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CC:
From: Anne Conlon and John Cock, Alta Planning + Design
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Re: Project List Development (Task 3.1-3.2) and Project List Prioritization (Task 6)

Pedestrian Project List and Prioritization

Introduction

The existing conditions phase of this study summarized pedestrian conditions in Memphis with a series of **quantitative spatial analyses**. The results identify areas within walking distance of public schools (within the City of Memphis) with existing **pedestrian safety issues, areas and specific routes of high pedestrian demand, current barriers to walking, and gaps in the supply of pedestrian infrastructure**. These quantitative analyses will provide a strong foundation for the development of a set of pedestrian improvement projects that are needed to create a **functional pedestrian network linking neighborhoods and destinations** around the city.

This memorandum describes the process that will be used to translate these analyses into a project list (Task 3.1-3.2) and inform project prioritization (Task 6). The proposed approach will provide city staff with documentation that supports the **methodical development of improvements to the pedestrian network**, including sidewalk infill, sidewalk repair, and intersection improvement projects. The use of quantitative metrics, supported by city policy, will provide a **transparent and rational decision making process** that supports project development and delivery.

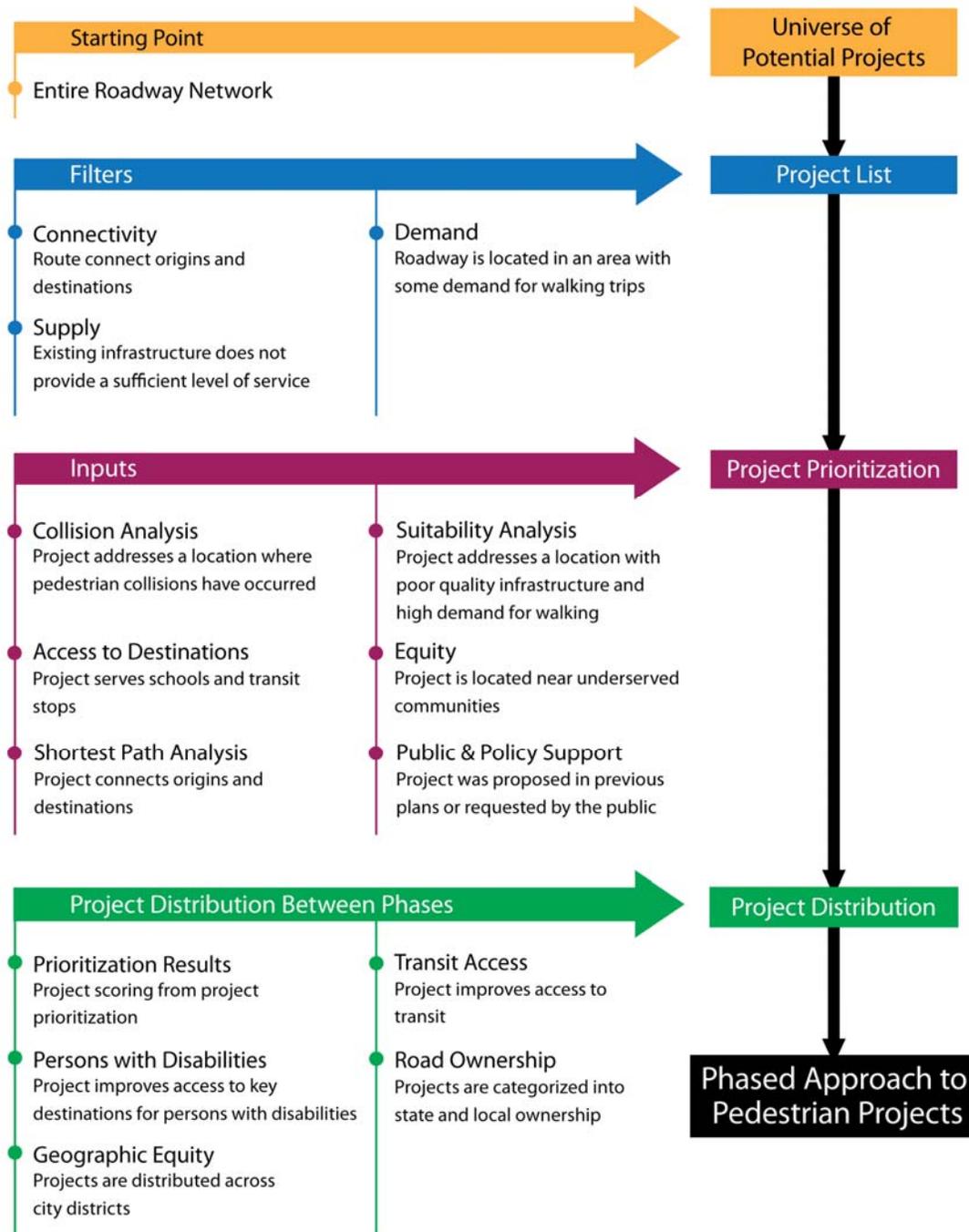
This memo includes the following sections:

