Weinland Park Community Mobility Plan

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Acknowledgements

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Executive Summary

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Introduction

Mobility Planning

Through the Community Mobility Planning (CMP) Program, the City of Columbus is taking a new approach to transportation planning and engineering that acknowledges and responds to key changes in how residents view and use the transportation system. It recognizes the role that well designed facilities play in creating healthy and vibrant communities. Recent focuses on environmental awareness, rising fuel prices, and a renewed desire for urban living in Columbus have all combined to increase demand for multi-modal options and improved connectivity between business, retail, and residential areas. The Mobility Planning Program is one of many steps the City is taking to promote sustainable development, revitalize urban areas, and improve transportation options for all residents. Since 2008, the City has adopted a Complete Streets resolution, developed the Bicentennial Bikeways Plan, updated the City's Bike Law to promote safe cycling and require the provision of bicycle facilities, been designated a Bicycle Friendly Community, and implemented the GreenSpot Program.

In general, traditional transportation planning methods analyze the street system to maximize operational efficiency for motorized vehicles, often at a municipal or regional scale. Such plans have lead to the creation of auto-centric networks that often overlook or even determine the types of land uses that surround them, and frequently discourage or preclude travel by other modes. Often, older residential neighborhoods near the urban core bear the marks of such development patterns as interstates and arterial roads were built through them to connect new suburban developments to the central business district. Recognizing the importance of complete streets and the need for improved mobility, particularly in older urban neighborhoods, the City of Columbus developed the Community Mobility Planning Program to achieve the following goals:

- Balance the transportation system for moving people and goods by all modes (pedestrian, bicycle, automobile, transit, truck, and rail)
- Reduce traffic violations (speeding, failure to yield to pedestrians, running red-lights, etc)
- Recognize and strengthen the connection between land use and mobility (coordination with other planning efforts)
- Promote distinct and vibrant neighborhoods
- Address issues identified by community residents
- Recommend comprehensive yet implementable solutions

What are Complete Streets?
Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street. Some of the benefits of complete streets include:

- Economic development
- Better air quality
- More vibrant streets and communities
- Improved safety for all users
- Enhanced accessibility
- Lower transportation costs
- Better health through increased activity

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The Community Mobility Planning Process

A planning process, that seeks to be inclusive of all travel modes and all users of the transportation network, was tailored to meet the needs of the Weinland Park neighborhood. The process was broken down into four basic phases:

Data Collection: this phase included all input gained from the public and stakeholders, technical data collection such as sidewalk and curb ramp inventories and traffic counts, and a review of existing plans and policies. Specific mobility issues and locations of concern were identified throughout the Weinland Park community.

Toolbox of Treatments: as the first step in developing solutions, the team identified numerous solutions for each travel mode that could be applied to address the issues and concerns identified during the data collection phase.

Location Specific Recommendations: this phase involved analyzing the mobility conditions at each location of concern throughout the neighborhood and recommending the most appropriate tool(s) for that specific site.

Prioritization and Implementation: the final phase of the planning process involves the City working with the project Steering Committee, which consists of neighborhood residents and key stakeholders, to prioritize the recommendations and develop a strategy for implementation. The City and Steering Committee will continue with this phase of the project long after the plan document has been completed.

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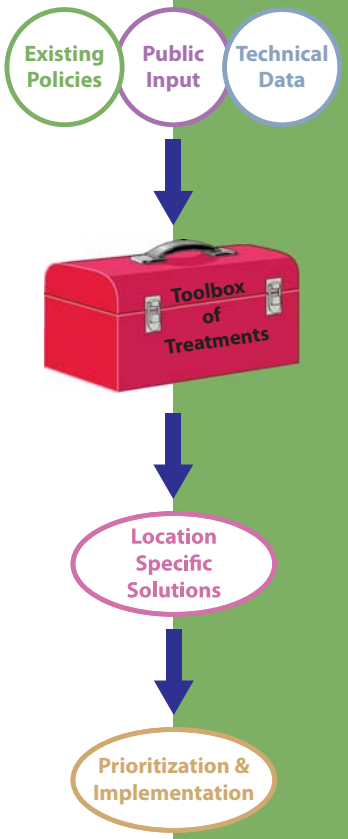
The plan study area (Exhibit 1) encompasses the entire Weinland Park neighborhood, which extends from High Street on the west to the CSX railroad tracks on the east and from Fifth Avenue on the south to Twelfth Avenue on the north. In addition to Weinland Park, the study area also incorporated Fourth and Summit Streets from I-670 to Hudson Street.

Figure 1: Community Mobility Planning Process

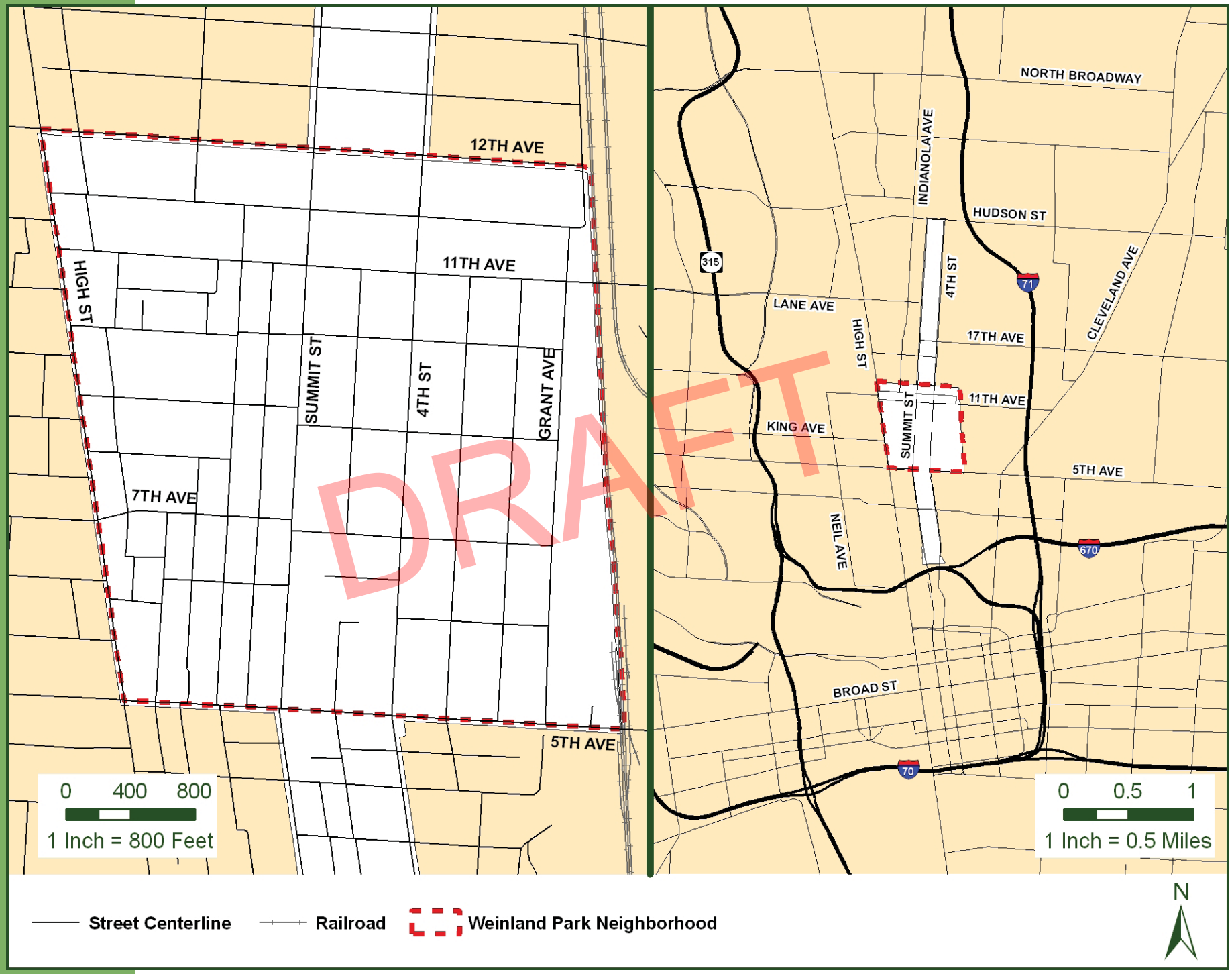


Mobility Planning in Weinland Park

Why Weinland Park?

After completing its first two community mobility plans in the Linden and Franklinton neighborhoods, the City of Columbus selected Weinland Park for its next plan. The community is an ideal location for mobility improvements for many reasons. Similar to Linden and Franklinton, Weinland Park has seen increased investment and redevelopment in recent years after long periods of disinvestment. It is located adjacent

Exhibit 1: Weinland Park Community Mobility Plan Study Area



to The Ohio State University and the Short North and is less than one mile from downtown Columbus, all of which are major activity generators used by a wide range of people with different mobility needs. Weinland Park is also a densely populated neighborhood and, at one-half square mile in area, is conducive to travel by various modes.

Resident concerns, recorded in 311 requests, and other issues such as a high number of pedestrian crashes and traffic violations have also prompted City officials to take actions to improve mobility in and around Weinland Park. Many of the factors and concerns leading to the selection of Weinland Park for a CMP are discussed in more detail in the following sections and in subsequent chapters of this plan.

While the plan was initially intended to focus strictly on the Weinland Park neighborhood, the City received requests from adjacent neighborhoods to extend the study area along Summit and Fourth Streets. The entire corridor from I-670 to Hudson Street was included in the scope because any changes to these streets in Weinland Park would impact traffic along the rest of the corridor as well.

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Weinland Park Transportation Network

The streets in Weinland Park are laid-out in a traditional grid network. High Street and the one-way pair of 4th and Summit Streets serve as the main north/south arterial streets through the community, providing quick access to and from downtown Columbus. Fifth and Eleventh Avenues are the primary east/west arterial streets, providing access to High Street and I-71 and generally framing the neighborhood on the north and south. Seventh Avenue serves as a key route through the center of Weinland Park for local traffic; it connects to Weinland Park Elementary School, Kroger grocery store, and High Street. The rest of the street network consists of residential streets running both north/south and east/west.

This arrangement is highly conducive to neighborhood mobility as block sizes are small and direct connections are easily made to area destinations. In contrast to conventional suburban development, where loop and cul-de-sac streets create long circuitous routes, the streets in Weinland Park are better at facilitating a direct route for pedestrians, bicyclists, and transit as well as cars. The grid network also provides numerous entry and exit points to and from the neighborhood and offers multiple parallel routes of travel, thus reducing the importance of any one intersection or roadway. It is because of the existing transportation framework and mix of land uses in Weinland Park that this

The grid network in Weinland Park (left) is far more conducive to multi-modal travel than the suburban style loop and cul-de-sac development shown in this southwest Columbus neighborhood (right).

Figure 2: Comparison of urban and suburban street networks

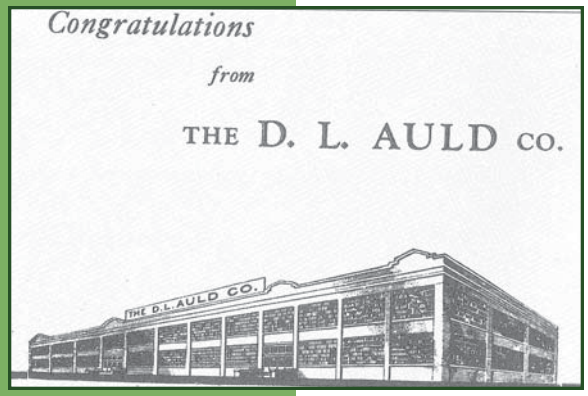

Figure 3: Located at the corner of Fifth Ave and Fourth St, D.L. Auld (later 3M) was a major employer in the area for nearly 100 years

Figure 4: The Godman Guild moved to its current location on the corner of Sixth Ave and Sixth St in Weinland Park in 1994

Did you know?
Since 1898, the Godman Guild has continually adapted to meet the needs of Columbus communities. Over the years, it has provided services ranging from public baths, to neighborhood organizing, to career and computer training courses.

area is a good location for mobility improvements. A better balance of transportation modes can be achieved simply through repairing, upgrading, and supplementing the existing infrastructure, rather than requiring a redesign of the street network.

History and Character of the Neighborhood

The Weinland Park neighborhood began to take shape in the late 19th and early 20th centuries as part of Columbus' Near North area. At the turn of the century, the industrial revolution brought an influx of factories and jobs to the City. The area that now constitutes Weinland Park developed as a mixture of industrial properties along the railroad tracks which serve as the neighborhood's eastern boundary, and residences for the factory employees . Businesses such as Columbus Coated Fabrics, D.L. Auld Company, and Timken Roller Bearings provided employment to many area residents and helped Weinland Park to become a stable working class neighborhood in the early and mid 1900's. To this day Weinland Park, by and large, retains its roots as a working class community.

Like so many urban neighborhoods across the country, Weinland Park saw a decline in home ownership and stability following World War II as families left the urban core for the suburbs. This out-migration, partnered with industrial decline, led to decades of disinvestment, concentrated poverty, and increased crime in the community. By 1990, Weinland Park had one of the highest concentrations of subsidized housing in the county, and suffered from rising unemployment along with gang and drug activity.

Since the mid-1990's, renewed attention and investment has been focused on the Weinland Park neighborhood by public, private, and non-profit organizations. Active and dedicated community groups like the Weinland Park Community Civic Association, long-standing organizations like the Godman Guild, newer groups such as Campus Partners and Community Properties of Ohio, and public agencies such as the City of Columbus and MORPC have all begun working in concert to effect positive and sustainable changes in Weinland Park. Efforts focused on crime prevention, increasing home ownership, and improving and deconcentrating Section 8 housing are just some of those that have been undertaken.

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Future Investments and Development in Weinland Park

Not only does the character and design of Weinland Park make it a good candidate for multi-modal improvements, but it is also an area in transition. With the aforementioned planning and investment activity occurring in the neighborhood, it is likely that Weinland Park will undergo substantial changes in the next 5-10 years. Some of the recent and upcoming efforts in the community include (Exhibit 2):

- New Weinland Park Elementary School and Schoenbaum Early Childhood Education Center
- Redesign of Weinland Park
- South Campus Gateway development
- Community Policing and Pride Center on 11th Avenue
- Clean-up and redevelopment of the Columbus Coated Fabrics site
- Clean-up and redevelopment of the 3M site
- 7th Avenue improvements (including new sidewalk construction) – Urban Infrastructure Recovery Funds
- York on High and Smith and High Condos on High Street north of Fifth Avenue
- New Kroger at Seventh Avenue and High Street
- Weinland Park Business Plan – Joint effort of Campus Partners, Columbus Foundation, and JP Morgan Chase Foundation.
- United Way Building Vibrant Neighborhoods Program – Weinland Park is one of five Columbus neighborhoods in which the United Way will focus efforts to improve neighborhood safety and ensure safe and decent housing

As current residents and agencies work for improvements in the neighborhood and new residents and businesses move in, this is an ideal opportunity to improve the safety and function of the transportation system for all users, but for pedestrians, cyclists, and transit riders in particular.

