

## 5 Implementation

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### 5.1 Approach

Development of an implementation plan and transition schedule included three steps once the Countywide barrier assessment was complete. First, all facilities with an identified barrier were prioritized. Next, a planning level cost estimate was developed to provide an estimate of the financial resources needed to remove all barriers. Finally, a schedule was developed based on a \$250,000 annual budget for barrier removal. This schedule will help inform recommendations for additional funding for barrier removal, see section 5.3.3 for schedule details.

### 5.2 Prioritization

To focus the County's efforts toward facilities that pose the largest barrier within the public right-of-way, an analysis of the accessibility of each pedestrian facility and its location was completed. The result of this analysis is a prioritized list of projects, with the highest benefit projects identified for removal first.

To complete this assessment for the public right-of-way, a multi-criteria analysis was conducted to determine which facilities do

not meet existing sidewalks and curb ramp standards. Each attribute collected in the field was compared against 2010 ADAS and PROWAG requirements as outlined in Chapter 2.

If the facility does not meet ADA requirements or best practices, or is located near public destinations, points were assigned, with the number of points dependent on the relative importance or proximity. Sidewalks or curb ramps with poor compliance and several proximate destinations received a high score and are prioritized for removal while facilities farther from public destinations have lower scores, and compliant features receive a score of zero.

#### 5.2.1 Accessibility Index Score

Several criteria were used to establish the extent to which each pedestrian facility did or did not present a barrier to accessible mobility. Tables 5-1 and 5-7 shows these criteria, the threshold used to identify them as a barrier, and the score used to indicate the severity of each barrier relative to each other. Facilities with a higher Accessibility Index Score (AIS) represent a large accessibility barrier.

Table 5-1 Sidewalk, Accessibility Index Score Value

SIDEWALK ACCESSIBILITY INDEX SCORE	CRITERIA	THRESHOLD	SCORE
Sidewalks	Width	< 60 inches or < 48 inches with no sidewalk pull-outs	4
	Cross Slope Issue	> 2%	1
	Cross Slope Issue	> 2.4%	1
	Cross Slope Issue	> 3%	2
	Condition	< Average	3
	Vertical Discontinuity Issue > ¼ inch and ≤ ½ inch without bevel or >½ inch	Barriers Present ≥1	1
	Vertical Discontinuity Issue	Barriers Present ≥5	1
	Vertical Discontinuity Issue	Barriers Present ≥10	1
	Horizontal Discontinuity Issue > ½ inch	Barriers Present ≥1	1
	Horizontal Discontinuity Issue	Barriers Present ≥5	1
	Horizontal Discontinuity Issue	Barriers Present ≥10	1
	Fixed Obstacles	Barriers Present ≥1	1
	Fixed Obstacles	Barriers Present ≥2	1
	Fixed Obstacles	Barriers Present ≥3	1
	Moveable Obstacles	Barriers Present ≥1	1
	Moveable Obstacles	Barriers Present ≥2	1
	Moveable Obstacles	Barriers Present ≥3	1
	Protruding Obstacles	Barriers Present ≥1	1
	Protruding Obstacles	Barriers Present ≥2	1
	Protruding Obstacles	Barriers Present ≥3	1
	Non-Compliant Driveways Non-Compliant >2% cross-slope, and/or Non-Concurrent Grade Break and/or >8.3% Running Slope	Barriers Present ≥1	1
	Non-Compliant Driveways	Barriers Present ≥2	1
Non-Compliant Driveways	Barriers Present ≥3	1	
Maximum Sidewalk (AIS) Score			30