- **Summary of Approach** – The first section below provides a visual summary of the overall approach to project development and prioritization.
- **Project List Development** – The second section of the memorandum provides a detailed description of the proposed methodology for the development of a list of pedestrian projects.
- **Project Prioritization** – The third section of the memorandum provides a detailed description of the proposed approach to prioritize the pedestrian project list.
- **Project Distribution Between Phases** – The fourth section identifies additional criteria that will be used to ensure a mix of projects between phases, including serving pedestrians with disabilities and geographic equity.
- **Proposed Project Tables** – The final section identifies a proposed format of the segment and intersection project tables, as well as potential project types that may appear within each.

Summary of Approach

The universe of potential projects for improvement begins with the entire roadway network – all intersections and segments apart from limited access highways. The proposed approach filters this universe into a project list of needed improvements based on the findings of the Pedestrian Suitability Analysis and Shortest Path Analysis. That project list is then prioritized and segmented to produce a set of priority projects for short term implementation, along with a proposed phasing of the full project list.

Figure 1: Approach to Project Development and Prioritization



Project List Development

Quantitative Project Selection

The following criteria will be used to filter the universe of potential projects down to a list of needed improvements. Roadway segments and intersections that are removed from consideration for pedestrian improvements in this process do not warrant investment in the time frame of this plan, given a limited funding environment.

- **Shortest Path Analysis:** Any roadway segment or intersection in the lowest two scoring categories on the Shortest Path Analysis Composite Map **will be removed**.
- **Pedestrian Suitability Analysis – Supply:** Segments and intersections that scored 80 or above **will be dropped** from the project list. These segments already provide a high level of service. Segments with a roadway permeability in the ‘medium’ or ‘medium high’ category **will be dropped** from consideration for uncontrolled crossings, since these segments are less of a barrier to pedestrians.
- **Pedestrian Suitability Analysis – Demand:** Any segment or intersection in the lowest two scoring category on the Composite Demand map **will be removed**.

Qualitative Linear Project Development

The results of the quantitative filters above will then be pieced together into project routes using the following approach:

- Segments will be grouped into linear routes that link neighborhoods to schools.
- Where a direct alternative is available with good infrastructure, routes will not be drawn.
- Where two alternatives exist, the shortest path analysis will be used to select the preferred route alignment.
- Once routes are drawn, all segments along the route will be included in the project regardless of the quantitative filters above.
- Intersection improvements will be identified along each route. The following guidelines will be used to designate improvements along routes.
 - All signalized intersections along routes will be evaluated for potential improvements such as pedestrian signal heads or leading pedestrian intervals regardless of supply scores.
 - Improvements will be included where needed at all stop-controlled crossings.
 - The need for uncontrolled crossings will be evaluated as part of ‘intersection project development’.

Intersection Project Development

Intersections along linear routes will be examined for infrastructure needs and included as components of route projects, with the exception of uncontrolled crossings. The following process will be used to identify intersections that need improvement where linear projects are not needed, and to identify locations where uncontrolled crossings are needed on and off routes.