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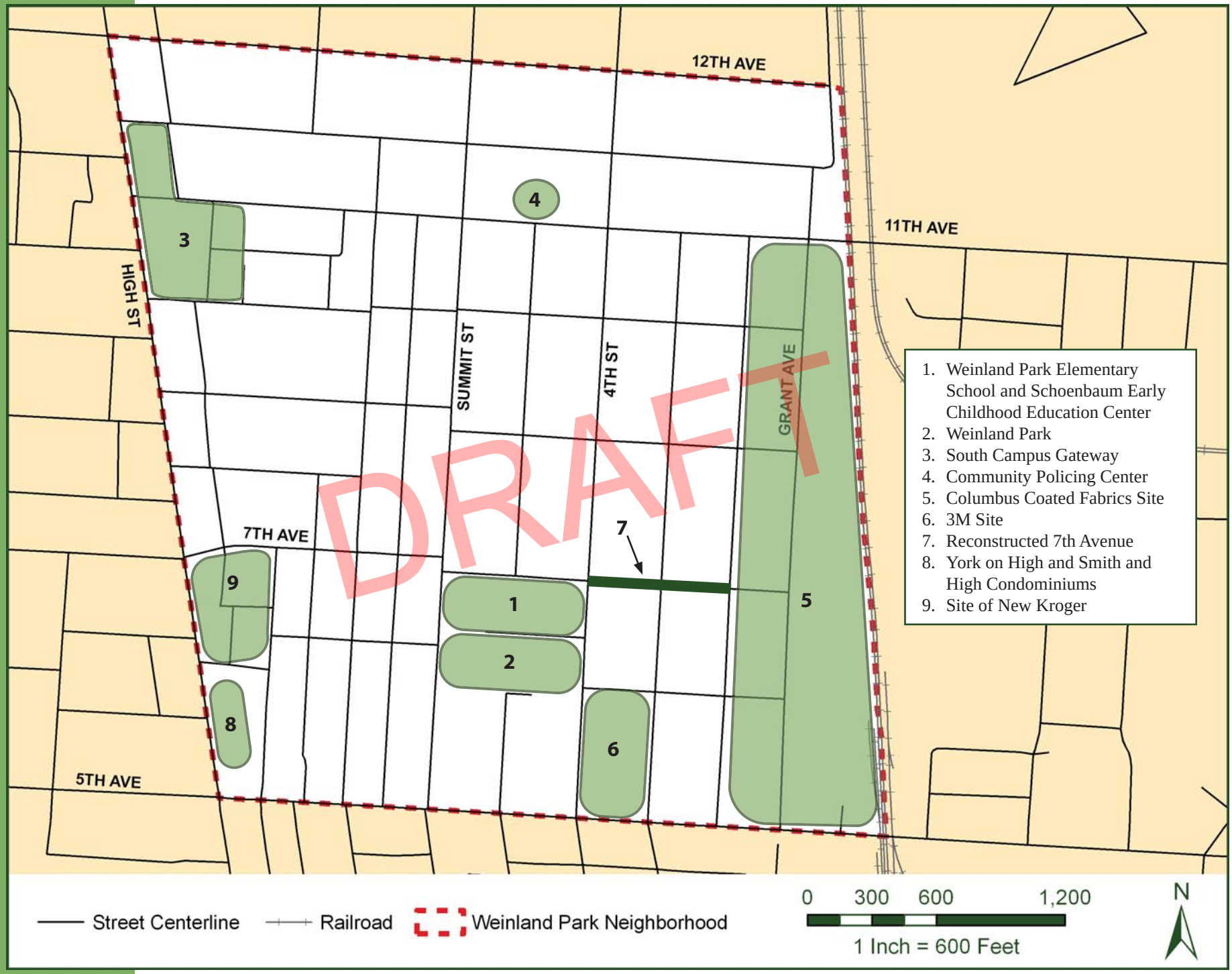
Figure 5: The new Weinland Park Elementary School, and adjacent Schoenbaum Center both opened in 2007

Figure 6: The Seventh Avenue improvements, shown here under construction, included complete reconstruction of the road and the installation of sidewalks

Exhibit 2: Recent and Planned Investements in Weinland Park



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Issues and Concerns

In order for the project team to successfully study and recommend solutions to the mobility issues of the Weinland Park community, it was important to first identify and begin to understand what those problems are. The most effective way of gaining this understanding was through input from neighborhood residents and stakeholders. This process began before the project was even initiated with the tabulation of 311 service requests, and continued through the entire planning process. The project team sought to engeage the community and capitalize on the knowledge and input of residents to identify key locations of concern to study, develop solutions, and prioritize the recommendations.

3-1-1 Service Requests

By analyzing requests submitted via the City of Columbus Call Center (3-1-1), City officials were able to identify a need for improved mobility conditions in Weinland Park. The volume and nature of calls regarding transportation issues were key factors in the selection of Weinland Park for a CMP; these service requests also served as a starting point for the project team to begin identifying issues to be addressed.

Within the study area, a total of 3,060 service requests were recorded since 2005, of which 264 were transportation related. The 264 relevent concerns were further broken down by type of request as shown in Table 1 and Exhibit 3 in order to identify any trends. The majority of 3-1-1 calls were regarding maintenance issues such as potholes or other poor pavement conditions and sweeping or plowing the streets. These were spread evenly throughout the entire study area.

Most of the calls regarding signage and signals were to report a damaged sign or request a new sign. However, the type of sign requested was not available for most calls so conclusions could not be drawn about specific mobility issues. Multiple requests for signal timing changes at the Summit Street/Fifth Avenue and Fourth Street/Fifth Avenue intersections were recorded.

Pedestrian related requests focused on damaged sidewalks in various locations. However, two calls requested pedestrian safety improvements at the Seventh Avenue/Summit Street intersection. All but two of the calls concerned with vehicle speeds were along High Street. These asked for traffic calming, a speed trailer, and a change to the speed limit.

Table 1: Number of 3-1-1 calls within study area by issue/concern (2005-2008)

Type of Request	Number of Calls
Maintenance	141
Signage/Signals	70
Handicap/ADA	20
Pedestrian	15
Miscelaneous	8
Vehicle Speeds	7
Dangerous Intersection	2
Bike	1
Total	**264**

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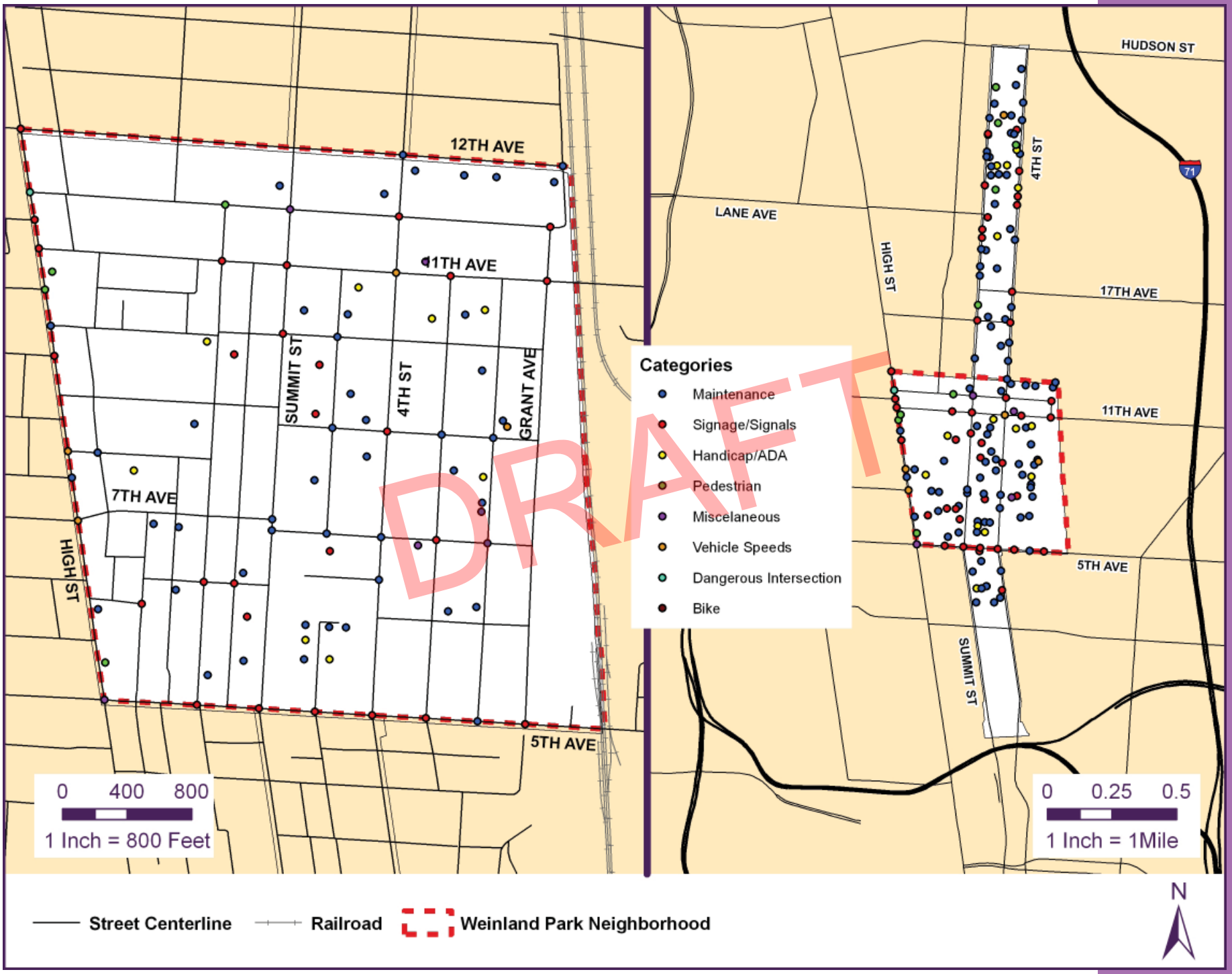

Exhibit 3: Transportation 311 Calls Recorded in Study Area (2005 - 2007)

Figure 7: Public involvement notification flyer

Figure 8: Residents signing-in at the September 24th Community Open House Meeting

Communication Forums & Input Opportunities

With one of the primary goals of the Community Mobility Planning Program being to address transportation issues identified by community residents, public input and involvement played a vital role throughout the planning process. From the initial development of plan goals, to the identification of mobility issues, to the selection and prioritization of solutions, residents of the Weinland Park community and area stakeholders were involved throughout the planning process. All public involvement materials from the project are included in Appendix #.

The City conducted numerous public involvement events, in a variety of venues and formats, in order gain participation from as wide a range of residents as possible. At the outset of the planning process, a Communication Plan was created to act as a guide for public involvement throughout the project. The goals and objectives of the Communications Plan are to identify activities that are:

- Engaging and informational to the public, stakeholders, and the project team
- Comprehensive in nature
- Result-oriented
- Inclusive of other government organizations

In order to ensure members of the community were made aware of and had the opportunity to participate in the planning process, multiple methods of notification were used for all of the scheduled public events. A project website was established on which all meeting materials and additional project information was made available. Prior to each event, the City issued press releases, posters were hung in businesses and community facilities throughout the neighborhood, and fliers were distributed during door knocking campaigns by team members and representatives from the Weinland Park Community Civic Association. Additionally, emails were sent out on multiple listservs and to any resident or stakeholder who provided their contact information.

The following is a brief description of the approaches the City took to engage and facilitate discussions with the public during the planning process:

Community Open House – Held on September 24, 2008 at the OSU Schoenbaum Family Center, the purpose of this meeting was to kick-off the WPCMP and introduce the planning process to the community. Residents were also asked to share their general mobility concerns with the project team. Approximately 40 people attended the meeting.

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Opening Workshop – On October 3, 2008 approximately 30 people attended a workshop at the OSU Schoenbaum Family Center. At this meeting, a presentation was made to educate attendees on engineering solutions used to improve multi-modal safety and reduce vehicular speeds in residential areas. Specific mobility issues and locations were also discussed, and an informal vote was held to prioritize the issues.

Neighborhood Walk Audits – On October 4, 2008 three neighborhood walk audits were held allowing project team members to experience first hand the transportation issues residents face everyday. The walk audits provided educational opportunities, demonstrating the use and effectiveness of various planning tools. Extensive input was taken at each location and potential solutions were discussed. Between 15 and 20 people attended each of the three walks.

Stakeholder Meetings – From September 2008 to January 2009, about 30 "one-on-one" interviews were conducted with individuals and small groups of stakeholders in the Weinland Park area. The interviews generally consisted of ten questions and a discussion of the mobility issues and concerns of the organization or group that the interviewees represented. Each person interviewed was also asked if they would be interested in serving on a steering committee during the development and prioritization of solutions. The following groups participated in one-on-one stakeholder meetings:

- CABS
- Campus Partners
- City Departments
- Community Properties of Ohio
- COTA (2)
- Directions for Youth and Families
- Godman Guild
- Huckleberry House
- Indianola Math, Science, and Technical School
- Italian Village Society (2)
- Kroger
- Living Hope Fellowship Church
- Maynard Blake Group
- National Youth Advocate Program
- Neighborhood Services, Inc.
- Neighbors In Action
- North Central Mental Health
- ODOT
- Seventh Avenue Community Baptist Church
- St. Joseph Montessori School
- University Area Commission (1 project introduction & 4 meetings)
- University Community Association
- University Community Business Association
- University District Organization
- Wagenbrenner Company (2)
- Weinland Park Community Civic Association
- Weinland Park Elementary School

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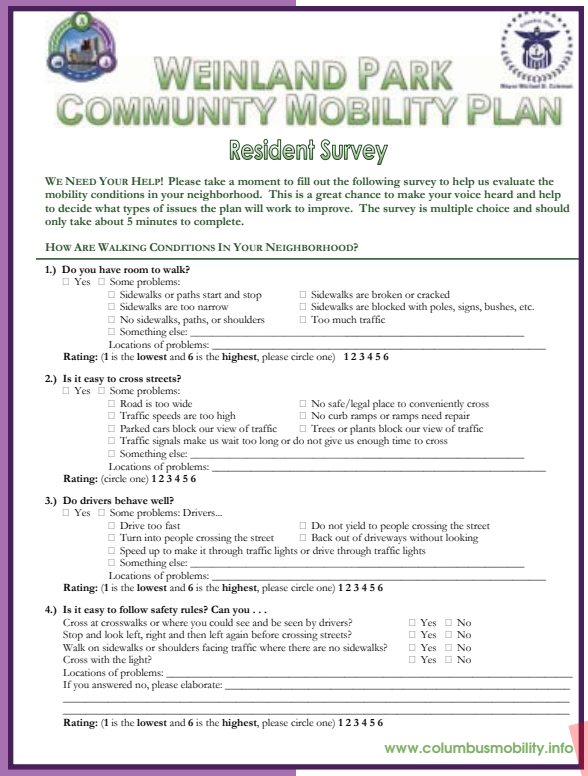
Figure 9: Attendees prioritize mobility issues at the Opening Workshop

Figure 10: Participants on the walk audit learn about the effectiveness of traffic calming by creating a "human curb extension"



WEINLAND PARK
COMMUNITY MOBILITY PLAN

Resident Survey

WE NEED YOUR HELP! Please take a moment to fill out the following survey to help us evaluate the mobility conditions in your neighborhood. This is a great chance to make your voice heard and help to decide what types of issues the plan will work to improve. The survey is multiple choice and should only take about 5 minutes to complete.

HOW ARE WALKING CONDITIONS IN YOUR NEIGHBORHOOD?

