THE CITY OF SAN DIEGO

REPORT TO THE CITY COUNCIL

DATE ISSUED: April 17, 2015 REPORT NO: 15-045

ATTENTION: Infrastructure Committee

SUBJECT: Citywide Sidewalk Assessment Final Report

REQUESTED ACTION:

THIS IS AN INFORMATION ITEM REPORT ONLY. NO ACTION IS REQUIRED BY THE COMMITTEE OR THE CITY COUNCIL.

BACKGROUND

The City of San Diego has more than 1.3 million residents residing in 342 square miles of land area. San Diego residents and visitors regularly utilize thousands of miles of sidewalks associated with the City street network. Many of the City's sidewalks were constructed during the rapid development of the City's roadway system from the start of World War II through the 1970s. The sidewalk system also includes much older walkways with some dating to the early part of the last century. While the City estimated an inventory of approximately 5,000 miles of sidewalks, a comprehensive condition and precise inventory was not known prior to the completion of this assessment and study.

On June 10, 2013, via Resolution 308247, the City Council approved the Mayor's Proposed Fiscal Year 2014 Budget with a few exceptions. An addition to the proposed budget by the City Council was $1,000,000 to fund an assessment of sidewalk conditions. The project scope of inventorying and assessing the condition of sidewalks was presented to the Infrastructure Committee on July 31, 2013. Preliminary work began immediately and field data collection occurred from February 2014 through April 2015. Final quality control is expected to be completed by the end of June 2015 with mapping to be completed by the end of the calendar year.

SIDEWALK MAINTENANCE POLICY

There are several policy and legislative documents that govern the responsibility for sidewalk repair, maintenance, and installation. Per state law, California Streets and Highway Code Sections 5610-5618, owners of property fronting a public street are required to maintain sidewalks in a safe condition for use by members of the public, except where the unsafe

condition is caused by someone other than property owner. Forty years ago, in 1975, the City adopted its current policy of paying for some of the cost to repair sidewalks in many other situations. Under Council Policy 200-12, the City assumed responsibility to repair sidewalk damage caused by water main breaks, grade subsidence, heat expansion, and street trees within the parkway that were planted or maintained by others.

Normal sidewalk wear and tear and deterioration is the responsibility of the adjacent property owner. Council Policy 200-12 also established a Cost Sharing Program to help offset the cost of repairs when the property owner was responsible for the repair. If a property owner must repair and replace any portion of the sidewalk, they are required to obtain a permit from the City, which is used for plan-check and inspections. This permit is not required for sidewalk repair that is addressed under the Cost Sharing Program.

The City of San Diego strives to keep sidewalks safe for public use by mitigating potential tripping hazards when made aware of such hazards. These hazards are mitigated through ramping of uneven sidewalk panels and repairing sidewalks damaged by trees planted in the public right-of-way. In addition, the City issues a Notice of Liability to the abutting property owners instructing them of their duty under California Streets and Highways Code Section 5610 to repair the sidewalk and keep it in a safe condition. Most property owners are unaware of their responsibility to maintain and repair the sidewalk adjacent to their property. As a result, when sidewalks deteriorate and even become unsafe, the City is left to mitigate hazards and perform repairs that could and should have been addressed by property owners.

SCOPE OF SIDEWALK ASSESSMENT

The condition of City sidewalks was at the center of this inventory and assessment. In addition to identifying damage to existing sidewalks and locations without sidewalks, several other assets and features were identified and inventoried. Prior to this endeavor, these assets had not been fully inventoried. These included:

- Sidewalk inventory
- Concrete curb ramps
- Trees within the right-of-way
- Sidewalk tree wells without a tree

PROJECT METHODOLOGY AND COSTS

The assessment was a labor-intensive process that involved student engineers walking the entire length of City sidewalks and recording data in handheld Global Positioning System (GPS) devices. Based on approximately 5,000 miles of sidewalk and an average walking/data capturing rate of 1.5 miles per day per student engineer, initial project estimates calculated a need for two project managers and 24 half-time student engineers to complete the assessment survey in 12 months. As a result of attrition, the data collection took fourteen months to complete. By

December 2014, approximately half of the student engineers had graduated or left the project for other opportunities; for the last two months of the project, only nine student engineers remained.