Table 5-2 Curb Ramp Accessibility Index Score Value

<b>CURB RAMP ACCESSIBILITY INDEX SCORE</b>	<b>RATING CRITERIA</b>	<b>POSSIBLE SCORE</b>
<b>Ramp Width (Max. Score)</b>	< 48 inches	<b>30</b>
<b>Ramp Running Slope (Max. Score)</b>	> 8.3% (< 15 feet), or >5% (Blended)	<b>30</b>
<b>Ramp Cross Slope (Max. Score)</b>	> 2%	<b>30</b>
<b>Ramp Type (Max. Score)</b>	<b>Non-Compliant Type</b>	<b>30</b>
Accessible Path	No	2
Turning Space	None or width < full width of ramp or length < 48 inches	5
Turning Space Turning Slope	> 2%	3
Flare Slope	> 10%	2
Receiving Ramp	No	2
Truncated Domes (DWS)	No	3
Truncated Domes (DWS Placement)	Other than Back of Curb	1
Truncated Domes (DWS Depth)	< 2 feet	1
Truncated Domes (DWS Width)	Less than Full Width of Curb Ramp	1
Grade Break	Not Concurrent	2
Counter Slope	> 5%	2
Lip	> ¼ inch	2
End in Crosswalk	No	2
Roadway Clear Space	< 4ft x 4ft	2
<b>TOTAL CURB RAMPS ACCESSIBILITY SCORE (AIS)</b>		<b>30</b>

Table 5-3 Signal Push Buttons Accessibility Index Score Value

<b>SIGNAL PUSH BUTTONS ACCESSIBILITY INDEX SCORE</b>	<b>RATING CRITERIA</b>	<b>POSSIBLE SCORE</b>
Curb Distance	Pushbutton less than 10 feet from curb = No	2
Crosswalk Extension Distance	Pushbutton less than 5 feet from the extension of the crosswalk line = No	2
Force Less Than 5lbs	Pushbutton Force less than 5 pounds = No	2
Vibe Feedback	Pushbutton provide vibratory feedback when pushed = No	2
Button Size and Visual Contrast	Pushbutton size meets minimum 2-inch diameter with visual contrast from housing = No	2
Distance of 2 Buttons on Same Corner	Distance between pushbuttons on the same corner less than 10 feet and audible indication of WALK interval in speech = No, or distance greater than 10 feet and indication of WALK interval in both speech or tone = No	2
Reach Depth from Landing	Reach depth from pushbutton to the landing is less than 10 inches = No	2
Mounting Height	Mounting height of pushbutton from landing area is < 42 inches or > 48 inches	2
Tactile Arrow	Tactile Arrow provided = No	2
Directional Arrow	Directional arrow on pushbutton face, housing or mounting & pushbutton with parallel orientation to crosswalk direction = No	2
Level Clear Space	Level clear space provided at pushbutton (min. 30" x 48") landing area provided with less than a 2% cross slope in any direction = No	2
Both Audible Tone during "Walk" Cycle and Audible Speech during "Walk" Cycle	Audible indication of WALK interval in tone = No and Audible indication of WALK interval in speech = No	2
Locator Tone during "Don't Walk" Cycle	Locator tone operates during DON'T WALK and flashing DON'T WALK intervals = No	2
Braille Street Name	Braille correctly showing street name = No and audible indication of street name at any time = No	2
APS Style Housing	Housing is APS Style = No	2
<b>TOTAL SIGNAL PUSH BUTTONS ACCESSIBILITY SCORE (AIS)</b>		<b>30</b>

Table 5-4 Parking Stall Accessibility Index Score Value

PARKING STALL ACCESSIBILITY INDEX SCORE	RATING CRITERIA	POSSIBLE SCORE
Stall Width	If regular stall, < 96 inches. If van accessible stall, < 132 inches and adjacent aisle is < 96 inches.	4
Stall Turning Slope	> 2%	4
Stall Pavement Marking	No Marking	3
Sign Present	No Sign	2
Sign Height	< 60 inches	1
Wheel stop or Curb Present	No Wheel stop/Curb (and not a parallel stall)	2
Vertical Clearance	< 98 inches and a van accessible parking stall	2
Adjacent Walkway Width	For parallel on-street parking with a sidewalk <= 14 feet wide nearby, stall is not at end of block. If sidewalk is > 14 feet wide, no access aisle provided in road parallel to stall or access aisle is < 5 feet wide.	2
<b>Connected to Access Aisle (Max. Score)</b>	<b>No Access Aisle</b>	<b>10</b>
Connected to Accessible Path	Not Connected	2
Access Aisle Width	< 60 inches	3
Access Aisle Turning Slope	> 2%	3
Pavement Marking	No Hatching	2
<b>TOTAL PARKING STALLS ACCESSIBILITY SCORE (AIS)</b>		<b>30</b>

