**COUNCIL AGENDA:** 2/25/2020
**ITEM:** 3.5
**FILE NO:** 20-185

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

# Memorandum

**TO:** HONORABLE MAYOR AND CITY COUNCIL

**FROM:** Toni J. Taber, CMC
City Clerk

**SUBJECT:** **SEE BELOW**

**DATE:** February 14, 2020

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

## RECOMMENDATION

(a) Accept the status report on the City's Deferred Maintenance and Infrastructure Backlog.

CEQA: Not a Project, File No. PP17-009, Staff Reports, Assessments, Annual Reports, and Informational Memos that involve no approvals of any City action. (Public Works)

[Transportation and Environment Committee referral 2/3/2020 - Item (d)2]

**T&E AGENDA:** 02/03/2020
**ITEM:** d(2)

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

# Memorandum

**TO:** TRANSPORTATION AND ENVIRONMENT COMMITTEE

**FROM:** Matt Cano

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

**DATE:** January 27, 2020

Approved

Date 1-27-20

## RECOMMENDATION

1) Accept the status report on the City's Deferred Maintenance and Infrastructure Backlog.
2) Refer this report to the full City Council on the February 25, 2020, City 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. Overall, the DMIB, including all anticipated Measure T funding for 2019, will total roughly $1.6 billion in unfunded costs, with an additional $90.7 million needed annually in order to maintain the City's infrastructure in a sustained functional condition.

### Impacts of Measure T

In November 2018, San José voters approved Measure T, the Disaster Preparedness, Public Safety, and Infrastructure Bond Measure, which is estimated to provide $650 million for a wide variety of infrastructure needs. The likely investments in this bond measure that focus primarily on infrastructure backlog include, but are not limited to:

- $300 million to repair an estimated 388 miles of local and neighborhood streets in the worst condition starting in 2020.

- $20 million for the repair and replacement of several bridges on the deferred maintenance backlog.
- $20 million to facilitate the conversion of streetlights and other outdoor lights at city facilities to LED.
- $35 million to construct Storm System Conveyance & Flood Prevention Projects.

The result of these Measure T infrastructure investments, when fully implemented, will have a significant impact on decreasing the infrastructure backlog. Primarily with the investment of $300 million for pavement from Measure T, the anticipated street backlog by 2029 is expected to be approximately $371 million which is a reduction of $729 million from previous projections of $1.1 billion in prior reports.

Transportation Infrastructure continues to have the largest unfunded needs. This area, focusing on the City's street network, roadway lighting and right of way landscaping assets, has been successful in leveraging Federal, State and Regional funding to partially address the needs of the assets. With a much-improved funding situation, the one-time backlog associated with street maintenance has stabilized, and will decrease as heightened maintenance levels occur in the coming years. Regarding streetlights, the one-time backlog associated with the conversion of Low-Pressure Sodium lamps (LPS) to LED lighting has been eliminated through a combination of Measure T and a PG&E conversion program scheduled to begin in 2020.

Similar to the 2019 report and with funding collected from tributary agencies and revenue from ratepayers, the Regional Wastewater Facility and Water Utility programs reported no unfunded needs at this time. 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 2020-2021 Proposed Capital Budget.

Building Facilities inventory including the Convention Center and other City-owned Cultural Facilities (including regional community centers and neighborhood partner community facilities) reported an increase in ongoing unfunded needs. Additional resources are likely needed to assist staff in evaluating building facilities to improve the accuracy of its data management systems. In 2019-2020, PRNS was approved to incorporate additional resources to the capital team to lead this effort. 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 the ongoing process to complete Life Cycle Cost Analysis Reports for all City-owned facilities.

The Parks, Recreation and Neighborhood Services Department (PRNS) continues to evaluate infrastructure backlog against baseline conditions established in 2013-2014 and is moving toward developing more detailed information. This year PRNS developed detailed information on Park Service Yards. In future years, the data on other park amenities will be refined.

The Airport continues to monitor and identify vertical and horizontal deferred maintenance backlog needs. The Department continued funding several one-time projects and completed additional deferred maintenance items within the Airport's Five-year Capital Improvement Program (CIP). The Airport has made positive progress in addressing their prior deferred maintenance projects. The Airport updated the Airfield Pavement Condition report used to assess pavement condition and forecast priorities. Significant pavement projects are incorporated into the CIP while on-going pavement maintenance is accomplished each fiscal year.

## 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. The report has been updated annually since that time.

## ANALYSIS

Staff has updated the 2019 backlog estimates to reflect more recent work and funds anticipated for inclusion into the 2021-2025 Proposed Capital Improvement Program (CIP). The current backlog of deferred needs is estimated at $1.6 billion with an additional $90.7 million needed annually.

Based on these updates, the following table summarizes the current state of the City's Deferred Maintenance and Infrastructure backlog. 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 estimates would be required before funding is requested to address specific unfunded needs. Additionally, Attachment A provides the breakdown of General Fund versus Capital Fund one time and ongoing needs.

## Infrastructure Backlog (numbers in millions)

| Program | One Time Backlog | | | Annual Ongoing Needs | | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | Change | 2019 | 2020 | Change |
| Airport | $5.9 | NONE | -$5.9 | NONE | NONE | 0 |
| Building Facilities **(1)** | $171.5 | $188.0 | $16.5 | $18.9 | $20.1 | $1.2 |
| Cultural Facilities Operated by Others (OCA) | $7.6 | $5.2 | -$2.4 | $1.5 | $1.0 | 0 |
| Sports Facilities | TBD | $4.4 | $4.4 | TBD | TBD | TBD |
| Convention Center and Cultural Facilities (TSJ) | $54.1 | $67.5 | $13.4 | TBD | TBD | TBD |
| Fleet | $9.1 | $9.6 | $0.5 | $1.3 | $1.0 | -$0.3 |
| Parks, Pools and Open Space **(2)** | $201.4 | $234.6 | $33.2 | $33.4 | $34.4 | $1.0 |
| Sanitary Sewer | TBD | TBD | 0 | $3.6 | $2.4 | -$1.2 |
| Service Yards | $21.6 | $21.6 | 0 | $3.8 | $3.8 | 0 |
| Storm Sewer **(4)** | $180.0 | $180.0 | 0 | TBD | TBD | TBD |
| Information Technology **(3)** | $21.6 | $28.4 | $6.8 | $0.4 | $4.3 | $3.9 |
| Radio Communications | NONE | $2.5 | $2.5 | NONE | NONE | 0 |
| Transportation Infrastructure **(4)** | $876.1 | $871.8 | -$4.3 | $23.9 | $23.7 | -$0.2 |
| Regional Wastewater Facility | NONE | NONE | 0 | NONE | NONE | 0 |
| Water Utility | NONE | NONE | 0 | NONE | NONE | 0 |
| **Total** | **$1,549.0** | **$1, 613.5** | **$64.5** | **$86.9** | **$90.7** | **$3.9** |

**(1)** Annual Ongoing $20,064,000 for Parks Buildings only, remaining facilities TBD.
**(2)** The one-time backlog number for parks and open space may significantly increase in future years as a result of the aging system as described further later on in this report.
**(3)** Information Technology needs within Departments not managed by the IT Department are not included in this estimate.
**(4)** Measure T investments include $35M in Storm Sewer, $30M in Transportation Infrastructure's streetlights and bridges, and $300M in on-going pavement annualized over 10 years.