1.) Do you have room to walk?
☐ Yes ☐ Some problems:
☐ Sidewalks or paths start and stop ☐ Sidewalks are broken or cracked
☐ Sidewalks are too narrow ☐ Sidewalks are blocked with poles, signs, bushes, etc.
☐ No sidewalks, paths, or shoulders ☐ Too much traffic
☐ Something else: _____
Locations of problems: _____
Rating: (**1** is the **lowest** and **6** is the **highest**, please circle one) **1 2 3 4 5 6**

2.) Is it easy to cross streets?
☐ Yes ☐ Some problems:
☐ Road is too wide ☐ No safe/legal place to conveniently cross
☐ Traffic speeds are too high ☐ No curb ramps or ramps need repair
☐ Parked cars block our view of traffic ☐ Trees or plants block our view of traffic
☐ Traffic signals make us wait too long or do not give us enough time to cross
☐ Something else: _____
Locations of problems: _____
Rating: (circle one) **1 2 3 4 5 6**

3.) Do drivers behave well?
☐ Yes ☐ Some problems: Drivers...
☐ Drive too fast ☐ Do not yield to people crossing the street
☐ Turn into people crossing the street ☐ Back out of driveways without looking
☐ Speed up to make it through traffic lights or drive through traffic lights
☐ Something else: _____
Locations of problems: _____
Rating: (**1** is the **lowest** and **6** is the **highest**, please circle one) **1 2 3 4 5 6**

4.) Is it easy to follow safety rules? Can you . . .
Cross at crosswalks or where you could see and be seen by drivers? ☐ Yes ☐ No
Stop and look left, right and then left again before crossing streets? ☐ Yes ☐ No
Walk on sidewalks or shoulders facing traffic where there are no sidewalks? ☐ Yes ☐ No
Cross with the light? ☐ Yes ☐ No
Locations of problems: _____
If you answered no, please elaborate: _____
Rating: (**1** is the **lowest** and **6** is the **highest**, please circle one) **1 2 3 4 5 6**

www.columbusmobility.info

Figure 11: Resident survey distributed to collect input on mobility conditions and concerns

Figure 12: Team members discussing mobility issues at the Third Hand Bike Co-op

Resident Surveys – Surveys about the existing conditions and barriers to mobility in Weinland Park were distributed throughout the study area as another means of collecting comments and gauging the perceptions of mobility in the neighborhood. An initial round of surveys was primarily collected from residents living within the Weinland Park neighborhood while a second round was distributed to residents living north of Weinland Park. In all, over 100 surveys were completed and returned. The survey results showed that more than 50% of residents reported problems in almost all facets of community mobility, with the greatest problem areas being related to road surfaces and driver behavior impacting safety for pedestrians and cyclists.

Porch Chats – This method of data collection and public involvement was employed to gain input from residents who were unable to attend any of the formal public events for the project and would have otherwise not been engaged in the planning process. The porch chats involved over 40 informal interviews conducted at residents' houses, various businesses, and other community gathering places. These informal conversations, which occurred among small groups of individuals and generally covered the same questions as the surveys, captured input from residents in all geographical areas and walks of life across the Weinland Park neighborhood.

Closing Workshop – Held at Grace Baptist Church on November 17, 2008, the closing workshop provided a summary of the planning process and public input to date, as well as information about the effectiveness of various traffic calming tools. Attendees then broke into four groups and used mapping of Weinland Park to recommend potential solutions for specific locations throughout the neighborhood. Approximately 40 attendees were at the meeting.

University Area Commission Public (UAC) Meeting – A presentation and opportunity for public input on the WPCMP was incorporated into the January 15, 2009 UAC Executive Committee meeting at the 11th Avenue Community Policing Center. UAC members and other attendees were asked to share any comments or questions about the planning process or transportation issues in the community. The resident survey was also handed out to representatives of neighborhoods to the north of Weinland Park for distribution, and the deadline for submittal moved back to allow for more input. About 20 people attended this meeting.

Stakeholder Update Meeting – On May 28, 2009 a project update meeting was held at the 11th Avenue Community Policing Center. All stakeholders who, during the initial

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interviews, expressed an interest in continued involvement in the project were invited to attend. Team members presented the results of the public input process and the technical data analyses along with the preliminary "toolbox of solutions" and location specific recommendations for each tool.

Final Community Open House – A second community open house meeting was held on June 24, 2009 at the OSU Schoenbaum Family Center. The team presented the results of the public input and technical study portions of the plan and were shown the preliminary solutions recommended for the neighborhood. Attendees had the opportunity to discuss questions and concerns regarding the plan with City engineers and to rank the solutions based on which they felt should be given the highest priority. These rankings are summarized in the Prioritization and Implementation chapter.

Several attendees expressed concern that safety issues on Summit and Fourth Streets, which had been removed from the scope of the plan due to uncertainty of future traffic demand and the potential for light rail, were not adequately addressed. Based on input received at this meeting, the City determined that Summit and Fourth Streets would again be included in the plan and that more detailed analyses of the corridor should be done in order to adequately address the Community's concerns.

Steering Committee Meetings - A Steering Committee was formed from interested residents and stakeholders to help prioritize the recommended solutions and develop an implementation strategy. Summaries of these meetings are discussed in the Prioritization and Implementation chapter.

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Figure 13: Weinland Park resident Ken Johnson describes the CMP process with the local media

Figure 14: Youth participation and input was encouraged at all public involvement events

Figure 15: Team members talking with residents at a farmer's market on Fourth St and 18th Ave

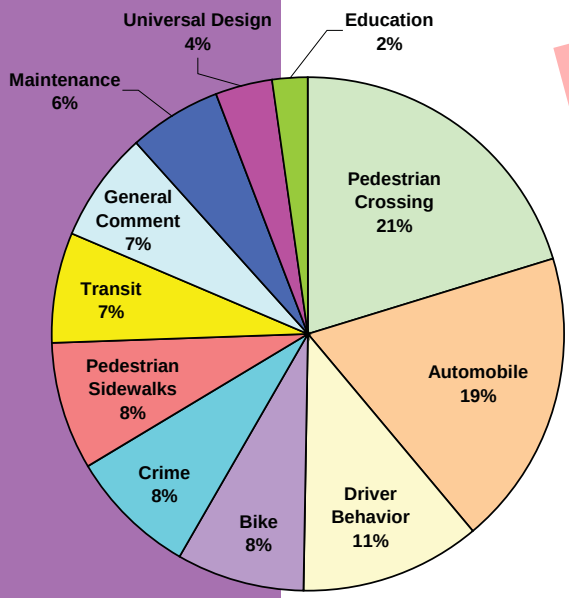

Figure 16: Percent of total comments received for each category

Public Involvement Comments

In sum, nearly 1,000 comments were compiled from a wide range of sources such as interviews, meeting notes, surveys, and emails. These comments were all compiled and organized with respect to the corresponding public forum, location of concern (if known), and category of concern (Appendix). The following eleven categories were identified to group the comments; the total number of comments received for each category are shown in parentheses:

- Automobile (179) – traffic flow and safety, parking, issues affecting motorists
- Bike (78) – concerns regarding the safety and comfort of cyclists
- Crime (77) – concerns for personal safety
- Driver Behavior (108) – issues with motorists impacting the safety and comfort of other travel modes
- Education (20) – concerns to be addressed through education rather than infrastructure
- Maintenance (57) – surface conditions, broken signs and signals, overgrown vegetation, trash
- Pedestrian Crossings (193) – concerns for pedestrians crossing streets
- Pedestrian Sidewalks (77) – issues pedestrians face walking along sidewalks/ streets
- Transit (66) – comments regarding COTA, CABS, and other transit options
- Universal Design (35) – ADA and accessibility issues
- General Comment (65) – comments that do not fit into any of the other categories

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The comments were then sorted by category in order to identify the key issues that are of greatest concern to the community and by location to identify "hot spot" areas most in need of attention. Figure 16 shows the percentage of comments for each of the eleven categories mentioned above, while Figure 17 shows the most frequently discussed corridors and intersection locations respectively. The most comments (21%) dealt with concerns regarding "unsafe" pedestrian crossings. These comments were overwhelmingly related to issues with crossing High, Summit, and 4th Streets, with the most pertaining to the offset intersection at Summit Street and 7th Avenue.

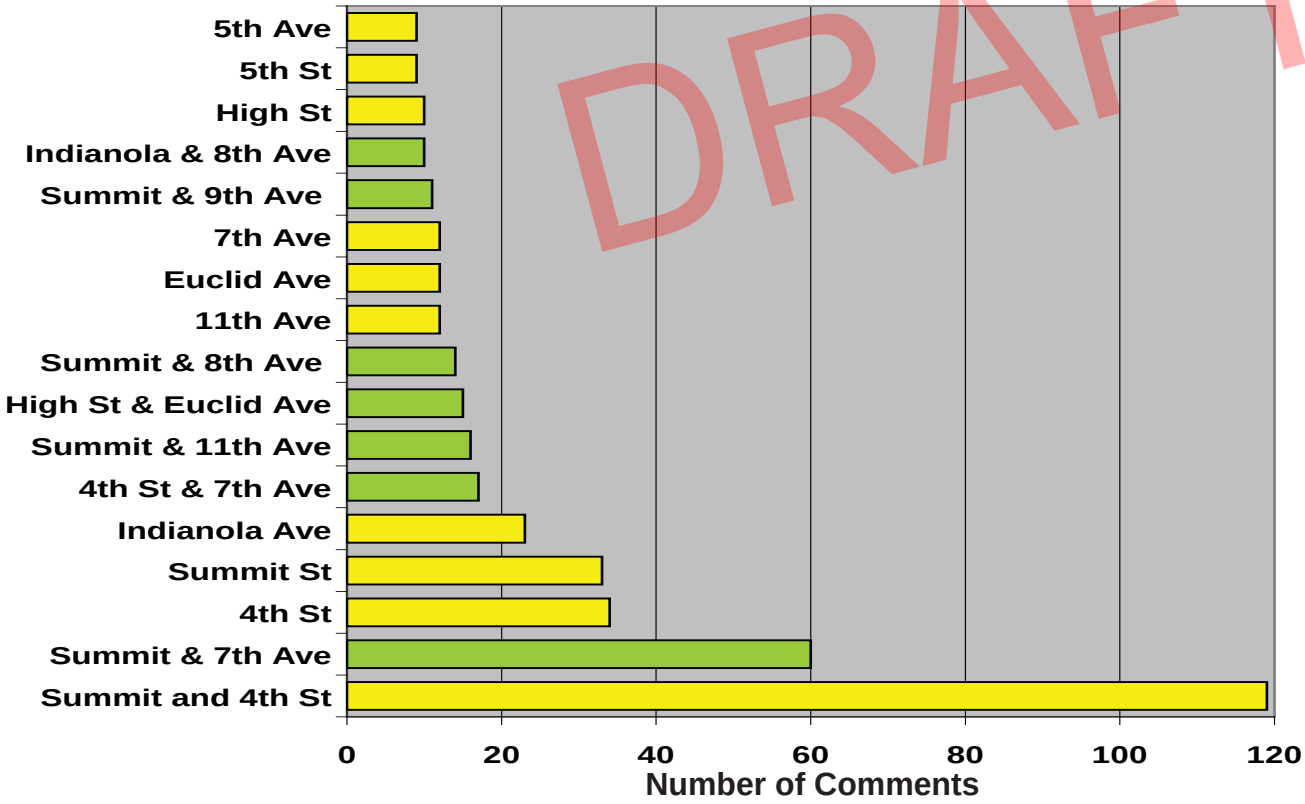
Auto-oriented concerns were the second most prominent issue, comprising 19% of all comments. Many of these comments related to discussions about converting Summit and 4th Streets from one-way to two-way operation; a topic consistently mentioned at each public forum. Generally, opinions on the issue were split, with a slight majority in

favor of two-way operation. Those in favor tended to cite better traffic calming, slower vehicle speeds improving pedestrian and bike safety, and better integration into the neighborhood. Those opposed to conversion felt that traffic calming could be achieved through other measures, access to downtown would be impaired, and that two-way traffic would result in reduced safety and increased noise. Others felt that more public input was needed outside of the Weinland Park area.

In addition to discussions about Summit and 4th Streets, the automobile category encompassed concerns about unsafe driving conditions. The most repeated concern was poor sight distances, making for hazardous intersections. Parking too close to the intersection was one reason cited for poor visibility, as were the numerous offset intersections in the neighborhood.

Figure 18: Resident Chris Orban describes safety concerns on Summit and Fourth Streets at a public meeting

Figure 17: **Locations of greatest concern in the study area by number of comments**



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Speeding is the most prevalent concern in the driver behavior category (11%), especially on Summit and 4th Streets, where people feel it divides the neighborhood and makes walking and biking unsafe. The general consensus was that the speed limit should be lowered on these streets or at least enforced at 35mph. Fifth, Indianola, and Euclid Avenues were also mentioned repeatedly with regards to speeding.

The bike, crime, and pedestrian sidewalk categories each accounted for 8% of the total. Comments in each of these areas were fairly consistent among individuals. Bike concerns centered around the lack of facilities and connection to downtown, especially on Summit and Fourth Streets. Crime was mentioned as a deterrent to biking and walking and the need for better lighting was consistently suggested. The generally poor condition of sidewalks was mentioned repeatedly and observed on the walk audits. Attendees identified poor walking conditions and locations of sidewalks in need of repair. Comments about sidewalks were also closely tied to maintenance issues.

Comments regarding transit were generally favorable, stating that the area is one of the best served by COTA; a few comments cited the need for more bus shelters and problems getting to outlying areas. The general category encompassed all comments that did not fit into other categories or were outside the scope of the mobility planning process. Some of these were related to aesthetics and expressed a desire for better streetscaping and gateway features. The maintenance and universal design categories generally called for improved maintenance by the City and property owners and for improved accessibility. Finally, some comments called for a need to better educate users of the transportation system, particularly motorists, to safely travel with all modes.