- Signalized Intersections and Four-way Stops
 - Intersections that meet the criteria of the ‘Quantitative Project Selection’ approach will be included in the project list
 - Intersections associated with route projects will be removed from consideration, since these will be prioritized as part of route projects.
 - Signalized intersections in the top two categories of the demand analysis will be included in the project list regardless of their supply score. This accounts for signalized intersections with crosswalks

and curb ramps that may need high visibility crosswalks, pedestrian signal heads, leading pedestrian intervals, or other improvements.

- Uncontrolled Crossings
 - Segments that meet the criteria of the ‘Quantitative Project Selection’ approach will be candidates for potential midblock crossings.
 - An uncontrolled crossing will be recommended where a school and neighborhood are separated by one of these segments.
 - An uncontrolled crossing will be considered on local roads within a quarter mile of a school where an intersection meets the criteria of the ‘Quantitative Project Selection’ approach and demand is in the top two categories. These crossings may occur at intersections or mid-block.

Project Prioritization

Following development of the project list, projects will be prioritized based on the quantitative analyses completed to date along with factors including policy support, equity, stakeholder input, and proximity to key destinations. Table 1 summarizes criteria and scoring for prioritization. Projects will then be segmented based on geographic equity and the particular needs of populations with disabilities.

Prioritization Scoring

Table 1: Project Prioritization Criteria

Criteria	Definition	Input	Rank	Measurement	Points	Max. Influence
School Access	To what extent does this improve pedestrian access to a school?	Public school locations	High	Project is within ¼ mile of a public elementary or middle school (or high school)	30 (20)	15%
			Medium	Project is within ½ mile of a public school elementary or middle school (or high school)	15 (10)	
			Low	Project is further than ½ mile from a public school	0	
Promote Safety	To what extent does the project provide an immediate safety improvement at a location with a recorded safety concern?	Collision analysis shows intersections and street corridors with highest crashes	High	Multiple pedestrian crashes have occurred at the segment or intersection in the last five years for which there is data (2007 – 2011)	30	15%
			Medium	A pedestrian crash has occurred at the segment or intersection in the last five years for which there is data (2007 – 2011)	15	
			Low	No crashes occurred	0	
Inadequate Infrastructure	Does the project improve conditions at an intersection or corridor with poor or inadequate infrastructure?	Pedestrian Suitability Analysis – Supply Score	High	Segment or intersection is designated as lower supply	30	15%
			Medium	Segment or intersection is designated as medium supply	15	
			Low	Segment or intersection is designated as higher supply	0	
Equity	To what extent does the project benefit underserved communities?	Equity composite measure showing geographies (census tracts) where pedestrian improvements could benefit underserved populations	High	Census tract scored in the top tier in the Mid-South Greenprint's Equity Analysis	20	10%
			Medium	Census tract scored in the middle tier in the Mid-South Greenprint's Equity Analysis	10	
			Low	Census tract scored in the lowest tier in the Mid-South Greenprint's Equity Analysis	0	
Promote Connectivity to Destinations	How many origins and destinations will the segment connect?	Shortest Path Analysis	High	Project is in the top third of segments categorized by the number of routes served	20	10%
			Medium	Project is in the middle third of segments categorized by the number of routes served	10	
			Low	Project is in the bottom third of segments categorized by the number of routes served	0	
Serves Activity Centers	Is the project located in an area with high demand for walking?	Pedestrian Suitability Analysis – Demand Score	High	Segment or intersection is designated as higher demand	20	10%
			Medium	Segment or intersection is designated as moderate demand	10	
			Low	Segment or intersection is designated as lower demand	0	
Transit Access	To what extent does this improve pedestrian access to the transit network?	Transit ridership by stop (boardings)	High	Project is within ¼ mile of a transit stop with more than 100 boardings a day	20	10%
			Medium	Project is within ¼ mile of a transit stop with 20 to 100 boardings a day	10	
			Low	Project is within ¼ mile of a transit stop with less than 20 boardings a day	5	
Civic Amenity Access	Does the project serve a public library or community center?	Locations of libraries and community centers	N/A	Project is within ¼ mile of a public library or community center	10	5%
Previously Proposed Projects	Does the project have direct support expressed by inclusion in an adopted planning document?	2011 Memphis MPO Regional Bicycle and Pedestrian Plan; MATA Short Range Transit Plan (SRTP): This plan identifies key transit stops where pedestrian improvements aimed at supporting transit should be focused	N/A	Project corresponds to a pedestrian improvement recommendation in the MPO Plan or is within a ¼ mile of a key transit stop from the MATA SRTP	10	5%
Stakeholder Input	Has the project location been identified by project stakeholders (TAC)?	School survey, Transportation Advisory Committee, sidewalk request program	N/A	The project corresponds to one of the following: <ul style="list-style-type: none"> Location was identified by a project stakeholder as a priority for improvement Location was identified as a problem in the 2011 MPO plan Location was requested more than once through the city's sidewalk request program 	10	5%
Maximum Points					200	100%

