CITY OF CHULA VISTA

City of Chula Vista
Pedestrian Connectivity Plan

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CIVIL ENGINEERING / SURVEYING / PLANNING / GIS
LANDSCAPE ARCHITECTURE / ADA TRANSITION PLANNING

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TABLE OF CONTENTS

1. Introduction

The City of Chula Vista, California is a vibrant community located in the Metropolitan San Diego area. It has a population of 270,000 people and boasts more than 52 square miles of coastal landscape, rolling hills, mountains, quality parks and miles of trails. The City takes pride in providing access to its many community assets not only through vehicular access, but also through its connected sidewalk network, pedestrian and bike trails. The City plans to ensure equal opportunity for residents and visitors to the City of Chula Vista, to include those living with disabilities. As a result, the City engaged in a Pedestrian Connectivity Planning process to determine the extent to which individuals with disabilities may experience barriers accessing the public rights of way. The City of Chula Vista has engaged in this evaluation in an effort to identify and work toward removing obstacles that limit access by people with disabilities and promote pedestrian connectivity. This information, with public input received, allows the City to identify and implement a Pedestrian Connectivity Plan which reflects the City's ongoing commitment to all residents, employers, businesses and visitors for creating an inclusive and accessible place to live, work and play.

This report provides the project background, the approach, advanced methodologies, a summary of findings and an overview of next steps in advancing accessibility for public infrastructure for the City of Chula Vista.

1.1 Background

The City has established several programs to provide a strong foundation for implementation of recommendations to pedestrian connectivity and accessibility within the City of Chula Vista. The City's responsibilities in this arena are influenced by the American's with Disability Act (ADA). The American with Disabilities Act (ADA) became effective in 1991. It is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and places that are open to the public. The purpose of the law is to make sure that people with disabilities have the same rights and opportunities as everyone else. The ADA was passed to prohibit discrimination against people with disabilities.

The City originally adopted an ADA (Americans with Disabilities Act) Transition Plan in 1994. This plan covered all City facilities, and presented a discussion of City park accessibility, a checklist for City buildings, along with a pedestrian ramp inventory. The inventory was done in the field by City staff. At that time, it was determined that there were 2497 missing ramps in areas with curb, gutter and sidewalk, and 1847 existing ramps that may not have completely met ADA standards at that time.

Ramps were ranked according to the following criteria:

- One point for proximity to State and local government facilities
- One point for proximity to transit routes

- One point for proximity to commercial areas

Over time, all cities experience growth and change. In an effort to maintain its inventory of accessibility concerns, the City conducted a subsequent review of City infrastructure in 2006-2007. Categories for ranking ramps were re-established based on the most recent Americans with Disabilities Act regulations. The inventory was done on computer using iStreet View software, and it was estimated that approximately 5 to 10 percent of ramp locations were not identified. Other missing pedestrian improvements were inventoried in 2007, as the City mapped out missing sidewalk, and missing curb, gutter and sidewalk. The City updated the database to include any additional missing ramps identified in the field, and deleted ramps that were constructed.

In 2010 the City adopted its first Pedestrian Master Plan. Twenty-seven corridors and three intersections were recommended for pedestrian improvements. In 2015 the City determined that a full assessment of the public infrastructure would aid the public works department efforts to plan for and remediate all remaining public infrastructure over time. The City understood the importance of aligning their Pedestrian Master Plan data with the information pertaining to sites where public infrastructure required improvement for accessibility. In 2016, Cole Design Group, Inc. was selected to lead the effort of the Pedestrian Connectivity Plan, with Chen Ryan Associates, acting as sub-consultant to aid in data collection and alignment of the Pedestrian Master Plan.

1.2 Federal Accessibility Requirements

Understanding accessibility compliance, and specific accessibility issues within a city, is a requirement of the federal regulations implementing the Rehabilitation Act of 1973, which require that all organizations receiving federal funds make their programs available without discrimination toward people with disabilities. The Act, which has become known as the "civil rights act" of persons with disabilities, states that:

"No otherwise qualified handicapped individual in the United States shall, solely by reason of handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance (Section 504)."

Subsequently, Congress passed the Americans with Disabilities Act (ADA) on July 26, 1990. Title II of the ADA covers programs, activities, and services of public entities. The Department of Justice's (DOJ) Title II regulations adopt the general prohibitions of discrimination established under Section 504 and incorporate specific prohibitions of discrimination for the ADA. Title II provides protections to individuals with disabilities that are at least equal to those provided by the nondiscrimination provisions of Title V of the Rehabilitation Act.

The Americans with Disabilities Act (ADA) is a comprehensive civil rights law for persons with disabilities in both employment and the provision of goods and services. This civil rights law mandates equal opportunity for individuals with disabilities. The ADA prohibits discrimination in access to jobs, public accommodations, government services, public transportation and telecommunications. The ADA states that its purpose is to provide a "clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities." Congress emphasized that the ADA seeks to dispel stereotypes and assumptions about disabilities.

The law is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities.

Since the original signing of the Americans with Disabilities Act, significant modifications and amendments have been made to the ADA statutes and the federal regulations implementing the ADA.

Specifically, under the ADA, public agencies may not, among many other things, either directly or through contractual arrangements, deny qualified persons with disabilities the opportunity to participate in services, programs, or activities that are not separate or different from those offered to others, even if the City of Chula Vista offers permissibly separate or different activities; or select facility locations that have the effect of excluding or discriminating against persons with disabilities.

Title II of the ADA provides that public entities must identify and evaluate all programs, activities, and services and review all policies, practices, and procedures that govern administration of the entity's programs, activities, and services. This Pedestrian Connectivity Plan, together with other detailed documents, surveys and data allow for the preparation of budgeting and planning for necessary remediation within the public infrastructure of the City to improve accessibility.

1.3 ADA Standards and Guidelines

The United States Access Board provides standards and guidance documents for the design and alteration of accessible pedestrian facilities. These guidelines, are known as 2010 ADA Standards and the proposed Public Rights-of-Way Access Guidelines (PROWAG). PROWAG has not yet been adopted as an enforceable Standard but is recognized by the Federal Highway Administration (FHWA) and the Department of Transportation (DOT) as guidance and best practice for pedestrian facilities with the public right-of-way. The FHWA and the US Department of Justice have also issued a joint memorandum that provides guidance on the implication of street alterations on the installation of curb ramps and requires curb ramps upgrades when a street undergoes defined resurfacing activities. The pedestrian facilities within the City's right-of-way utilized PROWAG guidance for compliance evaluation. The project also assessed public right-of-way compliance with the Manual on Uniform Traffic Control Devices (MUTCD), Federal Accessibility Standards and the Access Board's proposed Guidelines to provide a baseline for planning and budgeting mitigations needed to make pedestrian facilities in the right-of-way more accessible to people who have disabilities.

2. Report Overview

The project included a city-wide evaluation of 766.16 miles of sidewalk along both sides of a street block, 9,987 curb ramps, and 449 signal pushbuttons.

In general, the sidewalks, curb ramps, and pedestrian pushbuttons are in good condition and will support most pedestrians with little trouble. The assessment shows which locations may not be technically in line with the proposed PROWAG recommendations or the MUTCD.

A field survey was conducted between the dates of October 2016 through May 2017 to assess the existing condition as part of the development of this plan to determine the status of the existing pedestrian network and identify necessary improvements. During these field surveys, elements affecting pedestrian connectivity, such as the curb ramps and sidewalks were evaluated. The survey teams assessed each segment of sidewalk and every curb ramp for the City for the purpose of making recommended corrections and prioritizing future work.

The potential issues found during the self-evaluation survey were assigned a prioritization for remediation. Public rights of way prioritization consider the severity of potential issues throughout the City, combined with the level of pedestrian activity at each location, especially among those with disabilities. Public input was sought on the development of prioritizations for remediation for public rights of way facilities, which took place in 2017. Web surveys were conducted from August 14th through October 9th, 2017. During this period, a total of 50 surveys were received by the city. Typical comments received were to prioritize sidewalk gap projects at activity centers such as schools, get vegetation removed from sidewalk edges, and provide for additional lighting and concerns about parked vehicles blocking pedestrian pathways. Meeting with the senior community also took place and requests for additional bus stop benches and prohibiting bicyclists from using the sidewalk were raised. On a regular basis, pedestrian issues are discussed at the grass roots community level with residents such as Bike Walk CV and also at the regularly scheduled Safety Commission meetings, the Commission on Aging meetings and through Web Surveys where input is taken and updates are provided to them on the city's Capital Improvement Program projects.

Costs and prioritization of the potential issues within the public right of way are processed and analyzed allowing for 'smart' data, to be integrated with other city information through both their GIS (geographic information system) and the City's asset management software, Lucity. The approach creates the opportunity for the City Public Works Department to identify potential barriers to accessibility and develop action plans to remove existing barriers and mitigate future barriers, over time. This process assists the City of Chula Vista staff to facilitate with more ease the decisions of infrastructure improvement to all individuals within the City of Chula Vista.

This report describes the overall scope of the project, the methodology used to assess and prioritize public rights of way, planning level costs associated and an overview of the general findings.

3. Project Scope Summary

The City of Chula Vista has completed a self-evaluation of its existing sidewalks, curb ramps, and pedestrian signal pushbuttons to identify potential barriers that might reduce their use by people who have disabilities. The information collected will better inform decision makers in how to plan and budget for improvements through the City's Pedestrian Connectivity Plan.

In 2016, Cole Design Group, along with Chen Ryan, performed a thorough evaluation of the entire City street network, by assessing sidewalks, curb ramps and pedestrian signal pushbuttons within the public right-of-way (see Exhibit A). The scope includes the following:

Public Right-of-Way (Street Corridors)

a) Sidewalks
b) Curb Ramps
c) Pedestrian Signal Pushbuttons

The inventory included a total of 766.16 miles of sidewalk, 9,987 curb ramp location, and 449 pedestrian signal pushbuttons. An overview of analysis of the data collection and cost summary of the inventory collected for public right-of-way facilities is located later in this report.

