, the projected cost of performing the condition assessment and system improvements, and an analysis of capacity improvement projects needed to address existing deficiencies in the system.

The implementation of the Exfiltration Abatement Program has been carefully crafted into the CIP; however, construction escalation has stretched the current budget that was allocated to this program and may need some adjustments in next year budget. Staff will continue to monitor all expenditures related to the Exfiltration Abatement Program and request for adjustments to the budget or staffing as needed.

ESD, DOT and DPW are currently working together to identify the annual funding needs of all the programs that are funded from the SSUC Fund (Wastewater Treatment Plant Operating and Capital, Collection System Capital, and Operating and Maintenance). The final result of this interdepartmental collaboration will be a 10-year rate strategy to advance all three programs.

The annual operating and maintenance costs (managed by DOT, currently at $21.7 million) may also require future increases to enable DOT to continue implementing various strategies aimed at decreasing SSOs and response times. The purchase of additional equipment and resources to

implement technology solutions that will enable better system monitoring and more efficient maintenance operations are some of the future investments under consideration. As the pavement maintenance program has increased production as a result of new funding streams, the number of sanitary sewer miles investigated via CCTV and point repairs completed has increased to proactively identify and repair sewer defects with the goal of repairing them prior to paving. Current CCTV and sewer repair capacity has been increased temporarily to meet this expansion. DPW and DOT are working together to evaluate existing capabilities and determine if more resources need to be considered through the budget process.

An idealized annual investment for both the Capital Improvement needs (for rehabilitation and capacity expansion) and O&M of the system would total approximately $60.0 million per year for the next 10 to 20 years as shown in the following table:

Annual Need for Maintenance and Infrastructure	
Rehabilitation	$29,400,000
Condition Assessment	$3,900,000
Capacity Projects (existing users)	$5,000,000
Total Capital Need	**$41,300,000**
O&M (DOT)	$21,700,000
Total Capital and Operating Need	**$60,000,000**
2021-2022 Adopted Budget Funding	$59,100,000
Total Annual Unfunded Need	**$900,000**

After taking into account DOT operating costs ($21.7 million) programmed in the FY 2021-22 Adopted Operating Budget and the amount of resources added into the FY 2021-22 Adopted Capital Budget ($37.4 million, which excludes fund balance primarily used for continuing projects and Sanitary Sewer Joint Participation projects), the remaining annual unfunded need is approximately $900,000. This need will be evaluated on an annual basis to determine if any future funding increases are required. Any future funding modifications will be the result of a collaboration between ESD, DOT and DPW that considers the needs at both the Regional Wastewater Facility and the sanitary sewer collection system, as well as long-term rate payer impacts.

Storm Sewer

The storm sewer collection system includes:

- 1,100 Miles of Storm Sewer Pipe
- 35,540 Storm Drain Inlets
- 4,500 Miles of Curb and Gutter
- 1,727 Storm Outfalls
- 31 Pump Stations
- 32 Large Trash Capture Devices

The preliminary citywide storm drain system's dynamic hydrologic and hydraulic (H&H) model was developed and prepared prior to the February 2017 flood event. The InfoWorks ICM (Integrated Catchment Model) computer model included pipes of 24 inches and larger in diameter using the City's GIS datasets, as-built plans, and survey data, and incorporated boundary information from Valley Water's HEC-RAS model files, and was calibrated using 2013-2014 and 2015-2016 flow data of the storm drain and creek/river channel systems. At the end of this phase of modeling effort, a preliminary list of 22 high priority capacity improvement projects were identified, with approximately $215 million in total capital cost. These high-priority projects include the Charcot area improvement project which is funded by Measure T allocation of $35 million. The capital cost for the remaining high-priority projects for flood protection purposes is estimated to be $180 million. Stormwater pump stations continue to age, and DPW and DOT are working together to estimate and secure funding needed for identified rehabilitation and repairs. Staff will submit a funding request for 2022-2023 to cover the cost of the most urgent identified needs.

The City is updating and refining the preliminary model based on the collected high-water mark and channel flow/stage data collected by Valley Water for Coyote Creek during the February 2017 flood event and for Guadalupe River during the January 2019 large storm events. The updated modeling analysis is anticipated to be completed in late 2022 with a revised list of high priority projects.

2022-2026 Adopted CIP provides improvements to the storm sewer collection system in the Charcot area north of San Jose, pump station and outfall rehabilitation, minor storm sewer improvement projects, as well as installation of additional large trash capture devices in compliance with the Stormwater Municipal Regional Permit. It has been identified that over 335 outfalls have deteriorated and require rehabilitation. In addition, any improvements within the riparian corridor of City-owned creeks require mandatory environmental mitigation, monitoring and reporting to the regulatory agencies for a minimum of 10 years. The current annual funding to rehabilitate these outfalls is approximately $2.5M for the next 4 years, which is only sufficient to address only a limited number of high-priority locations per year. A total annual funding of $4.0 in the next several years would be required to rehabilitate or replace these deteriorated outfalls.

Funding for the Storm Sewer Capital Improvement Program is derived from a transfer of funds from the Storm Sewer Operating Budget, which is funded through Storm Sewer Service Charge fees. These charges are assessed annually on properties and collected with real property taxes. The transfer level is $1.5M in 2022-2023, and $6M for each of the subsequent four years of the 5-year CIP.

The flood event in February 2017 also shed light on the maintenance of waterways within City-owned properties. The City currently doesn't have funding to maintain the waterways, and while the Santa Clara Valley Water has been collecting funding for this purpose, they don't have encroachment permits or rights of entry to do work in and on City-owned property and City rights of way. City staff will work with the Valley Water to understand the processes that are necessary for this to occur and subsequently can coordinate in this effort to clean the creeks.

During these notable storms and other major storm events, DOT staff also observed severe flooding/ponding along the Taylor Street, Stockton Avenue, Cinnabar Street, and West Santa Clara Street storm systems, particularly at the Pershing Avenue, and Taylor Street underpass and West Santa Clara Street underpass. DPW staff has identified approximately 13,900 feet of pipeline projects to improve the capacity of these systems, and the costs are estimated at roughly $14 million.

Impacts of Measure T

A total of $35 million was allocated for Storm System Conveyance & Flood Prevention Project. This funding will be utilized for high priority projects identified in the Deferred Maintenance and Infrastructure Backlog. The highest priority project is the design and construction of the Charcot Storm Drain Improvements to improve the drainage in the Charcot area north of San Jose. This project includes the diversion of storm runoff from Coyote Creek into Guadalupe River and complete build-out of the Rincon II Pump Station.

