

Chesterfield Countywide Sidewalk Implementation Plan

PlanRVA Active Transportation Working Group

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Project Goals

- ✓ Update Existing Sidewalk Data for all major roads / non – neighborhood
- ✓ Create a Countywide Sidewalk Masterplan
- ✓ Deliver a top Prioritized Implementation Plan with recommended improvement and budget estimate

Project Tasks

1. GIS Data Validation and Update
2. Demographic Data Enrichment
3. Data Publication and Map Product Creation
4. Meetings
5. Data Synthesis and Engineering Analysis
6. Technical Memorandum

Task 1: GIS Data Validation and Update

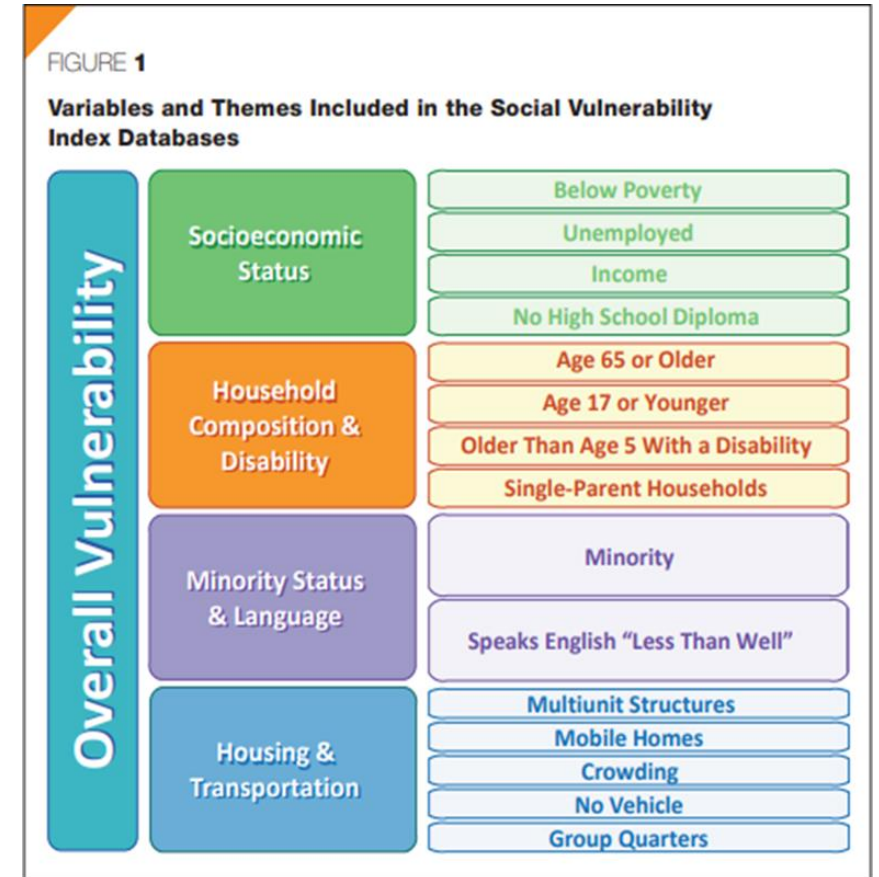
- Validate existing GIS sidewalk data and update inventory using available Google imagery
- Utilize VDOT Roadway Surface Condition Inventory to capture sidewalk locations on arterials/collectors

Task 2: Demographic Data Enrichment

- Demographics analysis to identify the census block groups that are highest in “need” of sidewalks and mobility for their population.
 - 168 Census Block Groups (CBGs)
- Proximity analysis for each potential sidewalk project and measures distance to attractors (schools/services/transit/jobs) and detractors (pedestrian crashes/speeds/ADT).