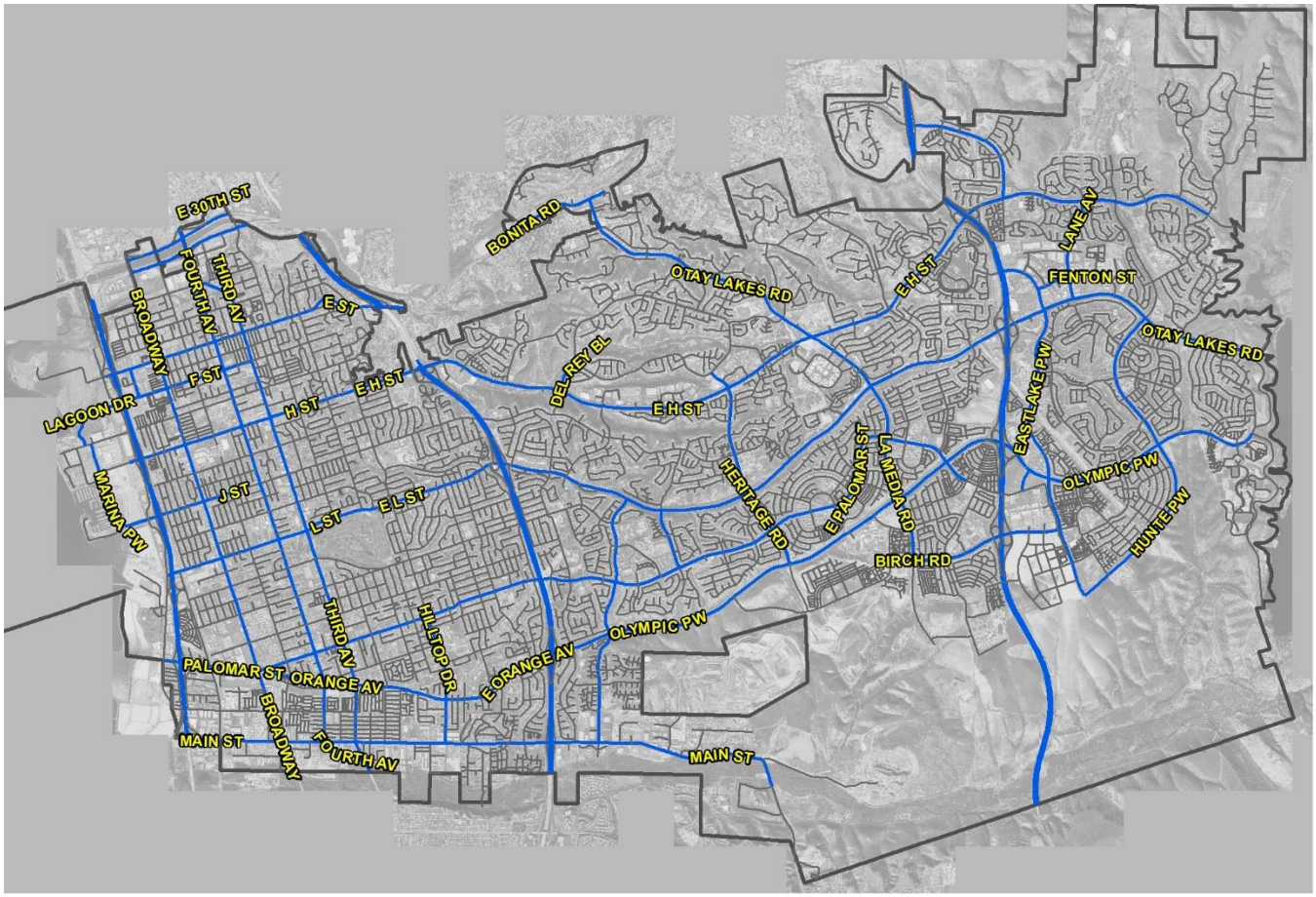
Curb Ramp with Detectable Warning Surface

Data collected from this assessment, allowed for:

1. Evaluation of sidewalks and curb ramps using the proposed PROWAG recommendations and the MUTCD
2. Visual assessment of pedestrian signal pushbuttons
3. Identification of portions of missing sidewalk segments for pedestrian connectivity
4. Quantification of the extent of corrective work required
5. Assignment of planning level cost estimates
6. Prioritization of data
7. Inclusion of the data in the City's Geographic Information Systems (GIS) database
8. Inclusion of the data in the City's asset management software, Lucity

Recognizing that the City of Chula Vista has limited funds and cannot immediately make all potential barriers identified fully accessible, this project sets forth the ability for City staff to properly analyze priorities for making accessibility modifications, over time, with emphasis placed on those of the highest priority for the disability community first.

Exhibit A - Boundary Map of the Project Scope



4. Methodology to Assessment & Prioritization

The method of conducting the evaluation for the City of Chula Vista included field data collection to compare existing conditions with the following standards and guidelines:

1. Proposed Public Right-of-Way Accessibility Guidelines, 2013 (PROWAG)
2. Federal Highway Administration Manual on Uniform Traffic Control Devices for Streets & Highways

These documents are used to evaluate existing public infrastructure and determine improvements needed to improve facilities accessibility.

4.1 Approach to Public Right-of-Way – Inventory Data Collection

The Consultant team created and utilized a geodatabase using the ESRI ArcGIS system. The customized fields for Geodatabase include location, directions, size, features and obstruction size. Data structure was pre-programmed for public right-of-way facility collection. Data was then logged into a project database and analyzed for compliance.

The traditional accessibility inventory process in the public right-of-way can be labor intensive while still offering inexact information. Many public entities rely on collection methods that provide limited information or assess barriers intermittently. This does not offer precise data or allow for accurate cost estimates for barrier removal. City of Chula Vista indicated an interest in utilizing a technology that would quickly and accurately document the type, severity, and location of sidewalk and curb ramp barriers in the City. The City contracted with Cole Design Group to utilize an exclusive technology called the ULIP-ADA to allow for an efficient and effective process to complete the assessment for pedestrian infrastructure within the public right-of-way.

ULIP Operator (Cole File Photo)

The technology was originally developed by Starodub, Inc. through a pilot program funded by the Federal Highway Administration. The Ultra-Light Inertial Profiler (ULIP) is mounted on a Segway. The device's displacement laser, three accelerometers, optical trigger, distance

measurement instrument, and gyroscope are designed to measure the sidewalk surface at a rate of 10,000 records per second. Together, these devices capture highly accurate information about cross and running slope and small surface variations. A mounted computer, or Toughbook tablet, offers an interactive display during data collection. The technical precision offered by this technology was identified as a best practice in *ADA Compliance at Transportation Agencies: A Review of Practices* (NCHRP 20-07 Task 249), a National Cooperative Highway Research Program study. Cole Design Group has invested in many years of technology upgrades and the ULIP system is now known as the ULIP-ADA version 3.0.

Field Data Specialists also collected the required information for the curb ramps, and signal pushbuttons throughout the defined project areas. Customized data collection software based on the proposed PROWAG recommendations and the MUTCD was the backbone for curb ramp and pushbutton validation criteria. Field Specialists, from Chen Ryan, entered data directly into the data collectors customized by Cole Design Group. Based on inspection and measurements of the existing features ensuring that all relevant characteristics were recorded, photos and video were properly linked, and accurate location data was logged in the GIS database.

Throughout the collection process, data collection, data validation, and linking to location and digital photo files happens automatically as the Field Data Specialists enter data and move from point to point. The Field Data Specialists then access the data entry, validation forms and aerial orthophoto images along with right-of-way, utility, topographic, or other feature data sets that were preloaded and appeared on the data collectors for easy reference in the field. Digital photos were automatically logged for location and linked to the database, based on synchronized time and date stamps.

Quality control was an important aspect of field data collection. Mobile GIS removed the error-prone conversion of spatial data from paper maps to digital format by synchronizing digital files directly between a handheld device and the desktop GIS. A custom routine was run on the collected data regularly to check for errors or missing information. The data was synced directly to a GIS database thus reducing the risk of errors in data conversion. This ultimately created a streamlined approach to understanding and evaluating barriers and the cost estimations for barrier removal to allow for effective planning for pedestrian access within the City's public right-of-way.

4.2 Approach to Database Analysis

The sidewalk and public right-of-way facilities data collected provides:

1) Positional accuracy: the digital representation of a potential barrier and its actual location found in the field;
2) Attribute accuracy: the digital representation of a potential barrier in a manner that best represents actual conditions found in the field (% running slope, % cross-slope, inches of vertical separation, etc.).

Guidance for public right-of-way facilities in defining the method with which to assess the data was found in Designing Sidewalks and Trails for Access (FHWA, 1999). This report advises that grade and cross-slope "should be measured over 2 ft. intervals, the approximate length of a wheelchair wheelbase, or a single walking pace."

Adherence to FHWA's interpretation of features in the data set provided quality assurance in the attribute accuracy of the resulting database. Once the field data collection and validity checks were performed, the raw data was processed so it could be stored in the City's centralized GIS database for analysis and reporting.

GIS played a pivotal role in the project from data acquisition (organizing the millions of data points generated during the study) to creating an ArcPad user interface for asset management and compliance monitoring. Additional data point attributes can be used for compliance tracking. Compliance reporting capabilities are available to track progress.

4.3 Approach to Prioritization

The ADA requires that public agencies have plans in place to remediate accessibility issues. It is best to identify an implementation process that prioritizes what physical ADA compliance issues are planned for remediation over time. This places emphasis on the need for a well-conceived prioritization process. While the Department of Justice gives some guidance in this area, it is important that public agencies take a close look at any potential compliance issues and consider how they will incorporate remediation into their annual programs. In 2010 the City adopted its first Pedestrian Master Plan. Twenty-seven corridors and three intersections were recommended for pedestrian improvements. The Pedestrian Master Plan was taken into account when addressing prioritization and reviewing the public infrastructure for accessibility compliance and improvements.

ADA compliance issues in the public rights of way can be complex to prioritize without an analysis tool. Cole has designed sophisticated analysis and processing tools within GIS to allow each public agency to customize their approach in a quantitative manner. This prioritization methodology eases the decision-making process for creating a proposed action plan for removal of potential barriers over time. The GIS-based barrier ranking analysis results in a combined activity and severity score for every sidewalk, curb ramp and signal pushbutton. In order to prioritize potential barriers for remediation, activity and severity scores are used. A high activity score is

representative of areas where pedestrian activity (especially among persons with disabilities) is likely to be greatest, based on demographic, land use, and transportation conditions, or other factors as determined by each public agency. A high severity score is representative of areas where the quality of existing pedestrian infrastructure is potentially poor for persons with disabilities, based on potential barriers documented in the sidewalk, curb ramp and pushbutton inventory. Both scores are combined to produce a Final Score and a means by which sidewalk corridors can be prioritized for remediation.