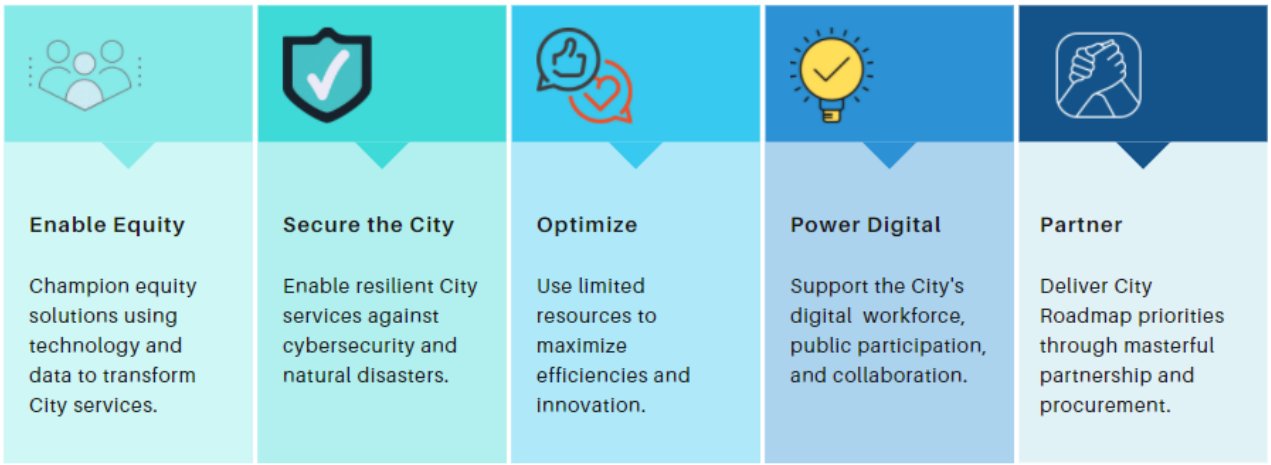
A total of $25 million was allocated by the Measure T to install multi-benefit green stormwater infrastructure (GSI) projects. ESD, PRNS, DOT and PW continued to collaborate and identify several potential regional GSI and green street locations. The River Oaks Detention Basin, one of the six identified locations in the GSI Plan, currently in the design phase, will be one of the first regional projects being built in San Jose by the City. Other regional and green street projects will follow after the City completes the feasibility study of the five identified potential GSI sites. Based on the result of the draft feasibility study, one of these sites – City Land South of Phelan (Kelly Park Horse Stables) – is likely to be selected to proceed with the final design. This $25 million investment aligns with the need to invest in green stormwater infrastructure to further the environmental goals of the City.

ESD and PW staff worked collaboratively and applied for Proposition 1 Integrated Regional Water Management (IRWMP) Grant Program funding for the design and construction of the River Oaks Stormwater Capture Project. The application was approved and the City has negotiated and executed a Local Project Sponsor Agreement with the Association of Bay Area Governments to effectuate a $3,203,550 grant with City matching funds of 65% for the total project cost relating to the River Oaks Stormwater Capture Project. The 65% matching funds would come from the Measure T Program – Clean Water and Green Infrastructure Projects.

Information Technology

The City of San José Information Technology Department (ITD) provides Citywide information and communications technologies that support municipal services. ITD is responsible for the organization's business applications, cybersecurity, customer support, data administration, data/voice/video communications, and productivity and collaboration systems. This includes the financial management, human resources management, payroll, and the budget systems, as well as other critical technology solutions.

ITD developed a new City IT Strategic Plan for 2021-2023 based on the City Roadmap adopted by the City Council in June 2021, and informed by direction from the City Manager, input from City Council and Committees, requirements from City departments, and referencing industry trends. The new IT Strategic Plan was approved by City Council in late 2021 and focuses on the following five strategic pillars to shape City technology and innovation investments in the coming years:



The Information Technology Department (ITD) maintains central technology asset data to catalog and prioritize unfunded server, storage, software, cybersecurity/resilience, and other liabilities presented in this report. The City Manager's Office and ITD have worked to address those needs each year, through the City Budget Process.

Citywide Technology Portfolio

ITD organizes the City's Deferred Maintenance Infrastructure Backlog along service portfolios:

- **Business Resilience**—Cybersecurity risk detection/prevention, policies and compliance, digital privacy, perimeter defense systems, deskside and endpoint protection, incident response/management, and education/training resources.
- **Business Solutions**—Human resources, financials, payroll, budget, talent management, utility billing, treasury, revenue, enterprise content management, and similar enterprise software systems and platforms.
- **Data/Voice/Video Communications**—Core Municipal Area Network, internal wireless network for major City facilities, telephony, internet connectivity, load balancing, remote access, network segmentation, and monitoring/alerting.
- **Public WiFi Network**—Public wireless network connecting San Jose International Airport, the Convention Center, and the Downtown core for City operations, special events and downtown activation, and digital inclusion purposes.

- **Technology Infrastructure and Operations**—Server compute, data storage, virtualization, asset and image management, and Customer Support/Help Desk services supporting ~7,500 users and over 360 enterprise servers.
- **User Computing Environment**—Approximately 8,000 computers, 9,700 network telephones, and 5,400 City mobile and FirstNet endpoint devices.

Progress Since FY2017-2018

Continuing to resolve deferred technology needs is essential to meeting City Roadmap initiatives, the City Manager's Enterprise Priorities, and City Council's San Jose Smart City Vision. Information and communications technologies are directly required in six of the eight Enterprise Priorities: COVID-19 Pandemic: Community + Economic Recovery; Safe, Vibrant, + Inclusive Neighborhoods + Public Life; Smart, Sustainable, + Reliable City: 21st Century Infrastructure; Strategic Fiscal Positioning + Resource Deployment; Building the San José of Tomorrow with a Downtown for Everyone, and Powered by People.

Between FY2017-2018 and FY2021-2022, the City invested to address technology deficits in its foundational information and communications technologies that support all departments. These initiatives resolved major deferred items in areas of cybersecurity, business systems used by departments, server and storage infrastructure, employee computers, and enterprise resource management applications programs. Related, the Mayor and City Council have allocated $4.0 million toward a Technology Replacement Fund over the past three budget cycles to begin accruing necessary funding to replace the City's multi-decade-old financials, human resources, and payroll systems, to include integration of the City's budget and talent management systems if possible. Total cost is estimated at $35 million.

Of special note, the City invested approximately $2.1 million to refresh the organization's server compute/storage/virtualization infrastructure with a modern architecture that reduces costs per system while increasing security and resilience; approximately $1.0 million in data/voice/video network replacements to upgrade core performance and resilience; approximately $2.1 million to replace computers used by staffs Citywide that averaged over eight years old and that ran on unsecure operating systems; key investments into City cybersecurity protections; and $750,000 to enhance San José 311 services and development capabilities. In the FY2021-2022 Mid-Year Update budget actions, $300,000 was approved to refresh the City's budgeting system near-term.

