Walk This Way:  
Infrastructure Equality Through GIS

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Why Sidewalks Matter

• Roads without sidewalks are more than twice as likely to have pedestrian involved crashes as roads with sidewalks on both sides of the street.

• Research shows that if you build it they will come, and quality matters.
Why Sidewalks Matter

• Birmingham is a City of neighborhoods
• Sidewalks are the most basic community infrastructure
• Sidewalks provide many benefits including safety, mobility, and healthier communities.
• 8 out of 10 Americans prefer being in a community that has sidewalks.
• 47% of people who live in a neighborhood with sidewalks are more likely to be active at least 39 minutes a day than those who live in neighborhoods without sidewalks.
How does this relate to Mississippi and Alabama?

Mississippi and Alabama are national leaders in obesity, health related issues, and poverty. 35% of Alabamians are obese, 28% of Alabamians don’t get any leisure activity on a given day, and 62% of Alabamians don’t have access to exercise opportunities.
• Collaborative county-wide plan for greenways and trails

• Planned to promote active lifestyles, improve health, economic benefits, reduce flooding and increase community awareness of the environment

• Conducted over 50 open house meetings and 6 design charrettes

• Planned 800 miles of trails – 200 miles of shared-use trails and 600 miles of street-based and pedestrian trails

• Resulted in $10 million TIGER VI grant to implement 29 miles of greenways and trails
Birmingham Sidewalk Planning: Phase I

Inventory

Public meetings

Deliverables:

Development of a master sidewalk map and descriptions, maintenance needs for existing sidewalks compliant with FHWA’s A Guide for Maintaining Pedestrian Facilities for Enhanced Safety access needs compliant with the United States Access Board’s latest edition of the Public Rights Of Way Accessibility Guidelines (PROWAG) possible funding and potential phasing of recommended sidewalk operations.
Birmingham Sidewalk Planning: Phase I

IMPLEMENTATION

DETERMINING PRIORITIES

CITYWIDE

As the Birmingham Sidewalk Master Plan identifies sidewalk priorities throughout the City, City officials and staff must prioritize sidewalk construction and repair further.

Areas that are existing sidewalk networks are the obvious places to start directing funding for sidewalk construction and repair. These areas have substantial amounts of information, mapping, data, and public input already available. The Birmingham Sidewalk Master Plan should work in concert with the framework area plans and the fine-grained planning of these projects. Informing the way that funding is allocated to the priorities identified in the Sidewalk Master Plan.

Currently, there is no set schedule in the City’s budget for sidewalk repair and construction, including an annual source of funding that is designated for sidewalk repair. In the City’s capital budget, an allocation of funding for sidewalk repair and construction is not identified. In the planning stage, a neighborhood feedback plan is needed to guide neighborhood feedback. Furthermore, the City’s street program, funding should be included in these projects' capital. sidewalk improvement projects are simple and cost-effective ways to ensure that the Sidewalk Master Plan is implemented.

The City’s Capital Improvements Program should be reevaluated and also coordinated with the Sidewalk Master Plan, ensuring that Capital Improvements such as sewer, water, or other utility repair occur concurrently with sidewalk repairs.

HEALTH OF THE COMMUNITY

In addition to the factors identified in this plan, the health of any community is impacted by the condition of sidewalks. Consideration must be given to the sidewalk condition, the community with worse health conditions may be a better candidate for higher sidewalk improvements than a community with better health conditions.

NEIGHBORHOOD ADVOCACY

It is essential that neighborhoods and communities have the ability to advocate for these sidewalk projects in their areas and understand the issues by which they may arise. Citizens may appeal directly to their City Council to include sidewalk projects in the budget or to allocate funds from the general fund to these projects. As the framework planning process continues, the neighborhood can advocate for specific sidewalk plans to be included in the implementation of the project. The implementation stage of these plans will be an implementation stage of those plans.

As stormwater management projects require various neighborhood connections, it is essential to maintain neighborhood connections on the plans. Neighborhood organizations should identify sidewalk projects in their area and ensure that the Sidewalk Master Plan is implemented.

ACTION ITEMS

The following action items should be taken to ensure that sidewalks will be considered priorities for budgeting and implementation in the future.