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:

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

The Airport is funded by a combination of funding sources that may either be used for capital improvements or repayment of debt service for capital improvements: Federal Grants (FAA), Passenger Facility Charges (PFC), Customer Facility Charges (CFC), and General Airport Revenue. The availability of PFCs, CFCs and General Airport Revenues for new capital projects is limited by existing debt service on bond and commercial paper and FAA grants have been limited by 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 improvement to the Airport campus was completed in June of 2010; these assets require additional maintenance to continue operating at the established efficiency levels. The Airport has been successful in receiving FAA grants to address airfield pavement rehabilitation. Maintenance items are categorized, prioritized, and addressed within the Airport's 5-year CIP as funding permits. The Airport continues to examine and monitor all facilities to refine the Airport's future budgetary needs to maintain these physical assets.

Additional structures outside the terminal zone are primarily used in support of aviation functions, such as parts storage and tenant maintenance activities. The Airport Master Plan Update along with a new CEQA Environmental Impact Report (EIR) will be presented to the

City Council early in 2020 and identifies existing facilities that will require replacement to maximize the land use and allow the construction of modernized terminal facilities.

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

Overall the pavement network at the Airport had an area weighted PCI value of 85 (on a scale of 0-100, 100 being zero maintenance required) based upon the last study conducted in 2016. Since the study was performed, the Airport has received FAA AIP grants to improve the pavement areas and anticipate that support will continue to complete the most critical areas. The pavement study is expected to be updated in the current Fiscal Year.

**Building Facilities**

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

- 36 Fire Department Buildings
- 3 Police Buildings
- 23 Libraries
- 50 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 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 within the last 15 years are rapidly reaching their fully functioning serviceable lives. These facilities have been designed and constructed with technologically advanced and sophisticated equipment that has

enhanced the user experience and increased functionality of the facilities, but has also increased long-term costs as well as increased maintenance frequencies to preserve the asset.

Compounding this advancement in asset complexity, previous budget deficits and shortfalls from sources generally used to fund capital maintenance activities have forced reductions that have left insufficient resources to meet the needs of the facilities for day-to-day maintenance. Even as a portion of this funding has been restored, the deferred work continues to increase, which can lead to infrastructure failures prior to the expected serviceable life.

The Facilities Management Division of Public Works utilizes Infor EAM, a sophisticated enterprise asset management program to track repair costs and frequency which help to derive 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. 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 $188 million, which includes approximately $147.5 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.

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 FY 2011-12. 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 conversion of 18,200 streetlights to LED lamps and adaptive controls was completed in June 2015, and the installation of seven solar energy systems generating 1.3 MW of clean power was completed in June 2017. The HVAC system at the Shirakawa Community Center was also replaced in March 2018. The HVAC chiller system replacement at the San Jose Museum of Art was completed in February 2019. Additionally, facility lighting replacement projects were identified as a part of the ESCO scope. Staff has been administering the installation work internally and through energy programs and utilize Measure T funding to reduce operation costs.

## Cultural Facilities Operated by Others

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

| Cultural Facilities | Estimated Five-Year Rehabilitation Need |
|---|---|
| Children's Discovery Museum | $2,350,000 |
| Tech Museum | $4,050,000 |
| History San Jose Facilities | $1,000,000 |
| Museum of Art | $2,000,000 |
| Hammer Theatre | $2,200,000 |
| Mexican Heritage Plaza | 1,000,000 |
| **Total Budget Need** | **$12,600,000** |
| Cultural Facilities Capital Maintenance Reserve | $3,136136,000 |
| Additional Anticipated Funding Through 2020-2024 | $4,250,000 |
| **Remaining Unfunded Need** | **$5,214,000** |

*The current reserve level is estimated to fully fund nearly all planned projects through 2020-2021; a total of $5.2 million would be needed to complete the projects identified in 2021-2022 through 2024-2025.

The current estimated rehabilitation need through FY 2024-25 has been recently updated to approximately $12.6 million. This figure was developed through the facility operators, and Department of Public Works engineers, journey level building trades staff and through evaluation of condition assessment reports that provide information at a more detailed level.

In FY 2014-15 the City Council approved an allocation of Transient Occupancy Tax (TOT) growth above the 2013-2014 levels toward capital replacement and maintenance at various cultural facilities including the San 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 FY 2017-18 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. The 2019-2020 Adopted Operating Budget increased the annual contribution to $850,000 and allocated one-time funding of $6.6 million to rehabilitate a variety of cultural facilities. The ongoing Cultural Capital Facilities Maintenance Reserve contribution of $850,000, combined with the existing reserve of $3.1 million is expected to fully fund all planned projects through 2020-2021, with future funding subject to reevaluation.

## Sports Facilities Operated by Others

San José Municipal Stadium was built in 1942 and is home to the minor league baseball team, the San José Giants. Solar4America Ice at San José (previously Sharks Ice) was built in 1994 and, in addition to serving as a practice facility for the Sharks, it is home to the San José State University hockey team and the San José Sharks junior teams. SAP Center opened in 1993 and is home to the San José 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 Solar4America Ice is currently under evaluation and as such is noted to be determined (TBD).

| Sport Facilities | Backlog |
|---|---|
| Muni Stadium | $2,000,000 |
| Solar4America Ice at San José | TBD |
| SAP Center | $2,400,000 |

## 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. The total backlog is estimated as shown in the following table:

| Facilities Operated by Team San Jose | Backlog |
|---|---|
| California Theater | $1,775,000 |
| Center for Performing Arts | $38,448,000 |
| Civic Auditorium | $3,124,000 |
| Montgomery Theater | $1,432,000 |
| Convention Center | $20,207,000 |
| South Hall | $2,500,000 |
| **Total Backlog** | **$67,486,000** |

While life cycle condition reports are still under review for all facilities, preliminary one-time deferred maintenance costs are estimated at $67.5 million. The recent rise in Transient 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 2018 the Convention Center exhibit hall lighting and ceiling upgrade project was completed at a total cost of approximately $21 million. The rehabilitation of the Civic Auditorium HVAC system at a cost of $5.5 million was also completed in 2018. The Convention Center restroom upgrades were completed in December 2019 at a cost of $2.3 million. An evaluation of phased rehabilitation needed for the Center for the Performing Arts (CPA) is under development. Staff anticipates the 2020-2025 Proposed Capital Improvement

Program to outline a multi-year strategy to partially address the needs of the CPA. 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 2,866 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 | 501 |
| Fire Front Line | 119 |
| General Fleet | 1,450 |
| Off Road Fleet | 274 |
| Other Equipment | 522 |
| **Total** | **2,866** |

This year's vehicle and equipment inventory increased by 79 assets or 3% from last year's total of 2,787. The increases occurred primarily in the Police Department programs and were substantially comprised of light duty vehicles. The City's fleet assets inventory will continue to "right-size" as the organization's overall service delivery systems adjust to the current and future budget reality of the City. As this "right-sizing" occurs, vehicles that are no longer needed for one program will be shifted to another to ensure the City is replacing the vehicles that are the oldest or no longer meet the City's current sustainability goals. This strategy helps extend the useful life of the entire vehicle and equipment inventory.

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

The current backlog for the entire Fleet Management Program is $9.6 million. However, if current funding levels remain consistent over the next five years, the $9.6 million will decrease to $6.7 million due to higher levels of anticipated contributions from special funds. Vehicles that provide support for General Funded activities have a backlog of approximately $6.4 million. The average annual need for General Fund-only replacement vehicles is $2.5 million. The annual funding of $1.5 million leaves an ongoing need of $1.0 million. In addition to the General Fund-only portion of the backlog, a backlog of $3.2 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 $3.8 million for vehicle replacements. Public Safety vehicle funding has remained fully funded to ensure service. The replacement projections are calculated with vehicles reaching both age and mileage thresholds. There are a significant number of vehicles reaching age only that are not included in the backlog. It is important to consider, older vehicles cost significantly more to maintain. Replacing older vehicles regardless of miles results in lower operating costs, higher availability, cleaner emissions, greater safety features, and better fuel economy.