As mentioned previously, the project was estimated at $1,000,000. To date and through the data collection phase, the total project cost is approximately $800,000.

Prior to the onset of this project, there was no citywide sidewalk Geographic Information System (GIS) layer. This new GIS layer had to be developed prior to field data collection so that attributes captured during the field assessment could be tied to the GIS layer. Each sidewalk segment was assigned its own unique identification number. In the field, student engineers collected data along the segment lines displayed in a handheld GPS device. Data collected was automatically assigned to the selected segment.

A total of five distinct GIS layers were created as part of this project. Field data was collected with handheld GPS devices using Cartegraph's mobile software package. Collected data was downloaded daily from the GPS devices to the desktop computers running ArcGIS 9.

RESULTS

Sidewalk Inventory

The City has a street network consisting of 2,774 miles of roads. The survey determined that while most roads have sidewalks on both sides, there are several areas within the city where sidewalks do not exist for one reason or another.

Sidewalk Inventory	***Miles***
Sidewalks	4,580
Non-Existent Sidewalks	620

Per San Diego Municipal Code Section 142.0610, it is the responsibility of the developer or individual property owner to provide for new sidewalks adjacent to their property as part of the development process for building permits, subdivisions, and changes in use of the property. During the physical assessment of existing sidewalks, the student engineers captured locations where no sidewalks exist. These areas were mapped in GIS and a layer was created to identify these locations. This information will be used by various departments for planning and estimating purposes.

Condition Assessment

The criteria for recording sidewalk damages were based on predetermined standards set by the City's Transportation & Storm Water Department, Street Division. Damages were segregated into one of the following four categories:

- *Cracking* – the breaking of a sidewalk panel. This is often caused by deterioration, inadequate soil compaction, weight loads and temperature variances. These damages may not pose a safety hazard if no faulting or gaps occur.
- *Faulting* – the change in elevation across a crack. This is caused by the same factors as cracking.
- *Subsidence* – the sinking of sidewalk panels creating elevation differences between adjacent sections of sidewalk or curb. This is most often caused by insufficient compaction or expansive soils under the base material.
- *Uplift* – the raising of sidewalk panels creating elevation differences between adjacent sections of sidewalk or curb. This is most often caused by tree roots or heat expansion.

The severity of the damage for each category was also evaluated by field collection staff as elevation differentials of:

- Between ½" and 1 ½"
- Greater than 1 ½" up to 3"
- Greater than 3"

A summary of the deficiencies indentified are shown below.

Damages	***Locations***
Uplift/Faulting (0.5" to 1.5")	40,039
Uplift/Faulting (>1.5" to 3")	13,982
Uplift/Faulting (>3")	7,871
Tree-Damaged Sidewalk	7,585
Subsided Sidewalk	7,425
Cracked Sidewalk	1,480

The City currently funds a portion of damaged sidewalks indentified by complaints. These have traditionally been addressed as a first reported, first repaired method. However, with this comprehensive citywide list of conditions, the City will be able to prioritize locations Citywide.

Concrete Curb Ramp Inventory

Curb ramp data captured through this project was limited to identifying whether or not a curb ramp existed, then classifying it as 'compliant' or 'non-compliant.' A 'compliant' curb ramp was determined to have a truncated dome panel and no gutter lip. A 'non-compliant' curb ramp was an existing curb ramp with neither of the two aforementioned characteristics.

Non-Compliant

Compliant

The location and designation of each curb ramp was captured and mapped on a GIS layer.

Curb Ramps	***Inventory***
Compliant	21,377
Non-Compliant	20,966

Based on this inventory of curb ramps and the number of intersections in the City, it is estimated that there are 25,000 corners without a curb ramp. Thirty five new ramps were installed in Fiscal Year 2014, and approximately 100 ramps will be installed in Fiscal Year 2015 in areas where curb ramps did not previously exist.

Trees Within the Right-of-Way

The data capture of trees within the City right-of-way included the location and general type. Generally, the City right-of-way is a standardized offset of 10 feet from the face of an existing curb to the property line. While other offset distances do exist, it was not feasible to research every street within the City limits. As such, all trees within 10 feet of the curb or edge of pavement were recorded. Trees located within street center medians were not a part of this inventory.