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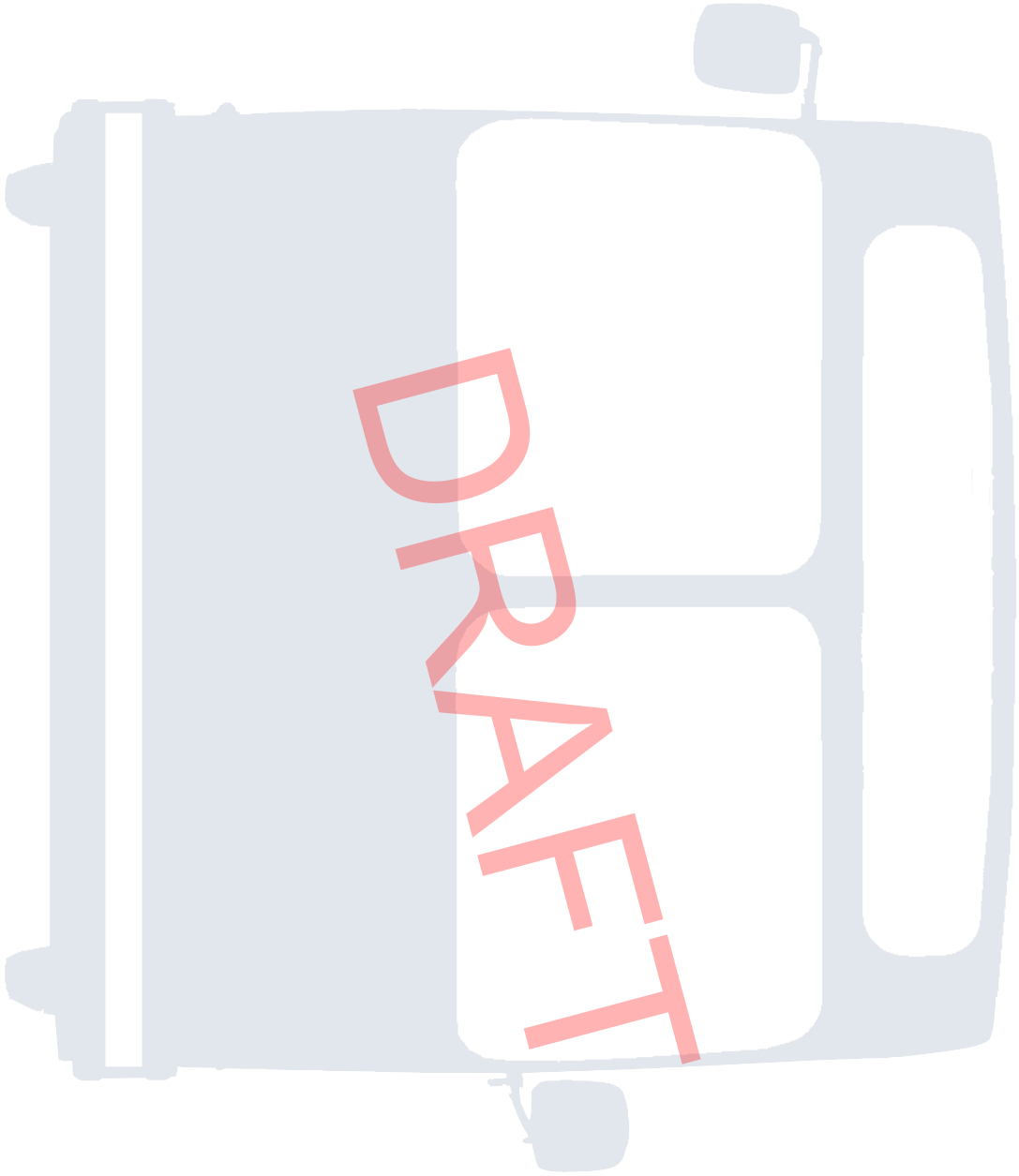

Existing Conditions

Guiding Plans and Studies

Prior to the evaluation of current mobility conditions in Weinland Park, all existing plans and studies for the study area were reviewed. These resources provided a better understanding of the current conditions in the area and served as a basis from which the Community Mobility Plan would be developed. Each document is listed below along with a brief summary of the pertinent information to this plan.

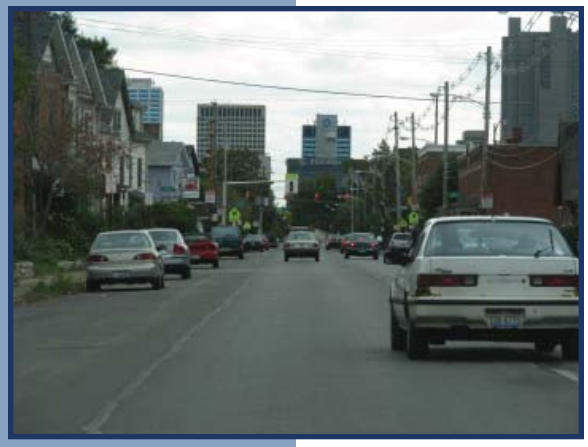

Figure 19: Southbound traffic on Summit St during morning rush hour

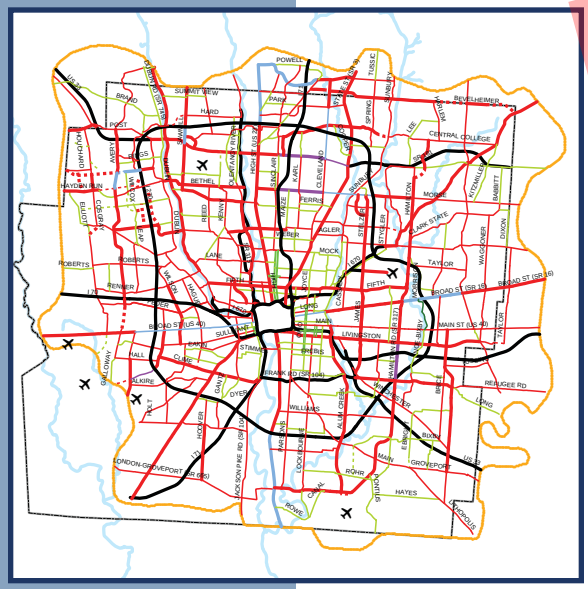

Figure 20: Columbus Thoroughfare Plan map

Columbus Comprehensive Plan (1993)

As the guiding plan for development of the entire City, this plan is very general in scope. With relation to community mobility, the following recommendations apply:

- In central city neighborhoods consider policies to slow traffic and discourage heavy non-local through traffic on local streets. Ways to achieve this include closing sections of alleys to discourage through traffic and maintaining narrow streets that are characteristic of neighborhoods
- Expand existing transportation options and take a long-range perspective to future changes in transportation needs and technologies
- COTA's planning efforts should identify major transit corridors for busway and/or light-rail development
- Improve pedestrian, bicycle, and vehicular linkages between neighborhoods to promote a stronger link between residential areas and activity centers
- Devise standard streetscape improvements and standards to reinforce identity

Columbus Thoroughfare Plan (1993)

This map identifies and classifies all streets in the City that are collector roads and above. It makes recommendations for the total number of lanes, direction of traffic (one- or two-way), and the minimum right-of-way width for each. The following streets in the study area are listed on the Thoroughfare Plan:

- High Street and Fifth Avenue (4-2D) - four lanes of two-way traffic divided by a median and a 120-foot right-of-way
- Hudson Street and Eleventh Avenue east of Grant Avenue (4-2) - four lanes of two-way traffic and a 100-foot right-of-way
- Summit and Fourth Streets (3-1) - three one-way travel lanes and an 80-foot right-of-way
- Eleventh and Chittenden Avenues west of Grant Avenue (2-1) - two one-way travel lanes and a 60-foot right-of-way
- Third, Seventeenth, and Lane Avenues (C) - these collector streets call for two or three lanes with two-way traffic and a minimum right-of-way width of 60 feet

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University Neighborhoods Revitalization Plan (1996)

Developed by Campus Partners as a joint effort of the City of Columbus and The Ohio State Univeristy (OSU), this plan provides a comprehensive vision and strategy to revitalize the neighborhoods surrounding the Ohio State campus, including Weinland Park. Recommendations of the plan include:

- Maintain one-way operation on Summit and Fourth Streets in the near term, while implementing traffic calming measures, removing parking restrictions, recalibrating traffic signals, and increasing speed enforcement. In the long term, reevaluate two-way operation
- Examine closures on some local streets in Weinland Park to limit cut-through traffic and create defensible space
- Enhance the role of High Street as a major transit corridor
- Provide a more effective public transportation/transit system
- Enhance and improve pedestrian and bicycle movement to, from, and within the University Neighborhoods

A Plan for High Street: Creating a 21st Century Main Street (2000)

This plan focuses on design concepts and implementation strategies for High Street in the University District, with particular focus on the development of a Campus Gateway Project. It calls for re-establishing High Street as the Main Street of the area, emphasizing its role as a traffic artery, an economic development generator, and public gathering space. In terms of mobility, the plan calls for wider sidewalks and on-street parking along High Street, and a re-configuration of the Eleventh Avenue/High Street intersection. The South Campus Gateway incorporates all of these recommendations.

University/High Street Development & Design Guidelines (2002)

These design guidelines, called for by the two aforementioned University District plans, are intended to guide the implementation of strategies identified in those two documents. They dictate a pedestrian-oriented development style with first floor retail uses, small setbacks, wide sidewalks, and pedestrian scale signage and lighting.

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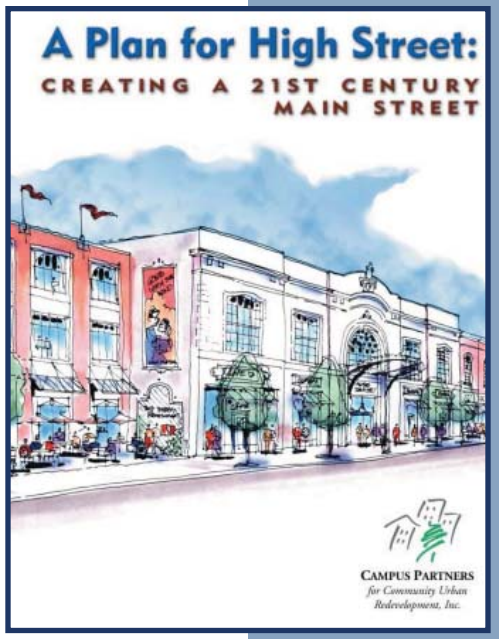

Figure 21: A Plan for High Street cover

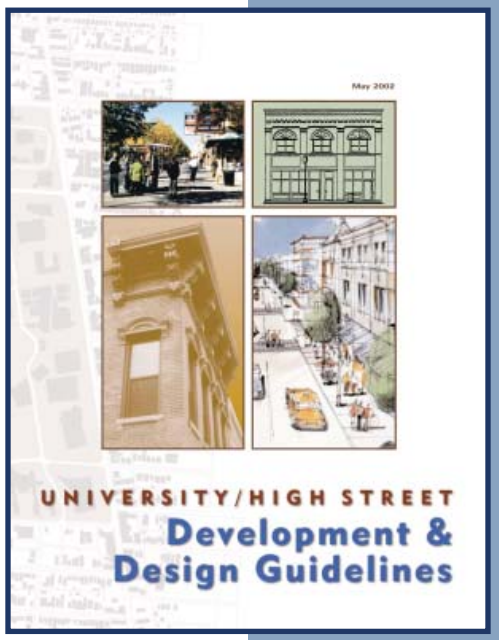

Figure 22: University/High Street Development & Design Guidelines cover

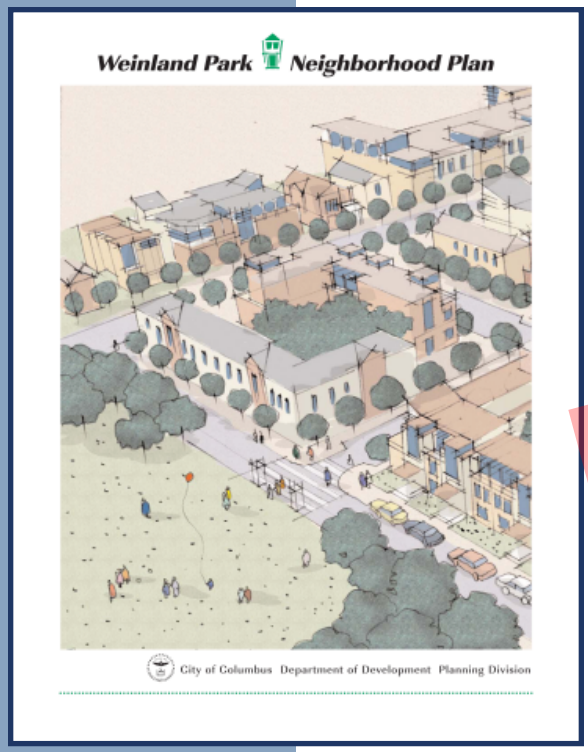

Figure 23: Weinland Park Neighborhood Plan cover

Downtown Columbus Circulation Study (2004 - not adopted)

This study analyzed existing and future traffic patterns along numerous corridors in and around downtown Columbus. Numerous one-way pairs, including Summit and Fourth Streets, were evaluated for potential conversion to two-way operation as a part of this study. The following is a summary of the assumptions and recommendations made for Summit and Fourth Streets in the study:

- Existing traffic volumes (2000) were projected to 2030 using growth factors of 40% and 20% for the AM and PM peak hours respectively
- Three scenarios (existing conditions, one-way with reduced lane widths, and two-way) were analyzed
- The reduced lane width and two-way scenarios assumed light rail operation along the corridor
- The one-way scenario maintained permanent parking on one side and off-peak parking on the other side of both streets and included a bike lane on both streets, while the two-way option maintained the off-peak parking but eliminated the permanent parking from both streets and did not include bicycle facilities
- Vehicle delays were comparable for the two new scenarios. They were higher than the existing configuration, but were comparable to one another
- The one-way reduced, lane width scenario was recommended over the two-way scenario because it allowed shorter pedestrian crossing distances and wait times, allowed for bus/light rail stops in the permanent parking lane, limited impacts to on-street parking, and provided bicycle lanes

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Weinland Park Neighborhood Plan (2006)

This is a comprehensive plan for the Weinland Park community that addresses all aspects of the neighborhood, including transportation and mobility. The public infrastructure section of the plan emphasizes multi-modal accommodation and safety improvements (Appendix #). Some of the recommendations include:

- Take a multi-agency approach to calming Summit and Fourth Streets
- Design streets to move traffic while recognizing the primarily residential nature of the neighborhood and need for overall safety
- Encourage cooperative transit agreements between COTA and OSU
- When developing and implementing transportation facilities, place the needs of residents, employees, and visitors to Weinland Park above those of persons merely traveling through the neighborhood
- Application of appropriate traffic calming techniques on streets throughout the neighborhood

- New lighting within the public right-of-way shall be attractive, pedestrian-scale, and resistant to vandalism
- Priority of improvements shall be placed on areas near Weinland Park, the elementary school, and the Schoenbaum Early Childhood Education Center

MORPC Regional Bicycle Transportation Facilities Plan (2006)

This document provides a regional perspective of the bicycle network in Central Ohio. It highlights bicycle usage, safety concerns, existing facilities, and recommends future improvements to the overall network. The plan includes the following information that relates to the project area:

- Two general groups of riders: Group A (advanced) and B/C (beginner/children) must be considered in the planning and design of bicycle facilities
- High Street and Fifth Avenue are two of the ten highest bicycle crash corridors in the region
- Summit and Fourth Streets are the only two existing bikeways in the study area
- High, Summit, and Fourth Streets and Fifth Avenue are recommended as "short connectors" according to MORPC's bikeway functional classification

Columbus Pedestrian Thoroughfare Plan (2007 - not adopted)

This document provides a guide to developing appropriate pedestrian facilities along key routes throughout the City (Appendix #). Streets are classified from 1 (highest) to 5 (lowest) and given a recommended sidewalk width and clear walking zone. Each street also receives a high/medium/low rating for traffic speed and volume to determine the recommended lateral separation and vertical buffer to ensure safety and comfort. All of the streets within Weinland Park that are included in that plan (High, Summit, and Fourth Streets and Fifth, Tenth, and Eleventh Avenues) were rated as Class 1 or 2, which have recommended sidewalk widths of 12 to 18 feet and 8 to 12 feet respectively.

Columbus Bicentennial Bikeways Plan (2008)

The City's recently completed bicycle master plan establishes an ambitious vision for bike facility development for the next ten years. It calls for 200 miles of new bikeways by 2018, the creation of 100 bike friendly intersections, and the installation of 1,000 new bike racks. Most significantly, it sets the goal of achieving a 10% mode shift from automobiles to alternative modes of transportation by the year 2012. Given the recent creation and adoption of the Bicentennial Bikeways Plan, this Community Mobility Plan mirrors many of the recommendations from that document for the development of bicycle facilities in the study area.