## Parks, Recreation and Neighborhood Services

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

- 206 Neighborhood and Regional Parks, three golf courses and numerous Open Space areas totaling 3,537 Acres
- 50 Regional and Neighborhood Community Centers (Discussed above in the Building Facilities Section)
- 286 Playgrounds
- 13 Dog Parks
- 85 Tennis Courts
- 20 Bocce Courts
- 158 Basketball Hoops
- 36 Outdoor Fitness Areas
- 6 Aquatic Facilities
- 7 Neighborhood and 1 Regional (Lake Cunningham) Skate Parks
- 17 Community Gardens
- 101 Athletic Fields Supporting Youth and Adult Soccer, Baseball, Softball, and T-Ball
- 61 Miles of Paved Trails
- 77 Trail and Park-Related Bridges
- 7 Park Service Yards
- San José Family Camp
- Happy Hollow Park and Zoo

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

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

PRNS estimated infrastructure backlog needs at approximately $200,149,000 as of FY 2013-14. That number is adjusted annually based upon asset lifecycles and unfunded liabilities. Table PRNS-1 shows the estimated backlog for various PRNS amenities. Staff continue to build on data collection and management to more accurately quantify and track backlog in specific asset classes. This improved data management may increase the overall infrastructure backlog estimate for the parks system. Annual depreciation and inflation continue to grow at a faster rate than annual expenditures resulting in an overall increase to the total PRNS infrastructure backlog.

Despite an estimated five-year capital budget of $359.99M, the parks related infrastructure backlog continues to grow at a rate that exceeds the capital budget. PRNS will continue to explore alternative funding sources to offset both capital and operating expenses and reduce its DMIB burden.

**TABLE PRNS-1**
**PRNS Asset Backlog Estimates (Begin FY 2019-20)**

| Park Component | Estimated Backlog 2020 | |
|---|---|---|
| Park Grounds[1] | $ 101,141,000 | |
| Playgrounds | Future Calculations to be Extracted from Park Grounds and Regional Facilities | |
| Sport Courts / Fields | Future Calculations to be Extracted from Park Grounds and Regional Facilities | |
| Pools | Future Calculations to be Extracted from Park Grounds and Regional Facilities | |
| Bridges | Future Calculations to be Extracted from Park Grounds and Regional Facilities | |
| Park Yards | $ 7,830,000 | |
| Trails | $ 14,153,000 | |
| Regional Facilities | $ 111,462,000 | |
| *Park Component SubTotal* | | *$ 234,586,000* |
| Community Buildings[2] | $ 64,885,000 | |
| Other Buildings [2] | $ 79,702,000 | |
| Restrooms[2] | $ 2,889,000 | |
| *Building Component SubTotal* | | *$ 147,476,000* |
| **TOTAL PRNS BACKLOG** | | **$ 382,062,000** |

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

A summary of each class is presented below.

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

Playgrounds
In 2018, PRNS completed an inventory and developed GIS mapping of its playground assets. Table PRNS-2 shows the number of playgrounds in each Council District placed into one of four age categories: 1) less than 10 years; 2) 11 to 14 years; 3) 15 to 20 years; and 4) older than 20 years. The work in 2018 led to funding for replacement or improvements at numerous playgrounds throughout the city. In 2019, Table PRNS-2 was modified to show how many playgrounds in each Council District received funding for renovations or replacements or had new playground installations.

**TABLE PRNS-2**
**Playground Age by Council District**
**(as of December 20, 2019)**

| Playgrounds | CD 1 | CD 2 | CD 3 | CD 4 | CD 5 | CD 6 | CD 7 | CD 8 | CD 9 | CD 10 | Total Citywide |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ≤ 10 Years | 2 | 11 | 12 | 12 | 8 | 7 | 22 | 6 | 6 | 3 | 89 |
| 11 - 14 Years | 0 | 1 | 6 | 1 | 3 | 4 | 2 | 6 | 1 | 9 | 33 |
| 15 - 19 Years* | 13 | 17 | 13 | 15 | 14 | 12 | 11 | 4 | 15 | 19 | 133 |
| ≥ 20 Years* | 4 | 5 | 6 | 0 | 2 | 0 | 0 | 7 | 2 | 2 | 28 |
| **Total** | **19** | **34** | **37** | **28** | **27** | **23** | **35** | **23** | **24** | **33** | **283** |
| New Playgrounds Opened in 2019 | | | 1 | | | | 2 | | | | 3 |
| Number of Playgrounds Funded for Replacement in FY2019/20 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | 1 | 14 |

** Meets or exceeds the target lifespan of playground equipment*

Per Table PRNS-2 created in 2018, more than half (57%) of existing playgrounds (161 out of 283) are at or have exceeded the target lifespan of 15 years. Of the remaining playgrounds, 33 are 11 to 14 years old, suggesting replacement will be required within the next five years.

In 2019, PRNS acquired funding to renovate or replace 14 playgrounds, which will reduce the total number of playgrounds that have exceeded the target lifespan. Further effort is being made to assess playgrounds by investigating factors including age of equipment, manufacturer, and condition of structure. Those playgrounds that have been identified through the lens of these criteria were selected for safety inspections to determine the next priorities for replacements. PRNS will continue to propose funding for the renovation or replacement of these playgrounds.

Sport Courts

PRNS staff are in the process of assessing sport court (e.g., tennis, futsal and basketball courts, etc.) pavement conditions. The initial stage of this project involves site visits to each sport court to perform visual inspections. Each assessment will be translated to a numerical rating which can then be used to generate a prioritized list for work orders. By inventorying and analyzing the sports courts, PRNS will be able to identify the infrastructure backlog quantities and costs of this park asset category. The findings of this report will be available in 2020.

Sport Fields

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

Pools

The City of San Jose currently operates six pools. While this is a small quantity, these assets are an important feature to the communities they serve. The pools and associated infrastructure will require further research to determine the unique funding needs each pool requires. In future years, PRNS will secure funding to perform evaluations of the pools and quantify infrastructure backlog.

Bridges

The current inventory of pedestrian bridges includes bridges found in parks and along trails. An inspection report conducted by Public Works has guided the process for repair work. Ten out of 77 bridges have been repaired and the remaining 28 bridges with repair needs are currently being scheduled. New protocols for maintenance work will allow for better project tracking to capture monies spent on bridge repair work.

Park Yards

Staff completed a study of park yards in 2019. The study determined both infrastructure backlog and future reconstruction needs at each location. The total funding need for park yards is approximately $47 million, with $7.8 million shown as infrastructure backlog. Infrastructure backlog includes pavement replacement, fencing, facility security, etc. and, in two cases, replacement of portable buildings that are past their useful life.

Trails
In 2019 PRNS investigated the potential of hiring a consultant to perform automated condition assessments of the trail system. While this project did not receive funding in 2019, PRNS continues to pursue efficient means of assessing trail pavement and will revisit this venture in the next fiscal year. Additional assessments will be required for trail assets including signage and striping. Reserve funds will be requested next fiscal year to establish a reliable funding system in order to perform periodic resurfacing and restriping to sustain longevity of trail pavement.