Table 5-5 Railroad Crossing Accessibility Index Score Value

<b>RAILROAD CROSSING ACCESSIBILITY INDEX SCORE</b>	<b>RATING CRITERIA</b>	<b>POSSIBLE SCORE</b>
Flange Gap	> 3 inches wide	10
DWS	No DWS	10
DWS Placement	< 6 feet or > 15 feet from edge of nearest rail, or No DWS	10
<b>TOTAL RAILROAD CROSSING ACCESSIBILITY SCORE (AIS)</b>		<b>30</b>

Table 5-6 Crosswalk Accessibility Index Score Value

<b>CROSSWALK ACCESSIBILITY INDEX SCORE</b>	<b>RATING CRITERIA</b>	<b>POSSIBLE SCORE</b>
Width	< 6 feet	6
Run Slope	> 5%	12
Cross Slope	> 2% at Stop/Yield Controlled Intersections or > 5% at other types of crossings	12
<b>TOTAL CROSSWALK ACCESSIBILITY SCORE (AIS)</b>		<b>30</b>

Table 5-7 Bus Stop Accessibility Index Score Value

BUS STOP ACCESSIBILITY INDEX SCORE	RATING CRITERIA	POSSIBLE SCORE
Boarding Area Dimensions	< 5'x8' or no boarding area	8
Condition	Poor	5
Boarding Area Cross Slope	> 2%	5
Boarding Area Run Slope	> 5% and not similar to roadway grade	4
Accessible Route Slope	> 5% and not similar to roadway grade (if separation between boarding area and shelter)	4
Shelter Cross Slope	> 2% (If there is a shelter)	4
<b>TOTAL BUS STOP ACCESSIBILITY SCORE (AIS)</b>		<b>30</b>

### 5.2.2 Location Index Score

A number of popular community destinations - such as schools, transit and parks - are used to identify high priority pedestrian facilities within the County. This is done by determining which pedestrian facilities fall within a specified proximity of one or more of these destinations.

Pedestrian facilities within the identified proximity are assigned points based on each destination they are close to, as shown in Table 5-8. This measure is called the Location Index Score (LIS), which identifies high pedestrian generating overlapping areas. Ultimately the more pedestrian generators, the higher the score.

Community Defined Destinations identified during the public outreach process consisted of general land uses as well as specific locations that participants identified as issues. Specific locations included facilities like sidewalks, curb ramps, crosswalks and signals that individuals had identified as barriers.

Table 5-8 Location Index Score Value

LOCATION CRITERIA	RATING CRITERIA	POSSIBLE SCORE
<b>Schools</b>		
Proximity to Schools	Within 1/8-mile radius of school	5
Walk-To-School Route Proximity	Within 1/2-mile radius of school	5
<b>Parks</b>	Within 1/8-mile radius of park	5
<b>Transit</b>		
Park and Ride	Within 1/8-mile of park and ride	5
Bus Stops	Within 1/8-mile of transit stop	5
<b>Traffic Signal/Roundabout</b>	Within 1/8-mile of signal or roundabout	5
<b>Public Buildings</b>	Within 1/8-mile of location	5
<b>Downtown / Urban / Commercial Business Centers</b>	Within 1/4-mile radius of Downtown, Urban and Commercial Business Center Zoning	5
<b>Community Defined Destinations</b> (defined by Stakeholder/Public Engagement*)	Within 1/8-mile of location	5
<b>TOTAL LOCATION INDEX SCORE (LIS)</b>		<b>45</b>

\* Note: Community Defined Destinations to be identified based on public outreach, ADA surveys, etc. on what locations are more important, thus giving extra weight to those community defined destinations. (To be determined)

### 5.2.3 Barrier Removal Priorities

By combining the Accessibility Index Score and Location Index Score or Facility Use Index Score together, a Composite Index Score was developed. Together, these measures prioritize barrier removal at locations where pedestrian facilities present a barrier and where pedestrians would be expected.

