CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: Barry Ng

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

DATE: January 17, 2018

Approved Kim Walesh Date 1/26/18

COUNCIL DISTRICT: Citywide

RECOMMENDATION

1) Accept status report on the City's Deferred Maintenance and Infrastructure Backlog.
2) Recommend this report be placed on the February 27, 2018, Council Agenda.

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 certain further increases to the backlog due to impacts from the current economic conditions. Overall, the DMIB will total roughly **$1.39 billion** in unfunded costs, with an additional **$112 million** needed annually in order to maintain the City's infrastructure in a sustained functional condition. Completing the DMIB in January, as opposed to April, provides the City Council and the Administration context with which to prioritize available funding for the development of the 2018-2019 Proposed Capital Budget and the 2019-2023 Capital Improvement Program.

Transportation Infrastructure continues to be the largest unfunded need. 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. Despite these efforts, including recent one-time contributions from last year's City sales tax measure and ongoing projected funding from the recently passed VTA Measure B sales tax and increased gas tax revenue from the State, significant additional revenue streams are needed to prevent continued deterioration of the transportation system.

Similar to the 2017 report, the Regional Wastewater Facility and Water Utility programs reported no unfunded needs due to stable funding sources. The Sanitary Sewer Program annual funding needs are calculated based upon the results of a 2011 Sewer Condition Assessment Pilot and an analysis of capacity improvement projects needed to address existing deficiencies in the system. The ongoing unfunded need in the Sanitary Sewer Program has decreased due to greater amounts of ongoing funding that began in 2015-2016, and will continue to be evaluated during the development of the 2018-2019 Proposed Capital Budget.

The Building Facilities inventory including the Convention Center and other City-owned Cultural Facilities reported increases in unfunded needs. Many of the newer facilities utilize a variety of sophisticated systems, green technology, and other features that enhance the user experience or increase the functionality of the venue. As a result, the costs associated with the maintenance and capital replacements required at these facilities has increased. Public Works has devoted time and resources over the past few years to establish an assessment program to measure the ongoing needs at these facilities. This includes the Maintenance Oversight Program for the Convention Center and other Cultural Facilities and Life Cycle Cost Analysis Reports for all City-owned facilities. While the backlog for the Convention and Cultural Facilities operated by Team San Jose has grown over the past few years due to a more robust assessment of infrastructure needs, staff anticipates that a continued significant investment of resources will be deployed from the Convention and Cultural Affairs Fund and the Convention Center Facilities District Revenue Fund to reduce this backlog in the coming years.

The Parks, Recreation and Neighborhood Services Department (PRNS) continues to evaluate infrastructure backlog against baseline conditions established in 2013-2014 by third party specialists as well as PRNS and DPW staff. Instead of conducting this cost prohibitive assessment on an annual basis, the baseline estimates include annual depreciation of park facilities; staff then calculates the annual increase in infrastructure backlog cost by comparing the projected annual depreciation with actual expenditures on capital replacement and previously identified backlog items. Staff continues to improve PRNS' Business Intelligence platform, which will provide for more real-time capital facility assessment and monitoring with better tracking of repair costs and life cycle management. Stewardship of existing facilities, including the identification and resolution of backlog projects, continues to drive much of PRNS' Capital Improvement Program Workplan. New challenges are projected in 2017-2018 and outlying years, because of the 2016-2017 flood damage to PRNS facilities along Coyote Creek and other areas of the City.

The Airport continues to study and identify vertical and horizontal deferred maintenance backlog needs. The Department continued funding several one-time projects and completed some

additional deferred maintenance items within the Airport's 5-year Capital Improvement Program (CIP). Deferred maintenance projects that are not within the 5-year CIP have been identified, and the Airport continues to track the list of deferred maintenance, which now totals $5.9 million excluding pavement items. The Airport conducted a field investigation utilizing a pavement management consulting firm to help collect the necessary data points, and is currently updating the Pavement Management System program to forecast the costs associated with the pavement conditions. The annual unfunded needs for the Airport are reported this year as "to be determined" pending the completion of the pavement analysis and land-use study results.

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 comprehensive report was updated in October 2008 as part of the Structural Deficit Elimination Plan efforts to reflect the Adopted FY2008-2009 budget. The report has been updated annually.

The 2017 figures presented in last year's report were determined using the information presented in the previous reporting year and an analysis of current infrastructure conditions and needs and the funding in the Proposed Operating and Capital Budgets.

ANALYSIS

Staff has updated the 2017 backlog estimates to reflect more recent work and funds anticipated for inclusion into the 2019-2023 Proposed Capital Improvement Program (CIP). The current backlog of deferred needs is estimated at **$1,391,680,000** with an additional **$111,915,000** needed annually.

Based on these updates, the following table summarizes the current state of the City's Deferred Maintenance and Infrastructure backlog. A breakdown of this backlog by General Fund costs and Special/Capital Funds costs can be found in ***Attachment A***. It should be noted that the costs in the chart below represent staff's best estimate at this time. As described throughout the memorandum, further analysis and refinement of these figures would be required before funding is requested to address these unfunded needs.

Infrastructure Backlog

Program	Current Backlog of Deferred Needs	Annual Ongoing Unfunded Needs
Airport	$5,900,000	NONE
Building Facilities **(1)**	$154,468,000	$18,912,000
Cultural Facilities Operated by Others (OCA)	$2,718,000	TBD
Sports Facilities	TBD	TBD
Convention Center and Cultural Facilities (TSJ)	$75,680,000	TBD
Fleet	$8,200,000	$1,400,000
Parks, Pools and Open Space	$177,234,000	$32,458,000
Sanitary Sewer **(2)**	TBD	$1,500,000
Service Yards	$26,100,000	$4,795,000
Storm Sewer **(3)**	$223,500,000	TBD
Information Technology **(4)**	$21,200,000	$300,000
Radio Communications	NONE	NONE
Transportation Infrastructure	$696,680,000	$52,550,000
Regional Wastewater Facility	NONE	NONE
Water Utility	NONE	NONE
Total	**$1,391,680,000**	**$111,915,000**

(1) Annual Ongoing $18,912,000 for Parks Buildings only, remaining facilities TBD.
(2) The current backlog of the entire collection system is undergoing further evaluation.--
(3) Initial results of the City-wide Master Plan identified $223.5 million in high priority projects.
(4) Information Technology needs within Departments not managed by the IT Department are not included in this estimate.

The Current 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 operating and maintaining building and pavement. These facilities include:

- 3 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
- 2 Public Parking Garages
- 4 Surface Parking Lots

The Airport is funded by a combination of Federal Grants (FAA), Passenger Facility Charges (PFC), Customer Facility Charges, and General Airport Revenue. These funds continue to be impacted due to financial payments for bond and commercial paper, and limited Federal budgets. 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 improvements to the Airport campus was completed in June of 2010; 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 deferred maintenance for building project costs is estimated to be $5.9 million. The Airport is currently completing an analysis to update the pavement condition index study and a land-use study is ongoing to refine the Airport's future budgetary needs to maintain these physical assets. The annual unfunded needs for the Airport will be updated pending the outcome of the pavement analysis and land-use study results. Additional structures outside the terminal zone are primarily used in support of aviation functions, such as parts storage and tenant maintenance activities. A special study Request For Proposal (RFP) will determine the best use of the property along the southeastern portion of the Airport and potentially plan for replacement through a private/public development partnership over the next 5 to 10 years. This planned study, along with the Airport's Master Plan, will identify existing facilities that will require replacement to maximize the land use and allow the second phase of the Terminal Area Improvement Program (TAIP Phase II) construction for expanded terminal facilities based on achieving triggers related to the growth of passenger activity. The previous study for minimum investment necessary to allow continued occupancy is not included since the facilities are identified within the limits of scope for the study of the southeastern zone.