Task 2: CDC Social Vulnerability Index

- Utilizes 17 total demographic data points to rank order at-risk communities.
- Incorporated to provide comparison and facilitate creation of Chesterfield County Demographic Model



Task 2: Chesterfield County Demographic Model

- 2013-2017 ACS Owner/Renter HHs by Vehicles Available: 1 or 0
- 2013-2017 ACS Workers Walking to Work
- 2013-2017 ACS Workers Biking to Work
- 2013-2017 ACS Workers Transit to Work
- 2019 Population Density
- 2019 Employed Population (16+)
- 2019 Median Household Income
- 2019 Low-Moderate Income (LMI)

Task 2: Chesterfield Pedestrian Priority Model

- Created using three (3) basic components:
 1. Pedestrian Generators (Demographic Model)
 2. Pedestrian Attractors (Proximity Analysis)
 3. Pedestrian Detractors (Proximity Analysis)

- Origin – Demographics
- Destination – Proximity

Task 2: Chesterfield Pedestrian Priority Model

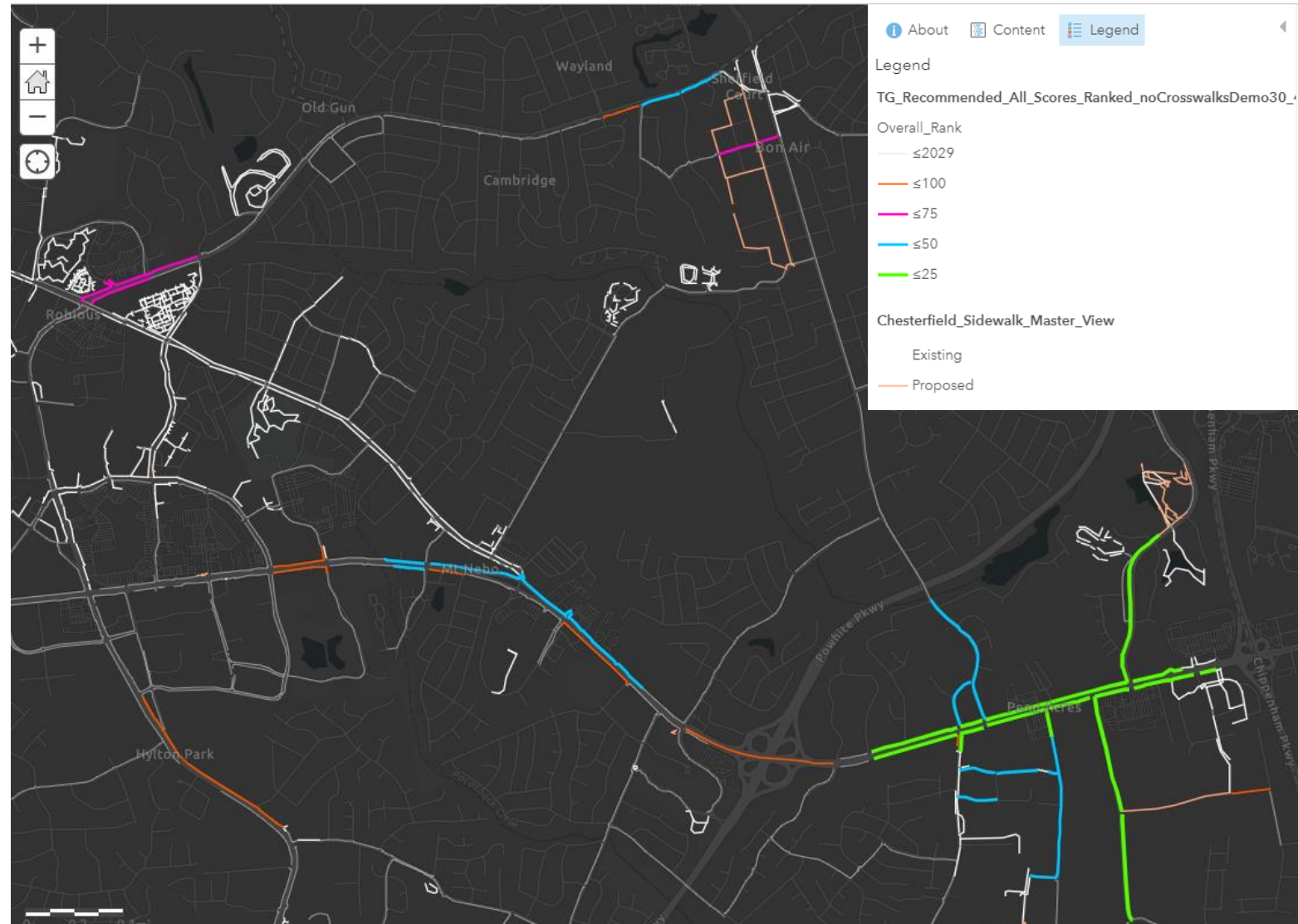
Pedestrian Attractors	Points
Transit Stops	5
Community Centers	3
Neighborhood/Community Retail < 10	2
Neighborhood/Community Retail > 10	4
Elementary Schools	3
Middle Schools	2
High Schools	2
County Services	2
Libraries	2
Post Offices	1
Colleges	1
Parks and Recreation	1