The Final Score is not intended to be used as a verbatim list to approach the remediation one sidewalk segment at a time, but instead a planning tool that aids in the development of a proposed action plan over time. By comparing the rankings of corridors, the City can better group sidewalk segments, creating a logical approach to sidewalk improvements. Additionally, the City can define policies and approaches to address joint displacements, ramp installations, etc. to fit within the City's normal practices for making infrastructure repairs and improvements.

The information below provides a more in-depth discussion regarding the types of data and criteria that are used to formulate Activity, Severity, and Final Score.

I. Activity Score

Activity factors describe the likelihood of people, with an emphasis on the disability community, using an area's pedestrian facilities (weight) and the proximity to the specific locations (value). Availability of transportation funding is also considered in the scoring, if desired. Input from the city is used to determine the weight, or emphasis, of the factors based on expected use. Weights are shown in parentheses, as examples of common weights selected for use.

1) Government Buildings: *The ADA emphasizes the importance of "walkways serving local government offices and facilities" as such, these locations, receive a higher weight, or priority. This activity score category is determined by the proximity (expressed in linear feet) to these destinations.*

2) Transit: *Dependable, accessible public transportation is especially important for people with disabilities, many of whom rely on it to get to work and actively participate in their communities. Many cities have a well-defined bus/transit network, so facilities located within walking distance to the stops would receive a higher score. This activity score category is determined by the proximity (expressed in linear feet) to these destinations.*

3) Hospital & Medical Facilities: *Hospitals and medical facilities, by their nature, are activity generators for people with disabilities. Many people who use mobility devices, or are blind or have low vision, do not drive. Access to health care is important to everyone. For those who walk, use a mobility device, or ride the bus, it is equally important to provide accessible facilities. This activity score category is determined by the proximity (expressed in linear feet) to these destinations.*

4) Schools: *Parents often consider "good" schools as an important factor when buying a new home. How their children get to and from school is part of that equation. Cities are committed to ensuring all children and families can travel or walk to school safely. This activity score category is determined by the proximity (expressed in linear feet) to these destinations.*

5) Parks & Recreation Facilities: *Cities offer numerous parks with a broad range of amenities and features, including pools, community centers, hike/bike trails, etc. It is important to provide access to its parks, recreational facilities, and programs, for people with disabilities. This activity score category is determined by the proximity (expressed in linear feet) to these destinations.*

6) Employment Density: *Removing barriers to employers facilitates equality of opportunity and improved employment for people with disabilities. Walking and transit are important factors in ensuring people with disabilities, and all pedestrians have access to potential work places. This activity score category is determined by the number of jobs per acre reported by the U.S. Census Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics block group data.*

7) Retail Land Uses: *Retail Land Uses represent shopping destinations within cities, generating significant vehicular and pedestrian activity. Use of public right of way facilities in proximity of these areas is likely much higher than many other locations within the cities. This activity score category is determined by the proximity (expressed in linear feet) to these destinations.*

8) Disability Communities: *Access to accessible pedestrian facilities around disability communities is vital for individuals living with disabilities. Access allows patrons an opportunity to enjoy the outdoors and facilitates visits by friends and family. This activity score category is determined by proportions reported in the American Community Survey (U.S. Census) block group data.*

9) Pedestrian Collisions: *Safety is a primary factor for improving sidewalk connectivity. Targeted improvements to pedestrian street crossings will enhance mobility and safety, thus lessen the number of pedestrian related collisions. This activity score category is determined by the occurrence and severity of collisions. Sidewalks reduce the likelihood of pedestrian collisions by more than half where sidewalks do not exist and likelihood of a paved sidewalk being a crash site is significantly lower than a site without a sidewalk.*

Activity Factors & Weightings:

(15%) Government Buildings
(15%) Transit/Bus Stops
(10%) Employment Density
(15%) Disability/senior care centers & Communities
(15%) Pedestrian Collisions
(10%) Parks & Recreation Facilities
(5%) Retail Land Uses
(10%) Schools
(5%) Hospitals & Medical Centers

Once the activity factors were selected and applied, the consultants provided a basic review of the prioritization outcomes, in comparison to findings of the Pedestrian Master Plan, previously completed by Chen Ryan. A major goal of the Pedestrian Master Plan project was to develop a thorough understanding of pedestrian needs and serve as a key resource for the City when seeking grant funding necessary to implement pedestrian projects that promote pedestrian safety, walkability, mobility, and neighborhood quality. This high level review found the Pedestrian Master Plan to be well aligned with the findings and rankings of the Pedestrian Connectivity Plan.

Sample Table (School)

Weight	*Proximity*	*Value*
10%	**0-500**	**100%**
	501-1000	**70%**
	1001-1750	**40%**
	1750-2640	**10%**
	2641+	**0%**

Sample Map of Distance from Activity Factor (i.e. School) and the calculated points based on weighting assigned

II. Severity Score

The severity score indicates the level of deviation from current standards and guidance documents for the features of the public rights of way evaluated, such as sidewalks, curb ramps and signal pushbuttons, representing the areas of greatest potential constraint on mobility in the public rights of way. The severity score calculations follow accessibility guidance for new construction and alterations found in the proposed PROWAG recommendations for both sidewalks and curb ramps, and in the MUTCD for signal pushbuttons.

II.I Sidewalk Severity Score

Sidewalk severity scoring focuses on sidewalk characteristics that may directly affect the usability of a sidewalk and determines whether the facility's features represent a low, medium, or high potential barrier to connectivity.

The score is based on the number and severity of occurrences of each of the following potential barriers over a given block face: fixed obstructions, changes in level, cross slope, and running slope, etc. Scores are further adjusted by the ratio of non-standard features relative to the total length of the block face.

1. Running Slope (Grade): *Grade is defined as the slope parallel to the direction of travel. The proposed PROWAG recommendation R302.5 generally limits the running slope to a maximum of 5 percent but allows the grade of the sidewalk to be consistent with the profile grade of adjacent roadways when roadway grades exceed 5 percent. Allowances are made for regulatory or physical constraint but require compliance to the maximum extent practicable.*

Sample Table (shown for Running Slope)

Weight	*Indicator Category*	*Value*	*Calculation*
10	**0 - 5%**	**0%**	**(Linear Feet * Value) / Total Block Length) * Weight)**
	5.1 - 8.33%	**5%**	
	8.34 - 10%	**10%**	
	10.1 - 12.5%	**50%**	
	12.6% +	**100%**	

2. Cross Slope: *Cross slope is defined as the slope measured perpendicular to the direction of travel. The proposed PROWAG recommendation R302.6 limits cross slopes to 2%.*

3. Sidewalk Width: *The sidewalk is commonly referred to as the Pedestrian Access Route (PAR). This area should be free of all obstacles, protruding objects and any vertical protrusions that would be hazardous to pedestrians. The proposed PROWAG recommendation R302.3 provides for a minimum continuous clear width of 48 inches for Pedestrian Access Routes (PAR). PARs less than 60 inches wide should have 60 in. x 60 in. passing spaces at a maximum 200 ft. intervals.*

4. Changes in Level: *Changes in level, or heaves, are defined as vertical height transitions between adjacent surfaces or along the surface of a path. Proposed PROWAG recommendation R302.7.2 allows changes in level less than ¼ inch high to be vertical and indicates changes in level between 1/4 inch and ½ inch to have a maximum bevel of 50 percent.*

5. Obstructions: *Obstructions in the pedestrian environment are defined as objects that limit the vertical and horizontal passage space or reduce the clear width of the sidewalk. The proposed PROWAG recommendation R302.3 states that a minimum clear width of 48 inches should be preserved in the sidewalk area.*

6. Sidewalk Connectivity-Gaps: *Missing sidewalk, increases travel distances and makes it difficult for pedestrians to access destinations. A network of sidewalks in which all parts are well-connected to each other reduces the distance pedestrian, especially those with disabilities, have to travel to get from point to point. While sidewalks are not required, they should be accessible when they are present.*

7. Vertical Clearance: *Protrusions in the pedestrian environment are defined as objects that limit the vertical space, protrude into the circulation route, or reduce the clearance width of the sidewalk. The proposed PROWAG recommendation R402.2 states that a minimum clear width of 48 inches should be preserved in the sidewalk area and states that objects projecting from walls that have leading edges between 27" and 80" should not protrude more than 4" into walks and passageways. Additionally, freestanding objects mounted on posts or pylon may overhang a maximum of 12" from 27" to 80" above the ground.*

8. Gaps Between Joints (Horizontal Openings): *Gaps are defined as horizontal opening measured between sidewalk slabs or drainage grates. The proposed PROWAG recommendation R302.7.3 limits horizontal openings to 0.5 inches.*

9. Protrusions: *Protrusions in the pedestrian environment are defined as objects that protrude into the circulation route. The proposed PROWAG recommendation R402.2 states that objects projecting from walls that have leading edges between 27" and 80" should not protrude more than 4" into walks and passageways. Additionally, freestanding objects mounted on posts or pylon may also overhang a maximum of 4" from 27" to 80" above the ground.*

II.II Curb Ramp Severity Score

The Curb Ramp Severity Score focuses on curb ramp characteristics that directly affect the usability of the curb ramp and determine whether the facility's features represent a low, medium, or high potential barrier to accessibility. The curb ramp severity score is determined by:

II.II.a. Curb Ramp - The Initial Evaluation

1. Missing Curb Ramp: *A missing curb ramp warrants 100% weighting for prioritization purposes.*

   If a curb ramp is present, there is an 'initial' evaluation process. If a curb ramp fails during the initial evaluation process, additional information may not be evaluated. The initial evaluation process reviews the primary features of the curb ramp. These are:

1. Curb Ramp Running Slope: *The curb ramp running slope is the sloped transition between the street and the sidewalk in the direction of travel. The proposed PROWAG recommendations R304.2 and R304.3.2 specify that the curb ramp running slope should not exceed 8.33% unless the length of the curb ramp exceeds 15 feet.*

2. Curb Ramp Cross Slope: *A curb ramp allows people who use wheelchairs and other wheeled devices to negotiate the elevation change between the roadway and the sidewalk without having to negotiate the curb. Since the grade of the ramp will be significant, the cross slope should be minimized. The proposed PROWAG recommendation R302.6 specifies that curb ramp cross slopes should not exceed 2%. There is an exception for curb ramps at intersections without stop or yield conditions that allows the cross slope of the curb ramp to match that of the street, but the crosswalk cross slope is limited to 5%.*

3. Curb Ramp Width: *The minimum curb ramp width should be 48 inches. Just like the clear width of the pedestrian access route, 48 inches allows sufficient room to maneuver up and down the curb ramp. Curb ramps serving shared use paths, or multi-use trails, must be the full width of the trail to accommodate all users on the same passage.*

4. Surface Condition: *The pedestrian access routes must provide a firm, stable and slip resistant surface. Soft loose surfaces such as loose sand or gravel, wet clay, and irregular surfaces such as cobblestones can significantly impede some users' connectivity.*

II.II.b. Curb Ramp - The Final Evaluation

The Curb Ramp Severity Score focuses on curb ramp characteristics that directly affect the usability of the curb ramp and determine whether the facility's features represent a low, medium, or high potential barrier to accessibility.