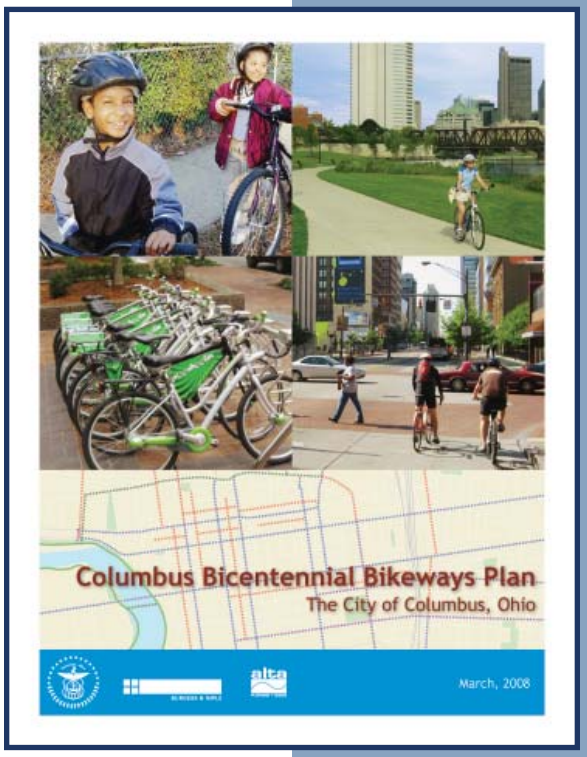

Figure 24: Bicentennial Bikeways Plan cover

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Automobiles

Road Network

As was discussed earlier, the streets in and around Weinland Park are laid out in a grid network. The neighborhood is bounded by arterial streets on the north (Eleventh Avenue), south (Fifth Avenue), and west (High Street). Fourth and Summit Streets, which run north-south through the center of the neighborhood, are a one-way pair that also function as arterial roadways. Two east-west collector streets (Chittenden and Seventh Avenues) and one north-south collector (Indianola Avenue) provide further connectivity to the arterial roads and key locations throughout the neighborhood for area residents. The remaining streets in Weinland Park are residential in nature and generally serve only those users who live on them. These three different types of roadways create a system that serves a wide range of motorists, from those traveling through Weinland Park, to those making strictly local trips within the neighborhood.

Within the study area, the pavement width of Summit and Fourth Streets ranges from 40 to 52 feet, with the majority of each being 46 feet wide. Currently, the typical section for Summit and Fourth Streets, between Warren Street and Eleventh Avenue, includes a permanent parking lane that is not striped, two variable width travel lanes, and one lane that functions as a travel lane during the peak hour and a parking lane for the remainder of the day. North of Weinland Park both roads widen to provide three travel lanes with permanent on-street parking on both sides. Both Summit and Fourth Streets have 35mph speed limits.

Through the study area, the Summit and Fourth Street corridor is the most prominent feature of the transportation network. This one-way pair carries US 23 north of downtown Columbus and is heavily used by commuters going to and from downtown from northern suburbs such as Clintonville and Worthington. However, in recent years, the importance of Summit and Fourth Streets as access routes to and from downtown has diminished. With the completion of I-670, motorists can easily travel between I-71 and SR 315, both of which provide freeway access to areas north of downtown.

Between Fifth and Ninth Avenues, High Street is 48 feet wide with two travel lanes in each direction and a center turn lane. North of Ninth Avenue, it widens in between intersections to provide on-street parking on one or both sides of the street, but remains 50 feet wide at intersections through the use of curb extensions. The speed limit on High Street is 25 mph. Fifth Avenue is 44 feet in width, has two lanes in each direction, and a posted speed of 25mph. With the exception of some sections of residential

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street that are one-way, all other streets in the study area have one travel lane in each direction and a speed limit of 25mph. Most streets also have on-street parking on at least one side of the road.

Although it runs north-south along the entire eastern edge of Weinland Park, Grant Avenue is not included in the analyses or recommendations of this plan. As part of the project to redevelop the Columbus Coated Fabrics site, the entire road within Weinland Park is being reconstructed. The improved Grant Avenue will consist of one travel lane in each direction, on-street parking on both sides of the road, curb extensions at intersections, and a posted speed of 25mph (Appendix #). Construction of the Grant Avenue improvements is scheduled to begin in 2010.

Existing Volumes, Capacity, and Speeds

Existing traffic volumes and speeds in Weinland Park and along the Summit and Fourth Street corridors were analyzed in order to gain the necessary understanding of traffic conditions to develop mobility recommendations for the neighborhood. Traffic counts conducted by the City between 2003 and 2007 were supplemented with new counts at key locations (Exhibit 4). The vehicular speed and volume information collected during these counts was then analyzed to determine if and where any capacity and/or speeding problems exist. A summary of the traffic counts is included in Appendix #.

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Determining the existing capacity of major roads in the study area is important in trying to understand what changes to the system can be accommodated. Traffic capacity is generally expressed in levels of service (LOS). LOS is a measure of vehicle delay and is rated from "A" to "F," with A being the best (no delay) and F being the worst (gridlock). Table 2 shows LOS A through F and the corresponding delay in second per vehicle for signalized intersections. In the past, LOS C has been the accepted standard for transportation planning. However, in urban areas, particularly on roads where multi-modal options and slower vehicle speeds are desired, LOS D and even E are increasingly being recognized as acceptable standards. Because the capacity of a road is generally constrained at its intersections, these are the locations on which analysis was performed.

The intersections that most influence the roadway capacity in Weinland Park and their associated LOS for the AM and PM peak hours are shown in Table 3. This analysis shows that, even during the highest volume hours of the day, current traffic levels on Summit and Fourth Streets are well within acceptable levels of service. This also

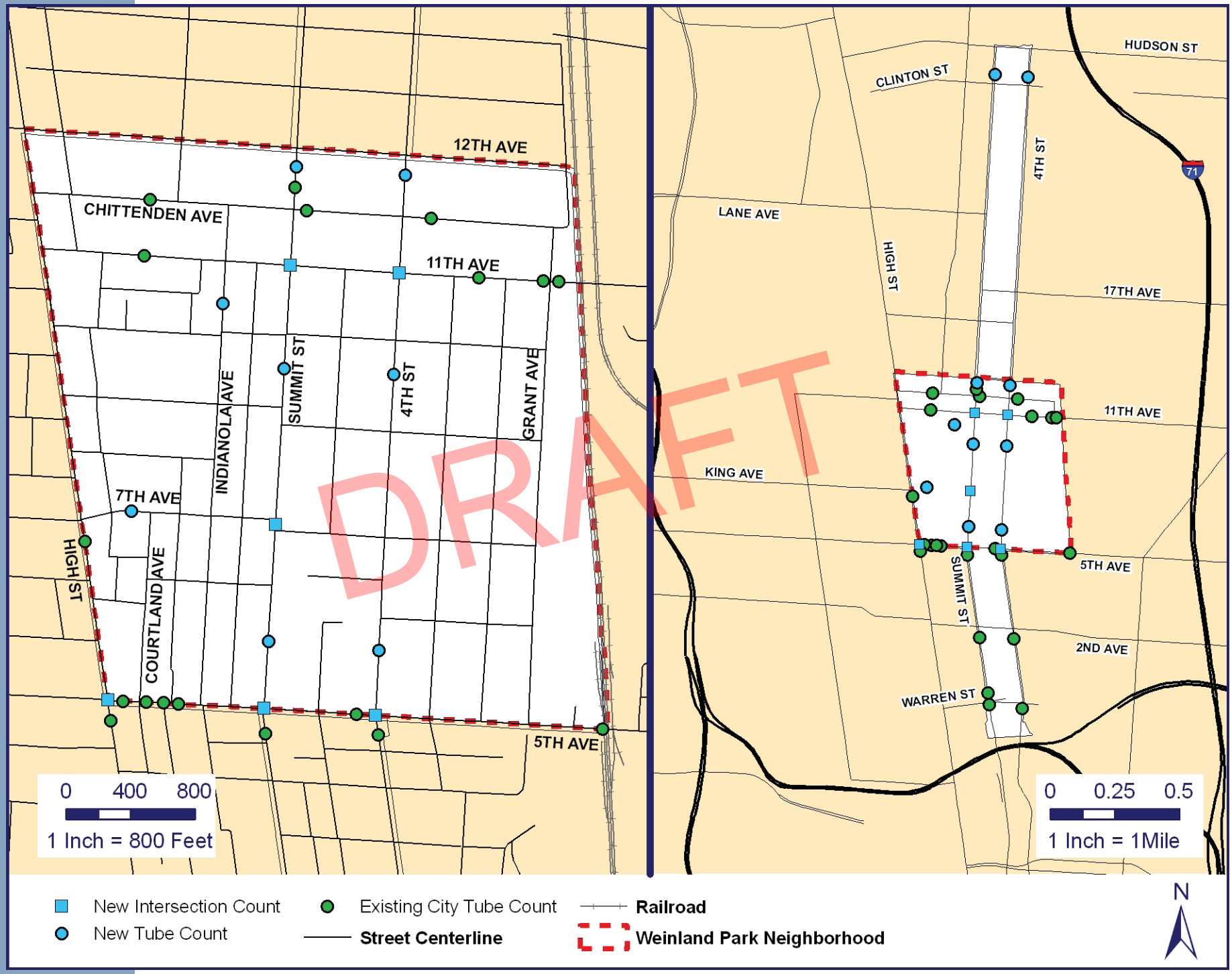
Table 2: Level of Service (LOS) and corresponding vehicle delay

LOS	Delay in Seconds
A	≤ 10 sec
B	> 10 and ≤ 20 sec
C	> 20 and ≤ 35 sec
D	> 35 and ≤ 55 sec
E	> 55 and ≤ 80 sec
F	> 80

Table 3: LOS and delay in seconds for key intersections during AM and PM peak hours

Intersection	AM Peak	PM Peak
Summit St & 5th Ave	C (24.4)	C (24.6)
4th St & 5th Ave	B (14.4)	C (24.7)
Summit St & 7th Ave	B (15.2)	B (16.6)
Summit St & 11th Ave	B (15.2)	B (19.1)
4th St & 11th Ave	B (14.7)	C (24.4)

Exhibit 4: Weinland Park CMP Traffic Count Locations



indicates that, for the remaining hours of the day, there is likely excess capacity on both of these roads, which can contribute to excessive traffic speeds.

The speed data collected for Summit and Fourth Street further confirm that, with current traffic volumes, there is excess capacity in the corridor. Figures 25 and 26 show the 85th percentile speeds for the locations where counts were taken along Summit and Fourth Streets. With few exceptions, the 85th percentile vehilce speeds along both roads are at or above 40mph, with some locations exceeding 45mph. This means that a normal motorist is comfortable driving between five and twelve miles over the speed limit through the study area. This poses safety concerns for motorists as well as pedestrians and cyclists.

What is the 85th Percentile Speed?
The 85th percentile speed is the speed at which 85% of vehicles on a road are travelling at or below. It is generally assumed that the 85th percentile speeds represents the speeds that a "normal motorist" feels comfortable driving based on the design and conditions of the road.

How is it Used?
The 85th percentile speed is a common factor in determining the speed limit for a road. However, it does not take into account the safety and comfort of cyclists and pedestrians. In this study, this measure was also used to identify where road design and vehicle speeds may pose safety concerns for cyclists and pedestrians.

Figure 25: 85th percentile vehicle speeds on Summit Street (35mph posted speed limit)

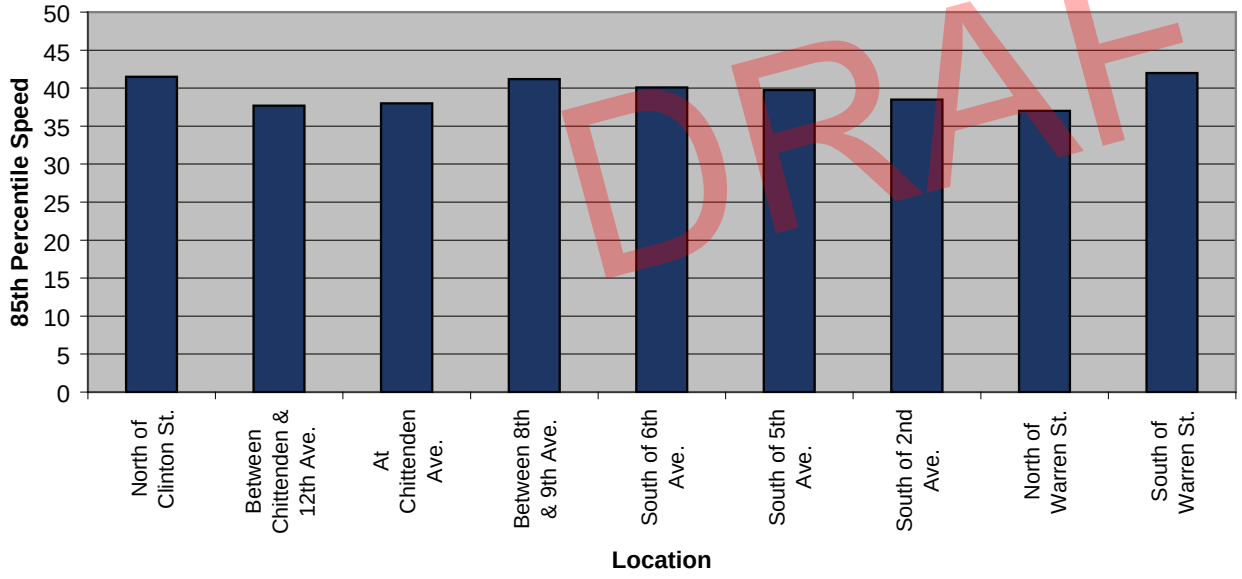


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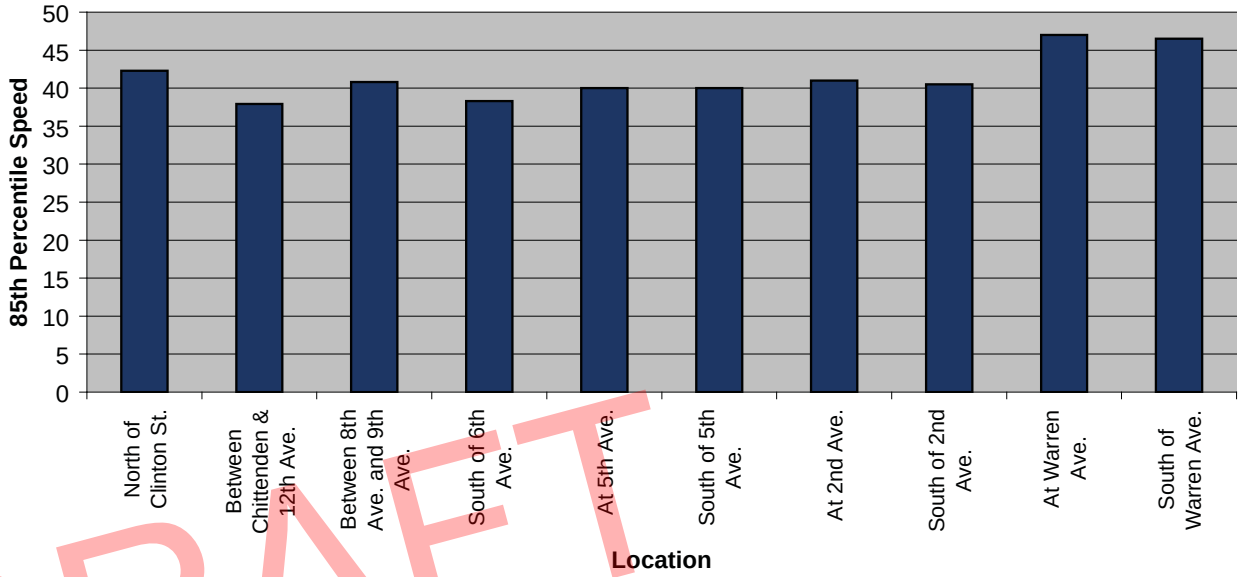
Figure 26: 85th percentile vehicle speeds on Fourth Street (35mph posted speed limit)