There are several tree wells within public sidewalks which are void of a tree. The assessment survey captured these tree wells for which no tree exists and mapped their location along with the vertical difference between the sidewalk and the bottom of the tree well.

Tree Data	***Inventory***
Palm Trees	83,954
Non-Palm Trees	41,240
Tree Wells Without Trees	1,178

The existing tree inventory in the City's work management system database will be updated with this information. The data collected as part of this assessment will allow the City to refine the tree maintenance schedule.

FUNDING:

During the last ten years, funding for sidewalk replacement has been budgeted at approximately $400,000 per year. In 2010, approximately $9,550,000 of bond funding was allocated for tree-damaged sidewalk replacement. As reflected below, the FY 2015 Lease Revenue Bond includes $1,000,000 to replace damaged sidewalks, and the Mayor's Proposed Fiscal Year 2016 Capital Improvements Budget includes an additional $3,600,000 to address sidewalk panel replacement, representing the highest amount of funding for this purpose in the last five years.

Year	*Replacement*	*Cost-Share*	*Slice/Grind*	*Total*
FY 2010	$9,950,000	$100,000	$25,000	$10,075,000
FY 2011	$400,000	$100,000	$25,000	$525,000
FY 2012	$400,000	$100,000	$25,000	$525,000
FY 2013	$400,000	$100,000	$25,000	$525,000
FY 2014	$900,000	$100,000	$25,000	$1,025,000
FY 2015	$1,800,000	$300,000	$25,000	$2,125,000
FY 2016	$3,600,000	$300,000	$625,000	$4,525,000

The Street Division also has eight positions that spend the majority of their time ramping or grinding potential sidewalk tripping hazards. Sidewalk height differentials of 1.5 inches or less can normally be repaired rather than replaced; larger height differentials generally require panels to be reconstructed. In Fiscal Year 2014, staff ramped or ground approximately 1,400 locations. In the first three quarters of Fiscal Year 2015, more than 2,600 locations have been ramped or ground.

Funding for new sidewalks is shown below:

Year	*Funding*
FY 2010	$1,628,000
FY 2011	$1,041,000
FY 2012	$375,000
FY 2013	$1,007,516
FY 2014	$1,964,959
FY 2015	$1,714,515
FY 2016*	$1,000,000

*anticipated

By the end of Fiscal Year 2015, Street Division crews will install nearly two miles of new sidewalk. Locations that now have more contiguous sidewalks include Camino del Rio South, Genesee Avenue at Mt. Herbert Avenue near a bus stop, and sidewalks adjacent to Bay Park Elementary and Rolando Park Elementary Schools.

WORK PLAN

Repairs and replacement performed by the City will be prioritized based on the cause and extent of the damage. Consideration will also be given to the road classification, the amount of pedestrian traffic at the location, and locations with ADA-related complaints. As such, locations with damage caused by trees in the right-of-way near bus stops, schools, parks, gathering places, and retail corridors will be scheduled first.

With the $6,450,000 combined Fiscal Year 2015 funding, lease revenue bond, and proposed Fiscal Year 2016 funding, in the next year the City will be able to address more than 7,000, or 9%, of the 70,000 deficiencies.

	Unit Cost Estimate	*Total Locations*	*Total Cost*	*FY15/16 Funding*	*FY 15/16 Locations*
Maintenance - Slice/Grind	$150	40,039	$6,000,000	$650,000	4,333
Tree-Related Replacement	$3,100	7,585	$23,500,000	$5,400,000	1,742
Non Tree-Related Replacement	$550	30,758	$16,900,000	$600,000	1,090
Total Sidewalk Damage Repair		**78,382**	**$46,400,000**	**$6,650,000**	**7,165**

The $2,714,515 combined Fiscal Year 2015 and 2016 funding for new sidewalks will fund approximately 3.5 miles of missing sidewalk. The cost to install new sidewalks varies greatly by location, design requirements, and site conditions.

PREVIOUS COUNCIL and/or COMMITTEE ACTION

June 10, 2013 - City Council approved funding for assessment.

July 31, 2013 - Infrastructure Committee, Sidewalk Condition Assessment Project Overview

September 17, 2014 - Infrastructure Committee, Sidewalk Assessment Update

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