When curb ramp is present, and it passes, or reflects more minor issues during the 'initial' evaluation steps, then a 'final' evaluation process takes places, which reviews all features of the curb ramp. These are:

1. Curb Ramp Running Slope: *The curb ramp running slope is the sloped transition between the street and the sidewalk in the direction of travel. The proposed PROWAG recommendations R304.2 and R304.3.2 specify that the curb ramp running slope should not exceed 8.33% unless the length of the curb ramp exceeds 15 feet.*

2. Curb Ramp Cross Slope: *A curb ramp allows people who use wheelchairs and other wheeled devices to negotiate the elevation change between the roadway and the sidewalk without having to negotiate the curb. Since the grade of the ramp will be significant, the cross slope should be minimized. The proposed PROWAG recommendation R302.6 specifies that curb ramp cross slopes should not exceed 2%. There is an exception for curb ramps at intersections without stop or yield conditions that allows the cross slope of the curb ramp to match that of the street, but the crosswalk cross slope is limited to 5%.*

3. Curb Ramp Width: *The minimum curb ramp width should be 48 inches. Just like the clear width of the pedestrian access route, 48 inches allows sufficient room to maneuver up and down the curb ramp. Curb ramps serving shared use paths, or multi-use trails, must be the full width of the trail to accommodate all users on the same passage.*

4. Landing Size: *Landings allow wheelchair users turning space to maneuver between the curb ramp and the sidewalk. The proposed PROWAG recommendations R304.2.1 and R304.3.1 specify that landings should have a minimum length of 48 inches, the length of an occupied wheelchair. Landing length is measured in the direction of travel to and from the curb ramp. Landings at a minimum of 48 inches wide prevent pedestrians from having to cross the curb ramp flare. If the landings are constrained, the minimum landing size should be 48 inches by 60 inches.*

5. Surface Condition: *The pedestrian access routes must provide a firm, stable and slip resistant surface. Soft loose surfaces such as loose sand or gravel, wet clay, and irregular surfaces such as cobblestones can significantly impede some users' connectivity.*

6. Landing Slopes: *Level landings at the tops of curb ramps make it possible to change direction after completing the ascent, or when preparing for a descent, rather than during the rise. The proposed PROWAG recommendation R304.2.1 requires slopes, in all directions of travel should not exceed 2% for Stop/Yield conditions. Allowances are made for through routes.*

7. Curb Ramp Surface Obstructions: *Space is needed at the top and bottom of curb ramps so that people using mobility devices can align with the running slope and maneuver to and from the ramps, including when making turns. The proposed PROWAG recommendations R304.2.1 & R304.3.1 defines obstructions in the pedestrian environment as objects that limit the vertical passage space, protrude into the circulation route, or reduce the clearance width of the curb ramp.*

8. Gutter Lip: *Vertical surface discontinuities are not allowed where slopes change (at grade breaks) like those that occur between the bottom of a curb ramp or turning space and the gutter. The proposed PROWAG recommendation R302.7.1 specifies that transitions from ramps to gutter and streets should be flush and free of changes in level.*

9. Gutter Running Slope (Grade): *The gutter is the roadway surface immediately next to the curb ramp that runs along the curb. At a curb ramp, the grade of the gutter is generally counter to the grade of the curb ramp. The proposed PROWAG recommendation R304.5.4 indicates the running slope of the gutter – measured parallel to the path of travel – should not exceed 5 percent.*

10. Curb Ramp Flare Slope: *The flared sides of curb ramps provide a graded transition between the curb ramp and the surrounding sidewalk. Flares are not considered an accessible path of travel because they are generally steeper than the curb ramp and often feature significant cross-slopes. Flares with no adjoining walkable surface are excluded from evaluation. Flares located in the circulation path may have a 10 percent flare slope measured parallel to the curb.*

11. Detectable Warning Surface (DWS) - contrasting: *Raised tactile surfaces used as warnings employ textures detectable with the touch of a foot or sweep of a cane to indicate the transition between the curb ramp and the street. The proposed PROWAG recommendation R305 specifies that tactile surfaces used as detectable warnings should also provide color contrast with surrounding surface materials.*

12. Detectable Warning Surface (DWS) – dimension: *Detectable warnings should also be 2 feet in the direction of travel and be placed the full width of the curb opening. To prevent a person from unknowingly stepping into the street. Field Technicians also evaluate the condition of DWS when present at a curb ramp.*

III. Final Ranking Scores

Once Activity and Severity Weighting are applied to the data, values are calculated, resulting in a quantitative score for both severity and activity. These two numbers combined generate a quantitative, final ranking score. The weighting tables are used in GIS algorithms, which create quantitative values. All this information has geospatial points in GIS, so the data can be analyzed either in spreadsheet format or in mapping format (as shown in Section 5.5 of this document).

The final ranking scores are not intended to be used directly as a *verbatim* prioritized list to be implemented in the exact order presented. This is due to the fact that projects are more efficiently planned, and deliver better results for pedestrian access, when grouped together for remediation. For instance, it is not effective to jump from one curb ramp to another across the city, versus addressing numerous ramps at an intersection for necessary improvements. Single location remediation is sometimes necessary due to a citizen grievance, where there is a barrier to access at a specific location. When viewed from a larger planning scale, however, the city staff will utilize the final ranking prioritized list, analyze the severity data, and group together compliance issues that need to be addressed within a general activity area, in order to logically improve the pedestrian paths of travel in the public right of way. The city then develops planned projects that can be incorporated into street maintenance or alteration programs, and capital improvement planning. The final ranking scores simplify and contribute greatly to the overall advanced planning that ultimately generates the proposed infrastructure projects, year to year.

5. Summary of Findings

5.1 Inventory - Public Rights of Way

The connectivity assessment within the City of Chula Vista public right-of-way generated a significant amount of information regarding the accessibility of public rights-of-way within the City. A total of 766.16 miles of sidewalk, 9,987 curb ramps, and 449 signal pushbuttons were evaluated.

The following tables represent a summary of observations regarding the information gathered. Evaluation reports for each individual pedestrian facility is complete, along with Corridor Reports and cost estimates.

5.2 Sidewalk Inventory Data

The project assessed 766.16 Miles of sidewalk. The majority of potential sidewalk issues were primarily in the more minor severity break points.

Common Sidewalk Data Observatons:

- Utility poles and boxes are common elements which can present as accessibility concerns. Coordination with utility companies for location alteration can take significant effort, and at times are not relocatable. Often design exceptions may need to be considered if altering a utility location is not feasible.
- Other permanent obstructions include: bollards/poles/posts, bus stop benches, fire hydrants, parking meters, and trees.
- Of the protrustions, vegetation by far respresented the most common issue, representing 78% of the overall potential sidewalk obstructions. Maintenance of vegetation around sidewalks will be a strategy to help reduce accessibility challenges.
- Miscellaneous potential obstructions include more easily relocated items: private mailboxes, commercial and USPS dropboxes, and newspaper dispensers.
- The most common temporary potential obstruction was parked vehicles blocking the pedestrian access route.
- Changes in level (Heaving) is commonly associated with root growth of trees and other vegetation under the sidewalk and generally continues to increase as the root grows. Because of the technology used to collect data, very minor deviations were detected. Of the changes in level, 70% represented minor lifts of 1/4 -1/2 inch which are typically very difficult to detect using traditional data collection techiques. 86% of the sidewalk heaves were below ¾ inch.
- 69% of all sidewalk cross slope concerns fell in the 2% to 4% range. This is a very minor deviation from the guidelines. 22% of overall sidewalk cross slope concerns fell into the greater than 5% range. Driveways can be a common reason for more significant cross slope concerns. Cross Slope is another category where the data gathering using the ULIP provides more robust and granular data than the traditional methods.
- 69% of sidewalks with run slope concerns fell to the lowest deaviation range (5-8.33%).
- 81% of sidewalks with gaps (horizontal seperation) were in the most minor ½ to ¾ inch range.

1. Sidewalk Obstructions\Protrusions

Utility	500
Sign	380
Temporary	886
Overhead Vegetation Protrusion	4613
Side Vegetation Protrusion	2872
Traffic Signal	91
Misc.	22
Others	136
Uneven Heaving	14
Total	9,514

Sidewalk Obstruction

2. Sidewalk Changes in Level (Heaves)

1/4"– 1/2"	29,431
½"- 3/4"	6,675
¾"-1"	3,257
1"+	2,709
Total	42,072

Sidewalk Changes in Level (Heaves)

3. Sidewalk Cross Slope

2.01 - 3%	198.92 miles
3.01 - 4%	100.81 miles
4.01-5%	42.88 miles
5.01%-6%	29.39 miles
6.01%-7%	17.26 miles
7%+	50.0 miles
Total	432.58 miles

Steep Cross Slope - Driveway

4. Sidewalk Run Slope

5.01% – 8.33%	115.45 miles
8.34% - 10%	23.91 miles
10.01% - 12.5%	19.00 miles
>12.5%	7.65 miles
Total	166.01 miles

Sidewalk Run Slope

5. Sidewalk Connectivity

Sidewalk Gap	19.74 miles
No Sidewalk	53.00 miles
Buried Sidewalk	0.12 miles
Narrow Sidewalk	2.31 miles
Total	75.17 miles

Sidewalk Connectivity

6. Sidewalk Gaps (i.e. Expansion joints, cracks)

1/2”-3/4”	798
3/4”-1”	145
1”+	39
Total	982

5.3 Curb Ramp Evaluation

Cole's Survey Team evaluated 9,987 curb ramp locations. Numerous types of curb ramps were identified. Below is the total number surveyed and percentage that met the guidelines and standards. Also listed below is a list of each type of curb ramp surveyed.