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

## Sanitary Sewer

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

- 2,030 Miles of Sanitary Sewer Mains (6 inches to 90 inches in diameter)
- 12 Miles of Force Mains
- 17 Pump Stations
- 2 Filtration Stations
- 39,380 Manholes
- 202,000 Lateral Connections

Approximately 80% of the City sewer collection system is at least 40 years old. The Department of Public Works (DPW) is leading the implementation of a comprehensive Condition Assessment program with the Department of Transportation's (DOT) assistance to determine the infrastructure improvement needs of the aging system. Data gathered from the Condition Assessment will be utilized by both departments to determine the capital projects necessary to maintain the service life of the system as well as operations and maintenance programs to ensure uninterrupted conveyance of sewage to the treatment plant.

In order to meet the more stringent regulatory requirements of the State Sanitary Sewer Systems-Waste Discharge Requirements, 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 eight years. These strategies include increased sewer line cleaning productivity, proactive cleaning of problematic sewer lines, implementation of an SSO first responder program, chemical treatment or mechanical

cleaning of sewer lines identified as having heavy root intrusion and growth, and continued collaboration with the Environmental Services Department (ESD) to address commercial areas that have evidence of excessive fats, oils, and grease (FOG) in their sewer mains.

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

| Fiscal Year | FY2012-13 | FY2013-14 | FY2014-15 | FY2015-16 | FY2016-17 | FY2017-18 | FY2018-19 |
|---|---|---|---|---|---|---|---|
| Number of SSOs | 155 | 101 | 97 | 55 | 58 | 22 | 42 |

The 42 SSOs are equivalent to approximately 2.1 SSOs per 100 miles of sewer main per year. The significant reduction in SSOs since FY2012-13 is attributed to the improvements made by DOT in the maintenance of the existing sewer system in conjunction with the DPW repair and rehabilitation projects identified through the Condition Assessment program and Sanitary Sewer Capital Improvement Projects. DOT continues to proactively enhance its maintenance program and will continue to evaluate the program's performance as it works towards keeping the SSO rate at fewer than 3 SSO events per 100 miles of sewer main annually.

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

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

***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 FY 2008-09, the City has included 5 of these projects into the multi-year CIP work plan, and to date, 36 of these projects have been completed.

Staff continued to use flow monitoring data collected through the ongoing flow monitoring program to evaluate and validate the remaining projects to address existing deficiencies. As of end of FY 2017-18, all projects with existing capacity deficiencies have been reviewed against recently collected flow data. As a result, 21 new projects totaling nearly $29 million were confirmed to have existing capacity deficiencies and are considered as infrastructure backlog rather than deferred maintenance. This equates to an annual cost of $2.9 million per year for the next 10 years.

Staff is working on expanding the model to include all 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. Likewise, DOT had made investments for additional equipment and personnel in conjunction with its operations and maintenance program to assist the Sanitary Sewer Condition Assessment (SSCA) program. Coupled with defect coding analysis and sewer repairs, 78% of the City's sewer collection system has been inspected. This progress is in alignment with the recommendations from the Pilot SSCA completed in 2011. Utilizing a risk-based analysis of statistic samples of the sewer system revealed the need to invest in frequent monitoring of the high-risk pipelines. The SSCA recommended an annual investment of $28 million for system rehabilitations in order to prevent the system from further deterioration. The SSCA also recommends a 10-year remote video inspection and analysis program for the collection system which equates to 10% annually. As the SSCA program continues, it is anticipated that additional funding may be needed to design and construct sewer infrastructure repair and rehabilitation projects identified in the SSCA program. Completion of these projects reduces the potential risk of SSOs due to structural deficiencies in the system and may augment the Operations and Maintenance program.

An Exfiltration Abatement Program was recently developed and implemented by DPW staff to identify sewer mains with high risk of sewage exfiltration (leaking out) potentially causing contamination of the storm drain system. DPW aims to repair/rehabilitate these sewer mains at a rate of 6.5 miles annually. Staff has revised its work plan to integrate the Exfiltration Abatement Program into the SSCA program to identify high-risk pipe in the system using video inspection. As of October 2018, approximately 78 miles of high-risk pipes have been identified and the funds needed to repair and rehabilitate these 78 miles is estimated to be $83 million. As more information is collected through the CCTV program, the number of high-risk pipes and repair needs may increase. The repair and rehabilitation of these high-risk pipes are carried out as part of the existing CIP sewer repair and additional needs will be quantified and reported in future years.

Staff is also working on developing a new Interceptor Management Program for the interceptor system. The interceptor system consists of a series of parallel, large diameter pipelines that extend from 7th and Empire Street, north along 7th, 5th, and 4th Streets to Highway 101, and across Highway 101 along Zanker Road to the Regional Wastewater Facility located north of Highway 237. The Interceptor Management Program will include a condition assessment program which would remove accumulated debris, clean and evaluate the interceptors and prioritize the portions of pipe that may require rehabilitation and/or repair. The program will also include the evaluation and rehabilitation of the City's soil bed filters that assist with removing odors and corrosive sewer gases from the interceptors. The soil bed filters are located at Canoas Garden and at Structure B on Zanker Road. Currently the facilities are outdated, not working efficiently, and in need of replacement or upgrading utilizing newer filter technology. The total cost for this Interceptor Management Program is still under development.

***Operations and Maintenance***

DOT staff has been implementing several elements of the SSO Reduction Program that was developed to address the results of the 2010 EPA / San Francisco Regional Water Quality Control Board (SFRWQCB) audit. 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, the 909 miles of sewer lines cleaned was on par with the 942 cleaned in FY 2017-2018. 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 $1.4 million to a total of $37.2 million to fully fund the annual capital program.

Beginning in FY 2015-16, 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 $5.2 million funding gap.

The implementation of the Exfiltration Abatement Program has been carefully crafted into the CIP; however, construction escalation has stretched the current budget that was allocated to this program and may need some adjustments in 2020-21 budget. Staff will continue to monitor all expenditures related to the Exfiltration Abatement Program and request for adjustments to the budget or staffing as needed.

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

The annual operating and maintenance costs (managed by DOT, currently at $20.85 million) may also require future increases to enable DOT to continue implementing various strategies aimed at decreasing SSOs and response times. The purchase of additional equipment and resources to implement technology solutions that will enable better system monitoring and more efficient maintenance operations are some of the future investments under consideration. As the pavement maintenance program increases production as a result of new funding streams, the number of sanitary sewer miles investigated via CCTV will increase to proactively identify sewer defects with the goal of repairing them prior to paving. Current CCTV and sewer repair capacity has been increased temporarily to meet this expansion. DPW and DOT are working together to evaluate existing capabilities and determine if more resources need to be considered through the budget process.