Facilities with the highest score should be addressed first (46+ points) and represent facilities that present a clear physical barrier and are in high demand areas. The next levels of

priority are ‘high’ (31-45 points) and ‘medium’ (16-30 points). Facilities with the lowest scores should be address last (1 to 15 points), have minor barriers, and are in locations where pedestrian demand would be expected to be lower. These scores are relative, comparing one facility to the other. The ranges for medium and high priority were defined based on review of the identified barriers and assessment of the relative barrier they present. It should be noted that while some barriers have a lower priority, they still should be removed.



## 5.3 Transition Plan Cost and Schedule

A key requirement of an ADA Transition Plan is development of a schedule which shows how long it will take the County to remove accessibility barriers. Understanding the financial resources needed to remove accessibility barriers is essential for developing such a schedule.

Cost estimates for each barrier were developed to assist in determining a schedule for the completion of the barrier removal process as a tool to help the County plan funding for the full removal of barriers over the coming years.

### 5.3.1 Process

Unit costs were developed to address ADA barriers described in Chapter 2. The unit costs were developed using recent bid tabulations, input from County staff, and planning level assumptions concerning each ADA barrier type.

ADA deficiencies were totaled using their respective unit of measurement: for example, square yards for sidewalks, and number of facilities for curb ramps.

To avoid overestimation of non-compliant facilities, assumptions were made when necessary to address the repeatability of the unit cost and the quantities for each item. For example, a sidewalk segment with a non-compliant cross-slope that will require full replacement will not also require vertical discontinuity repair.

A final cost estimate was determined using information from the data inventory and calculated using current year construction costs.

### 5.3.2 Planning Level Cost Estimate

A planning level cost estimate to remove all identified barriers was developed based on the process described above. This overall cost includes construction, design, mobilization, and other construction related contingencies, but does not include County staffing needed for project management. Table 5-9 shows a summary of each activity associated with barrier removal and the applicable cost of removing the specified amount of deficiencies.