The remaining deferred maintenance items are the horizontal surfaces (pavement). Critical 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. During the past 12 months, staff continued additional joint resealing and is currently replacing a section of ramp pavement. Staff implemented an improved pavement management system study and the consultant is completing the analysis to provide an update on the pavement condition index (PCI) 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 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 5-year old study; a number of these pavement sections are exhibiting a drop in the PCI value and will need to be considered for rehabilitation in future budget cycles. In general, the concrete pavement sections are performing well and are in better condition than the asphalt surfaced pavement sections. Six of seven asphalt surfaced air cargo ramp sections have PCI's ranging from 31 to 69 and are exhibiting multiple types of distress including both climate and load related deterioration. A detailed pavement management summary report will be evaluated by Airport Senior Staff identifying the priority projects for the upcoming pavement program.

Building Facilities

The Facility Management Division of Public Works supports maintenance, operations, and capital improvements at over 400 buildings and structures, comprising more than 5 million square feet. These buildings include:

- 36 Fire Department Buildings
- 3 Police Facilities
- 23 Libraries
- 54 Community Centers
- 251 Park Facility Buildings
- 3 City Hall Buildings
- 6 Cultural Facilities
- 7 Facilities Operated by Team San Jose (TSJ)
- 3 Sports Facilities

- Numerous Other Smaller Buildings

The conclusion of the decade of investment (2000-2010), which nearly doubled the square footage of the facility inventory, leads to the next half century where sustainability will be the focus. The major building systems and equipment within facilities constructed ten years ago or more are reaching their serviceable lives. These newer facilities and their systems were constructed with a high degree of variety and sophistication. This approach 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 complexity of assets, previous budget deficits and shortfalls from sources generally used to fund maintenance activities, predominantly General Fund and Construction and Conveyance (C&C) Taxes, 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 item needs compound which can lead to infrastructure failures prior to the expected serviceable life and associated premature replacement costs.

The Facilities Management Division of Public Works utilizes Infor EAM, a sophisticated enterprise asset management program to track repair costs, expected end-of-life asset durations, and data collected from asset condition assessments. These assessments have historically been conducted through third party specialists at a cost. The City Council allocated $400,000 in FY2015-16 and $300,000 in FY2016-17 for Public Works to conduct building assessments. Additional funding of approximately $200,000 will likely be requested over the next two years to complete a comprehensive assessment of all City-owned buildings and structures. Until such an analysis is completed, this report will use building assessments and estimates completed to date, and make use of other best available data.

The current backlog for deferred maintenance in building facilities is estimated at $154 million, which includes approximately $115 million for Parks Buildings. 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. A more robust estimate is anticipated once the city-wide building assessment study is completed by 2020.

Recognizing the need, the funding allocation for preventive maintenance activities in the Facilities Management Division has been increased in recent years. This is a very important program that provides proper maintenance of assets. The Facilities Management Division has developed a program wherein over 80% of preventive maintenance activities are completed as scheduled, greatly improved from the 38% completion rate in FY2011-12. The focus of the program has been: 1) the completion of work items that address life safety needs, and 2) the preservation of assets. In the short term, this program will reduce the number of equipment failures as the preventive maintenance work will facilitate the ability of staff to identify and correct repairs prior to that equipment reaching the point of failure. Over the long term, the

results of this funding will benefit the City as preventive maintenance results in the extension of the life of assets.

City Council approved the use of an energy service contract (ESCO) to complete energy efficiency projects. The first set of projects, including the conversion of 18,200 streetlights to LED lamps and adaptive controls, and the installation of 7 solar energy systems generating 1.3 MW of clean power, has been completed. The remaining bundle of projects, including 2 HVAC system replacements and facility lighting upgrades, should be completed by June 2018. ESCO will allow antiquated and inefficient building systems to be replaced, and offers a new mechanism to reduce the deferred maintenance backlog. Collaborating with an ESCO potentially allows for the renewal of aging infrastructure and addresses deferred maintenance in a timely manner by financing projects with the utility cost savings generated from the measures.

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	$1,900,000
Tech Museum	$2,100,000
History San Jose Facilities	$700,000
Museum of Art	$1,900,000
Hammer Theatre	$1,200,000
Mexican Heritage Plaza	1,800,000
Total Budget Need	$9,600,000
Cultural Facilities Capital Maintenance Reserve	$4,632,000
Additional Anticipated Funding Through 2019-2023	$2,250,000
Remaining Unfunded Need	$2,718,000

*The current reserve level is estimated to fully fund all planned projects through 2019-2020; a total of $2.7 million would be needed to complete the projects identified in 2020-2021 through 2022-2023.

The current estimated rehabilitation need through 2022-2023 has been recently updated to approximately $9.6 million. This figure was developed through discussions with the Office of Cultural Affairs (OCA), which provides management oversight for the above-referenced facilities, the facility operators, and through the evaluation of condition assessment reports that provide information at a more detailed level than was previously available.

In FY2014-15 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 Jose Museum of Art, Tech Museum of Innovation, Hammer Theatre, History San Jose, 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, eliminating the allocation of annual Transient Occupancy Tax (TOT) growth above base 2013-2014 levels and instead committing $450,000 annually. This ongoing set-aside, combined with the existing reserve of $4.6 million is expected to fully fund all planned projects through 2019-2020, with future funding subject to reevaluation. The Cultural Facilities Capital Maintenance Reserve continues to be an important tool to address the deferred maintenance and infrastructure backlog, with $2.6 million allocated for cultural facilities in 2017-2018, including the Children's Discovery Museum, Camera 3 Theater, Museum of Art, Hammer Theatre, Tech Museum of Innovation, History San Jose, School of Arts and Culture at Mexican Heritage Plaza.

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

Sports Facilities Operated by Others

San Jose Municipal Stadium was built in 1942 and is home to the minor league baseball team, the San Jose Giants. Sharks Ice was built in 1994 and, in addition to serving as a practice facility for the Sharks, it is home to the San Jose State University hockey team and the San Jose Sharks junior teams. SAP Center opened in 1993 and is home to the San Jose Sharks professional hockey team. A comprehensive life cycle analysis of the SAP Center is currently being conducted that is jointly funded by the City and Sharks Sports Entertainment. The backlog for these facilities is currently under evaluation and as such is noted to be determined.

Sport Facilities	Backlog
Muni Stadium	TBD
San Jose Ice Center	TBD
SAP Center	TBD

Convention Center and Cultural Facilities Operated by Team San Jose

These facilities are operated by Team San Jose on the City's behalf and total approximately 1.4 million square feet, including the new areas added with the recent expansion of the Convention Center.