An idealized annual investment for both the Capital Improvement needs (for rehabilitation and capacity expansion) and O&M of the system would total approximately $57.05 million per year for the next 10 to 20 years as shown in the following table:

| **Annual Need for Maintenance and Infrastructure** | |
|---|---|
| Rehabilitation | $29,400,000 |
| Condition Assessment | $ 3,900,000 |
| Capacity Projects (existing users) | $ 2,900,000 |
| **Total Capital Need** | **$36,200,000** |
| O&M (DOT) | $20,852,000 |
| **Total Capital and Operating Need** | **$57,052,000** |
| 2019-2020 Adopted Budget Funding | $54,671,000 |
| **Total Annual Unfunded Need** | **$ 2,381,000** |

After taking into account DOT operating costs ($20.85 million) programmed in the 2019-2020 Adopted Operating Budget and the amount of resources added into the 2019-20202020 Adopted Capital Budget ($33.8 million, which excludes fund balance primarily used for continuing projects and Sanitary Sewer Joint Participation projects), the remaining annual unfunded need is approximately $2.4 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
- 4,500 Miles of Curb and Gutter
- 1,712 Storm Outfalls
- 31 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 Valley Water for storm runoff methodologies and parameters, and for use of their HEC-RAS riverine model as boundary conditions. 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 or higher is anticipated in a 3-year event. These high-priority projects consist of installation of new storm sewers, upsizing of existing storm sewers, and construction of a new pump station on Charcot Avenue if pumping alternative is selected. With the allocation of $35 million from Measure T to construct the Charcot area flood protection project, either a flow diversion system or a new 250-cfs pump station, the capital cost for the remaining high-priority projects for flood protection purposes is estimated to be $180 million.

The 2020-2024 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 335 outfalls have deteriorated and require rehabilitation. In addition, any improvements within the riparian corridor of City-owned creeks require mandatory environmental mitigation, monitoring and reporting to the regulatory agencies for a minimum of 10 years. The current annual funding to rehabilitate these outfalls is $760,000, which may be sufficient to address a few high-priority locations per year.

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 2020-2024 Adopted CIP is $12.8 million in 2019-2020 and between $9.0 million to $14.0 million per year for the remaining years of the 5-year CIP. The 2019-2020

transfer amount included a $5.5 million reimbursement received from Caltrans for full trash capture projects.

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

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

**Impacts of Measure T**

A total of $35 million was allocated for Storm System Conveyance & Flood Prevention Project. This funding will be utilized for high priority projects identified in the Deferred Maintenance and Infrastructure Backlog. The highest priority project is the design and construction of a new storm water pump station in North San Jose near Charcot Avenue/Coyote Creek.

A total of $25 million was allocated by the Measure T to install multi-benefit regional green infrastructure (GSI) projects. ESD, PRNS, and PW collaborated to identify six potential regional GSI locations at River Oaks Detention Basin, Kelley Park Horse Stables and Disc Golf areas, Vinci Park, Roy Butcher Park, and Tully Ballfield Park. This investment aligns with the need to invest in green stormwater infrastructure to further the environmental goals of the City.

ESD and PW staff worked collaboratively to request Proposition 1 Integrated Regional Water Management (IRWMP) Grant Program funding for a potential project at River Oaks Pump Station. The IRWMP Grant Program requires a 50% funding match from grant awardees.

**Information Technology**

In Fiscal Year 2017-2018, the City of San José began reinvestments in essential information and communications technologies (IT) that support all City departments, but where those assets were at End-of-Life and End-of-Support in their engineered lifecycles. Citywide technology services affect nearly all City operations, including voice and data communications, data access, email and collaboration, City financials systems, human resources systems, and payroll systems. The Information Technology Department (ITD) assembled asset data in developing the IT Strategic Plan that cataloged unfunded server, storage, software, cybersecurity/resilience, and other costs.

In tandem with a City Auditor's report, those liabilities were added to the deferred maintenance infrastructure backlog as unfunded capital technology items.

***Progress Since FY2017-2018***

Four areas of investment were emphasized in the IT Strategic Plan and all received funding in the past two City Budget cycles to resolve major portions of the respective backlogs—cybersecurity; server and storage infrastructure; personal computers used by employees that were old and insecure; and a Technology Replacements Fund to begin accruing for the replacement of major, multi-million dollar systems such as the City's financials, human resources, payroll, and public wireless systems. Of the $28M+ in identified needs, the City invested $1.7 million in an IT Infrastructure Refresh; about $2 million in replacing decrepit computers running on old, slow, and unsecure operating systems; about $600,000 in new funding for pressing cybersecurity needs; and initiated the Technology Replacements Fund with an initial $2 million deposit.

***New Needs are Reshaping Deferred Priorities***

Continuing to resolve deferred IT investments is essential to meeting the San Jose Smart City Vision and the City Manager's Enterprise Priorities. Information and communications technologies are essential to delivering outcomes defined in four of the eight Priorities: Emergency Management and Preparedness; Smart, Sustainable, and Reliable City; Strategic Fiscal Positioning and Resource Deployment; and Powered by People.

Communication and systems outages in 2016 clarified the need for investment in the City's aging technologies as departments were impaired for hours to days. In fact, modern work teams are often incapacitated when their ability to use work systems and communicate are compromised. Three Public Safety Power Shutoff events, as well as observations from large organizations that experienced cyberattacks that brought down regulatory, public safety, airport, financial, and payroll systems—all validate the need for San Jose to build resilient and secure information and communications systems now and into the future.

Additionally, as the City prepares for the next economic downturn, technology is a strategic tool for meeting high service demands even as City resources stall or decline. Software and communications tools can automate trivial and manual tasks; enable more responsive interaction with the City for residents and businesses; and avoid costs through data-driven decision-making.

***Citywide Technology Portfolio***

ITD organizes the City's Deferred Maintenance Infrastructure Backlog along its portfolio of service areas:

- **Business Solutions**—Human Resources, financials, payroll, talent management, utility billing, treasury, revenue, enterprise content management, and similar critical enterprise systems and platforms.

- **Cybersecurity**—Perimeter defense systems, deskside and client anti-malware, incident management systems and services, and education/training resources.
- **Data/Voice/Video Networks**—Routers and switches constituting the Municipal Area Network, wireless access equipment and systems for major City facilities, telephone services and equipment, load balancing systems, remote access systems, software defined networking platform, and network monitoring and alerting systems.
- **IT Infrastructure and Operations**—Server compute, data storage, and backup solutions, server virtualization platform, virtual computers platform, and Help Desk/case management systems that support about 7,500 users and over 350 enterprise servers used citywide.
- **Public WiFi Network**—Public wireless network connecting San Jose International Airport, the Convention Center, and the Downtown core ("Wickedly Fast WiFi"), along with the East Side Union High School District partner network ("Access East Side") serving one attendance area and approved to grow to one to two more.
- **User Computing Environment**—Approximately 7,500 PCs, 9,600 IP phones, and 3,100 City mobile computing and communications devices.

***Current Status***

Deferred Infrastructure costs by IT categories:

| **Information Technology Infrastructure Backlog** | | |
|---|---|---|
| **IT Service Area** | **One-Time** | **Annual Replacement Accrual** |
| Servers/Storage[1] | $ 116,000 | $ 23,200 |
| Data and Voice Communications | None | $ 80,000 |
| Deskside and Mobile Technologies | $ 2,096,600 | $ 1,374,471 |
| Business Software Applications | $ 25,780,000 | $ 2,565,000 |
| Security | $ 360,000 | $ 275,833 |
| **Total** | **$ 28,352,600** | **$ 4,318,504** |

[1] Major replacement of servers and storage in FY2019-2020.

Overall, the deferred maintenance and infrastructure backlog for ITD is approximately $28.4 million in one-time costs and an estimated $4.3 million annually. While progress was made in the past two years, major systems continue to age toward the end of their engineered lives. The City's "Tech Debt" thus accumulates each year when investments are unaddressed.

In a number of areas, deferred infrastructure costs are peculiar in being low. While accurate to City asset inventories, the deferred infrastructure backlog for IT is shaped by (1) missing essential systems in departments for which obsolescence and capital replacement costs have not been planned, as well as by (2) systems for higher resilience, security, asset management, and administrative functions that are typical of organizations of San Jose's size and scale do not

exist. During the City's "Decade of Deficits", the organization simply lacked the resources to invest in some basic hardware and software tools. ITD continues to work with City departments to develop a clearer catalog of Citywide needs.