Common Curb Ramp Data Observatons:

- The bulk of potential issues overall were identified with the curb ramps. Based upon our approch in assessing curb ramps, when one or more element of a curb ramp feature appears to be out of compliance, even if it is a minor impedance issue, the curb ramp is considered to technically deviate from the current standards and guidance. Due to this approach in evaluating the curb ramps, the majority of curb ramps were found to have some type of potential concern. Many of these locations, however, represent minor impedance issues and many ramps are usable, despite technical deviation. This highlights the need to develop a prioritization of the curb ramp issues to ensure the City is addressing the highest priority elements that impede accessibility and connectivity first.
- Running slope of the curb ramps was the most prominent issue.
- The majority of the curb ramp cross slope concerns fell to the more minor severity of 2-3% range representing 13% of the overall curb ramp cross slope data.
- Of the 2,670 missing curb ramps, 2,413 represent missing ramps within T-Intersections. These are often in residential areas where the City will need to review each curb ramp complaince details and the overall corridor for the best design solutions. Additionally, the inventory assessment was based upon the ultimate design of three crosswalks at each T-intersection which is typically reduced to two in residential areas. In many cases, installing ramps would conflict with existing driveways, drainage facilities, or accessible parking. Currently the missing ramps within T-Intersections represent $4,826,000 of improvements but, each location will require additional review by city staff to determine a realistic solution for creating the best accessible path of travel. The number of missing ramps and costs for improvements should decrease, as design solutions and actual remediation plans for these sites evolve during the advanced planning process.

1. Curb Ramp Type

Curb Ramp	Total	No Ramp Issues	Ramp Issues
No Ramp (Missing)	2,670	0	2670
Perpendicular	5,579	164	5408
Parallel	1,075	67	1008
Directional	103	0	103
Combination	532	29	503
Blended Transition	28	4	24
Total	**9,987**	**264**	**9,716**

A very high percentage, 90.1%, of the 2,670 missing ramps are represented in areas identified as "T-Intersections". In these locations, some missing ramps may be remediated with signage and physical barriers eliminating an unmarked pedestrian crossing. Other design solutions may be found to address these areas and the City will be evaluating these locations.

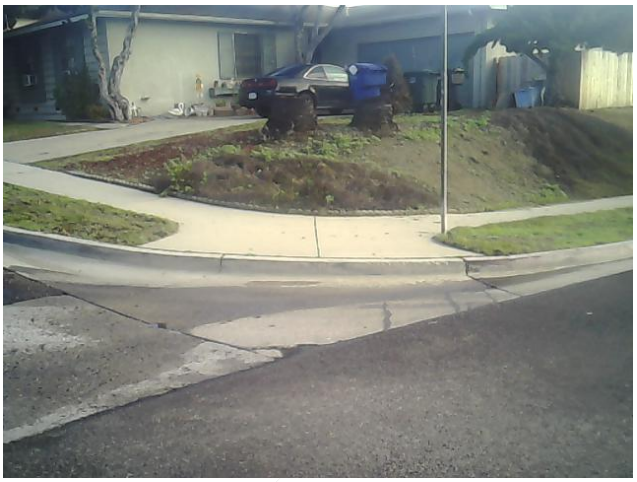
As a part of the total sidewalk facility, the crosswalk must be accessible to everyone, including people with disabilities.

The ADA states:

> *...pedestrian walkways must contain curb ramps or other sloped areas at intersections to streets, roads, or highways.*

The MUTCD defines an intersection:

The area embraced within the prolongation or connection of the lateral curb lines, or if none, the lateral boundary lines of the roadways of two highways that join one another...



Missing Curb Ramp

The MUTCD defines a crosswalk:

That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line...

2. Curb Ramp Running Slope

0 – 5.0%	368
5.01% – 8.33%	2077
8.34% - 10%	2760
10.01% - 12.5%	1530
>12.5%	577
Total	7312

Curb Ramp Running Slope

3. Curb Ramp Cross Slope

<= 2.0%	3730
2.01% – 3.0%	1262
3.01% - 4.0%	747
4.01% - 5.0%	496
5%+	1077
Total	7312

Curb Ramp Cross Slope

4. Curb Ramp Landing Slopes

Not per PROWAG recommendation	749
Meets PROWAG recommendation	692
No Landing	9
* Not Assessed	5,867

**Ramp did not meet early evaluation criteria*

Landing Slope

5. Detectable Warning Surfaces

DWS: Missing	429
DWS: Compliant	933
DWS: Deviates from Standard	25
* Not Assessed	5,870

**Ramp did not meet early evaluation criteria*

Curb Ramp Detectable Warning Surface-Missing

5.4 Pedestrian Signal Pushbutton Inventory Data

Survey results show that 1673 individual pedestrian pushbuttons at signalized intersections were evaluated. Surveyors were trained on a form of visual assessment compliance criteria, the backbone of which is a data collection checklist formed from PROWAG and MUTCD guidance. At each of these locations the surveyors visually assessed and documented limited pushbutton features, based on the proposed PROWAG guidelines and 2009 MUTCD standards (Sections 4e.08 through 4e.13).

Pedestrian Signal Pushbutton Data Observatons:

- 79% of pedestrian pushbuttons observed had 1 pushbutton per post.
- Only 15% did not have a pushbutton installed.
- 28% of overall pedestrian pushbuttons had issues relating to distance to curb, while less than 23% had issue relating to distance to crosswalk.
- 19% of the locations had a clear floor space issue.

1. Pedestrian Pushbuttons per post

1	**1445**
2	**114**
No Pushbutton	**269**
Total Signal Posts Assessed	**1828**

Pedestrian Pushbutton Per Post

2. Pushbutton Distance to Curb

Compliant	**1130**
Deviates from Standard	**543**
No Pushbutton	**269**
Total	**1942**

Pushbutton Distance to Curb

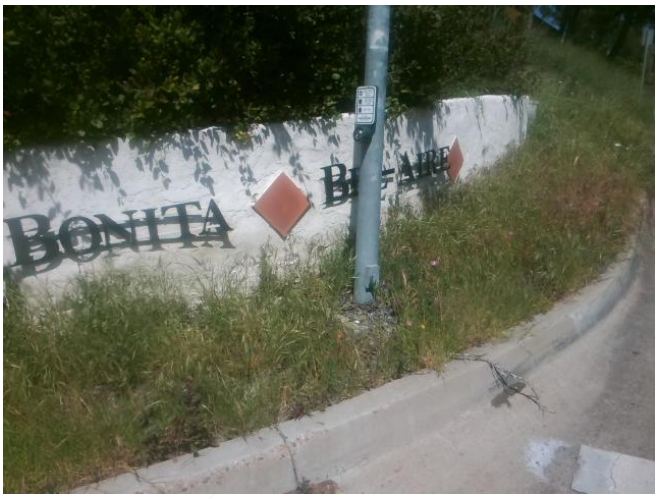
3. Pushbutton Distance to Crosswalk

Compliant	**1233**
Deviates from Standard	**440**
No Pushbutton	**269**
Total	**1942**

Pushbutton Distance to Crosswalk

4. Clear Floor Space

Compliant	***1303***
Deviates from Standard	***370***
No Pushbutton	***269***
Total	***1942***

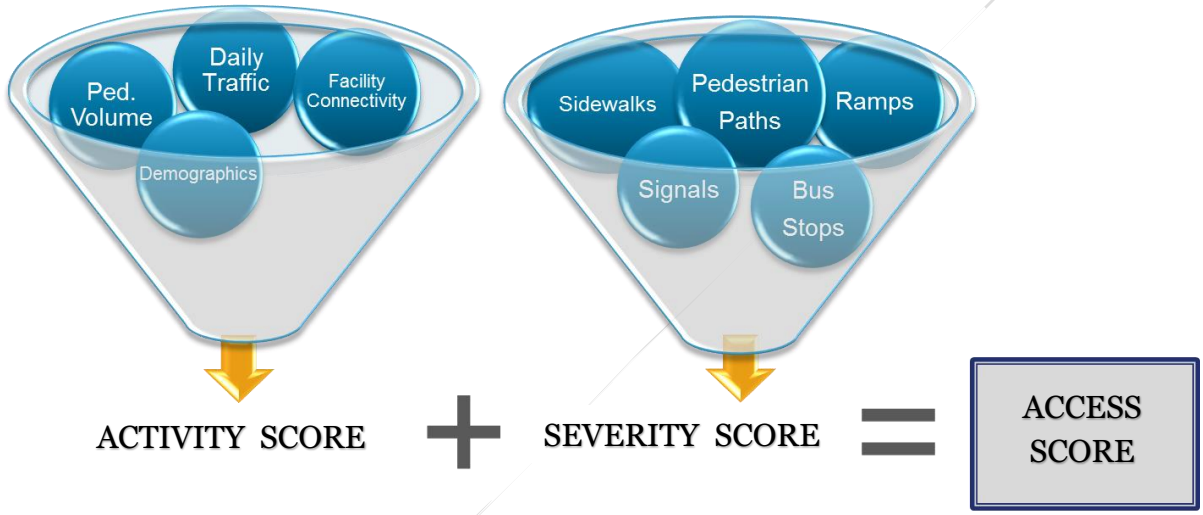


Pushbutton Clear Floor Space - Missing

5.5 Prioritization of the Inventory – Public Rights of Way

The ADA requires that public agencies have plans in place to remediate potential accessibility issues. This places emphasis on the need for a well-conceived prioritization process. While the Department of Justice gives some guidance in this area, it is important that public agencies take a close look at their compliance issues and consider how they will incorporate remediation into their annual programs.

The methodology to prioritization is covered in more detail in Section 4 of this report. The image below depicts the overall process.



The GIS-based access ranking analysis results in a combined activity and severity score for every sidewalk, curb ramp and signal pushbutton. In order to prioritize potential areas for remediation, activity and severity scores are used. A high activity score is representative of areas where pedestrian activity (especially among persons with disabilities) is likely to be greatest, based on demographic, land use, and transportation conditions, or other factors as determined by each public agency. A high severity score is representative of areas where the quality of existing pedestrian infrastructure may be diminished for persons with disabilities, based on potential barriers documented in the sidewalk, curb ramp and pushbutton inventory. Public outreach and comments received are factored into either locations of impedance, indicated in severity score, and/or areas of high use, indicated in the activity factors. Public feedback from the disability community is a vital part of the process and information received by the City during the public outreach effort predominantly validated much of the findings of the review. The Severity and Activity scores are combined to produce a Final Score and a means by which potential issues can be prioritized for remediation.