Facilities Operated by Team San Jose	Backlog
California Theater	$2,190,000
Center for Performing Arts	$50,355,000
Civic Auditorium	$1,820,000
Montgomery Theater	$1,505,000
Parkside Hall*	-
Convention Center	$14,610,000
South Hall	$5,100,000
Total Backlog	**$75,680,000**

*Parkside Hall is part of the Museum Place development project

While life cycle condition reports are still under review for all facilities, preliminary one-time deferred maintenance costs are estimated at $75.7 million. The recent rise in Transit Occupancy Tax (TOT) proceeds allocated to the Convention and Cultural Affairs Fund (536), and the availability of special tax revenue from the Convention Center Facilities District Fund (791) for improvements at the Convention Center, has provided the City with significant resources to address the backlog. In 2017 the Convention Center exhibit hall lighting and ceiling apparatus, and restroom renovations were completed at a total cost of approximately $21 million. The rehabilitation of the Civic Auditorium HVAC system at a cost of $7 million was also completed in 2017. An evaluation of rehabilitation needs at the Center for the Performing Arts was recently completed. Staff anticipates the 2019-2023 Proposed Capital Improvement Program to outline a multi-year strategy to address the needs of this facility. 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 2,752 vehicles and equipment that support public safety, public health, and general government operations citywide. These vehicles and equipment are categorized as follows:

Category	Qty.
Police Patrol	471
Fire Front Line	115
General Fleet	1,405
Off Road Fleet	273
Other Equipment	488
Total	**2,752**

This year's vehicle and equipment inventory increased by 28 assets or 1% from last year's total of 2,724. These increases occurred primarily in the Police Department programs and were primarily 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 in order to ensure the City is replacing the vehicles that are the oldest and in the worst condition. 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 all funds is $8.2 million. However, if current funding levels remain consistent over the next five years, the $8.2 million will decrease to $6.9 million due to higher levels of contributions from special funds. Vehicles that provide support for General Funded activities have a backlog of approximately $6.1 million. The average annual need for General Fund-only replacement vehicles is $2.4 million. The annual funding of $1 million leaves an ongoing need of $1.4 million. In addition to the General Fund-only portion of the backlog, a backlog of $2.1 million exists for vehicles that support special fund efforts. This includes equipment at the Regional Wastewater Facility, vehicles supporting fee programs, and vehicles supporting capital programs. This year's backlog includes annual estimated special funding amounts of $3.2 million for vehicle replacements. Public Safety vehicle funding has remained fully funded in order to ensure service. Similar to this year, it is anticipated that the 2018-2019 budget will include funding for General Fleet replacement. These 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 5-Year Capital Improvement Program (CIP) focuses on long-term sustainability by encouraging the reduction of infrastructure backlog, park and trail development, and land banking for future facilities. Two Capital Implementation Teams work through the CIP to design and deliver both large infrastructure as well as small scale repair and installation projects. Together, their efforts support the development and long-term sustainability of PRNS assets. The City's infrastructure assets under this category include:

- Neighborhood and Regional Parks and Open Spaces – 3,518 Acres(1)
- Trails – 59 miles
- 71 Trail & Park-related Bridges
- 10 Dog Parks
- Aquatic Facilities – 6 pools
- Skate Parks – 7 neighborhood and 1 regional (Lake Cunningham)
- Community Gardens – 18 neighborhood gardens across the City
- Sports Fields – 100, including soccer, baseball, softball, and T-ball fields
- Rest Room Buildings – 61 stand-alone park restrooms

(1) Including golf courses and excluding San Jose Family Camp.

PRNS anticipated future infrastructure needs at approximately $200,149,000 as of 2013/14 and since that time, PRNS has projected future backlog growth each year based upon facility lifecycles and unfunded liabilities. Adjusted for inflation, an annual need of $51,370,000 was predicted for 2016/17, as park assets exhaust their useful life. PRNS continues to allocate funding to specific infrastructure backlog projects in the 5-year CIP along with continued recommendation of an Infrastructure Backlog Reserve funding strategy in each new CIP Budget.

With an estimated $17.9 million expended toward backlog items in 2016-2017, the starting backlog for 2017-2018 rose by $33.5 million to $292.5 million; a 12.9% increase. The unfunded backlog estimate is made up of the following components.

Table PRNS 1: Updated Backlog Estimate by Facility Component (Begin FY 17/18)

Facility Component	Backlog
Park Grounds	$79,053,000
Community Buildings*	$50,714,000
Regional Facilities	$87,119,000
Other Buildings *	$62,296,000
Restrooms*	$2,258,000
Trails	$11,062,000
TOTAL	**$292,502,000**

* These figures roll up to the Building Facilities backlog

Despite recent increases to park maintenance funding, greater capital investment is required city-wide to replace expiring assets, many of which have worn out more rapidly due to prolonged periods of insufficient maintenance resources. Parks have also been strained by several years of drought as well as recent flooding during the winter of 2016/2017. Staff anticipates the cumulative effect of these conditions intensified deterioration of landscaped areas, buildings, and other park infrastructure, increasing the overall backlog. PRNS does not currently have sufficient available staff capacity to reassess all PRNS sites appropriately and continues to make projections based upon the 2013/14 published backlog assessment.

With all remaining Measure P bond funding allocated to the Arcadia Ballpark and Coleman Soccer Field Projects, Construction & Conveyance (C&C) taxes and Park Trust Fund (PTF) are the primary revenue sources available to address backlog and facility replacement needs. These revenues are insufficient to reduce existing backlog and keep pace with anticipated lifecycle replacement. For this reason, PRNS will continue to explore alternative funding mechanisms and work with City Council to develop the most equitable and sustainable path forward.

Service Yards

The four City service yards include 325,000 square feet of space and over 1,800,000 square feet of property.

Service Yard Facilities	Backlog
Central Service Yard	$ 9,700,000
Mabury Yard	$ 6,900,000
South Yard	$ 6,000,000
West Yard	$ 3,500,000
Total Budget Need	**$26,100,000**

Improvements in service yards are funded through the C&C allocated to the Service Yards fund. The Service Yards program is currently underfunded and a comprehensive life cycle analysis was completed in FY2016-17. Capital improvement needs continue to rise at these facilities on an annual basis, including, paving, mechanical, plumbing, HVAC, roofing and various modernization projects. Renewal and replacement needs vary from yard to yard, building type, the extent of facilities use, and quality of original construction and maintenance management. Levels of current operating budgets and special appropriations for capital renewal and deferred maintenance also affect required funding levels. However, inevitably, building systems and components deteriorate and need replacement. If C&C funding levels for maintenance will continue to be the source of funding for these facilities, the current funding levels will fall short in meeting the long-term deferred maintenance needs.

The High Speed Rail (HSR) project may reduce the future infrastructure needs for the South Yard facility. Depending on the option selected, the South Yard may need to be completely redesigned and rebuilt to accommodate the track alignment for the HSR, and the cost to rebuild the South Yard would be absorbed by the HSR project.

Sanitary Sewer

The sanitary sewer collection system includes:

- 2,030 Miles of Sanitary Sewer Mains (6 inches to 90 inches in diameter)
- 10 Miles of Force Mains
- 18 Pump Stations
- 45,000 Manholes
- 202,000 Lateral Connections

Approximately 80% of the City sewer collection system is at least 40 years old. DPW is leading the implementation of a comprehensive Condition Assessment program with DOT's assistance to determine the infrastructure improvement needs of the aging system. Data gathered from the Condition Assessment will be utilized by both departments in determining 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, the Department of Transportation (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 few years. These strategies include increased sewer line cleaning productivity, proactive cleaning of problematic sewer lines, implementation of a 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) in addressing commercial areas that have evidence of excessive fats, oils, and grease (FOG) in their sewer mains.