***Key Technology Initiatives Affecting Deferred Backlog***

Re-platforming the City on current technologies that will sustain operations and innovation efforts is one of the four major initiatives of the IT Strategic Plan approved by City Council. The replacement value of existing assets for core enterprise infrastructure hardware systems is about $28.4 million and includes all technology assets needed to support Citywide services. It excludes department-specific information technology equipment used by Police, Airport, and Libraries, and others that have dedicated staff and funding to support their operations.

Approximately 45% of City technology hardware is now past its engineered End-of-Life and End-of-Support. This is a 26-point improvement versus 2016 and will experience another major improvement in 2020, once large portions of the City's computers, servers, and storage are refreshed. With refreshed hardware, one-time costs to replace deskside and Data Center IT assets is approximately $2.1 million, with an ongoing maintenance cost of roughly $1.4 million.

The City Auditor's report on City mobile devices and usage identified a large inventory of assets that are handled under the operating budgets of departments, but that were not funded as part of any replacements program. With the Office of Civic Innovation leading and approval in the 2019-2020 Adopted Operating Budget, the City has a current project underway to augment response in City emergencies, replace obsolete phones and hotspots, and consolidate purchasing for volume discounts. Asset management improvements will be led by IT as part of the initiative.

As noted earlier, $1.7 million was carried to the 2018-2019 operating budget for a core infrastructure refresh for critical servers, along with $400,000 for Citywide data capacity for analytics and Internet-of-Things uses. The new IT infrastructure environment will provide a consolidated resource for all departments— providing server, storage, and virtualization capacities with higher availability, cloud-access, business resumption, and security that any current City server environment. The procurement award occurred in December 2018 and contracting was completed in November 2019. The project is slated for August 2020 completion. This new environment will allow departments to grow and meet server needs more quickly, more securely, and at lower cost. Thus, most departments are planning to migrate to the new ITD server environment as their end-of-life equipment fails and as resources can be assigned.

***Special Deferred Costs***

The City's Financial Management System (FMS) is almost 30 years old. A major update was completed by the Finance and IT department in March 2019. Nonetheless, departments continue to report the system lacks key functionality that would help them better manage their finances in real-time. In many cases, City teams have addressed functional deficiencies with "side" systems

as workarounds. The Finance Department and ITD estimates cost to re-platform the Finance system at approximately $15 million. The City should continue to accrue funds for that project.

In addition, Human Capital Management (Payroll, Time Management, Benefits and Position Control) and Budgeting systems are not seamlessly integrated with Financial Management System or Budget System. The City's Strategic Support departments will examine the potential gains that a fully integrated Enterprise Resource Planning (ERP) system might provide in 2020. Key aspects to assess will be work efficiency gains and the quality of reporting and planning. ITD estimates that is would cost approximately $8 million to replace our Human Capital Management System (PeopleSoft) and $1.2 million to replace our budgeting system (Hyperion).

The City is not fully positioned to use an enterprise content management system (ECM) across departments, causing an inability to effectively administer a Records Management Program and eDiscovery program at the level staffs require. By not having an ECM, departments desiring to implement business process automation tools do not have a consistent Citywide "source-of-truth" to store and search for records that are subject to discovery. In addition, fragmented approaches to creating electronic forms is more costly and lacks a cohesive strategy and vision. To move to a cohesive Content Management approach, investment is needed to re-engineer business processes and assist with change management in how our staff will do their work in a more automated mode. The estimated one-time and ongoing costs for completing implementation of the ECM solution is estimated to be $400,000 one-time, and $75,000 estimated on-going cost and excludes any additional staffing.

A final modernization need is in the area of the Emergency Operations Center. With the passage of Measure T, there will be technology investments related to the construction of the new Emergency Operation Center. Technology-related costs have not been thoroughly identified and will not be supported by bond funding. Hence, the City carries an currently unknown liability for those costs heading into the FY2020-2021 City Budget Process.

## Radio Communications Program

The City's infrastructure assets under this category include:

- Citywide Public Safety Radio Systems – 29 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
- Fixed equipment distributed at the above sites to operate the various radio systems:
    - Voting Receivers – 167
    - Base Station Transceivers – 112
    - Voting Comparators – 39

- Public Safety Answering Point (PSAP) – 33 Radio Consoles at Main Dispatch PSAP and 14 Radio Consoles at Alternate PSAP
- Subscriber Units (Mobile and Portable Radio Devices) – Approximately 6,700 Units (2,827 are already configured to use with SVRCS with 78 left to purchase this fiscal year and 167 left to purchase in FY 2019-20)
- Inventory for Support & Maintenance (Spare Parts & Supplies) – Approximately 1,000 Units
- Test Equipment – 52 Units

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 Silicon Valley Regional Communications System (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 2020-20242024 Capital Improvement Program allocates approximately $2.5 million to the Silicon Valley Regional Communications System – Radios project. In addition, the City will use grant funds to help supplement the purchase of SVRCS radios for Police and Fire. And, as the existing legacy radio system equipment is nearing the end of its useful life, $2.5 million will be needed to replace this backbone infrastructure.

## Transportation Infrastructure

The City's infrastructure assets under this category include:

- Street Pavement – 2,434 miles
- Traffic Signals – 957 signalized intersections
- Roadway Signs – 90,495 traffic control signs; 3,398 intersection street name signs; 26,509 residential street name signs
- Roadway Markings – 5,700,000 square feet of markings; 513,005 raised pavement markers (RPMs)
- Streetlights – 64,400 streetlights and poles
- Landscaping – 242 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 – 252,961 street trees (19,451 City-maintained) and 75,209 vacant street tree sites (777 on City parcels)

- ADA Compliant Curb Ramps – 29,657 locations (5,924 locations with no ramps; 17,332 locations with ramps that are not fully compliant and need modification or replacement; 6,334 locations currently in compliance)
- Bridges –158 National Bridge Inventory (NBI) vehicular bridges (20 feet or greater in length); 78 vehicular bridges less than 20 feet in length; 20 pedestrian bridges

***Street Pavement***

The City's most significant transportation asset is the street network consisting of 2,434 miles of pavement. The condition of San José streets has not declined this year and the current average Pavement Condition Index (PCI) is 66 on a 100-point scale, which is a rating of *Fair*. After years of increasing, the one-time deferred maintenance backlog has stabilized and is $539.7 million in 2019, only slightly higher than the $539.1 million reported in 2018. Based on current data, $102 million is needed annually over a 10-year period to improve overall pavement conditions to a rating of Good (PCI 70 or higher) and eliminate the backlog. The substantial new investments in the street network and maintenance on nearly 290 miles of streets in 2019 have steadied conditions on San José's streets, and reliable funding levels in future years will continue to reduce the maintenance backlog and improve street conditions citywide.

The combined revenues from Senate Bill 1 and VTA 2016 Measure B will account for an average of $36.5 million annually for street pavement maintenance over the next 10 years. Measure T will provide an additional $37.5 million each year through FY 26-27. DOT will also receive a federal grant which will provide approximately $17.2 million for maintenance on the major streets in the 2020 construction season. These collective funding sources bring the average annual funding level for pavement maintenance over the next 10 years to approximately $87.1 million, nearly the same number reported in 2019, and an increase of $37 million from the 2018 report in which the 10-year funding estimate was $50.1 million. With approximately $87.1 million in ongoing funding, the City will be able to fully fund pothole repairs, program management activities, and maintenance on the 944-mile Major Street Network which carries over 85% of City traffic. In 2020, DOT will initiate its first year of Measure T street resurfacing, which, in combination with annual allocations from VTA 2016 Measure B, is expected to provide maintenance to all residential streets in the City within a 9-year horizon.