The City recognizes that significant technology investments occurred to support response and recovery to the COVID-19 global pandemic in 2020 and 2021. American Rescue Plan Act (ARPA) funding was prioritized in the City's Resumption of Onsite Work (ROW) planning and initiatives. These efforts both resolved some deferred maintenance while also creating new large long-term infrastructure investments to maintain. Specifically, the transition to a remote workforce required a refresh of the City's remote access solutions; drove replacement of about 20% of the City's computers; necessitated rapid implementation of cybersecurity defenses and tools to manage increased risks; accelerated adoption of about 4,000 FirstNet devices; spurred approximately $3.9 million in investments into digital inclusion network build-outs; and is

requiring over $600,000 in investments into online meeting equipment for conference rooms. The investment reduced the City's deferred maintenance infrastructure backlog by $1.5 million. A rise in deferred maintenance accounting is likewise projected in future years.

New Priorities are Reshaping Deferred Infrastructure Costs

The City's overall technology-related deferred maintenance infrastructure backlog grew from a $37.4 million infrastructure backlog in FY2020-2021 to $47.5 million in FY2021-2022. The $10.1 million increase arises from recognition of infrastructure costs related to recent public safety and digital inclusion investments by the City. Deferred technology infrastructure items include:

- FirstNet phones have a three-year life cycle and the phones purchased in 2019 have fully deprecated. The cost to replace 1,273 phones is about $950,000. Other FirstNet devices are in their second year of the life cycle, incurring a cost of $2.5 million to deferred maintenance.
- Infrastructure equipment supporting the City's Digital Inclusion networks carry a five-year engineered life cycle and began reaching End-of-Life in FY2022-2023. ITD's asset inventory shows a need to replace approximately 200 access points per year with a one-time cost of approximately $420,000 and an ongoing cost of $128,000 for new hardware and installation. The replacement of the access points is necessary to maintain the speed and availability of the networks to serve the public. However, an assessment of the architecture in FY2022-2023 may lead to alternate designs that could positively impact this cost.
- The Financial Management System is 30+ years old and reached the end of its lifecycle long ago with a deferred maintenance one-time cost of $20 million as of January 2022. The City has accrued $4 million in total replacement funds, with $2 million of that total designated in the technology sinking fund towards this replacement.
- The Human Capital Management (HCM) system, which provides human resources, benefits, and payroll, is 25+ years old and provides basic functions for the City. This item carries a deferred maintenance one-time cost of $15 million as of January 2022. The City has accrued $4 million in total replacement funds, with $2 million of that total designated in the technology sinking fund towards this replacement.
- The Business Tax System (BTS) is used to manage the City's Business Tax, Business Improvement District Fee, and a small number of Regulatory Permit programs. This legacy application was designated End-of-Life in 2014, is no longer supported by the vendor and cannot be upgraded due to hardware and licensing limitations. This item carries a deferred maintenance one-time cost of $4.25 million as of January 2022. There is no ongoing additional deferred maintenance and $4.1 million is appropriated in the Finance Department budget for replacement of this system.
- Oracle Database Appliances (ODA) are used to provide highly-availability database services for City applications. The ODAs carry a five-year engineered life cycle and reach replacement age starting in FY2022-2023 with a deferred maintenance cost of $350,000.

- The Sales Tax application is used to review and audit sales tax data received from businesses reported to the State of California. This application has reached the end of its life cycle with a deferred maintenance of $220,000 in one-time cost as of January 2022.
- The Talent Management system is fully deprecated, with a replacement cost of $350,000 registered in deferred maintenance.
- The current IT Asset Management system is over seven years old and reaches the end of its seven-year lifecycle in FY2021-2022. Deferred maintenance of $425,000 in one-time cost as are recognized as of January 2022.
- The City's Perimeter Security Firewalls, which manage the interface of the City network with the Internet, are one year into their engineered life of five years with no replacement funds accrued. At a replacement cost of $1,200,000, $240,000 is deferred maintenance as of the current fiscal year.
- All the desk phones are 5-10 years old and reached End-of-Life and replacing all desk phones will require a one-time cost $370,000 is deferred maintenance as of the current fiscal year.

Technology Deferred Maintenance Infrastructure Backlog Summary Status

Technology Infrastructure Backlog		
Service Area	**One-Time**	**Annual Replacement Accrual**
Servers/Storage[1]	$1,309,000	$374,000
Data and Voice Communications	$1,933,000	$401,000
Deskside and Mobile Technologies	$3,501,000	$1,431,000
Business Software Applications/ Platforms	$36,858,000	$278,000
Cybersecurity	$1,200,000	$240,000
Emergency Communications (FirstNet)	$955,000	$2,524,000
Utility Billing System	$1,715,000	$429,000
Total	**$47,471,000**	**$5,677,000**

[1] Major replacement of servers and storage was completed in 2020.

Overall, the total deferred maintenance and infrastructure backlog for ITD is $47.5 million in one-time costs with additional accrued deferral of $5.7 million per year. The City has made considerable progress in resolving the City's oldest and most at-risk technology assets. Remaining deferred maintenance separate into two categories: (1) major legacy systems that continue to age, and (2) newer large technology investments without maintenance and replacement funds allocated based on their engineered life cycles. Important to note, refreshing systems and upgrading equipment to current technology standards is especially important for the City in order to minimize cybersecurity threats organizations now face on a constant basis.

Radio Communications Program

The City's infrastructure assets under this category include:

- 29 Citywide Public Safety and Non-Public Safety Radio Channels
- 11 Citywide Public Safety and Non-Public Safety Conventional Simulcast Radio Channels
- 30 Radio Sites – 18 City Owned and 12 Non-City Owned
- Enterprise Radio Systems – Regional Wastewater Facility, Airport, and Convention Center
- Fixed equipment distributed at the above sites to operate the various radio systems:
    - Voting Receivers – 167
    - Base Station Transceivers – 112
    - Voting Comparators – 39
- Public Safety Answering Point (PSAP) – 34 Radio Consoles at Main Dispatch PSAP and 14 Radio Consoles at Alternate PSAP
- Subscriber Units (Mobile and Portable Radio Devices) – Approximately 5,445 Units (3,285 are already configured to use with SVRCS)
- Inventory for Support & Maintenance – Approximately 1,000 Units
- Test Equipment – 52 Units

The Silicon Valley Regional Interoperability Authority (SVRIA) is a joint powers authority consisting of 16 voting (including the City of San José) and 7 non-voting member agencies whose mission is to identify, coordinate, and implement communication interoperability solutions to its member agencies by integrating voice and data communications between law enforcement, fire and rescue services, emergency medical services, and emergency management for routine operations, critical incidents and disaster response and recovery. The Silicon Valley Regional Communications System (SVRCS), a multistage project coordinated by SVRIA, replaced the existing public safety radio systems currently in use in Santa Clara County with a system that uses the 700/800MHz spectrum, which allows for enhanced data transmissions, additional capacity for mutual aid scenarios, and the ability to record transmissions for training purposes.