Since beginning the implementation of the SSO reduction strategies in 2011, DOT has recorded a consistent reduction in SSO occurrences. In FY2016-17, the City recorded 58 SSOs, which shows a consistency with the 55 SSOs recorded in FY2015-16, and a consistent decline from 97 SSOs recorded in FY2014-15, 101 SSOs recorded in FY2013-14, and 155 SSOs recorded in FY2012-13. The 58 SSOs are equivalent to approximately 2.54 SSOs per 100 miles of sewer main per year. The continuing downward trend in SSOs is attributed to the improvements made 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. In FY2016-17, the First Responder program met the 30 minutes or less target response time for approximately 91% of SSO sewer related calls. DOT continues to make adjustments to its maintenance program and will continue to evaluate the program's

performance as it works towards keeping the SSO rate at less 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.

Capacity needs

To manage system capacity needs, DPW staff has developed a trunk sanitary sewer system hydraulic computer model using InfoWorks ICM 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 system deficiencies, and recommend capacity improvement projects. The completed Citywide Trunk Sewer System Master Plan and North San Jose Detailed Master Plan in 2013 (Master Plan) identifies over 100 sewer capacity improvement projects totaling approximately $190 million, of which about 75% of the projects, or $146 million, were to address existing deficiencies. Since FY2008-09, the City has included 38 of these projects into the multi-year CIP work plan, and to date, 28 of these projects have been completed.

Staff continued to evaluate and validate projects identified in the Master Plan using flow data collected through the ongoing flow monitoring efforts. As a result, 27 new projects, totaling nearly $34 million, were confirmed to have existing capacity deficiencies in the system and are considered as infrastructure backlog rather than deferred maintenance. This equates to an annual cost of $3.4 million per year for the next 10 years.

Staff is working on expanding the model to include smaller sewer mains of 8 inches in diameter or less. This effort will result in new capacity improvement projects being added to the work plan in future years.

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. Coupled with defect coding analysis and sewer repairs, 48% of the collection system has been inspected. 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 whole 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.

In 2016, the City entered into a Consent Decree with San Francisco Baykeeper, a California non-profit organization, to resolve any potential Clean Water Act claims that were brought up by Baykeeper. The Consent Decree requires the City to develop and implement an Exfiltration Abatement Program which will identify all sewer mains with high risk of sewage exfiltration (leaking out) causing contamination of the storm drain system. The Consent Decree also requires the City 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. The exact extent of the repair and rehabilitation of the high-risk sewer mains is not known at this time; however, during the first few years, any immediate repair needs will be carried out as part of the existing CIP sewer repair program and additional needs will be quantified and planned for in future years.

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/SFRWQCB audit. Currently, DOT staff utilizes an in-house developed, GIS-capable CMMS software 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, however, the miles of sewer lines cleaned declined slightly from 993 in FY2015-16 to 936, and the percent of SSOs responded to within 30 minutes increased from 81% in FY2015-16 to 91%. 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.

With the return of the economy and neighboring cities and agencies that have the same need to repair and rehabilitate their aging utility infrastructure, construction costs have steadily increased over the last few years which result in a need of additional funding of $1 million to a total of $36.3 million to fully fund the annual capital program.

Beginning in FY2015-16, the annual transfer from the Sewer Service and Use Charge Fund (SSUC Fund) to the Capital Fund was increased and maintained at $32 million per year, leaving a projected $4.3 million funding gap.

The implementation of the Exfiltration Abatement Program has been carefully crafted into the CIP and has not caused any impacts on the current 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 fund (managed by DOT, currently at $18.6 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.

An idealized annual investment for both the Capital Improvement needs (for rehabilitation and capacity expansion) and O&M of the system would total approximately $54.9 million per year for the next 10 to 20 years as shown in the following table:

Annual Need for Maintenance and Infrastructure	
Rehabilitation	$29,000,000
Condition Assessment	$ 3,900,000
Capacity Projects (existing users)	$ 3,400,000
Total Capital Need	**$36,300,000**
O&M (DOT)	$18,600,000
Total Capital and Operating Need	**$54,900,000**
2017-2018 Adopted Budget Funding	$53,400,000
Total Annual Unfunded Need	**$ 1,500,000**

After taking into account DOT operating costs ($18.6 million) programmed in the FY2017-18 Adopted Operating Budget and the amount of resources added into the FY2017-18 Adopted Capital Budget ($34.8 million, which excludes fund balance primarily used for continuing

projects), the remaining annual unfunded need is approximately $1.5 million. 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
- 32,200 Storm Drain Inlets
- 1,510 Storm Outfalls
- 30 Pump Stations

A hydrologic and hydraulic (H&H) computer model that integrates the City's storm drain system (24-inch and larger) and the downstream riverine system has been developed for the Citywide Storm Sewer Master Plan. The modeling effort was coordinated with the Santa Clara Valley Water District for storm runoff methodologies and parameters, and for use of their riverine model. The integrated model was calibrated using recent years' wet season flow and rainfall data, and validated using observed creek levels and flooding data for recent storm events.

The H&H model, simulating the 10-year 24-hour design storm event, used a 3-year event and past flooding locations to identify and prioritize capacity improvement projects. Twenty-two high-priority projects were recommended to alleviate flooding at locations previously identified by DOT and other locations where flooding of 6 inches during a 3-year event is anticipated. These high-priority projects require a wide range of improvements including installation of new storm sewers, upsizing of existing storm sewers, and construction of a new 225-cfs pump station on Charcot Avenue as discussed further below. The capital cost for these high-priority projects for flood protection purposes is estimated to be $223.5 million.

The 2017-2021 Adopted CIP provides improvements to the storm sewer collection system in Alviso and other critical areas, as well as continues pump station and outfall rehabilitation and minor storm sewer improvement projects. It has been identified that over 358 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 of the permit term.

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 in the 2017-2021 Adopted CIP is $7.0 million in 2017-2018 and $4.0 million per year for the remaining years of the 5-year CIP. This level of funding will be sufficient for staff to continue work on the master plan, decrease the maintenance backlog by constructing

projects to address known localized ponding and flooding, improve the existing system reliability, install large trash capture devices, and increase the conveyance capacity in Alviso. Additional resources will be needed, however, as projects from the master plan as well as the developing green infrastructure plan are identified.

During the December 2014 storm event, multiple street locations and businesses in the Charcot drainage area were flooded. The flooding condition confirmed the high-priority need for a pump station and larger drainage pipelines for this area. The cost to build these capital projects is roughly $38 million including $23 million for a new 225-cfs pump station on Charcot Avenue, which is well above current funding levels. While this funding was shifted to support the more immediate needs of the new Alviso pump station, staff will continue to explore potential funding options to support future design and construction of these infrastructure improvements.