The ongoing 10-year annual funding levels are $14.9 million short of the amount needed to restore the overall network to *Good* condition (PCI 70 or higher) in 10 years. This is a dramatic improvement from the 2018 report, where the annual shortfall was projected to be $42.7 million. Despite the shortfall, DOT estimates that the current funding levels will improve the average condition of the street network and reduce the deferred maintenance backlog over a 10-year period. With the investment of $300 million for pavement from Measure T, the anticipated street backlog by 2029 is expected to be approximately $371 million. This is a significant reduction from the $597 million 10-year backlog projected last year, and a $729 million reduction from the $1.1 billion projected backlog reported in the 2017 report. The improved expected 10-year backlog is a result of the plan to maintain the entire residential street network by 2028 using a zone-based selection approach, along with utilizing ongoing funding sources for cost effective

preventative and corrective maintenance on major streets to avoid further deterioration of many street segments.

DOT will provide a more detailed update to the Transportation and Environment Committee in March 2020 as part of its annual Pavement Maintenance Conditions and Funding Needs and Strategies Report.

***Traffic Safety Devices***

Traffic Signals
The Traffic Signal Maintenance Team responds to approximately 1770 service requests annually and maintains 957 traffic signal intersections (954 signals and 3 Hybrid Pedestrian Beacons – HAWKs), up from last year's 956 due to the activation of a new signal. 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, 87 miles of fiber, and 162 miles of interconnect cable throughout the City. DOT also maintains speed radar feedback signs (134) and changeable traffic direction signs (8). Due to past budget reductions that dropped preventive maintenance activities for much of this equipment below recommended levels, and due to continued hiring challenges which have increased the overall vacancy rate for electricians, currently only the most critical components that monitor the operation of the intersections are proactively maintained. Remaining resources are focused on responding to service requests in a timely manner. There is a one-time rehabilitation cost of $4.3 million for existing equipment. Additionally, there is an ongoing annual shortfall of $3.9 million, which includes amortized replacement costs and maintenance costs for new equipment, as well as the cost to provide all preventive maintenance activities for all existing signalized intersections and anticipated system expansion.

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

Roadway Markings
The roadway markings inventory includes roadway striping, crosswalks, stop bars and messages on street surfaces, and Raised Pavement Markers (RPMs). The purpose of these marking devices is to regulate and guide motorists, pedestrians, and cyclists to increase roadway safety, particularly during low-visibility conditions. Currently, there are 5.7 million square feet of

roadway markings throughout the City. To have 100% of markings in good condition, major roadway striping should be repainted every year; arterial legends and curb painting should be repainted on a two-year cycle; and residential areas should be repainted on a three-year cycle. Current funding only allows for a two-year repaint cycle for striping on major roads; a three-year cycle for arterial legends and curbs; and a 6-year cycle for residential areas. As a result of the deferred maintenance, approximately 3.7 million square feet (64%) are currently in good condition, which leaves 2 million square feet (36%) 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) – 278,695 on residential streets and 240,877 on major roadways. Currently, 100% 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 (5.7 million square feet of paint and all RPMs) in good or better condition, one-time funding of $6.1 million is needed to complete an additional 2 million square feet of roadway markings and install 303,752 RPMs. Additionally, $2.8 million is needed annually to meet all prescribed preventive maintenance cycles.

***Right-of-Way Street Lighting***

The City of San José owns and maintains 64,400 streetlights and streetlight poles, 28,400 of which have been converted to LED light fixtures to date. The current streetlight network contains 32,204 painted octaflute streetlight poles and 32,196 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 10,913 outages were repaired in FY 2018-19, which represents a 7% increase from the previous year. The increase in repairs is likely the result of the increased number of streetlight outage reports submitted through the ***My San Jose*** application, which makes reporting outages much easier for the public. Current resources, assuming full staffing levels, support a target service level for repairs of streetlight outages at 65% within 7 days. Unfortunately, maintaining full staffing has not been possible, and the FY 2018-19 performance was approximately 43% of reported outages repaired within 7 days. The streetlight team accomplished 71% of the repairs within 14 days despite the staffing challenges.

The 32,204 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 painted streetlight poles with galvanized surfaces would require a total one-time rehabilitation investment cost of $34.2 million.

The combination of Measure T and the PG&E conversion program have eliminated any one-time backlog associated with the conversion of Low-Pressure Sodium lamps (LPS) to LED lighting. On June 25, 2019, the City Council authorized the City Manager to negotiate and execute agreements with PG&E for the financing and installation of up to 27,000 LED streetlights. City staff is working to have the streetlight agreement executed with PG&E by the end of February 2020. The terms of the agreement provide for PG&E to fund, procure and install the new fixtures, remove and dispose of the old fixtures, and finance the entire effort at 0% interest. These costs are paid back using an energy-savings calculation based on the flat rate streetlight tariff. Staff anticipates PG&E beginning the conversion process by summer 2020, with completion targeted for the following year.

DOT developed a plan to get a head start on the conversion process because LPS lamps are being discontinued by manufacturers. DOT has already converted 1,156 conventional streetlights to LED and will convert over 5,000 of these lights with existing staff while the PG&E conversion process gets underway in the coming year. DOT will convert an additional 5,000 non-LED lights comprised of underpass lighting, decorative/ornamental lights and lights on pedestrian over crossings. Ultimately, every light in DOT's lighting inventory will be converted to LED.

***Streetscapes***

Right-of-Way Street Landscaping

There are 242 acres of General Fund street landscape including roadside and median islands. In the FY 2018-19 Adopted Budget, the Mayor's Beautify San Jose initiative provided one-time funding for a year period to address landscaping and debris removal work contractually on just over half of the City-maintained General Fund street landscape parcels. Funding for Beautify San Jose is set to expire on June 30, 2020, and DOT will seek to continue the program through the budget process.

In 2001, staff prepared an assessment of the median island landscape throughout the City, which identified several locations where median island landscape would be appropriate. Those locations total approximately 50 acres of new landscaping. To date, approximately 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 total approximately $13.8 million. Of the 242 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 $1 million will be needed to convert these locations to low-maintenance Type 1 designs. When combined with the procurement of vehicles for additional the total one-time need in Street Landscaping is $15.1 million.

Since FY 2006-07, the average landscape acreage per maintenance worker has risen from approximately 8 acres to 30.18 acres due to resource reductions and a growing inventory. In FY 2000-01, the condition of the City's street landscapes reached their peak in terms of condition, with 86% in good or better condition. Due to budget reductions since that time, conditions declined to 51% in good condition in FY 2016-17, but the overall landscape condition rating improved to 79% by FY 2018-19 with the sustainment of the Beautify San Jose program. 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 80% of all landscapes maintained with generally funded resources in good or better condition. This represents an ongoing annual shortfall of approximately $2 million. 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 $40,000 for weed abatement spraying for concrete islands. Although the $1.6 million ongoing annual shortfall is an accurate projection of future needs, it has been reduced over the past two years by $1 million to account for the Beautify San Jose funding that has addressed some of the deferred needs.

Stormwater Treatment Control Measures (TCMs)

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

To date, DOT has accepted 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. DOT received funds in the FY 2017-18 budget process for increased maintenance costs, repairs and ongoing maintenance of new facilities, and as a result the program is currently fully funded and there is no deferred maintenance or ongoing shortfall to report.