Table 5-9 – Planning Level Cost Estimate Within the Public Right-of-way

ADA DEFICIENCY	IMPROVEMENT TYPES	TOTAL QUANTITY	TOTAL PRICE
<b>Sidewalks</b>			
Non-Compliant Sidewalk	Reconstruct existing sidewalk or paved shoulder walkway	135,807 SY	\$19,692,029
Non-Compliant Driveway	New driveway with sidewalk	995	\$2,885,500
<b>Subtotal</b>			<b>\$22,578,000</b>
<b>Maintenance/Miscellaneous</b>			
Non-Compliant Horizontal Discontinuity	Sidewalk crack sealing/grouting (10 LF of sidewalk per horizontal discontinuity)	120 LF	\$600
Fixed Obstacles	Relocation of obstacles including utility pole, mailbox, tree trunk, etc.	18	\$54,000
Moveable Obstacles	Relocation of obstacles including tree/bush (prunable), message boards, parked cars, etc.	129	\$25,800
Protruding Obstacles	Relocation of obstacles including of bush/tree, signs, awnings etc.	216	\$108,000
<b>Subtotal</b>			<b>\$189,000</b>
<b>Curb Ramps</b>			
Missing Curb Ramps	New curb ramp	368	\$2,208,000
Non-compliant ramp (running slope, cross slope, ramp width, flare slope, lip, grade break, etc.)	Reconstruct existing ramp	674	\$4,044,000
Curb Ramps without Detectable Warning Surface (DWS) or DWS is Non-Compliant	Install/replace detectable warning surface	19	\$19,600
Curb ramp at marked crosswalk does not end within crosswalk.	Rechannelize crosswalk.	3	\$3,300
<b>Subtotal</b>			<b>\$6,275,000</b>
<b>Pushbuttons</b>			
Non-APS Pushbutton and Pushbutton are Located Incorrectly	Install new pole and pushbutton	15	\$75,000
Pushbutton is non-APS but is located within 5ft crosswalk extension, 10ft from curb, compliant reach depth, and adjacent to compliant clear space.	Install new pushbutton	9	\$18,000
<b>Subtotal</b>			<b>\$93,000</b>
<b>Bus Stops</b>			
Non-compliant bus shelter turning space cross slope	Replace Bus Shelter Pad (7.5SY per occurrence)	100 SY	\$18,000
<b>Subtotal</b>			<b>\$18,000</b>
<b>Accessible Parking Improvements</b>			
Non-compliant parking stall/parking aisle slope.	Grind surface and/or add asphalt lift.	2 EA	\$4,000
<b>Subtotal</b>			<b>\$4,000</b>
<b>Total</b>			<b>\$29,157,000</b>
<b>Contingency @ 20%</b>			<b>\$5,832,000</b>
<b>Design @ 12%</b>			<b>\$3,499,000</b>
<b>Mobilization @ 8%</b>			<b>\$2,333,000</b>
<b>TESC + Traffic Control @ 12%</b>			<b>\$3,499,000</b>
<b>Construction Management @ 20%</b>			<b>\$5,832,000</b>
<b>Public Right-of-Way: TOTAL 2020 DOLLARS</b>			<b>\$50,160,000</b>

### 5.3.3 Schedule

Based upon the self-evaluation, planning-level cost estimates, and existing funding programs, a schedule for barrier removal was developed. Table 5-10 below shows barriers at each priority level as a percentage and the total cost to remove those barriers. Highest priority barriers represent a significant barrier to accessibility in areas with high demand for accessibility. The majority of barriers in the high and very high priority categories are curb ramps and pedestrian pushbuttons located in high priority locations. Lower priority barriers represent lesser barriers to accessibility in areas with lower pedestrian demand. The barriers in the low and medium priority categories are primarily lesser barriers to accessibility such as moveable obstacles, horizontal discontinuities and protruding obstacles. It should be noted that while some barriers have a lower priority, they still should be removed.

Table 5-10 Public Right-of-Way Barrier Removal Prioritization and Cost

	<i>Low Priority Barriers (1-15 points)</i>	<i>Medium Priority Barriers (16-30 points)</i>	<i>High Priority Barriers (31-45 points)</i>	<i>Very High Priority Barriers (46+ points)</i>
<b>Percentage</b>	32%	45%	21%	2%
<b>Total Cost</b>	\$16,133,000	\$22,679,000	\$10,286,000	\$1,062,000

A plan should be developed to target removal of the highest priority barriers. The ‘very high’ priorities consist of 2% of the existing barriers and are estimated to cost a total of \$1,062,000 to remove. By removing the highest priority barriers first, the County is working to provide the best access to the most needed programs, in the shortest timeframe possible. After the highest priority barriers are removed the County should continue to remove the high priority, medium priority, and low priority barriers. The County should create a 5-year barrier removal program with a list of projects to remove specific barriers. The 5-year program should focus on the highest priority barriers. The purpose of the 5-year program is to make progress in barrier removal but also to provide a way to reassess the larger plan and measure incremental progress. At the end of the 5-year program the County should reevaluate their progress with barrier removal and the annual budget. . If progress is slower than anticipated additional funding may be required. If progress is faster than anticipated a shorter timeline may be achievable.

The County has proposed an annual budget of \$250,000, distributed between Maintenance and Operations (\$50,000), capital improvements for barrier removal (\$150,000) and project selection/design (\$50,000). With the approved budget of \$250,000 per year, it is anticipated that the removal of the highest priority barriers will be completed within the first 5-year program.