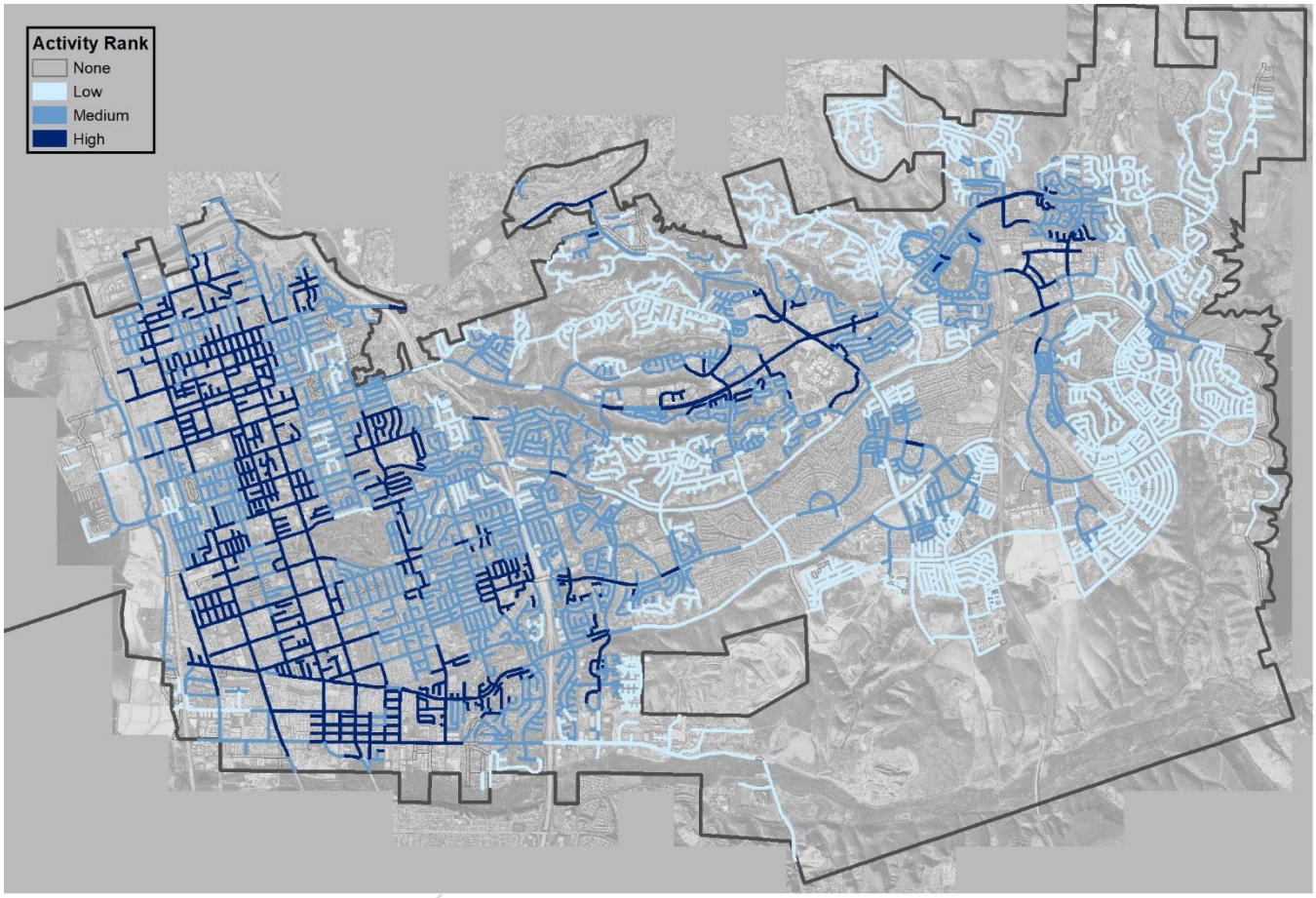
The Final Score is not intended to be used as a verbatim list to approach the remediation one sidewalk segment at a time, but instead a planning tool that aids in the development of a proposed action plan over time. By comparing the rankings of corridors, the City can better group sidewalk segments, creating a logical approach to sidewalk improvements. Additionally, the City can define policies and approaches to address joint displacements, ramp installations, etc. to fit within the City's normal practices for making infrastructure repairs and improvements.

The following tables and mapping images display the results at a high level of analysis.

Intersection components were calculated together to create an overall score. The same is true of sidewalks. These tools are used for high level analysis in planning major projects and alterations. Each compliance data point, however, also holds its own severity and activity weighting. The City has the ability to sort this data by any number of criteria to isolate joint displacements, or individual curb ramp review, etc. The information contained within this report, provides for a high-level review of how overall intersections and sidewalk corridors scored quantitatively.