During the flood event in February 2017, backwater from Coyote Creek filled the storm drain systems in the Rock Springs neighborhood, William Street Park, Selma Olinder Park, Five Wounds neighborhood, and Golden Wheel/River Bend/South Bay Mobile Home Parks. The City assessed the backwater flood risks in the storm drain system along Coyote Creek, and recommended installation of 19 new flapgates at outfalls that are subject to backwater during large storm events. The estimated cost to install 19 new flapgates at outfalls is approximately $3.5 million. This does not include any outfall improvements such as concrete wingwall, additional regulatory permit fees or requirements to protect bank stabilization from scouring nor mitigation fees.

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 Taylor Street underpass, and Pershing and West Santa Clara 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.

In addition to regulatory compliance under a National Pollutant Discharge Elimination System (NPDES) Municipal Regional Stormwater Permit, the City's Stormwater Program must comply with the Baykeeper Consent Decree that, among other requirements, obligates the City to prepare a Comprehensive Load Reduction Plan (CLRP, which is the equivalent of a Green Infrastructure Plan, or GIP) by July 2020, and to appropriate at least $100 million to implement green infrastructure projects identified in the CLRP over a 10-year period.

Information Technology

The Information Technology Department (ITD) mission is to execute, secure, and sustain the civic solutions that allow San Jose to thrive. The department enables the workforce through voice and data communications, executes citywide protects, and supports the City's critical data. Ultimately, ITD enables service delivery through hardware and software tools used by employees to perform the essential functions of their jobs. Providing strong strategic direction

for technology investments across the organization leverages the City's IT funding for maximum benefit.

After a decade of disinvestment, the City's focus is on modernizing core systems and solutions that support the changing demands of departments. Obsolete and aged IT assets in place routinely fail and cannot meet requirements for new solutions departments acquire and aim to implement. Related, serious audit findings related to staffing, project execution, and asset management continue to mount. These accumulated needs are referred to as "Tech Debt" and were identified as a critical area for investment in the IT Strategic Plan approved by City Council in March 2017.

Critical Enterprise Technology assets include:

- HR, payroll, financials, workers' compensation; and similar enterprise systems;
- Citywide voice/data network, data storage, server compute, and backup solutions;
- The Wickedly Fast WiFi public wireless network and current expansions to school attendance areas;
- Approximately 5,700 PCs, 9,100 VoIP phones, and 4,100 city-owned mobile computing/communications devices (laptops, tablets, and cell phones); and
- Over 150 physical and 250 virtual servers, hosts, and appliances.

Overall, the deferred maintenance and infrastructure backlog for ITD is approximately $21.2 million in one-time costs and an estimated $300,000 annually. The estimates represent the cost to replace aging infrastructure using 2017 dollars. Adding to the need to invest, the City's Tech Debt continues to accumulate each year it is unaddressed— siloed assets prevent interoperability needed to support the San Jose Smart Cities Vision, failures and outages increase, and the City's significant Cybersecurity risks from unsupported and obsolete systems disrupt public services. Current figures are part of a comprehensive review of IT assets that were part of the City's IT Strategic Planning Process completed at the end of 2016. A large number of assets were discovered to have been unaccounted for previously or underestimated. It is clear that the City's large deferred infrastructure maintenance backlog—San Jose's Tech Debt—has accumulated to a point where major investments are now unavoidable.

Information Technology Strategic Initiatives

1. **Re-platform the City on current technologies that will sustain operations and innovation efforts.**

The value of assets for the enterprise infrastructure systems is slightly under $11.0 million and includes all technology equipment needed to support enterprise services. It excludes department-specific information technology assets used by Police, Airport, and Libraries, that have dedicated staff and funding to support their infrastructure operations. Approximately 69% of the supporting IT hardware is past End-of-Support or End-of-Life. One-time costs to replace deskside and Data Center IT assets is approximately $5.3 million, with an ongoing maintenance cost of roughly $300,000. One of the largest costs of the infrastructure backlog is the estimated $2.8 million needed to replace approximately 2,800 desktop computers or 67%. The quantity of

computers to be replaced is based on the number of central users citywide but excludes Police, Airport, and Libraries. The IT asset management tool only views central assets, leaving assets in the three aforementioned departments unaccounted for. The audit of City mobile devices and usage also identified a large inventory of assets that are handled under the operating budgets of departments and not funded as part of a replacements program. Further, the City's fragmented asset management processes do not allow the City to take advantage of volume purchasing and asset management opportunities that could reduce costs and support needs.

The balance of $2.5 million in infrastructure backlog connects to replacement of the core network, server, storage, security, disaster recovery, and uninterruptible power supply equipment. Increasingly, ITD is unable to respond to new requests from departments due to the age of the City's current hardware, virtualization software, and server operating systems. Just as important, the City's IT infrastructure continues to age, the number of outages and lost work hours continues to grow, and the cost for vendor support of obsolete IT assets continues to rise.

Current practice is to replace components of the server environment as they fail, sometimes with used and auctioned parts. Often to work around an aged core, City departments maintain disparate technologies for their operations, replicating costs. This fragmented environment increases the infrastructure backlog in technology and diffuses the effect of IT investments organization-wide. As a result, some departments are modernized whereas the majority are forced to operate on IT assets which fail to perform to standards, but that also are unsupported by their manufacturers.

In an effort to remediate these needs, $1.1 million was included in the 2017-2018 Adopted Operating Budget for a core infrastructure refresh for critical servers as part of the 2017-2018 budget. The new server, storage, and virtualization environment provides for high availability, cloud-hosted service options, business resumption, and improved security as a fresh implementation. The procurement is currently underway as of January 2018. It is important to note that this environment will modernize only a portion of the City's server portfolio, which will be based on operational risk. However, the new infrastructure is configured to be scalable as needed. Thus, departments can migrate to the new IT server environment at advantageous cost as their end-of-life equipment fails, or as they assign resources to move earlier.

As referenced, the City maintains approximately 400 virtual and physical servers. Audit reports completed by the City Auditor's Office found the software platforms to be obsolete and unsecure. ITD is working on related needs for an Asset Management and Control solution, as well as with Microsoft to true-up the City's overall licensing compliance on an ongoing basis.

Important industry shifts include the transition to user-based software licensing and forced-maintenance of software on a subscription basis. In this new reality, the City will be required to pay to maintain its IT environment and will have fewer options to allow IT assets to age past support. The City will need to set strong strategies to manage costs as those models displace one-time purchase software in addressing the organization's current and future needs. For example, the Microsoft component of the portfolio will need to be addressed in May 2018, when

the City's current Enterprise Agreement expires. The contract affects the use of Office, Windows operation systems, databases, and related productivity tools used by nearly all employees. The City has pushed off many license needs over time. The costs and implications of those delays will be unavoidable with the new contract.

Of special note, the City's Financial Management System (FMS) is almost 30 years old and based on a system architecture from the 1980s. Although an update is planned for 2018, departments report the system lacks functionality in many key areas, including fiscal detail level, contract administration, procurement, budgeting, project and program cost accounting, and the like. In many cases, the City has addressed the functional deficiencies with other systems, duplicative systems, and/or tools designed for other functional needs. The cost to re-platform this system is approximately $15 million.