The 2022-2026 Adopted Capital Improvement Program allocated $8.9 million to the Silicon Valley Regional Communications System in order to initiate the radio replacement project. In the past, radio purchases from the Capital Improvement Program have been replacing the previous models of VHF and UHF single-band radios. The completion of replacing all the old models was done in FY 2019-20. Now, the Radio Division is facing a new budgetary challenge. The City's radio vendor, Motorola, announced all APX 7000 and APX 7500 models to have a scheduled out-of-support date, some as early as July 2021. The City entered in a 10-year contract with Motorola totaling $11.5 million. OP 60969 is option 1 of 10 and ends in FY2030-31. In November 2021, 809 radios were purchased with the one-time funding of $5.25 million solely allocated to replace the unsupported models. The agreement is to ship approximately 89

radios every year starting in August 2022 until the contract ends in FY2030-31. The Radio Division is still facing a budget shortfall of $3.8 million to replace 422 public safety radios. The table below displays the APX models and the corresponding dates that the radios will no longer be supported by Motorola. This also shows the 422 Public Safety mobile radios that are not funded during the 10-year contract with Motorola.

Model	Date Support Ends	Current Count	Replaced	Will Replace During contract	Not Funding During contract
APX7000 UHF (PD portables)	07/2021	799	600	199	
APX7500 (PD & FD Mobiles)	09/2022	772	94	678	422 (371 PD, 51 FD)
APX7000/XE VHF (FD portables)	05/2023	391	115	276	

The Radio Shop has been working closely with Motorola to formulate the radio replacement schedule. The table below represents the 10-year contract the city entered with Motorola. It also shows the 422 radios that are not funded to be replaced during the contract.

10 Year Contract Agreement with Motorola			
	2021 Radio Count	Proposed Purchases	# of radios short
PD Portables	866	866	0
Fire Portables	392	392	0
PD Mobiles	606	235	371
Fire Mobiles	166	115	51
*OOS: Out of Support	Total Radio Count:	Total radios purchased:	OOS* radios remain:
	2030	**1608**	**422**

The current DMIB to only replace the radios that will be unsupported in September 2022 would cost $3.8 million, with today's radio prices of $9,000 each. The annual ongoing need is based on replacing the 422 radios during the remaining 9 years of the Motorola contract, equates to $423,000 per year for the remaining 9 years short- or long-term The City's Public Safety departments will continue to apply for grant funds to help supplement the replacement cycle of SVRCS radios. It is important to note that once the 10-year contract with Motorola ends in FY2030-31, a new radio replacement cycle will be needed for the APX 8000 models to have the technical support available at all times for public safety radios.

All SVRCS Radios		Average 42% discount	
Year to Replace	No of Radios	Average cost per radio	Average Cost to replace
2021-22	319	$6,740	$2,150,060
2022-23	319	$6,740	$2,150,060
2023-24	319	$6,740	$2,150,060
2024-25	319	$6,740	$2,150,060
2025-26	319	$6,740	$2,150,060
2026-27	318	$6,740	$2,143,320
2027-28	318	$6,740	$2,143,320
2028-29	318	$6,740	$2,143,320
2029-30	318	$6,740	$2,143,320
2030-31	318	$6,740	$2,143,320
10-year Motorola contract	**3185**	**10-year Total**	**$21,466,900**

Lastly, the existing Legacy Radio System is nearing the end of its useful life. This is the system that all non-SVRCS city radios use to communicate. There are over 2,500 radios that communicate on this system. The 2020-2021 Adopted Budget allocated $200,000 for consultant services to review the existing legacy system and develop a scope of work to replace the outdated system
CDX Wireless Inc. has proposed 3 subsystems:
Priority Need: Replace Non-Public Safety radio system $1,512,000
Option 1: Transition PD to the new system for backup $8,767,500
Option 2: Transition FD to the new system for backup $6,139,350

Transportation Infrastructure

The City's infrastructure assets under this category include:

- Street Pavement – 2,519 miles
- Traffic Signals – 964 signalized intersections
- Roadway Signs – 90,495 traffic control signs; 3,398 intersection street name signs; 26,509 residential street name signs
- Roadway Markings – 5,700,000 square feet of markings; 519,572 raised pavement markers (RPMs)
- Streetlights – 65,600 streetlights and poles
- Landscaping – 290 acres of landscaped properties for general benefit
- Stormwater Treatment Control Measures (TCMs) – 23 total sites: 249 biotreatment cells, 2 detention basins, 2 bioretention basins, 46K sq ft riparian mitigation landscaping, 2 pump stations, 104K sq ft landscaping, 9,800 sq ft of subsurface infiltration systems and 24 tree well filters

- Street Trees – 253,572 street trees (19,750 City-maintained) and 77,583 vacant street tree sites (2,478 on City parcels)
- ADA Compliant Curb Ramps – 29,657 locations (4,397 locations with no ramps; 14,565 locations with ramps that are not fully compliant and need modification or replacement; 10,695 locations currently in compliance)
- Bridges –159 National Bridge Inventory (NBI) vehicular bridges (20 feet or greater in length); 78 vehicular bridges less than 20 feet in length; 8 pedestrian bridges

Street Pavement

The City's most significant transportation asset is the street network consisting of 2,519 miles of pavement. The condition of San José streets has improved this year and the current average Pavement Condition Index (PCI) is 68 on a 100-point scale, which is a rating of "Fair". After years of increasing, the one-time deferred maintenance backlog has decreased to $509.5 million in 2022, from the $526.4 million reported in 2020, a difference of $16.9 million. Based on current data, $83.5 million is needed annually over a 10-year period to improve overall pavement conditions to a rating of "Good" (PCI 70 or higher). Reliable funding levels in future years will continue to reduce the maintenance backlog and improve street conditions citywide.

The combined revenues from Senate Bill 1 and VTA 2016 Measure B will account for an average of $39.6 million annually for street pavement maintenance over the next 10 years. Measure T will provide an additional $37.5 million each year through FY 26-27. These funding sources bring the average annual funding level for pavement maintenance over the next 10 years to approximately $81.2 million, $3.5 million lower than reported in 2021, and an increase of $31.1 million from the 2018 report in which the 10-year funding estimate was $50.1 million. This number has decreased due to expiration of Measure T allocations in Fiscal Year 2027-2028. In 2022, DOT will deliver the third year of Measure T street resurfacing, which, in combination with annual allocations from VTA 2016 Measure B, is expected to provide maintenance to all residential streets in the City by the end of 2028. The ongoing 10-year annual funding levels are only $2.3 million less than the amount needed to restore the overall network to *Good* condition (PCI 70 or higher) in 10 years. This is a slight increase from the annual shortfall of $2.1 million from last year's report mainly because of Measure T funds expiration. Despite the shortfall, DOT estimates that the current funding levels will improve the average condition of the street network and reduce the deferred maintenance backlog over the next five years.

DOT provided a more detailed update to the Transportation and Environment Committee as part of its annual Pavement Maintenance Conditions and Funding Needs and Strategies Report.