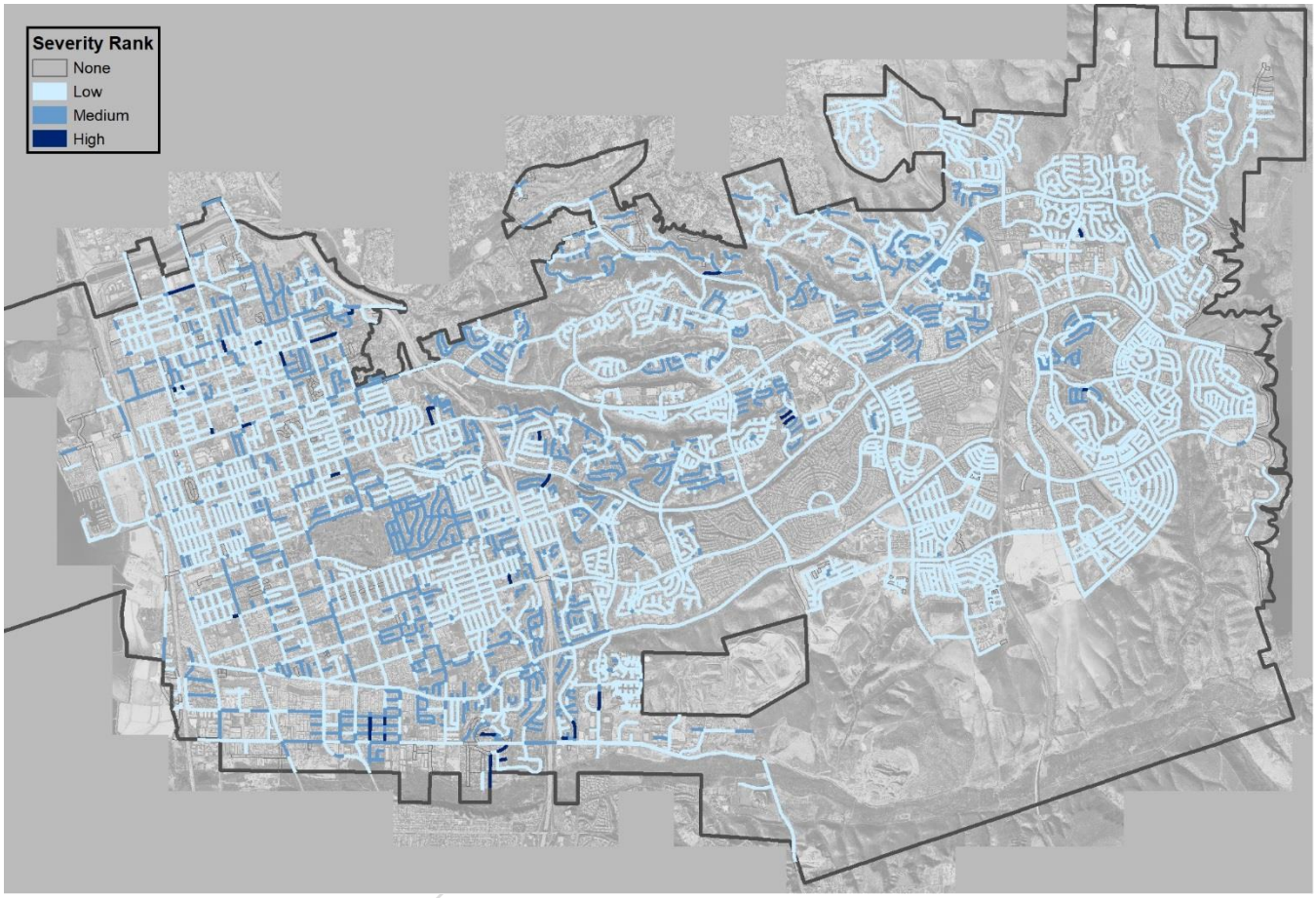
Corridors / Sidewalk Prioritization

Activity Ranking Only



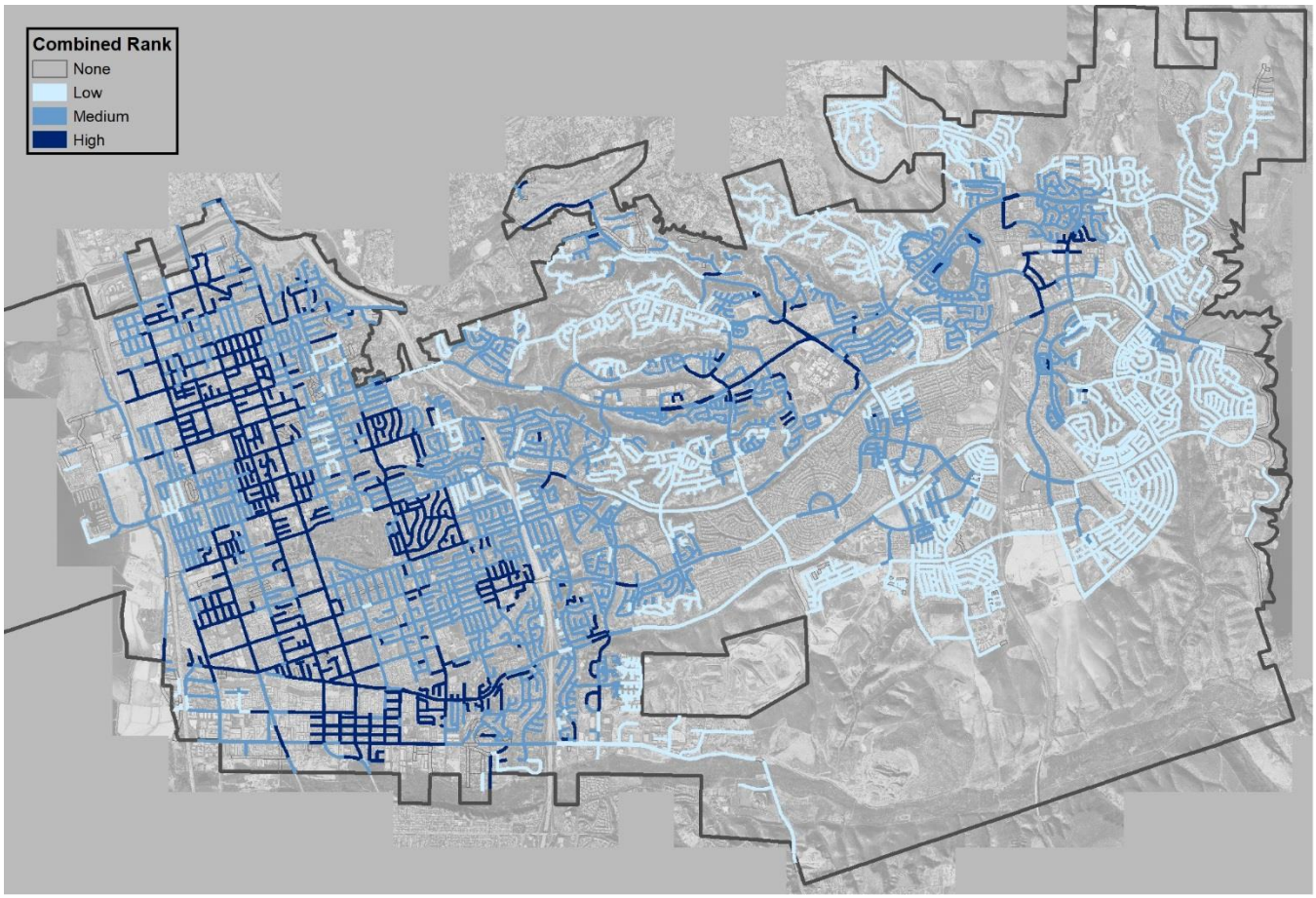
Corridors / Sidewalk Prioritization

Severity Ranking Only



Corridors / Sidewalk Prioritization

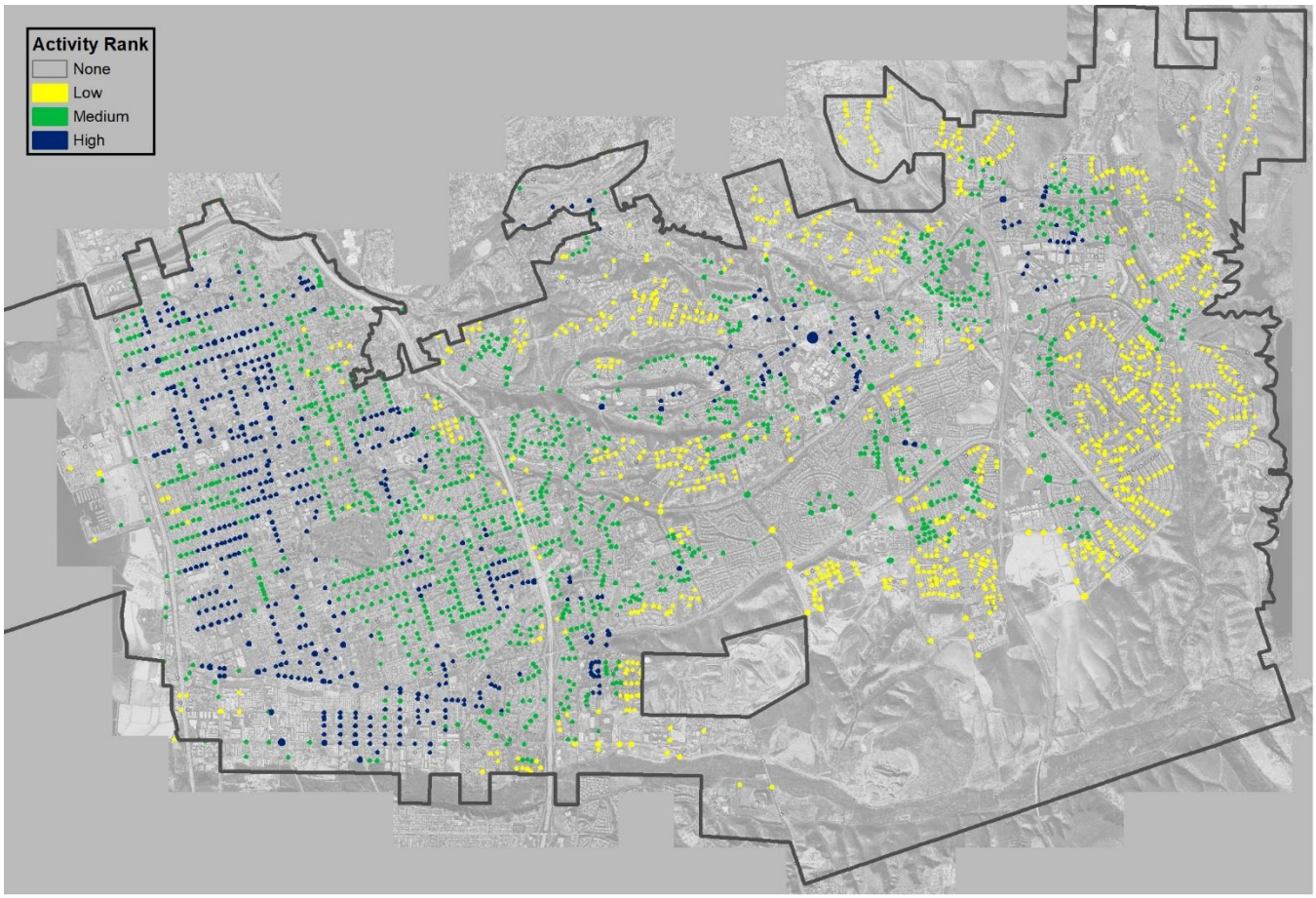
Combined ("Final") Ranking



In our scoring for prioritization, the values are fairly well balanced between the quantitative values that severity and activity both contribute to the final score. The severity ranking is also fairly consistent across the City. The primary driver for all overall scoring is a focus on higher activity areas. This data was also reviewed against the corridors identified in the Pedestrian Master Plan. The two data sets seem to have strong alignment.

Intersections Prioritization

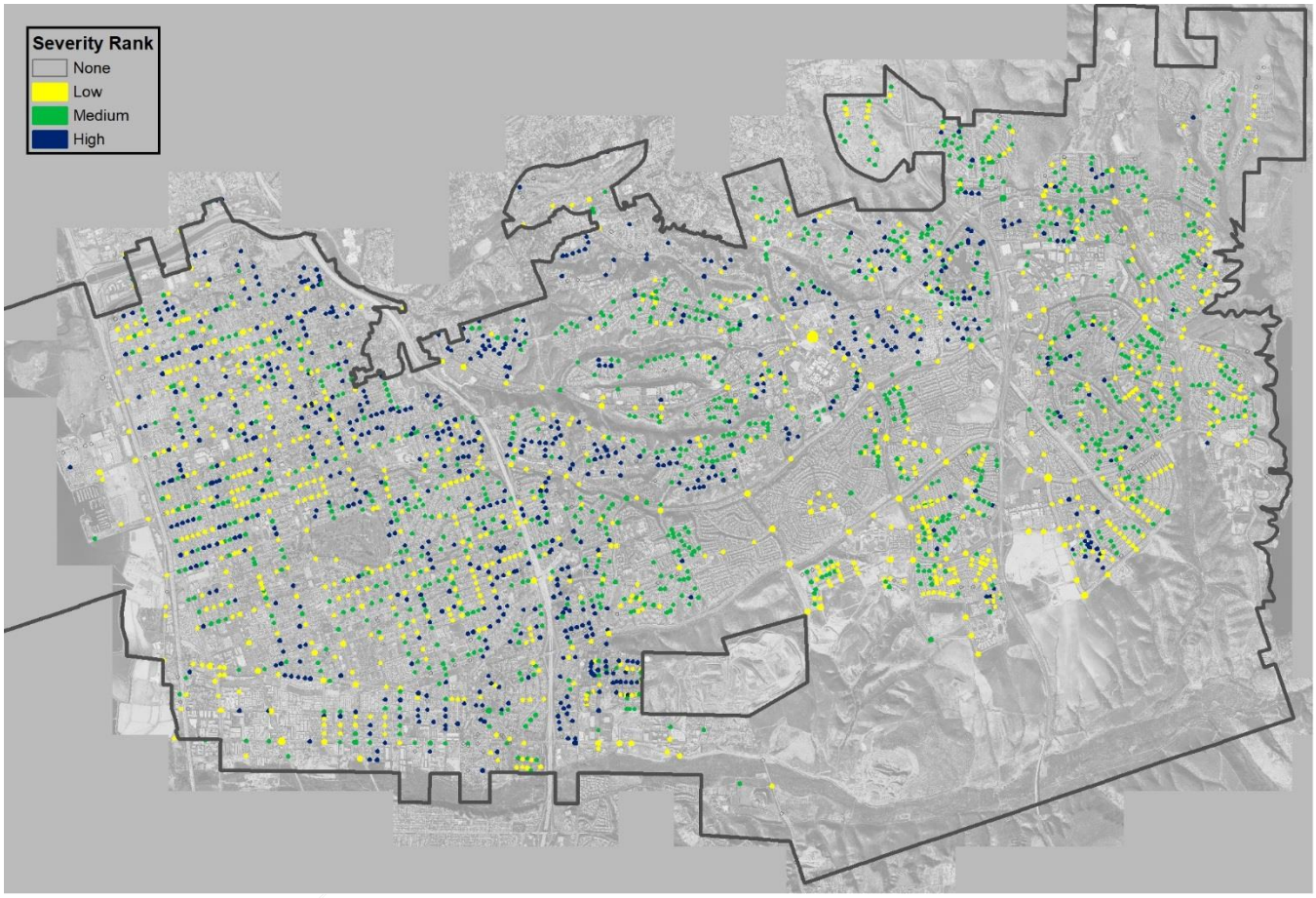
Activity Score Range



Broad patterns for intersections are the same as with sidewalks shown prior.