The City does not use a true enterprise content management system (ECM), causing an inability to effectively administer a Records Management Program, eDiscovery searches, or Legal Holds. CHAD, the current electronic records management system, is a stand-alone system that is inefficient and cannot enforce records retention. An ECM is used to create, store, distribute, discover, archive and manage unstructured content, such as scanned documents, email, reports, and office documents to enable organizations to deliver relevant content to users where and when they need it. City records may be kept beyond the legally mandated time required. Similarly, records may be disposed of prematurely without an ECM, causing spoliation violations.

The Office 365 and SharePoint subscriptions already maintained by the City include an enterprise-class electronic content and records management solution. The City has struggled with adoption across departments. ITD will focus on legal and records management needs with the City Attorney and City Clerk offices, along with the Finance and HR departments, to cover critical needs first. This will serve as the foundation for broader success of ECM citywide. The estimated one-time and ongoing costs for completing implementation of the ECM and eDiscovery Center solutions are estimated to be $370,000 one-time and excludes any additional staffing.

2. **Address growing risks of cybercrime and cyberdisasters by creating a Cybersecurity Office.**

Information and systems security require modernization and standardization across departments. Multiple audits have made significant findings of the current state of the City's security staffing, IT assets controls, and systems administration. These needs couple with a shift toward a mobile-enabled workforce that places City IT assets and information in the field, exponentially growing risk of cybercrime, and the absence of adequate cybersecurity talent.

For Fiscal Year 2017-2018, the City Council approved the creation of a Cybersecurity Office and City Information Security Officer (CISO) position to manage the City's emerging threats and risks. The CISO will lead a small team in the IT Department and lead implementation of the

Cybersecurity Workplan with key focus areas in the first year, with the goal being achieving a level of capability maturity.

Because of increasing risks and threats, Cybersecurity will be a primary area for continued investment in future years. ITD will detail changes and needs as they emerge to keep the City Manager's Office, elected officials, and departments aware.

Recent Efforts to Address the Backlog

Over recent fiscal years, ITD focused on desktop modernization with $500,000, network infrastructure upgrade ($250,000), and completion of the secondary data center buildout ($20,000). Additionally, funds included in the 2017-2018 Adopted Operating Budget allowed ITD to plan for an infrastructure refresh ($1.1 million).

Future State

The significant remaining technical infrastructure backlog includes those items related to hardware replacements, and network and security architecture. The City has made significant one-time strides in dealing with core enterprise applications that were a part of the infrastructure backlog, leaving primarily FMS and an electronic content management system that will need to be updated.

While the reduced infrastructure backlog is encouraging, an ongoing revenue source for a sustainable, modern IT environment continues to be a major obstacle in preventing the accumulation of technology debt. In addition, a lack of ongoing investment in technology will lead to an accumulation of deferred maintenance, as well as a return of some systems to an infrastructure backlog. As identified in findings by the City Auditor, a Technology Replacements Fund is recommended to be established to accumulate resources for future replacements of the City's aging infrastructure that can be upgraded in a phased approach or have become subscription-based.

The City has under-invested in technology over the past decade due to budget deficits. One approach to plan for the immediate and future replacement of aging infrastructure would be to set aside funding each year in smaller amounts rather than any single year in a large amount. Establishing a sinking fund would also ensure the City can upgrade to new equipment when it becomes available rather than justifying ongoing capabilities against immediate needs. As the City has witnessed from its decade of disinvestments, neglecting core investments in the tools and technologies used citywide have long-term negative impacts on the City's culture, ability to improve services and efficiency, and accumulate large deficits that are hard to overcome.

Radio Communications Program

The City's infrastructure assets under this category include:

- Citywide Public Safety Radio Systems – 33 Radio Channels
- Simulcast Radio Systems – 11 Radio Channels
- City Owned Radio Sites – 18 Sites
- City Owned Equipment at Non-City Owned Sites – 12
- Enterprise Radio Systems – Regional Wastewater Facility, Airport, and Convention Center
- Public Safety Answering Point (PSAP) – 32 Radio Consoles
- Subscriber Units (Mobile and Portable Radio Devices) – Approximately 6,700 Units (2,100 are already configured to use with SVRCS with 650 left to purchase)
- Inventory for Support & Maintenance (Spare Parts & Supplies) – Approximately 1,000 Units
- Test Equipment – 30 Units

While there is no current backlog in Radio Communications to maintain or replace existing equipment, there is an unfunded one-time need of $1.0 million for the future implementation of the Silicon Valley Regional Communications System (SVRCS) after accounting for allocated resources programmed in the 2018-2022 Capital Improvement Program.

The Silicon Valley Regional Interoperability Authority (SVRIA) is a joint powers authority consisting of 19 member agencies, including the City of San José, 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 SVRCS, a multistage project coordinated by SVRIA, will replace 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 additional transmission towers, repeater sites, and other communication infrastructure required to build out the SVRCS cost approximately $29 million. The City's share, based on its proportionate number of communication devices, was $7.5 million, with the participation of the Valley Transportation Authority. This portion is now complete with the last payment made in September of 2017.

In addition, over $12.0 million has been used to begin radio and dispatch console replacements. The 2018-2022 Capital Improvement Program allocates approximately $2.0 million to the Silicon Valley Regional Communications System – Radios project from 2018-2022. To address the $1.0 million remaining need for radios, the City will use grant funds and local funding from several sources.

Transportation Infrastructure

The City's infrastructure assets under this category include:

- Street Pavement – 2,434 miles
- Traffic Signals – 940 signalized intersections
- Roadway Signs – 90495 traffic control signs; 3,398 intersection street name signs; 26,509 residential street name signs
- Roadway Markings – 5,600,000 square feet of markings; 513,005 raised pavement markers (RPMs)
- Streetlights – 64,799 streetlights and poles
- Landscaping – 241.5 acres of landscaped properties for general benefit
- Stormwater Treatment Control Measures (TCMs) – 13 locations comprised of 128,500 square feet of landscaping, 2 pump stations, 11 subsurface infiltration systems, and 13 tree well filters
- Street Trees – 252,199 street trees (18,966 City-maintained) and 75,463 vacant street tree sites (1,111 on City parcels)
- ADA Compliant Curb Ramps – 34,189 locations (6,991 locations with no ramps; 17,710 locations with ramps that are not fully compliant and need modification or replacement; 9,488 locations currently in compliance)
- Bridges –172 National Bridge Inventory (NBI) vehicular bridges (20 feet or greater in length); 70 vehicular bridges less than 20 feet in length; 11 pedestrian bridges

Street Pavement

The City's most significant transportation asset is the street network consisting of 2,434 miles of pavement. The combination of age and the lack of adequate investment in the maintenance and repair of the street network over the years has resulted in continued degradation of its condition. The one-time deferred maintenance backlog has decreased, however, to $453.4 million in 2017, mainly due to the combination of increased investment in the rehabilitation of our major roadways and a complete inspection of the City's entire street network that was performed in 2017 using a fully-automated pavement condition assessment technology. This new assessment tool applies the same rating criteria and calculation methodology to determine street conditions as used previously, but provides a far more refined data collection approach and, therefore, more accurate condition assessment. This year's assessment revealed a better overall pavement condition across the City's entire network, with the biggest increase seen in the condition of local and neighborhood streets. The current Pavement Condition Index (PCI) for all San Jose streets is 67 on a 100-point scale, which is a rating of *Fair*.