Traffic Safety Devices

<u>Traffic Signals</u>

The Traffic Signal Maintenance Team responded to approximately 1,015 service requests in FY 2020-21 and maintained 964 traffic signal intersections, up from last year's 959 due to the activation of new signals. The intersections contain a variety of complex equipment such as traffic signal controllers and cabinets, video detection systems, flashing safety beacons, sophisticated communications systems, traffic conflict monitors, cameras, 164 miles of fiber, and 148 miles of interconnect cable throughout the City. DOT also maintains speed radar feedback signs (141) and Dynamic Message Signs (8). Due to past budget reductions that dropped preventive maintenance activities for much of this equipment below recommended levels, and due to continued hiring challenges which have increased the overall vacancy rate for electricians, currently only the most critical components that monitor the operation of the intersections are proactively maintained. Remaining resources are focused on responding to service requests in a timely manner. There is a one-time rehabilitation cost of $319,217 dollars for existing equipment. Additionally, there is an ongoing annual shortfall of $4 million, which includes amortized replacement costs and maintenance costs for new equipment, as well as the cost to provide all preventive maintenance activities for all existing signalized intersections and anticipated system expansion. Fortunately, the department has been able to hire several electricians and has reduced the vacancy rate considerably in FY 2021-22, but will continue to prioritize electrician recruitment.

Traffic Control and Street Name Signs

DOT's Traffic Sign Maintenance Section installs and maintains traffic control signs in the City right-of-way to regulate traffic, warn motorists (e.g. school zones), and provide other basic traffic directions. This program is currently fully funded and there is no deferred maintenance or ongoing shortfall to report. Proper maintenance of these signs is essential to the safe and efficient flow of traffic and pedestrians through the public right-of-way. This section also installs new residential street name signs and maintains traffic signal intersection street name signs. There are 90,495 traffic control signs, an estimated 26,509 residential street name signs, and 3,398 traffic signal intersection street name signs in the City of San José. The section maintains an inventory and database for all traffic control signs and overhead street name signs and has begun building the inventory for residential street name signs.

Roadway Markings

The roadway markings inventory includes roadway striping, crosswalks, stop bars and messages on street surfaces, and Raised Pavement Markers (RPMs). The purpose of these marking devices is to regulate and guide motorists, pedestrians, and cyclists to increase roadway safety, particularly during low-visibility conditions. Currently, there are 5.7 million square feet of roadway markings throughout the City. To have 100% of markings in good condition, major roadway striping should be repainted every year; arterial legends and curb painting should be repainted on a two-year cycle; and residential areas should be repainted on a three-year cycle. Current funding only allows for a two-year repaint cycle for striping on major roads; a three-year cycle for arterial legends and curbs; and a 6-year cycle for residential areas. As a result of the deferred maintenance, approximately 2.7 million square feet (49%) are currently in good condition, which leaves 3 million square feet (51%) that need to be painted in order to achieve 100% of markings in good condition.

The City has approximately 519,572 Raised Pavement Markers (RPMs) – 278,695 on residential streets and 240,877 on major roadways. Currently, 93% of Residential RPMs and arterial button have exceeded their life expectancy of 8 years and are in need of replacement. There is no ongoing preventative maintenance program to replace RPMs.

In order to achieve 100% of the total roadway markings inventory (5.7 million square feet of paint and all RPMs) in good or better condition, one-time funding of $8.6 million is needed to complete an additional 3 million square feet of roadway markings and install 484,865 RPMs, refresh lane messages/legends and repair bollards.

Right-of-Way Street Lighting

The City of San José owns and maintains 65,600 streetlights based on an inventory that was completed as part of the LED streetlight conversion project. Additional time is required to continue synthesizing the inventory data to determine the exact number of streetlight poles. Based on previous estimated counts, the streetlight network includes 32,050 painted octaflute poles and 32,350 remaining lights are either on galvanized poles, decorative poles, or are decorative uplights. DOT will provide an updated streetlight pole count in the FY 2022-23 DMIB update.

The Streetlight Maintenance Program is currently complaint-driven, addressing those outages or damaged lights that have been reported by the public. A total of 9,929 outages were repaired in FY 2020-21, which represents a 7% increase from the previous year. Current resources, assuming full staffing levels, support a target service level for repairs of streetlight outages at 65% within 7 days. Unfortunately, maintaining full staffing has not been possible, and the FY 2020-21 performance was approximately 50% of reported outages repaired within 7-14 days. Additionally, the longer response time can be partially attributed to LPS lamps burning out and DOT restoring streetlight outages by converting to LEDs, instead of repairing Low-Pressure Sodium fixtures (LPS) as LED conversions are more complex and time consuming than traditional light bulb replacements.

Painted octaflute streetlight poles have varying degrees of paint conditions on their surface. The City previously allocated funding to refurbish old painted octaflute streetlight poles with poor paint conditions (e.g. peeling paint, exposed metal) into galvanized poles which have significantly longer life expectancies. This funding was discontinued due to budget shortfalls more than a decade ago. DOT needs time to update its inventory to get an accurate count of painted octaflute poles and update the cost to refurbish. Refurbishing all of the painted streetlight poles with galvanized surfaces was previously estimated to require a total one-time rehabilitation investment cost of $34.2 million.

The combination of Measure T and the PG&E conversion program have eliminated any one-time backlog associated with the conversion of Low-Pressure Sodium lamps (LPS) to LED lighting. On June 25, 2019, the City Council authorized the City Manager to negotiate and execute

agreements with PG&E for the financing and installation of up to 27,000 LED streetlights. PG&E began the conversion work in December 2020 and anticipates completing the conversions in the first quarter of 2022. The terms of the agreement provide for PG&E to fund, procure and install the new fixtures, remove and dispose of the old fixtures, and finance the entire effort at 0% interest. These costs are paid back using an energy-savings calculation based on the flat rate streetlight tariff.

As part of the PG&E conversion program, a complete inventory of the streetlight assets was performed and early finding indicates that a significant portion of the current streetlight poles do not have a ground wire. The ground wire is typically installed to prevent the general public from accidental electric shock resulting from a damaged streetlight or streetlight pole the National Electric Code (NEC) has updated its specifications for a ground wire (NEC section 410.44). The previous NEC standard considered the metal pole to be an acceptable grounding path and did not require separate grounding wire but the new NEC standard is now requiring the ground wire. Staff will include the estimated costs to upgrade the lighting inventory in the next DMIB report.

Streetscapes

Right-of-Way Street Landscaping

There are 290 acres of General Fund street landscape including roadside and median islands. In the FY 2018-19 Adopted Budget, the Mayor's Beautify San Jose initiative provided one-time funding to address landscaping and debris removal work contractually on just over half of the City-maintained General Fund street landscape parcels. Funding for Beautify San Jose is set to expire on June 30, 2022, and DOT will seek to continue the program through the budget process.

In 2001, staff prepared an assessment of the median island landscape throughout the City, which identified several locations where median island landscape would be appropriate. Those locations total approximately 50 acres of new landscaping. To date, approximately 30 of those acres have been installed, leaving 20 acres still to be completed. Some of the median islands are constructed but do not have landscaping; others require the island to be constructed. There is no current funding identified for installing the remaining landscaping projects, which are estimated to total approximately $12.7 million. Of the 290 acres, there are currently 37 acres of remaining high-level landscape (Type 2) with trees and shrubs, including 10.5 acres with turf. It is estimated that $2.9 will be needed to convert these locations to low-maintenance Type 1 designs. When combined with the additional staff and vehicles ($1.6 million) the total one-time need in Street Landscaping is $14.3 million.