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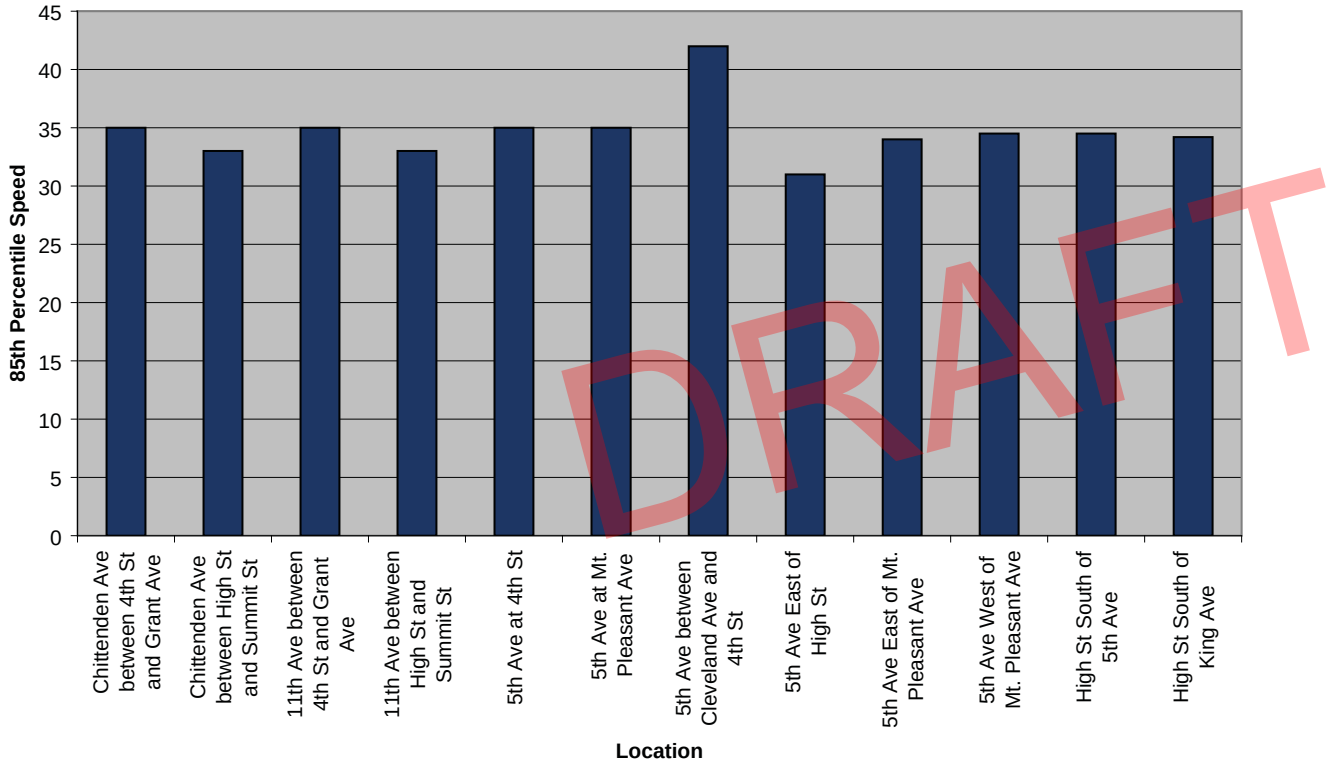
The corridor of Fourth and Summit Streets is controlled by a pre-timed, coordinated signal system. This means that the signals are connected so that they can communicate with each other and the timing of the beginning of each green light is coordinated so that a driver traveling at the speed limit will not have to stop. This keeps vehicles traveling the corridor at the beginning of the green phase moving at the speed limit. It can also allow vehicles catching up to the group to travel at speeds well above the speed limit. If the green lights are significantly longer than is needed to clear the group, as appears to be the case on these streets, then there is greater opportunity for vehicles to speed without having to stop.

Several of the factors discussed above contribute to the high vehicle speeds along Summit and Fourth Streets. The excess green band in the signal cycles allows motorists to speed through multiple intersections unstopped, while the number of lanes and relatively low vehicular volumes cause a lack of "friction" between moving vehicles and fixed objects along the edges of the road such as parked cars.

Summit and Fourth Streets are not the only roads in Weinland Park on which speeding is a problem. Figure 27 shows the streets with 25mph speed limits that have 85th percentile speeds over 30mph. This information indicates that speeding on Fifth Avenue is of particular concern given that most of the count locations registered 85th percentile speeds near or above 35mph. Similar to Summit and Fourth Streets, the excess lane capacity on Fifth Avenue allows vehicles to speed without being slowed by congestion.

Figure 27: 85th percentile vehicle speeds on streets with a 25mph posted speed limit



Vehicular Crashes

The most recent three-year crash data (2005-2007) was obtained from the Ohio Department of Public Safety and reviewed to identify trends that might indicate locations in need of safety improvements. A total of 1,571 crashes were recorded during that period within the study area. Of those, 1,036 occurred within the Weinland Park neighborhood, and the other 535 occurred along Summit and Fourth Streets to the north and south of the neighborhood.

Exhibits 5-7 illustrate the locations and number of crashes for each road segment and intersection in the study area. As could be expected, the vast majority of crashes occurred on or at the intersections of arterial streets, where traffic volumes are the highest. Approximately one-third (357) of the crashes in Weinland Park occurred on High Street, and another 30% occurred on Summit or Fourth Street, which saw 144 and 160 crashes respectively. A total of 168 crashes occurred along Fifth Avenue, 121 of which were at the High, Summit, or Fourth Street intersection. Similarly, Eleventh Avenue had 176 crashes, with 104 occurring at the High, Summit, or Fourth Street intersection. The nine highest crash intersections all had 30 or more crashes and are all located on one of these three streets (Table 4).

Table 4: Highest crash intersections in the study area (2005-2007)

Intersection	# of Crashes
5th Ave & High St	47
Hudson St & 4th St	44
5th Ave & Summit St	41
11th Ave & High St	37
12 Ave & High St	36
5th Ave & 4th St	33
11 Ave & 4th St	32
Chittenden Ave & 4th St	31
10th Ave & High St	30

A review of the crash severity shows that 81% (1,272) of the crashes resulted in no damage or property damage only. There were also 304 injury accidents and one fatality over the three year period. The fatality occurred at the intersection of Seventh Avenue and Fifth Street and resulted from a vehicle running the stop sign and colliding with another vehicle.

While fewer than 20% of all accidents in the study resulted in injury, there are several corridors and intersections that had higher than average injury rates, suggesting that safety may be of particular concern in those locations. Fifth Avenue presents the greatest concerns, as 33% of the crashes along that corridor were injury crashes. The injury rates for the full length of Summit and Fourth Streets (Warren Street to Hudson Street) were comparable to one another and the rest of the study area. However, within the boundaries of Weinland Park, the injury rates for both streets increase to about 25%.

For intersections in the study area, just over 20% of all accidents resulted in injury. The intersections of Fifth Avenue with Summit and Fourth Streets both have significantly higher than average injury occurrences at 32% and 45% respectively. The intersection of Seventh Avenue with High Street also has a higher than average percentage at 32%. The high number of crashes combined with the high percentage of injuries at these three intersections raises particular concern for the safety of motorists, pedestrians, and cyclists, and may indicate that better intersection design, signal timing, and/or speed control measures are necessary.

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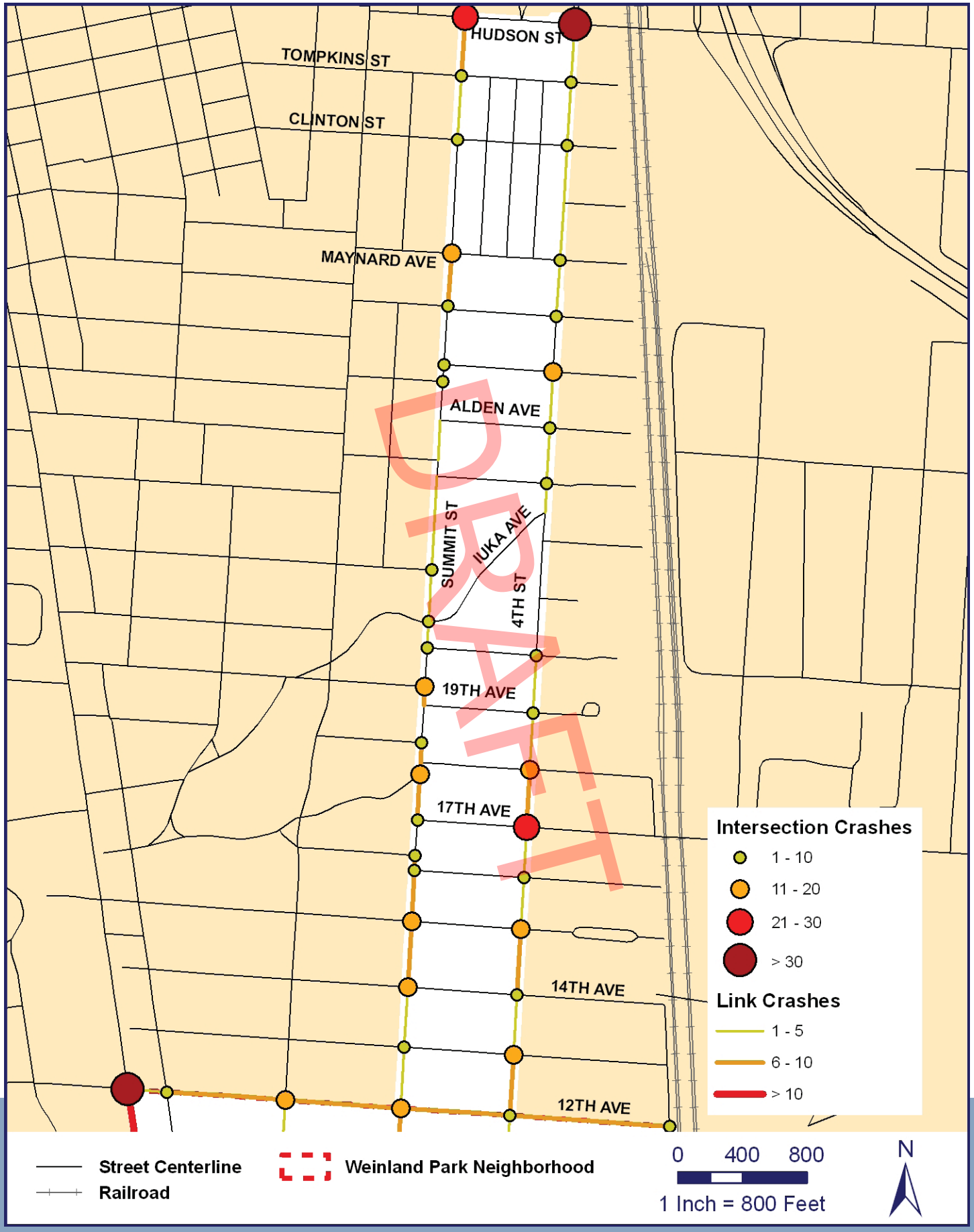
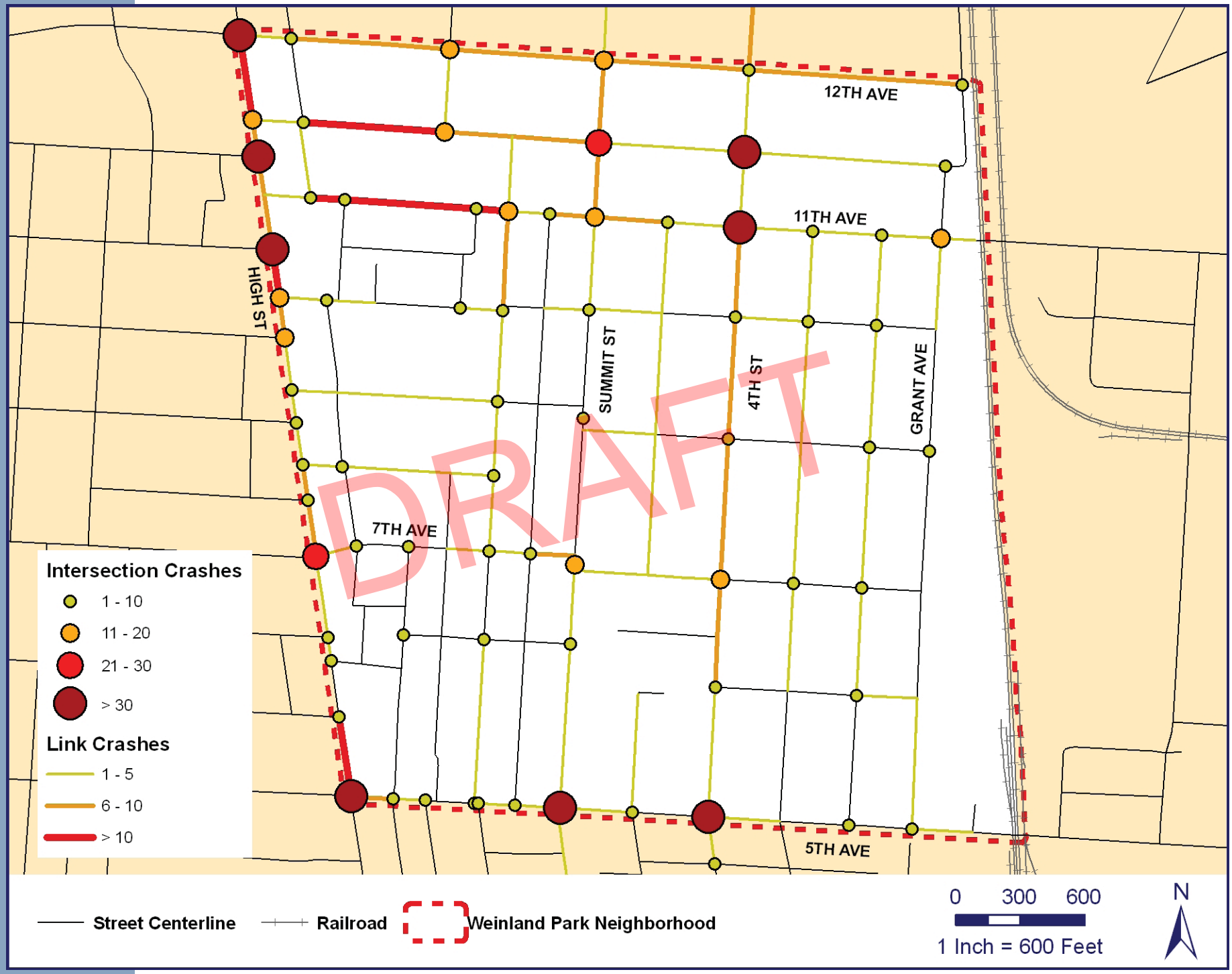