Project Distribution Between Phases

The above prioritization scoring will allow for the identification of the top priority projects across the city. However, it is important that the phased approach to project implementation reflect other factors beyond the prioritization criteria. A key issue in Memphis is serving pedestrians with disabilities, who are most impacted by the poor condition of sidewalks throughout the city. As described below, it will be necessary to ensure a set of projects that will particularly serve this population is included within each phase of the project. In addition, the final pedestrian project list will reflect a level of geographic equity, to ensure projects are included to serve various areas of the city.

The items below are thus not included in overall prioritization scoring, but will be used to distribute projects between phases in the resulting project list.

- **Equity for Persons with Disabilities** – Sidewalk repair projects (with high number of sidewalk obstacles or obstructions) will be identified near populations with disabilities (based on housing data) as well as near key medical institutions which are important destinations for this population.
- **Geographic Equity** – Priority projects will be identified in each council district.

Proposed Project Tables

Segment Projects

Table 2 – Proposed segment projects table

Project Name	From	To	Project Description	Length	Cost	School	Reason for Project	State Owned Road	Transit Access	Serves pedestrians w disabilities	City Council District	City Council Superdistrict
Street A	Street B	Street C	Sidewalk repair (100% of block)	0.4 miles	\$17,000	Memphis Elementary School	Project connects multiple origins and destinations in a high demand area and is included in an adopted plan.	X		X	1	8

Potential project types:

- New sidewalk
- Sidewalk repair (high cost)
- Sidewalk repair (medium cost)
- Sidewalk repair (low cost)
- Neighborhood slow zone / traffic calming
- Lane reconfiguration - Any pedestrian crossings that are part of a lane reconfiguration will be broken out as separate projects in the intersection projects table to ensure needed crossings are implemented sooner than a road reconfiguration that may be a longer term project.

Intersection/Crossing Projects

Table 3 – Proposed intersection/crossing projects table

Project Name	Existing Infrastructure	Project Description	Cost	School	Reason for Project	State Owned Road	Transit Access	Serves pedestrians w disabilities	City Council District	City Council Superdistrict
Street A	Signalized intersection with curb ramps and crosswalks	Add leading pedestrian interval.	\$17,000	Memphis Elementary School	Project improves an intersection where multiple crashes have occurred in a high demand area near two schools and a transit stop.	X		X	1	8

Potential project types:

Intersection Projects

- Signal Timing Modifications (Pedestrian Walk Phase Extensions and Detection, Protected and Permissive Left Turn Phase, Leading Pedestrian Intervals)
- Curblines Modifications (Curb Extensions, Minimize Curb Radii, ADA Curb Ramps, Removal of channelized right turn lanes or redesign for pedestrian priority)
- Crosswalks and Markings (Marked Crosswalks, Raised Crosswalk, Crosswalk Marking Maintenance, Advanced Stop Lines)

Midblock Crossing Projects

- Pedestrian Signal (Hybrid Beacon, RRFBS, Pedestrian Traffic Signal / 2 Stage Crossing)
- Crosswalks and Markings (Marked Crosswalks, Raised Crosswalk, Crosswalk Marking Maintenance, Median Refuge Islands, Advanced Stop Lines)