Since FY 2006-07, the average landscape acreage per maintenance worker has risen from approximately 8 acres to 30.18 acres due to resource reductions and a growing inventory. In FY 2000-01, the condition of the City's street landscapes reached their peak, with 86% in good or better condition. Due to budget reductions since that time, conditions declined to 51% in good condition in FY 2016-17, but the overall landscape condition rating improved to 79% by FY 2018-19 with the implementation of the Beautify San Jose program. In FY 2020-21, the landscape rating climbed to 97% in good condition.

DOT has determined 7.5 acres per worker as the desired baseline staffing that is needed to maintain Type 1 landscape in good condition, and 5 acres per worker for Type 2 landscape, with a desired target of 80% of all landscapes maintained with generally funded resources in good or better condition. This represents an ongoing annual staffing shortfall of approximately $1.6 million. The other components of the ongoing shortfall in the Landscape Maintenance Program include an estimated annual need of $587,000 to renovate 7.5 acres per year of landscape (replacing dead or damaged trees and shrubs and irrigation systems), and $42,000 for weed abatement spraying for concrete islands. Although the $2.22 million ongoing annual shortfall is an accurate projection of future needs, it has been reduced over the past three years by $1 million to account for the Beautify San Jose funding that has addressed some of the deferred needs.

Stormwater Treatment Control Measures (TCMs)

To comply with the Municipal Regional Permit (MRP) as issued by the State Water Resources Control Board, the City requires the design and construction of stormwater treatment control measures (TCMs) on every new development and redevelopment project that creates or replaces 10,000 square feet or more of impervious surface. TCMs generally can include bioretention basins, proprietary and tree well filters, subsurface infiltration systems, detention basins, and pervious pavement. New development in the public right-of-way now triggers required "green street" designs to ensure that contaminants and sedimentation are removed from stormwater runoff before the water enters the storm sewer system. As mandated by the MRP, the City is required to provide a high level of landscape management and maintenance services on a regular and prescribed basis to ensure functionality of the TCMs that are installed within the public right-of-way.

To date, DOT has accepted 24 public stormwater assets located throughout the City. These assets include a total of 247 biotreatment cells (52,000 square feet); two detention basins, encompassing pre-treatment and treatment (approximately 51,000 square feet); 4 bioretention basins (17,466 square feet) also known as rain gardens; 46,000 square feet of riparian mitigation landscaping; four pump stations, 104,000 square feet of general landscaping; 9,800 square feet of subsurface infiltration systems; and 24 tree-well filters. DOT initially received funds in the FY 2017-18 and in the subsequent years, base budget adjustments were used to account for increased maintenance costs, repairs and ongoing maintenance of new facilities, and as a result the program is currently fully funded and there is no deferred maintenance or ongoing shortfall to report, but as more infrastructure of this nature is installed staff will take steps to define and properly resource ongoing maintenance needs.

Street Trees

The City of San José's community forest consists of public trees as well as those trees that are on private property. There are an estimated 253,572 street trees within the public right-of-way, under the jurisdiction of the Department of Transportation. Of those, 19,750 trees are in areas which are maintained by the City, such as median islands and roadside landscapes. In addition, there are an estimated 75,583 vacant street tree planting sites, 2,478 of which are on City-maintained parcels.

The San José Municipal Code requires property owners to maintain street trees adjacent to their properties. The City is a major property owner and, therefore, has the responsibility to prune and maintain street trees adjacent to its properties. It is estimated that $5.2 million in one-time funding is needed to bring all existing City-maintained trees into good condition, which includes $1.92 million in one-time funds to plant trees in existing City-maintained plant-able sites.

Ongoing annual funding of $1.31 million is needed to maintain a 6-year pruning cycle. Routine removal and replacements, emergency response and tree inventory updates for the 19,750 City-maintained trees. With a current base budget funding level of approximately $120,000 that leaves an annual ongoing shortfall of $1.19 million.

Sidewalks/Curb & Gutter/ADA Compliant Curb Ramps

Per the City's Municipal Code, property owners are responsible for the cost of repairs for sidewalks and curb & gutter adjacent to their property. The City does not have a curb & gutter inventory, but it is estimated that there is approximately $56.5 million worth of existing needed repairs throughout the City, based on a 2% sampling of curb & gutter conducted in 2001. Additionally, while there is no actual inventory of sidewalks, it is estimated that there are 4,500 miles of sidewalk in various widths from 5 feet to 13.5 feet, which is based on the number of centerline miles of street. The rate of sidewalk damage is not known; however, having completed a tree inventory in 2015, over 19,000 parcels were brought to the attention of City staff, indicating that a significant body of work exists and has yet to be noticed or reported by residents. It is estimated that, under the current sidewalk repair policies, approximately 5,000 sidewalk locations will be repaired each year.

The City's current Americans with Disabilities Act (ADA) Sidewalk Transition Plan includes a collection of programs, administrative procedures, and design standards that support the implementation of accessible public sidewalks for people with disabilities. In recent years, the City has spent an average of $13 million to construct ADA compliant curb ramps. Additionally, the City installs or retrofits ramps along corridors where paving projects occur, as required by the ADA.

In 2017 and 2018, DOT worked with a consultant to provide a detailed analysis of the City's ADA ramp inventory to determine where ramps were missing or not in full compliance with the most recent ADA standards. The collected data was refined and analyzed in 2019, providing DOT with the most comprehensive update to its ADA ramp inventory to date. Using a combination of automated and manual data collection processes, the consultant determined that there are 29,657 locations that have been identified where ADA curb ramps should exist. Since 2018, the City has built an average of over 2,000 ADA ramps per year. Of the 29,657 locations and accounting for recent construction, 10,695 currently have ADA compliant ramps. Of the remaining 18,962 locations, 4,397 ramps are missing, 10,032 ramps exist but have significant barriers to mobility as defined by the ADA and must be retrofitted or replaced, and 4,533 require retrofit but are a lower priority because they provide fewer barriers to mobility. It is estimated

that a total of $128.9 million is required to install missing ramps and to bring existing ramps to current standards, a reduction of $14.6 million from the prior report due to accomplished work.

The City's ADA Transition Plan will bring all ADA ramps up to the most recent standards by 2040 through existing and newly acquired funding streams. The backlog will decrease as work is performed each year and there is no expected annual shortfall.

Missing Sidewalks

Although there is no complete assessment of missing sidewalks throughout the City, DPW and DOT staff are compiling locations of missing sidewalk as inspection staff becomes aware of them. The existing data, although not comprehensive, indicates a total of 118 miles of missing sidewalk in the City. Some notable locations include Alviso, Santa Clara County pockets annexed to the City, and certain areas where the design standards differed from those of today (North San Jose, portions of Almaden Valley hillside areas, and industrial areas).