<table>
<thead>
<tr>
<th>ACTION</th>
<th>TIMELINE</th>
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<tbody>
<tr>
<td>Create a sidewalk repair plan for high-priority areas.</td>
<td>Immediate</td>
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<td>Create an implementation committee to monitor and track sidewalk projects.</td>
<td>Immediate</td>
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<td>Work with the City to identify areas that can be included in the master plan.</td>
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<td>Coordinate with utility companies to ensure that sidewalk installations do not interfere with utility projects.</td>
<td>Immediate</td>
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<td>Include sidewalk priorities in neighborhood plans.</td>
<td>Ongoing</td>
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<td>Add a priority in the annual budget for sidewalk repair.</td>
<td>Tentative budget cycle</td>
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<tr>
<td>Add a priority in the annual budget for ADA compliance projects.</td>
<td>Tentative budget cycle</td>
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Implementation: A+
Birmingham Sidewalk Planning: Phase II

- Inventory
- Detailed survey of the current sidewalks to determine the condition of the sidewalks and their compliance /non-compliance with the American Disabilities Act (ADA)
Birmingham Sidewalk Planning:
5-Year Improvement Program

Vision:

"To improve the walkability within the City’s neighborhoods by making increased progress in terms of sidewalk repair throughout the City’s 23 communities. As a result of a multi-year, multi-phase planning process the City’s adopted Sidewalk Master Plan will provide a basis for implementation for this Sidewalk Action Plan."
Birmingham Sidewalk Planning: 5-Year Improvement Program

Theme:

The major theme for this plan will highlight action items related to implementing a short-term 5 year sidewalk improvement program as an implementation component of the City’s adopted Sidewalk Master Plan.

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<th>Year</th>
<th>Fiscal Year</th>
<th>Cost Estimate</th>
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<tr>
<td>5</td>
<td>2024</td>
<td>$7,094,663</td>
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5 Year/$25,000,000 Sidewalk Spending Estimates
ADA Compliance

• The Americans with Disabilities Act (ADA) has created design guidelines to ensure that transportation facilities are constructed to a set of standards that ensures accessibility for the disabled. Sidewalks are one of the most common pieces of transportation infrastructure, yet if not accessible, they can pose great challenges and danger to anyone in a wheelchair or with crutches. The ADA provides standards to help anyone constructing sidewalks do so in a safe, accessible manner.

• This became effective in 2016, and the City wanted to live up to its moto by going beyond the minimums required by what is called a Transition Plan.
ADA Sidewalks Explained

Maximum Sidewalk Slope:

Run Slope $\leq 5$

Cross Slope $\leq 2$

However, sidewalks may follow the slope of the adjacent roadway if 5% or less is technically infeasible.
Preliminary Inventory

• The first phase of the Master Plan was to conduct a preliminary windshield survey.
• This mapped where sidewalks existed and did not exist.
• Basic quality of existing sidewalks.
• Approximately 1000 miles roadways were analyzed.
• This data was based on blocks.
• This data was layered on top of existing GIS City data.
Establishing Priorities

• Three public meetings were held to identify community priorities.
• Residents were asked to rank designations by importance, and rank designations based on importance of community walkability.
• This data was converted to GIS data and seven community destinations emerged as priorities for the plan.
Establishing Priorities

• Schools
• Parks
• Transit Stops
• Community Centers
• Grocery Stores
• Libraries
• Commercial Areas
Field Work

• To truly address ADA the team set out to identify all sidewalk ADA incompatibilities.

• This was a 3 year process performed by a 3 person team that walked the nearly 1,000 miles of Birmingham roadway to document each inconsistency using GIS.
Data Points

• Approximately 150,000 GPS points during this data collection process.

• Data points were stored in the ArcGIS Online Cloud in a geodatabase which contained customized domains and attribute table along with photos of sidewalk and curb ramps.

• Due to the amount of photo attachments, this geodatabase weighed in at over 60GB!
- Slope: 32%
- Busted: 1%
- Construction: 6%
- Debris/Gravel: 5%
- Heavy Vegetation: 0%
- Joint Displacement: 1%
- Other: 1%
- Ponding: 1%
- Sidewalk Ends: 23%
- Utility: 31%
Organizing and Communicating the Data

- Classify and prioritize the worst sidewalk segments
- Priority buffer zones
- 5-year Plan selection
5 year Plan
Challenges

- Deciding on the final deliverable
- Selecting data collection software
- Testing workflow and GPS equipment
- Customizing Geodatabase
- Changing the conversation about how we budget funding across the city for sidewalks