Based on current data, $92.8 million is needed annually over a 10-year period to improve overall pavement conditions to a rating of Good (PCI 70 or higher on an industry-standard 0-100 scale) and to eliminate the backlog. Ongoing funding levels for the next 5 years are estimated at approximately $50 million per year, with an estimated $36.5 million in new funding being

provided by the statewide Road Repair and Accountability Act of 2017 (SB1) and the Valley Transportation Authority (VTA) 2016 Measure B half-cent sales tax.

With approximately $50.1 million in ongoing funding, the City will be able to fully fund pothole repairs, basic program management activities, some limited maintenance on the Local and Neighborhood Street Network, and proper maintenance on the 944-mile Major Street Network, which accounts for about 40% of the entire street network in San Jose and carries over 85% of City traffic. Additional one-time funding over the next two years, including federal and state funding along with local tax revenues, will enable the City to invest over $70 million in pavement maintenance in each of the 2018 and 2019 construction seasons, and will provide an opportunity for the City to perform some additional amount of maintenance on the Local and Neighborhood Street Network. While this is a significant improvement from last year's deferred maintenance report in which the 5-year annual funding estimate was $32 million, ongoing annual funding levels are still $42.7 million short of the amount needed to fully fund maintenance of the Local and Neighborhood Street Network and restore the overall network to *Good* condition (PCI 70 or higher). Unfortunately, at current and projected funding levels, the backlog of deferred pavement maintenance will continue to grow, and the overall condition of the network will continue to decline.

Traffic Safety Devices

Traffic Signals

The Traffic Signal Maintenance Team responds to approximately 2,300 service requests annually, and maintains 940 traffic signal intersections (938 signals and 2 Hybrid Pedestrian Beacons – HAWKs), up from last year's 926 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, 86 miles of fiber, and 146 miles of interconnect cable throughout the City. DOT also maintains speed radar feedback signs and changeable traffic direction signs. 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 section's overall vacancy rate, 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 $6.2 million for existing equipment and $342,000 for vehicles to support the preventive maintenance program. Additionally, there is an ongoing annual shortfall of $3,687,000, 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.

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. 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. This program is currently fully funded and there is no deferred maintenance or ongoing shortfall to report.

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 5.6 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 3.3 million square feet (59%) are currently in good condition, which leaves 2.3 million square feet (41%) that need to be painted in order to achieve 100% of markings in good condition.

The City has approximately 513,005 Raised Pavement Markers (RPMs) – 272,128 on residential streets and 240,877 on major roadways. Currently, 100% (272,128) of Residential RPMs have exceeded their life expectancy of 8 years and are in need of replacement, as well as an estimated 13% (31,624) of arterial buttons 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 (5.6 million square feet of paint and all RPMs) in good or better condition, one-time funding of $3,423,430 is needed to complete an additional 2.3 million square feet of roadway markings and install 303,752 RPMs. Additionally, $1,461,180 is needed annually to meet all prescribed preventive maintenance cycles.

Right-of-Way Street Lighting

The City of San José owns and maintains 64,799 streetlights and streetlight poles, 26,294 of which have been converted to LED light fixtures to date. The current streetlight network contains 32,302 painted octaflute streetlight poles and 32,497 remaining lights that are either on galvanized poles, decorative poles, or are decorative uplights.

The Streetlight Maintenance Program is currently complaint-driven, addressing those outages or damaged lights that have been reported by the public. A total of 8,633 outages were repaired in

FY2016-17, which represents a 23% decrease from the previous year. The decrease corresponds directly to a decrease in the number of streetlight outage complaints, which is primarily attributed to the conversion of over 26,000 low-pressure sodium streetlights to longer-lasting LED streetlights in recent years. 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 FY2016-17 performance was approximately 57% of reported outages repaired within 7 days. The streetlight team accomplished 65% of the repairs within 14 days despite the staffing challenges.

The 32,302 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. Refurbishing all of the 32,302 painted streetlight poles with galvanized surfaces would require a total one-time rehabilitation investment cost of $24.7 million. Additionally, there is a one-time need of $8.4 million to upgrade the 31,350 remaining low pressure sodium (LPS) fixtures. These LPS lamps will no longer be available after July 2019, as the lighting industry is moving away from conventional lighting to LED-based lighting.

To date, there are approximately 26,300 LED streetlights in the City, which is just over 40% of the total streetlight inventory. Most of the LED streetlights (approximately 18,000) were converted in FY2015-16 by the Energy Solutions Company (ESCO) program. The other LED lights were converted or installed at various times through a variety of City-sponsored and development projects.

DOT is currently planning two LED conversion projects for completion in 2018. These projects would convert approximately 1,000 lights in the Downtown and 1,100 on selected major arterial roads throughout the City. Funding has been allocated in the CIP for these projects.

For the remaining low-pressure sodium streetlights not currently planned for conversion, staff is following the direction of the City Council to perform a pilot project with anyCOMM Holdings Corporation that could lead to a full-scale conversion of these streetlights. As a result of the Innovative LED Streetlight RFP, the City Council directed staff to negotiate a pilot project agreement with anyCOMM that would allow them to install between 300 and 1,000 smart streetlight controller nodes on City streetlights. The purpose of the pilot project would be to evaluate the viability and functionality of the anyCOMM node to control the City's streetlights, provide innovative Internet of Things (IoT) approaches to delivering important City services, and deliver revenue to the City that could be used to convert the remaining low-pressure sodium streetlights to LED.

Streetscapes

Right-of-Way Street Landscaping

There are 241.5 acres of General Fund street landscape including roadside and median islands. In the FY2017-18 Adopted Budget, the Mayor's Beautify San Jose initiative provided one-time funding for a two-year period to address landscaping and debris removal work contractually on a little over half of the City-maintained General Fund street landscape parcels.

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 27 of those acres have been installed, leaving 23 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 cost approximately $13.8 million in one-time money. Of the 241.5 acres, there are currently 78 acres of remaining high-level landscape (Type 2) with trees and shrubs, including 10.5 acres with turf. It is estimated that $2.2 million will be needed to convert these locations to low-maintenance Type 1 designs. When combined with the procurement of vehicles for additional staff at $1,170,000, the total one-time need in Street Landscaping is $17,170,000.

Since FY2006-07, 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 FY2000-01, the condition of the City's street landscapes reached their peak in terms of condition, with 86% in good or better condition. Due to budget reductions since that time, conditions have declined to the current 51% in good condition. DOT is proposing 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 90% of all landscapes maintained with generally funded resources in good or better condition. This represents an ongoing annual shortfall of approximately $4,158,000. The other components of the ongoing shortfall in the Landscape Maintenance Program include an estimated annual need of $572,000 to renovate 7.5 acres per year of landscape (replacing dead or damaged trees and shrubs and irrigation systems), and $56,000 for weed abatement spraying for concrete islands. Although the $4.2 million ongoing annual shortfall is an accurate projection of future needs, it is being reduced in this year's report by $1 million to account for the Beautify San Jose funding that is addressing some of the deferred needs in FY2017-18.