Although the City of Alviso consolidated with the City of San José in 1968, the area continues to be deficient in a number of infrastructure categories, including sidewalks, curb and gutter, street lighting, and street trees. Deficient streets include portions of El Dorado, Moffat, Liberty, Liberty Court, Gold, Catherine, State, North First, and Spreckles.

Typical improvements that would accompany the installation of new sidewalk include storm sewers, street lighting, curb and gutter, water meter valve boxes, sewer cleanouts, and street trees. These additional improvements add significant cost above the cost of the sidewalk. Sidewalk installations also frequently require conform work with the existing improvements on private property.

Bridges

DOT is responsible for the maintenance of 159 National Bridge Inventory (NBI) bridges throughout the City, each of which exceeds 20 feet in length. There are an additional 78 vehicular bridges that are less than 20 feet in length and a further 8 pedestrian bridges for which DOT receives periodic service requests to repair. NBI bridges are regularly inspected by Caltrans, and DOT utilizes the reports generated from those inspections to determine the costs associated with maintaining and rehabilitating these bridges.

From the previous backlog report, Caltrans reported 26 structurally deficient City owned bridges for potential replacement or rehabilitation; however in 2018, the Federal Highway Administration (FHWA) redefined how bridge infrastructures would be classified as structurally deficient, which significantly reduced the number of structurally deficient bridges amongst local agencies. With Caltrans providing a bi-annual bridge inspection report, respective to each bridge structure, to this date, a significant number of the City's bridges were no longer classified as structurally deficient with potential for rehabilitation or replacement. It should be noted that with natural deterioration of bridge infrastructures, the potential for any of the City's owned bridges to be evaluated as structurally deficient by Caltrans may occur at any time.

Currently, there is a one-time backlog of approximately $36 million to potentially replace or rehabilitate two bridges that have been identified by Caltrans to be structurally deficient, and to provide, needed but not urgent, corrective and preventive maintenance to 80 NBI and non-NBI bridges. This accounts for $1.1 million in expended funds to perform preventive maintenance, which lowered the backlog accordingly. Additionally, the City's consultant identified two non-NBI bridges for potential rehabilitation or replacement as part of the one-time backlog. This overall backlog will benefit from the receipt of $20 million in Measure T funds which can be further leveraged to receive grant funding at the state and federal level. Although the full extent of work and potential impact to the backlog is not yet known as bridge conditions and work recommendations will continue to vary based on provided Caltrans inspection reports, and the FHWA Highway Bridge Program's grant application priority determination continues to be re-evaluated due to the high influx of applications.

If all rehabilitation and replacement work were accomplished, DOT estimates that it would require approximately $350,000 annually to perform routine inspection, cyclic preventative maintenance and condition-based corrective maintenance on its NBI and non-NBI bridges based on programmatic cost analysis. The City currently allocates $150,000 for bridge maintenance. Aside from City dollars, the Federal Highway Bridge Preventative Maintenance Program (BPMP) has served as a potential funding source for grant applicable projects. DOT staff will continue to pursue grant funds to address the current backlog of bridge preventative maintenance and rehabilitation projects.

A consultant is in the process of evaluating the City's bridge network to help develop a long-term maintenance strategy and will work with both DOT and PW staff to develop a plan for grant-eligible replacement and rehabilitation of bridges. In 2021, DOT delivered maintenance on 13 bridges and will additionally be delivering maintenance projects on approximately 17 bridges in 2022.

TRANSPORTATION INFRASTRUCTURE SUMMARY

A one-time investment is needed in every major Transportation asset category in order to bring the assets into good condition; most have ongoing shortfalls creating further backlogs and declining asset conditions. However, timely and substantial investments have delivered results by improving infrastructure conditions and lowering the one-time backlog,

The table below summarizes the various assets that comprise the total estimated one-time deferred maintenance and ongoing infrastructure backlog for Transportation Infrastructure elements that are the City's responsibility to maintain.

Transportation Infrastructure Needs (in Millions)		
Transportation Asset	**One-Time Funding Need**	**Annual On-Going Shortfall**
Pavement	$509.5	$2.3(1)
Traffic Signals	$.32	$4.0
Roadway Markings	$8.5	$5.0
Streetlights	$34.2 (1)	$0
ADA Curb Ramps	$128.9	$0
Trees	$5.2	$1.2
Landscaping	$14.3	$1.3
Bridges	$36.0	$0.2
Missing Sidewalk	TBD	TBD
Total	**$736.92**	**$14.0**

(1) Include Measure T investments of $300M for pavement over 10 years and streetlight conversions through Measure T and PG&E program.

San José/Santa Clara Regional Wastewater Facility

Facility Description

The San José-Santa Clara Regional Wastewater Facility[1] (RWF) is a regional wastewater treatment plant (Plant) serving eight South Bay cities (some as members of a district) and two unincorporated districts:

- City of San José
- City of Santa Clara
- City of Milpitas
- Cupertino Sanitary District
- County Sanitation District 2-3 (unincorporated)
- Burbank Sanitary District (unincorporated)
- West Valley Sanitation District (Campbell, Los Gatos, Monte Sereno, and Saratoga)

The Plant is jointly owned by the cities of San José and Santa Clara pursuant to an agreement executed in 1959, and is administered and operated by San José, through the Environmental Services Department (ESD). ESD is also responsible for planning, designing, and constructing capital improvements at the Plant. The service area includes a population of about 1.4 million, including a diverse commercial and business sector with more than 17,000 sewer main connections.

The RWF was originally constructed in 1956 and continued to be expanded over several decades in response to a growing population/service area and to comply with increased state and federal

[1] *The legal, official name of the facility remains San Jose/Santa Clara Water Pollution Control Plant, but beginning in early 2013, the facility was approved to use a new common name, the San José-Santa Clara Regional Wastewater Facility.*

regulations requiring higher treatment standards. The current wastewater treatment processes include screening and grit removal, primary sedimentation, secondary treatment by the activated sludge process, secondary clarification, filtration, disinfection, and dechlorination.

The RWF has an average dry weather flow design capacity of 167 million gallons per day (mgd), and a peak wet weather flow design capacity of 271 mgd. For 2021, the Average Dry Weather Influent Flow (ADWIF) and Average Dry Weather Effluent Flow (ADWEF) were 97 mgd and 75 mgd, respectively.

In addition to the original construction and subsequent treatment process expansions, several significant infrastructure investments have been made at the RWF over the past 25 years. These include: South Bay Water Recycling system (1998); Wet Weather Reliability Improvement project (2007); Sodium Hypochlorite Disinfection Facility (2011); Electrical Reliability Improvements (2004-2013); Digester Gas Storage Replacement (2016); Digester Gas Compressor Upgrades (2017); Emergency Diesel Generators (2017), and Iron Salt Feed Station (2018). However, these improvements do not fully represent the comprehensive rehabilitation needs at the RWF based on its current age and condition.