Exhibit 5: Recorded Vehicular Crashes (2005-2007) - Summit and Fourth Streets Northern Section

Exhibit 6: Recorded Vehicular Crashes (2005-2007) - Weinland Park



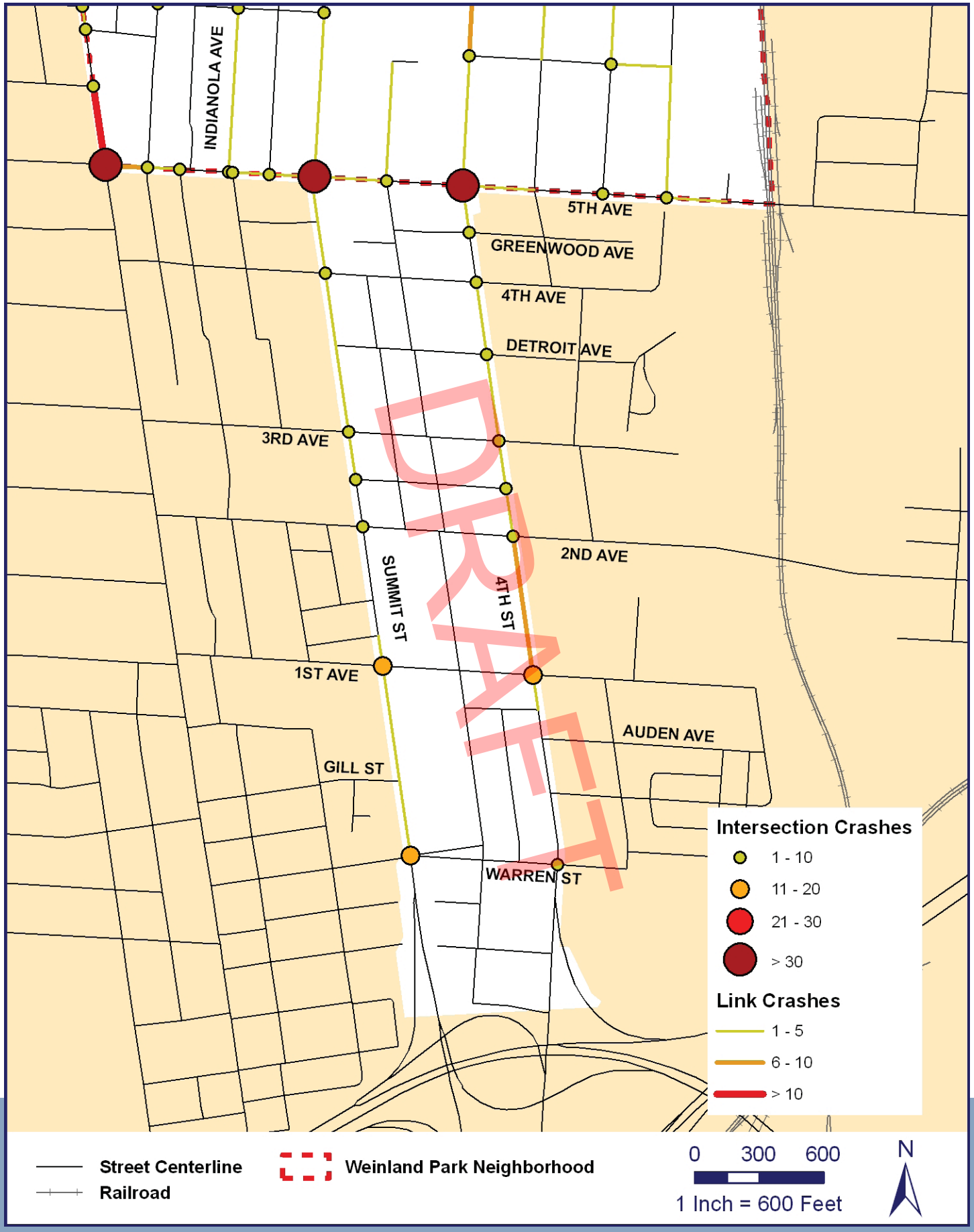


Exhibit 7: Recorded Vehicular Crashes (2005-2007) - Summit and Fourth Streets Southern Section

Geometric Issues

The intersection of Ninth Avenue with Indianola Avenue and the intersections of Seventh Avenue and Eighth Avenue with Summit Street are all offset. This means that two legs of the intersection do not line up across from each other creating safety issues for drivers and pedestrians. Problems include poor visibility of vehicles and pedestrians and confusing signing and vehicle priority for drivers. The most extreme example of this issue in Weinland Park is the intersection of Seventh Avenue and Summit Street. Confusion regarding vehicle priority and driver expectations is created when the light turns green for both the eastbound and westbound traffic at the same time. Westbound vehicles turning left have difficulty determining whether vehicles turning right onto Summit Street from Seventh Avenue are continuing east on Seventh Avenue or south on Summit Street. Further exacerbating the problem, obstructions at the intersection make it difficult for drivers to see pedestrians crossing the street. These factors combine to create a confusing condition for motorists to manuever.

The intersection of High Street and Seventh/King Avenue contains an abrupt deflection for vehicles traveling east and west. The change in direction in the middle of the intersection makes it difficult to see oncoming vehicles while turning left, and to see hazards on the far side of the intersection. These geometric deficiencies are likely a key contributing factor to the high number and above average percentage of injury accidents that occur at this intersection.

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Pedestrians

Sidewalks

During October 2008, a sidewalk inventory was performed that graded the condition of all 22.1 miles of sidewalk and all 818 curb ramps in the study area. While the City of Columbus does have existing standards regarding sidewalks for the purposes of code enforcement, it does not currently have an inventory rating system. Therefore, a sidewalk and curb ramp rating system developed and used by the City of Richmond, Virginia was utilized for this study. This system was selected because it is easy to record and update and it can be conducted by a person with little to no engineering or code enforcement knowledge, thus allowing members of the community to assist in maintaining the sidewalk ratings in the future.

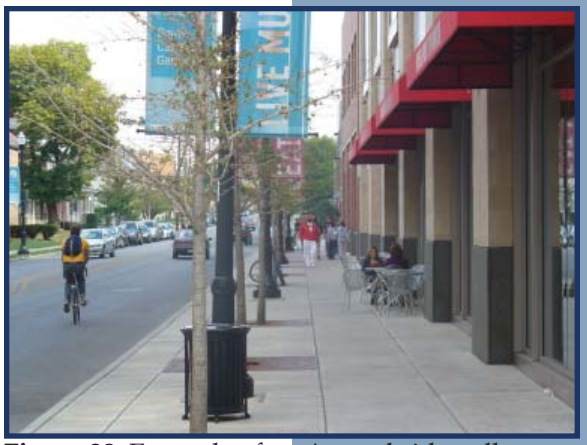

Figure 28: Example of an A rated sidewalk

The rating system assigns grades from A (best) to F (worst) for a section of sidewalk depending on the number of demerits present (Table 5). The individual conducting the inventory identifies minor demerits (those that may be an inconvenience to mobility) and major demerits (those that may make a section of sidewalk impassable, particularly for someone using a mobility aid) in order to determine the appropriate grade. For this inventory, examples of minor demerits include cracks that are less than one inch, obstructions that slightly narrow the sidewalk, sidewalk widths that are below standard but more are than three feet, and some trash and/or debris. Examples of serious demerits include cracks and heaving that are greater than one inch, obstructions or sidewalk widths that provide less than three feet of passable space (minimum required for wheelchairs and some strollers), and substantial trash and/or debris. Similarly, the curb ramp rating system assigns ratings of O (outstanding), S (satisfactory), or U (unsatisfactory) depending on the number of demerits present (Table 6).

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Figure 29: Example of a C rated sidewalk

Table 5: Rating system used for neighborhood sidewalk inventory

Grade	Level of Service	Criteria
A	Excellent	New or recently improved: continuous for whole block, uniform material (brick, concrete), even surface with no ponding, no trash/debris/dirt, no cracking/heaving/spalling, no roots or grass present, and having an overall aesthetically pleasing appearance
B	Good	Exhibits only 1-2 minor demerits but overall still viewed as above average
C	Fair	Exhibits 2-3 minor demerits or 1 major demerit and overall viewed as average
D	Poor	Exhibits 4-5 minor or 2-3 major demerits and overall viewed as below average
E	Very Poor	Exhibits more than 3 major demerits and overall viewed as well below average
F	Failing	A sidewalk in total disrepair/terrible condition/impassible for those using mobility aids
M	Missing	No sidewalk present
UC	Under Construction	N/A

Figure 30: Example of an E rated sidewalk

Table 7: Number of sidewalk segments by grade

Grade	Numer of Segments	Percent Within Study Area
A	9	2%
B	32	8%
C	75	19%
D	160	41%
E	83	21%
F	13	3%
M	8	2%
UC	16	4%

Table 8: Number of curb ramps by grade

Grade	Number of Ramps	Percent Within Study Area
O	195	24%
S	281	34%
U	334	41%
UC	8	1%

Table 6: Rating system used for neighborhood curb ramp inventory

Grade	Level of Service	Criteria
O	Above Average	Curb cut present and in good to excellent condition
S	Average	Curb cut/handicap access ramp present but in fair condition
U	Failing/No Ramp	Curb cut/handicap access ramp present but in failing condition (severely cracked or broken) or no ramp present
UC	Under Construction	N/A

Sidewalks were divided into sections by breaks at streets and alleys. This resulted in sections of varying lengths, meaning that a longer section would be more likely to have demerits than a shorter section. This variation was minimized by photographing every section and reviewing each grade once the entire inventory had been completed; however, given the variation in length of sidewalk sections and the observational nature of the grading system, the inventory must be viewed in the proper context. It is not intended to be used for code enforcement, but rather as a tool to identify the overall state of the sidewalk network in the neighborhood and to help prioritize the need for repair and replacement efforts.

As shown in Table 7, 65% of the sidewalks in the Weinland Park and along the Fourth and Summit Street corridors received a rating of poor (D) or worse. This means that three-quarters of the sidewalks in the study area have at least two serious faults that may make them impassable for some pedestrians. Exhibits 8-10 shows each section of sidewalk that was inventoried and the rating it received. In general, High Street has the best sidewalk conditions in the neighborhood, while all of the other arterials are badly in need of repair, with D and E being the most common ratings. Of particular concern along Summit and Fourth Streets are the presence of major obstructions (i.e. – utility poles, sign posts, debris) that reduce the clear walking zone to less than three feet, making the route impassible for anyone using a mobility aid. With the completion of the Seventh Avenue improvements in late 2008 and the upcoming reconstruction of Grant Avenue, a small section of Sixth Avenue just east of Fifth Street is the only location in Weinland Park with no existing or planned sidewalk.

Similar to the sidewalk inventory, Table 8 shows that many of the curb ramps in Weinland Park are also in need of repair or replacement, with the greatest number (41%) receiving a rating of unsatisfactory.

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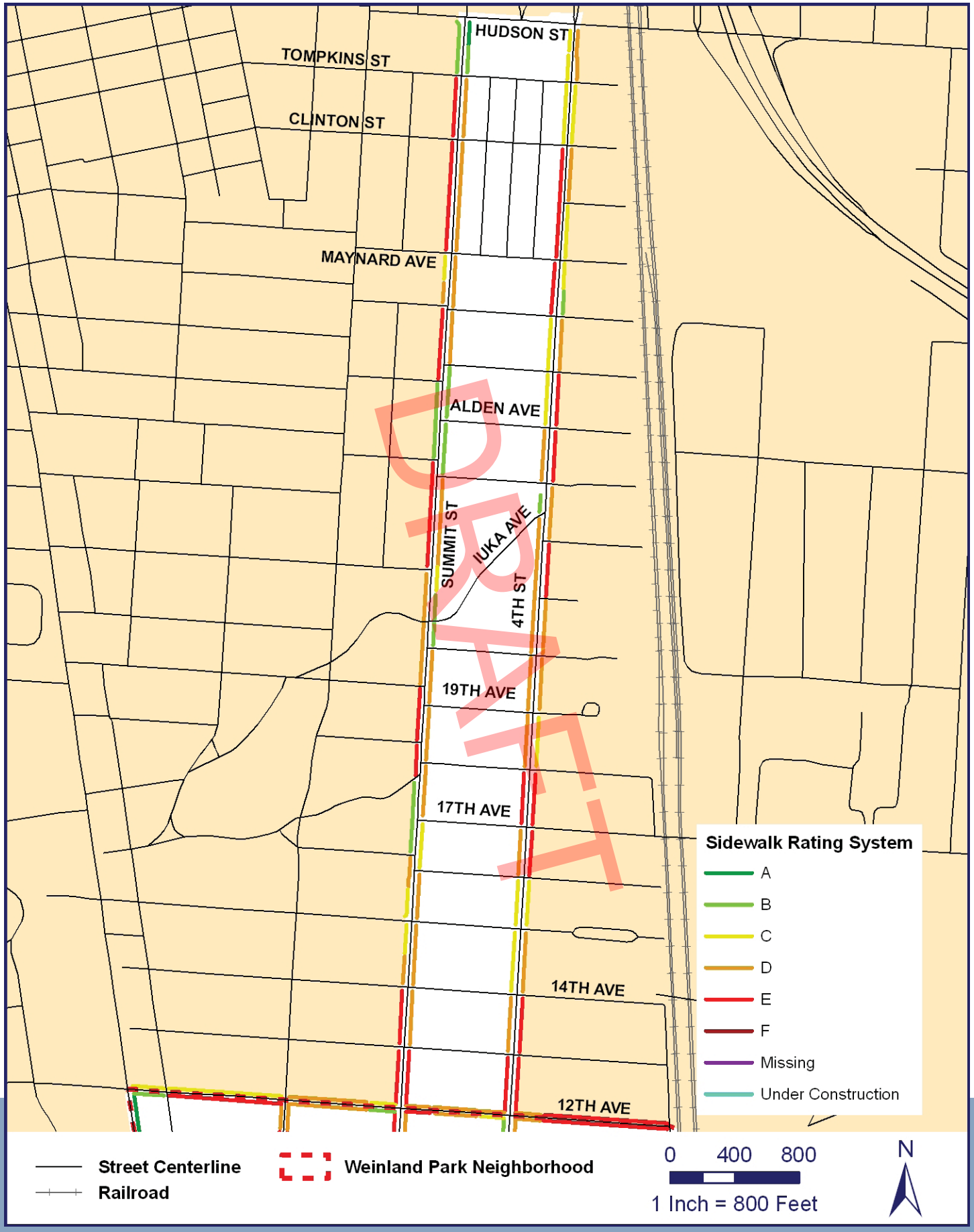
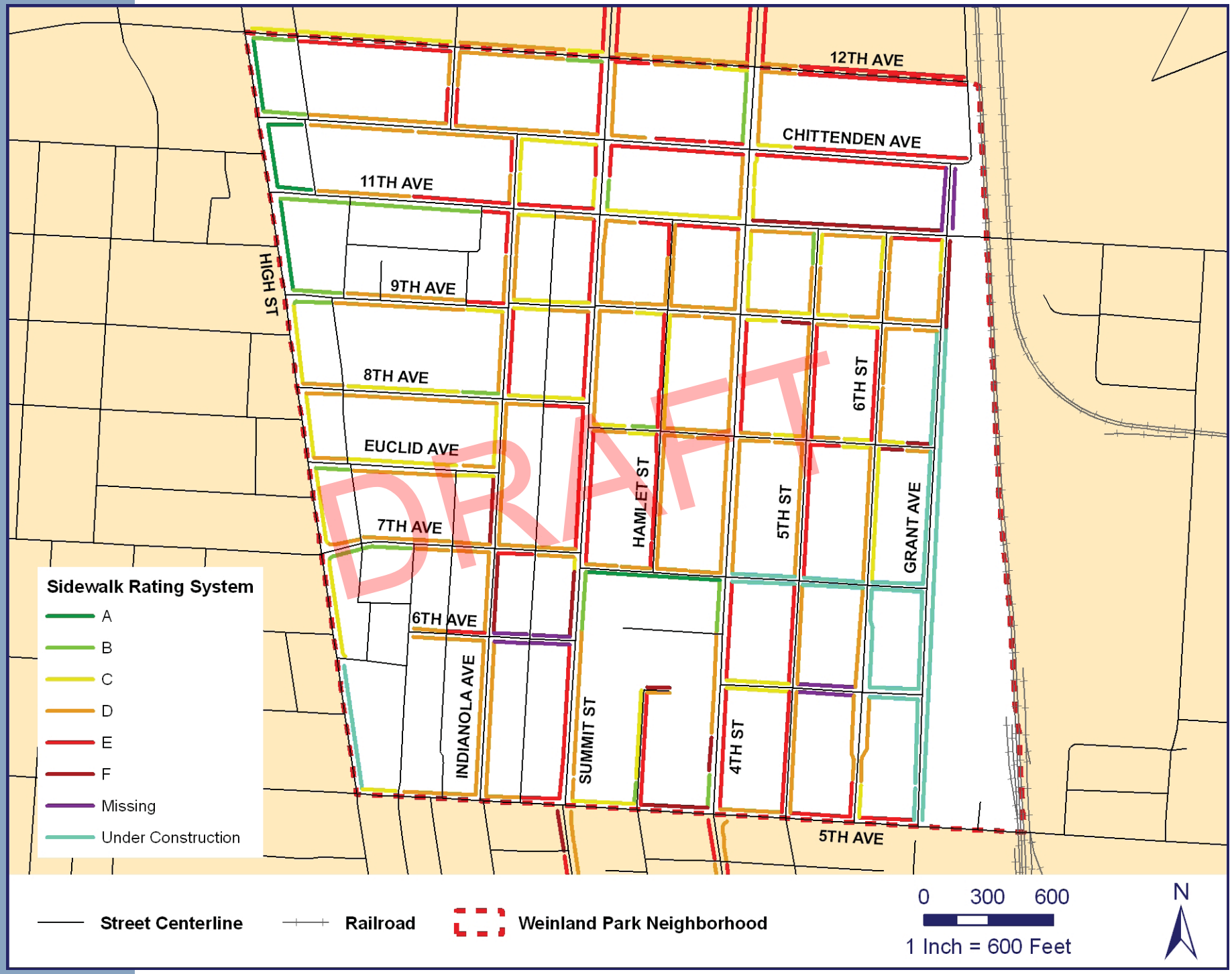