(1/2 Mile Proximity)

Pedestrian Detractors	Points	Weighting	Final Score
Pedestrian Crashes per Year (1/16 mile buffer applied to each crash)			
1+	3	3	9
0.5 - 0.9	2		6
0 - 0.5	1		3
0	0		0
Average Daily Trips (ADT)			
> 45,000	3	2	6
35,000 - 45,000	2.5		5
25,000 - 35,000	2		4
15,000 - 25,000	1.5		3
10,000 - 15,000	1		2
5,000 - 10,000	1		2
< 5,000	0.5		1
Speed Limit			
> = 45 MPH	3	1	3
35 - 40 MPH	2		2
30 MPH	1		1
< = 25 MPH	0		0

Task 3: Data Publication and Map Product Creation

- Creation of ArcGIS Online Database
- Includes Existing/Proposed & Ranked Sidewalk Segments
- Displays all data in one location for County staff to share and plan



Task 3: Data Publication and Map Product Creation



US Route 360 – Brad McNeer Parkway to Commonwealth Center Parkway (EB) Overall Project Score: 30.97

Overall Project Rank: 8

Project Length: 1,254 Linear Feet

Project Build Type: E_Shared_Use_Path

Build Type Rate/Linear Foot: \$290

Estimated Budget: \$370,000

Generator Score: 6.97

- Demographic Ranking: 58 of 168

Adjacent Functional Classification:
Principal Arterial

Magisterial District: MATOACA

Attractor Score: 9

- Businesses within 1/2 mi: 54

- Schools within 1/2 mi: 0

- GRTC stops within 1/2 mi: 1

- All other POI within 1/2 mi: 0

Detractor Score: 15

- Adjacent Speed Limit: 45

- Adjacent Average Daily Traffic (ADT):
76,000

- Pedestrian involved crashes within
1/16 mi. (Since 2013): 3

Task 4: Meetings

- Define Methodology
 - Refine Results
 - Re-run and fine-tune priorities
-
- Coordination with Planning, Economic Development, Schools

Task 5: Data Synthesis and Engineering Analysis

- Missing Link Analysis to ensure all existing/proposed sidewalks were connected to another existing/proposed sidewalk
- Provide expertise to understand best location for placement of sidewalk along certain corridors
- Provide typical section and cost estimate assumptions for all recommended sidewalk segments

Task 6: Technical Memorandum / Project Results

- Countywide Sidewalk Masterplan
 - 2,000+ recommended sidewalk projects
- Rank Order of All 2,000+ Sidewalk Projects
- Overall Top 50 Recommended Sidewalk Projects
 - Top Recommendations by Sidewalk Type and Magisterial District



Q & A

Next Steps

- Feasibility at Higher Level
- Replication for Other Localities
- Additional Assets