RWF Ten-Year Capital Improvement Program

Most of the RWF's infrastructure is now more than 50 years old and in need of significant rehabilitation and/or replacement. A 2007 Infrastructure Condition Assessment report (ICA) identified nearly one billion dollars in recommended improvements to address aging electrical, mechanical, and structural assets after decades of deferred maintenance and minimal capital reinvestments. As a follow on to the ICA, a comprehensive master planning process was completed between 2007 and 2010 resulting in the Plant Master Plan (PMP) Preferred Alternative that recommended comprehensive technical improvements and a land use plan for the RWF. The technical component of the PMP recommended over 100 capital improvement projects to be implemented at an estimated cost of $2.2 billion dollars over a 30-year planning period.

The PMP Preferred Alternative was adopted, and the environmental impact report was approved by the San José and Santa Clara City Councils in November and December 2013, respectively. In February 2014, the City of San José completed a project validation process to update and prioritize the recommended projects into 33 construction packages which in turn served as the basis for the RWF Ten-Year Capital Improvement Program (CIP) estimated at $1.4 billion. The Adopted 2022-2026 CIP includes $766.1 million for construction projects at the RWF. Currently, there are 13 projects in feasibility or design and 9 projects under construction.

Funding Strategy for Capital Improvements at the RWF

Historically, the transfer from the Sewer Service and Use Charge (SSUC) Fund and contributions from the City of Santa Clara and Tributary Agencies have served as the primary revenue sources for the RWF capital improvement program. In addition, long-term bonds and State Revolving

Fund (SRF) loans have also been used to finance various capital improvements at the treatment plant in the past. The San José-Santa Clara Clean Water Financing Authority (CWFA) 2009A Bonds were fully paid off in November of 2020.

With adoption of the PMP and completion of the project validation process in 2013-2014, it was recognized that a long-term funding strategy would be needed to provide sustained funding for the ten-year, $1.4 billion CIP. In June 2015, the City Council approved a Ten-Year Funding Strategy for the RWF CIP which included a combination of cash and debt financing, along with seeking low-cost State Revolving Fund (SRF) loans to the maximum extent possible. In July 2017, staff was informed by the State Water Resources Control Board that SRF funding would not be available for several RWF CIP projects due to higher-than-expected demand for SRF loans across the state. Significant changes would also have to be made to the loan agreement terms currently proposed by the State Water Resources Control Board (SWRCB) to allow the City to enter into any SRF agreements.

Going forward, the funding strategy for the City-only portion of the 10-year CIP primarily includes: (1) funding from the SSUC revenues, and (2) proceeds from debt issuance. Staff will also continue to monitor SRF loan opportunities, but is not actively seeking SRF loans at this time.

In October 2017, staff obtained City Council approval of an Interim Financing Program to finance capital improvements at the RWF. The interim financing program contemplates the use of a bank line of credit and issuance of long-term bonds in the future to supplement and/or refinance notes issued under the line of credit program. Council approved establishment of an interim financing program under a three-year contract to enable borrowing of up to a maximum of $300 million (outstanding at any one time) to fund San Jose's portion of the RWF CIP. Council approved an extension to the Interim Financing Program in October 2020. In the longer term, it is anticipated that bonds will need to be issued periodically to provide sufficient funding capacity for the 10-year CIP; the first bond issuance is expected to occur in 2022-2023.

Currently, there are no unfunded needs for the RWF CIP. Staff will continue to develop and refine project scopes, schedules, and budgets on an annual basis to continually inform and update both near-term and long-term funding needs. In addition, certain factors may impact estimated project and program delivery costs such as cost escalation, bidding climate, external regulatory requirements/permitting approvals, unknown site conditions, operational/construction constraints, staffing availability, etc. Staff will continue to monitor and implement mitigation measures to the extent possible to minimize cost impacts to the projects and program.

Water Utility System

The San José Municipal Water System (Muni Water) includes:

- 344 Miles of Water Mains Ranging from 6-Inches to 24-Inches in Diameter;
- 17 Reservoirs;

- 15 Pump Stations;
- 14 Wells;
- 3 Fluoride Injection Stations; and
- Other Appurtenances including Meters, Laterals, Hydrants, Air Release Valves, and Sample Stations.

Currently, there are no unfunded capital needs at Muni Water. The annual reinvestment into the system (approximately $7.8 million) funds water well rehabilitation and construction projects, replacement of aging steel water mains, and other infrastructure improvements. Per the Municipal Code, the water utility maintains a Reserve for System Rehabilitation and Replacement ($4.8 million) for any unanticipated capital needs. Overall, the assets are well maintained in good to excellent condition.

COORDINATION

This memorandum was coordinated with the following Departments: Airport, Environmental Services, Information Technology, Libraries, Parks, Recreation and Neighborhood Services, Transportation, and the City Manager's Budget Office.

/s/
MATT CANO
Director of Public Works

For questions please contact Mathew Nguyen, Deputy Director at (408) 535-8300.

Attachment A: General Fund vs. Special/Capital Funds

GENERAL FUND

	Current Backlog of Deferred Needs	Annual Ongoing Unfunded Needs
BUILDING FACILITIES (Police, Communications, City Hall, Animal Care and Services)	19,875,000	TBD
TECHNOLOGY (Infrastructure & Software Upgrades)	45,756,000	5,248,000
FLEET REPLACEMENT	4,600,000	840,000
SPORTS FACILITIES	0	TBD
TRANSPORTATION INFRASTRUCTURE	28,000,000	11,500,000
TOTAL GENERAL FUND UNMET/DEFERRED INFRASTRUCTURE AND MAINTENANCE NEEDS	**98,231,000**	**17,588,000**

SPECIAL FUNDS/CAPITAL FUNDS

	Current Backlog of Deferred Needs	Annual Ongoing Unfunded Needs
AIRPORT	0	0
BUILDING FACILITIES (Fire, Library, PRNS)	226,625,000	20,100,000
CITY FACILITIES OPERATED BY OTHERS	13,810,000	6,800,000
CONVENTION CENTER & OTHER CULTURAL FACILITIES	73,510,000	TBD
FLEET REPLACEMENT	3,100,000	560,000
PARKS, POOLS & OPEN SPACE	284,397,000	36,500,000
SANITARY SEWER SYSTEM	50,000,000	900,000
SERVICE YARDS	14,125,000	700,000
SPORTS FACILITIES	0	TBD
STORM SEWER SYSTEM	180,000,000	5,000,000
RADIO COMMUNICATIONS	3,800,000	400,000
TECHNOLOGY (Infrastructure & Software Upgrades)	1,715,000	429,000
TRANSPORTATION INFRASTRUCTURE	708,900,000	2,500,000
WATER POLLUTION CONTROL PLANT	0	0
WATER UTILITY SYSTEM	0	0
TOTAL POTENTIAL OTHER FUND UNMET/DEFERRED INFRASTRUCTURE AND MAINTENANCE NEEDS	**1,559,982,000**	**73,889,000**
TOTAL UNMET/DEFERRED INFRASTRUCTURE AND MAINTENANCE NEEDS	**1,658,213,000**	**91,477,000**