Street Trees

The City of San José's community forest consists of public trees as well as those trees that are on private property. There are an estimated 252,961 street trees within the public right-of-way under the jurisdiction of the Department of Transportation. Of those, 19,451 trees are in areas which are maintained by the City, such as median islands and roadside landscapes. In addition,

there are an estimated 75,209 vacant street tree planting sites, 777 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 $3 million in one-time funding is needed to bring all existing City-maintained trees into good condition, and an additional $583,000 is needed one-time to plant trees in existing City-maintained plant-able sites.

Ongoing annual funding of $490,000 is needed to maintain a 5-year pruning cycle and tree replacement needs for the 19,451 City-maintained trees, manage tree-emergencies that are reported by the public, regularly update the street tree-inventory for City maintained trees and plant vacant tree sites. With a current base budget funding level of $10000, that leaves an annual ongoing shortfall of $390,000.

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 $39.1 million worth of existing needed repairs throughout the City, based on a 2% sampling of curb & gutter conducted in 2001. Additionally, while there is no actual inventory of sidewalks, it is estimated that there are 4,500 miles of sidewalk in various widths from 5 feet to 13.5 feet, which is based on the number of centerline miles of street. The rate of sidewalk damage is not known; however, having completed a tree inventory in 2015, over 19,000 parcels were brought to the attention of City staff, indicating that a significant body of work exists and has yet to be noticed or reported by residents. It is estimated that, under the current sidewalk repair policies, approximately 5,000 sidewalk locations will be repaired each year.

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

In 2017 and 2018, DOT worked with a consultant to provide a detailed analysis of the City's ADA ramp inventory to determine where ramps were missing or not in full compliance with the most recent ADA standards. The collected data was refined and analyzed in 2019, providing DOT with the most comprehensive update to its ADA ramp inventory to date. Using a combination of automated and manual data collection processes, the consultant determined that there are 29,657 locations that have been identified where ADA curb ramps should exist. Of these locations and accounting for recent construction, 6,334 currently have ADA compliant ramps. Of the remaining 23,323 locations, 5,924 ramps are missing, 11,637 ramps exist but have significant barriers to mobility as defined by the ADA and must be retrofitted or replaced, and

5,726 require retrofit but are a lower priority because they provide fewer barriers to mobility. It is estimated that a total of $158 million is required to install missing ramps and to bring existing ramps to current standards.

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

Missing Sidewalks

Although there is no complete assessment of missing sidewalks throughout the City, DPW and DOT staff are compiling locations of missing sidewalk as inspection staff becomes aware of them. The existing data, although not comprehensive, indicates a total of 118 miles of missing sidewalk in the City. Some notable locations include Alviso, Santa Clara County pockets annexed to the City, and certain areas where the design standards differed from those of today (North San Jose, portions of Almaden Valley hillside areas, and industrial areas).
Although the City of Alviso consolidated with the City of San José in 1968, the area continues to be deficient in a number of infrastructure categories, including sidewalks, curb and gutter, street lighting, and street trees. Deficient streets include portions of El Dorado, Moffat, Liberty, Liberty Court, Gold, Catherine, State, North First, and Spreckles.

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

***Bridges***

DOT is responsible for the maintenance of 158 National Bridge Inventory (NBI) bridges throughout the City, each of which exceeds 20 feet in length. There are an additional 78 vehicular bridges that are less than 20 feet in length and a further 20 pedestrian bridges for which DOT receives periodic service requests to repair. NBI bridges are regularly inspected by Caltrans, and DOT utilizes the reports generated from those inspections to determine the costs associated with maintaining and rehabilitating these bridges.

Currently, there is a one-time backlog of $131 million to replace and rehabilitate 26 bridges that have been identified by Caltrans to be structurally deficient or functionally obsolete and provide needed but not urgent corrective and preventive maintenance to 80 NBI and non-NBI bridges. This backlog will benefit from the receipt of $20 million in Measure T funds which can be further leveraged to receive grant funding at the state and federal level, though the full extent of work and potential impact to the backlog is not yet known.

If all rehabilitation and replacement work were accomplished, DOT estimates that it would require approximately $250,000 annually to perform routine inspection, cyclic preventative

maintenance and condition-based corrective maintenance on its NBI and non-NBI bridges based on programmatic cost analysis. The City currently allocates $350,000 for bridge maintenance. Aside from City dollars, the Federal Highway Bridge Preventative Maintenance Program (BPMP) grant program has served as a funding source. DOT staff will continue to pursue grant funds to address the current backlog of bridge preventative maintenance and rehabilitation projects.

A consultant is in the process of evaluating the City's bridge network to help develop a long-term maintenance strategy. DOT will additionally be delivering maintenance projects on approximately 39 bridges in 2020 which will provide current data on construction prices. DOT anticipates the on-going annual funding needed to increase based on these new efforts and will report findings in next year's report.

## TRANSPORTATION INFRASTRUCTURE SUMMARY

A one-time investment is needed in every major Transportation asset category in order to bring the assets into good condition; most have ongoing shortfalls creating further backlogs and declining asset conditions.

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 | $539.7 | $14.9 [(1)] |
| Traffic Signals | $4.3 | $3.9 |
| Roadway Markings | $6.1 | $2.8 |
| Streetlights | $34 [(1)] | $0 |
| ADA Curb Ramps | $158 | $0 |
| Trees | $3.6 | $0.4 |
| Landscaping | $15.1 | $1.6 |
| Bridges | $111.0 [(1)] | $0.1 |
| Missing Sidewalk | TBD | TBD |
| **Total** | **$871.8** | **$23.7** |

[(1)] Include Measure T investments of $300M for pavement over 10 years, streetlight conversions through Measure T and PG&E program, and $20M for bridges

## San José/Santa Clara Regional Wastewater Facility

### *Facility Description*

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

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

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

The RWF was originally constructed in 1956 and continued to be expanded over several decades in response to a growing population/service area and to comply with increased state and federal 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 2018, the Average Dry Weather Influent Flow (ADWIF) and Average Dry Weather Effluent Flow (ADWEF) were 110 mgd and 79 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 project (2007); Sodium Hypochlorite Disinfection Facility (2011); Electrical Reliability Improvements (2004-2013); Digester Gas Storage Replacement (2016); Digester Gas Compressor Upgrades (2017); Emergency Diesel Generators (2017), and Iron Salt Feed Station (2018). However, these improvements do not fully represent the comprehensive rehabilitation needs at the RWF based on its current age and condition.

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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.*

***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 2020-2024 CIP includes $884.5 million for construction projects at the RWF. Currently, there are 11 projects in feasibility or design and 7 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. This includes the San Jose-Santa Clara Clean Water Financing Authority (CWFA) 2009A Bonds which remains outstanding in the amount of $16.6 million with a final maturity date of November 15, 2020.

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

Going forward, the funding strategy for the City-only portion of the 10-year CIP primarily includes: (1) 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 2020-2021.

Currently, there are no unfunded needs for the RWF CIP. However, it is important to note that many projects in the Adopted 2020-2024 CIP are currently in the feasibility/development or design 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. The annual reinvestment into the system (approximately $5.0 to 6.0 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 ($3.1 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.

/s/
MATT CANO
Director of Public Works

For questions, please contact Michael O'Connell, Deputy Director, at (408) 535-8300.

Attachment:
Attachment A – General Fund and Special Funds/Capital Funds Details