Intersections Prioritization

Severity Score Range

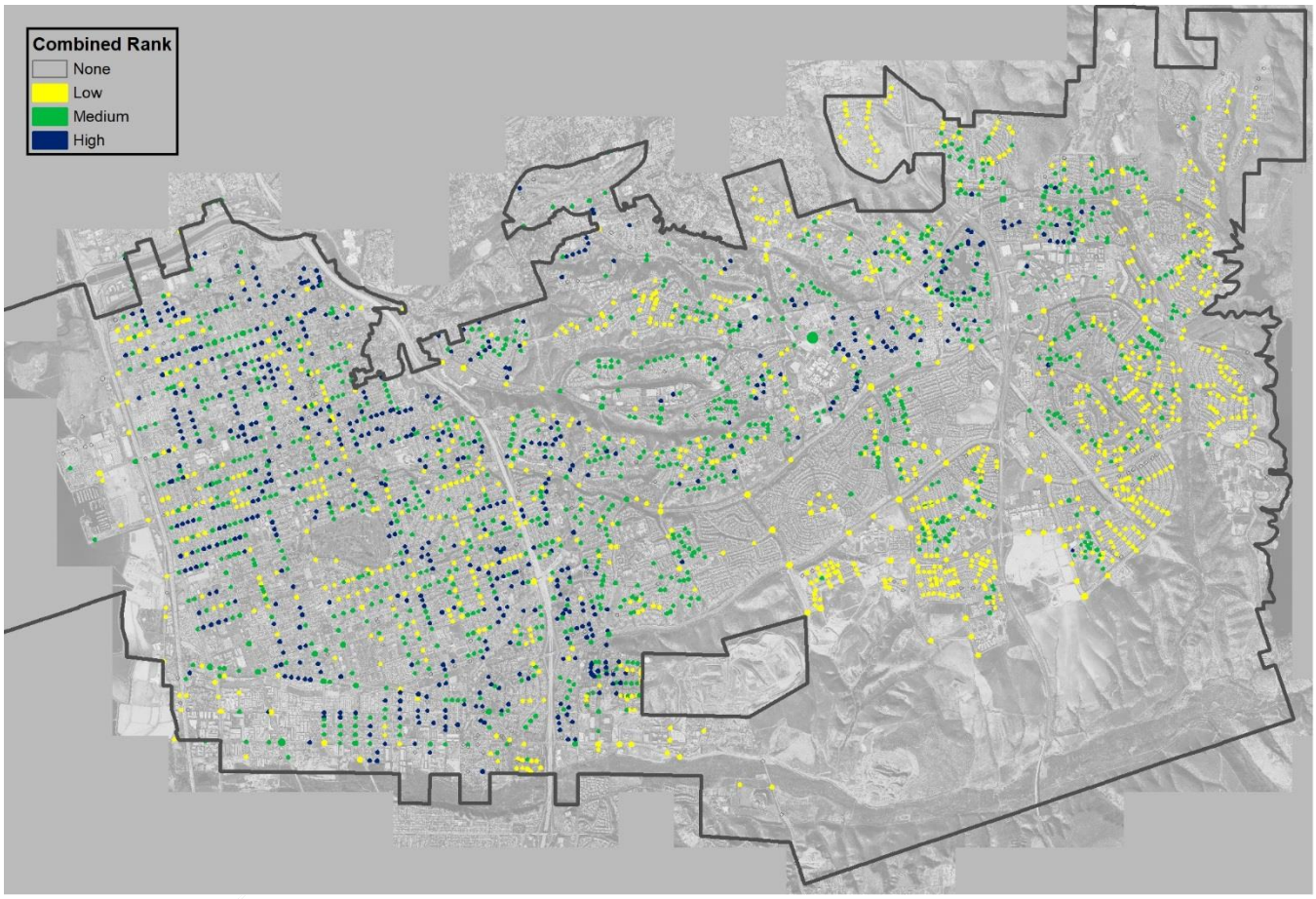


The data depicted in this map reflect all intersections with any type of potential concern. Missing curb ramps generally receive a higher severity ranking, as shown above to draw attention to these locations for review. It should be noted, however, that 90.1%, of the 2,670 missing ramps represented here are located within "T-Intersections". T-Intersections generally require additional advanced planning evaluation to consider unmarked pedestrian crossings, and whether a crossing is intended where the data would reflect a missing ramp. In advanced planning stages, staff will use the data to further evaluate the best locations where pedestrian crossings need to be created. While every potential site of a missing ramp is depicted above, not all of these locations will be appropriate for installation. The city will engage all available design solutions in these locations, and some

missing ramp locations may be remediated instead with signage or physical barriers eliminating an unmarked pedestrian crossing.

Intersections Prioritization

Combined ("Final") Score



The data depicted in this map reflect all intersections with any type of potential concern. Please see the comments on page 42, pertaining to missing ramps.

6. Developing a Plan of Action & Cost Estimates

Developing a Plan of Action

It is not financially feasible for the majority of public agencies to immediately remove all potential barriers to access and connectivity. It is the goal of the Pedestrian Connectivity Plan to provide valuable information that will allow for planning and execution of improvements to provide improved access over time. Once the activity factors were selected and applied, the consultants provided a basic review of the prioritization outcomes, in comparison to findings of the Pedestrian Master Plan, previously completed by Chen Ryan. A major goal of the Pedestrian Master Plan project was to develop a thorough understanding of pedestrian needs and serve as a key resource for the City when seeking grant funding necessary to implement pedestrian projects that promote pedestrian safety, walkability, mobility, and neighborhood quality. This high-level review found the Pedestrian Master Plan to be well aligned with the findings and rankings of the Pedestrian Connectivity Plan.

The City of Chula Vista has on-going programs that monitor proposed alteration projects and all resurfacing projects to include the review and upgrades of curb ramps and sidewalks. The City will utilize the current standards applicable, which may be 2010 ADA Standards for Accessible Design, Public Right-of-Way Accessibility Guidelines, 2011 (PROWAG), Manual on Uniform Traffic Control Devices (MUTCD), or Title 24 of the California Code of Regulations, as applicable. The City plans to address potential barriers within the sidewalk corridors and intersections in a prioritized strategic manner using the analysis and ratings provided in this plan, policies established by the City, input from the City's public outreach process, advanced design planning review, and allocated available funds. The City may choose to modify potential barrier removal priorities in order to allow flexibility in accommodating community requests, petitions for reasonable modifications from persons with disabilities and funding constraints and opportunities.

The information from the pedestrian connectivity assessment will be reviewed in its entirety and City staff will engage in advanced planning to properly assimilate the prioritized data and determine specific mitigation plans. The following provides an overview of a tiered approach that could be completed over time and programmed into the city's capital improvement program, or other projects and programs as applicable.

General Priorities for Mitigation of Accessibility Barriers

Priorities are listed by matter of importance to access and safety of pedestrians with disabilities, and based on public outreach feedback received to date:

1. **Grievances** received by individuals with disabilities will be reviewed with efficiency to determine if a remediation solution is appropriate. Those which require action will receive top priority. All grievances should be filed with the city's ADA Coordinator. (See contact information in Section 7.)

2. **Physical Barriers in the direction of travel**, such as significant joint displacement, or physical obstructions which prevent access will be considered a top priority. Some obstructions, such as utility poles or fire hydrants require more time for coordination with outside agencies and may take longer to address or require specialized design solutions to fully resolve unique challenges.

3. **Gap and heaves** in connectivity will be considered priorities dependent upon in the extent of severity and the degree of pedestrian use.

4. **Excessive Cross slopes**, such as those present at driveways, which force pedestrians into the street will be given higher priority than more minor cross slope concerns.

5. **Missing ramps** will be considered a high priority. Given the majority of missing ramps reside in T-intersection locations, these will be evaluated by city staff and reviewed in their entirety. Staff will identify the most viable locations for pedestrian crossing, and crosswalks and ramps will be proposed where appropriate. Other design solutions, such as directional ramps, signage or barriers may also be utilized to discourage use where a crosswalk is unmarked and is not intended.

Cost Estimates

The following charts provides an overall, initial planning-level cost estimate for addressing all the potential issues identified in this connectivity plan. All costs of the individual compliance components identified are totaled to reflect an overall costing for sidewalks and intersections below. Individual compliance component cost estimates are also included in the City's data. It is possible that this cost estimate will change over time as actual design solutions are identified in advanced planning stages, and as construction costs adjust annually based on City Unit Bid Price experience.

Public Right-of-Way

Facility Type	Preliminary Cost Estimate
Sidewalk	*$ 181,789,180*
Intersections	*$ 28,578,900*
Total	*$ 210,577,080*

T-Intersection Analysis – Rough Estimated Costs

No Ramp T-Intersection *If the full value were applied, overall cost predictions would reduce accordingly.*	*$ 4,826,000*
Total – *Potential Reduction*	*$ 205,751,080*

By Combined Prioritization Ranking

Facility Type	Low	Medium	High	Subtotal
Sidewalk	*$ 59,932,690*	*$ 83,884,040*	*$ 38,181,450*	*$ 181,789,180*
Intersections	*$ 10,956,900*	*$ 12,281,175*	*$ 5,340,825*	*$ 28,578,900*
Total	*$ 70,889,590*	*$ 96,165,215*	*$ 43,522,275*	*$ 210,577,080*

7. Conclusion

It is clear that the City of Chula Vista is proactively seeking to improve the pedestrian connectivity and accessibility of its infrastructure. While funding opportunities exist, and improvements will continue to be made in their ongoing construction, alterations, resurfacing and safety projects, the extent of the improvements that need to be made will understandably take a considerable amount of time to fully implement.

The information provided through this process and summarized in this report will allow the City to prioritize their connectivity and accessibility improvements and budget for future projects in a manner that best meets the needs of the community. The City has utilized information gathered during a public outreach session to understand feedback from citizens as to areas of highest priority and importance. Communication from the public will continue to be important as remediation efforts ensue over time.

The City's contact for connectivity and accessibility concerns or feedback pertaining to the public right of way is:

ADA Coordinator Contact information
Name: Patrick Moneda
Email: pmoneda@chulavistaca.gov

CONTACT INFORMATION
City of Chula Vista
Department of Engineering and Capital Projects
276 Fourth Avenue
Chula Vista, CA 91910
(619) 407-3512 phone
(619) 691-5171 fax

8. Appendix

Due to the size and nature of the extensive data collected, the files noted in these Appendices are not directly attached to the report but are available from the City upon request.

A. Prioritization Criteria and Weightings

B. Sidewalk Corridor Evaluation Reports

C. Curb Ramp Evaluation Reports

D. Signal Pushbutton Evaluation Reports