Stormwater Treatment Control Measures (TCMs)

To comply with the Municipal Regional Permit (MRP) as issued by the State Water Resources Control Board, the City has begun to require the design and construction of stormwater treatment control measures (TCMs) on every new development project that installs over 2,000 square feet of impervious surface. TCMs include hydrodynamic separators, bioretention basins, biotreatment cells, flow-through planters, 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 13 public stormwater assets located throughout the City. These assets include a total of 139 biotreatment areas (34,500 square feet of landscape), one detention basin (54,000 square feet), three bioretention basins (12,500 square feet), 13,000 square feet of riparian mitigation landscaping, two pump stations, 10,000 square feet of general landscaping, 4,500 square feet of subsurface infiltration systems, and 13 tree well filters. The one-time funding needed to repair deficiencies at these 13 locations is $59,000. The ongoing annual budget shortfall to maintain these 13 locations is $63,000, which includes funding for the required contractual maintenance and anticipated repairs to maintain compliance.

In addition to the existing projects which have been accepted, DOT anticipates accepting an additional 10 public stormwater assets located throughout the City in FY2018-2019, which will require an additional ongoing funding amount of approximately $220,000 for the required contractual maintenance and anticipated repairs in order to maintain compliance.

Street Trees

The City of San José's community forest consists of public trees as well as those trees that are on private property. Overall, including both public and private trees in San Jose, it is estimated that there has been a net increase of 12,810 additional trees since the start of the City's Green Vision in 2007. There are an estimated 252,199 street trees within the public right-of-way under the jurisdiction of the Department of Transportation. Of those, 18,966 trees are in areas which are maintained by the City, such as median islands and roadside landscapes. In addition, there are an estimated 75,463 vacant street tree planting sites, 1,111 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 $1,600,600 in one-time funding is needed to bring all existing City-maintained trees into good condition, and an additional $555,500 is needed one-time to plant trees in existing City-maintained plant-able sites.

Additionally, ongoing annual funding of $394,300 is needed to maintain a 5-year pruning cycle and tree replacement needs for the 18,966 City-maintained trees. With a current base budget funding level of $74,000, that leaves an annual ongoing shortfall of $334,360, which includes $16,000 per year to update the street tree inventory for City-maintained trees.

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 $39,100,000 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, with the recent tree inventory, over 19,000 sidewalk discrepancies 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 7,000 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 $1,250,000 annually to construct ADA compliant curb ramps. Additionally, the City installs or retrofits ramps along corridors where paving projects occur, as required by the ADA. There are 34,189 locations that have been identified where ADA curb ramps should exist. Of these locations, 9,488 currently have ADA compliant ramps; 17,710 locations have ramps that are not compliant and must either be modified or replaced; and 6,991 locations have no ramp at all and require new installation. The one-time cost to bring the remaining 24,701 ramps into compliance is an estimated $98,800,000.

Missing Sidewalks

Although there is no complete assessment of missing sidewalks throughout the City, DPW and DOT staff are noting and 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 172 National Bridge Inventory (NBI) bridges throughout the City, each of which exceeds 20 feet in length. There are an additional 70 vehicular bridges that are less than 20 feet in length for which no inspection history exists as they are not classified in the NBI, and an additional 11 pedestrian bridges for which DOT receives

periodic service requests to repair. NBI bridges are periodically inspected by Caltrans, and DOT utilizes the reports generated from those inspections to determine the costs associated with maintaining and rehabilitating these bridges. Currently, there is a one-time backlog of $82 million to rehabilitate 24 bridges that have been identified by Caltrans to be structurally deficient or functionally obsolete, as well as to provide recommended smaller maintenance tasks on 46 additional bridges.

If all documented rehabilitation and replacement work was accomplished, DOT estimates that it would require approximately $250,000 annually to perform periodic corrective maintenance on its NBI bridges based on existing unit prices. The City currently allocates $100,000 for bridge maintenance. Aside from City dollars, the Federal Highway Bridge Replacement and Rehabilitation (HBRR) grant program has served as a funding source. DOT staff will continue to pursue grant funds to address the current backlog of bridge rehabilitation projects. Additionally, DOT will seek to secure an engineering consultant to inspect the 70 bridges not classified as NBI and generate a list of deficiencies to add to the deferred maintenance backlog.

TRANSPORTATION INFRASTRUCTURE SUMMARY

Due to many years of budget reductions and underfunding, 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.

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	$453.40	$42.70*
Traffic Signals	$6.54	$3.69
Roadway Markings	$3.42	$1.46
Roadway Signs	$0	$0
Streetlights	$33.13	$0
ADA Curb Ramps	$98.80	$0
Trees	$2.16	$0.33
Landscaping	$17.17	$4.16
Stormwater TCMs	$.06	$0.06
Bridges	$82.00	$0.15
Missing Sidewalk	TBD	TBD
Total	**$696.7**	**$52.6**

*The annual shortfall of $42.7 million is based on obtaining the VTA

Measure B ($17.5 million annually) and the SB1 ($19 million annually) projected funding amounts. Currently, there is some uncertainty regarding the availability of both of these funding sources, and final determination may not be decided for some time.

San Jose/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 treatment plant is jointly owned by the cities of San José and Santa Clara through a Joint Powers Agreement (JPA), and is administered and operated by the Environmental Services Department (ESD). ESD is also responsible for planning, designing, and constructing capital improvements at the Plant, including water reclamation facilities. 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 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 2016, the Average Dry Weather Influent Flow (ADWIF) and Average Dry Weather Effluent Flow (ADWEF) were 101 mgd and 73 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 20 years. These include: South Bay Water Recycling system (1998); Wet Weather Reliability Improvement

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[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.*

project (2007); Sodium Hypochlorite Disinfection Facility (2011); Electrical Reliability Improvements (2004-2013); Digester Gas Storage Replacement (2016); Digester Gas Compressor Upgrades (2017); and Emergency Diesel Generators (2017). However, these improvements only addressed a few of the most critical and urgent needs and 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 2018-2022 CIP includes $882.8 million for construction projects at the RWF. Currently, there are 19 projects in feasibility or design, 1 project out to bid, and 5 projects under construction.

Funding Strategy for Capital Improvements at the RWF

Historically, the Sewer Service and Use Charge (SSUC) Fund (or pay-as-you-go cash) and contributions from the City of Santa Clara and Tributary Agencies has served as the primary revenue source 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. These include the San Jose-Santa Clara Clean Water Financing Authority (CWFA) 2009A Bonds which remains outstanding in the amount of $20.7 million with a final maturity date of November 15, 2020; and SRF loans entered by the City (not CWFA) to finance various Plant projects totaling $4.76 million and scheduled to be paid off by May 2019.

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) pay-as-you-go cash 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 proceeded with obtaining 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. 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 2019-2020.

Currently, there are no unfunded needs for the RWF CIP. However, it is important to note that many projects in the Adopted 2018-2022 CIP are currently in the feasibility/development phase. 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 Jose 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
- Other Appurtenances including Meters, Laterals, Hydrants, Air Release Valves, and Sample Stations

Currently, there are no unfunded capital needs at Muni Water. However, Muni Water is implementing a Water Master Plan which may identify additional maintenance or infrastructure needs that require increased funding. The annual reinvestment into the system (approximately $6.2 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 ($2.8 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, Parks, Recreation and Neighborhood Services, Transportation, and the City Manager's Budget Office.

CEQA

Not a project.

/s/
BARRY NG
Director of Public Works

For questions please contact MICHAEL O'CONNELL, Deputy Director at 408-535-8300.

Attachment A