Exhibit 8: Sidewalk Inventory - Summit and Fourth Streets Northern Section

Exhibit 9: Sidewalk Inventory - Weinland Park



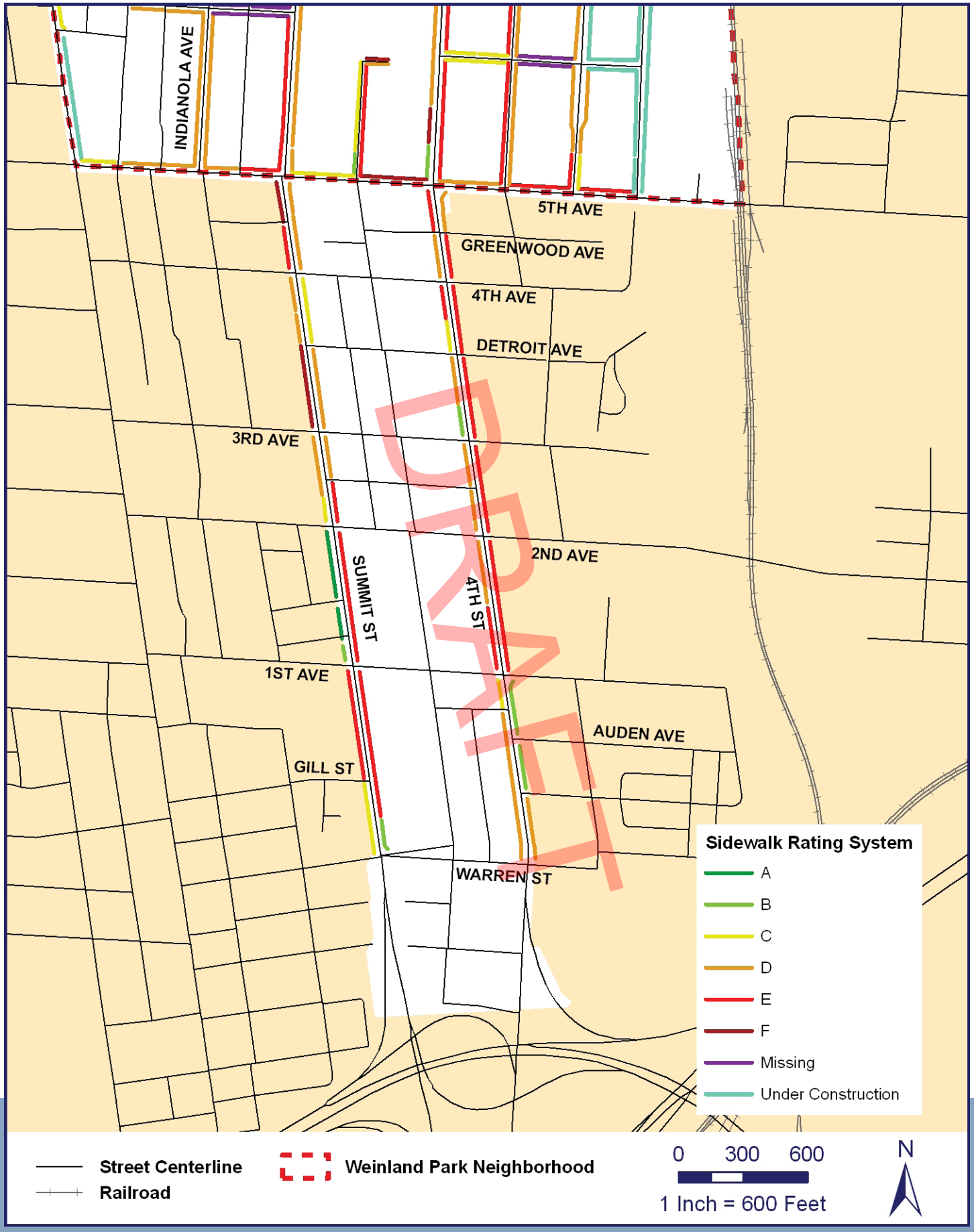


Exhibit 10: Sidewalk Inventory - Summit and Fourth Streets Southern Section

Figure 31: Utility poles, signs, vegetation, and other obstructions block visibility at the Seventh Ave and Summit St intersection

Figure 32: Pedestrians crossing Summit St at Seventh Ave to access Weinland Park Elementary School

Pedestrian Crossings

In order to identify the areas of concern for pedestrian crossings, the results of the public input process were reviewed along with reported pedestrian crash data from 2000-2007 (Exhibit 11). While vehicular crash data is analyzed in three year segments, pedestrian crashes are comparatively infrequent. For this reason, a longer time period was analyzed in an attempt to identify trends that could indicate an unsafe crossing location. Despite being relatively few in number, crashes involving pedestrians are far more likely to involve injuries and/or fatalities than crashes only involving vehicles. Therefore, even a few crashes over several years can justify safety improvements at a pedestrian crossing location.

A total of 105 crashes involving pedestrians were recorded within the study area from 2000 to 2007. Of those, 90 (86%) resulted in injury and the other 15 involved property damage only, there were no fatalities. Just over half of the crashes (54) occurred along High Street; Summit Street experienced the second most crashes (22). Although the number of pedestrian crashes on High Street is substantially higher than on any other street in the study area, a fact that can not be overlooked, there are several factors that must be considered when reviewing these statistics. Foremost, High Street has far more pedestrian traffic than any other street in the area, particularly at the northern end of the neighborhood adjacent to the Ohio State campus, where the most crashes are clustered. Additionally, the completion of the South Campus Gateway in late 2005 drastically improved the pedestrian environment along High Street between Ninth and Chittenden Avenues. While these facts do not mean that safety concerns do not exist along High Street, they do suggest that the number of crashes may not be as disproportionately high as the raw numbers suggest.

Crossing locations that were identified by residents and that have a high number of crashes were given the highest priority in the evaluation of existing conditions. The locations of greatest concern for pedestrian crossings include the following intersections:

- Summit Street at Seventh Avenue: This offset intersection is located at the northwest corner of Weinland Park Elementary School and is therefore used by large numbers of students. It was the single most frequently identified safety concern of area residents. The misalignment of Seventh Avenue creates longer crossing distances for pedestrians and confusion for motorists. Utility poles and signs on the southwest corner of the intersection also obstruct motorist views of pedestrians in the south crosswalk of the intersection. Frequent jaywalking was

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observed during the walk audit and other field observations at this intersection. There were four accidents involving pedestrians at this location, including one teacher who was struck during school dismissal.

- High Street at Fifth Avenue: This intersection of high volume arterials, located at the southwest corner of Weinland Park, had the highest number of crashes involving pedestrians in the study area with eight. The combination of high vehicular volumes, speeding on Fifth Avenue, and high pedestrian volumes (due in part to the presence of four bus stops at this intersection) all lead to substantial safety concerns for pedestrians crossing at this location.
- High Street at Seventh/King Avenues: This intersection is a vital access point into the Weinland Park neighborhood. The presence of Kroger on the southeast corner draws significant pedestrian and vehicular traffic, and the presence of Vision and Vocational Services on the southwest corner brings many vision impaired pedestrians to the intersection. Despite being somewhat skewed, the excessive width (42 feet for three lanes) and downward grade of Seventh Avenue as it approaches the intersection accommodates motorist speeding to "beat the light" at High Street. This creates a particularly unsafe situation for both pedestrian and motorists. There were four recorded pedestrian crashes at this location.
- Summit Street at Fifth Avenue: Concerns regarding vehicle speeds on both streets were raised by members of the public. The pedestrian walk phase was also observed to be extremely short, providing less than ten seconds of walk time before changing to a flashing "don't walk". Since 2000, five crashes involving pedestrians have been recorded at this intersection.

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Residents also expressed a need for more crossing locations on Summit and Fourth Streets as well as High Street to a lesser degree. One resident commented that "there are not enough legal spaces to cross (Summit and Fourth Streets), particularly between Fifth and Eighth Avenues." Unless specifically prohibited, pedestrians can legally cross a street at any intersection, whether there is a marked crosswalk or not. It stands to reason then, that these expressed concerns arise from a lack of comfort and perceived safety due to the distance between marked crossings of Summit and Fourth Streets. The nearest marked crosswalks to Weinland Park, the elementary school, and the Schoenbaum Center are at Fifth and Seventh Avenues, as there are none adjacent to the park or the south side of the school buildings. This results in pedestrians, often students going to or from school, crossing the street at random locations to avoid going out of their way to use a crosswalk.

Figure 33: The Fifth Ave & High St intersection has the highest number of vehicular and pedestrian crashes in the neighborhood

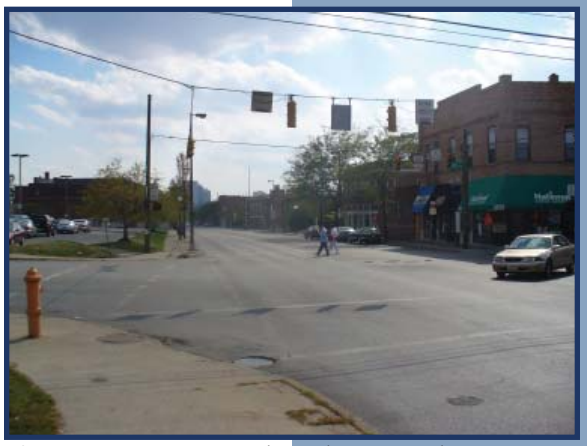

Figure 34: Facing south at the Seventh Ave & High St intersection. Kroger is on the southeast corner while Vision & Vocational Services and the library sit just northwest of the intersection

Finally, although Weinland Park covers a relatively small area, it has numerous resources and public facilities that are used by people from outside the neighborhood. Those who are unfamiliar with the area have little to no guidance to find key destinations such as the Godman Guild and the OSU Schoenbaum Center, both of which are located in the core of Weinland Park away from High Street and Fifth Avenue. A lack of good directional signage can prove very frustrating and even intimidating for a pedestrian trying to find a destination in an unfamiliar area.

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Exhibit 11: Recorded Pedestrian Crashes in Weinland Park (2000-2007)

Bicycles

The Columbus City Code identifies three distinct types of transportation facilities for bicycles: Class I, Class II, and Class III Bikeways. As defined in the Code:

"Bikeway" means a facility that explicitly provides for bicycle travel. A bikeway may vary from a completely separated facility to simple signed streets as follows:

(a) "Bike path" (Class I Bikeway) is a facility for the exclusive use of bicycles separated from motor vehicle traffic except at bike crossings.

(b) "Bike lane" (Class II Bikeway) utilizes existing roadways and is contiguous thereto but provides a separate lane of travel for the exclusive or semi-exclusive use of bicycles. The bike lane is physically separated from motor vehicle traffic by painted lines, pavement coloration, curbing, parked vehicles or other barriers.

(c) "Bike route" (Class III Bikeway) utilizes existing streets and roads. No separation of motor vehicle and bicycle traffic is provided as only signs are present to indicate the course of the bike route. (Ord. 1050-77.)

Figure 35: Bicycle route signs on Summit and Fourth Streets are currently the only bike facilities in Weinland Park

Currently the only bikeways in the Weinland Park neighborhood are Fourth and Summit Streets, which function as a one-way pair Class III bikeway.

Bike parking facilities, while not prevalent in the neighborhood, have been incorporated into many new buildings and developments in recent years such as the South Campus Gateway and the new Community Policing Center. The majority of the bicycle parking facilities are concentrated near the Ohio State campus as well as along High Street, while they are conspicuously absent from other locations, such as the new Weinland Park Elementary School and Schoenbaum Center.

Figure 36: The South Campus Gateway provides ample bicycle parking along High Street

Although Weinland Park, like many other Columbus neighborhoods, has for years suffered from a lack of bicycle facilities, the City has made strong commitments and tangible strides toward becoming much more bicycle friendly. Approved in May 2008, the Bicentennial Bikeways Plan is a bicycle master plan for the City that sets an ambitious path for facility development, enhanced funding, and increased ridership over the next ten years. Additionally, in January 2009, City Council adopted several City Code revisions that improve cyclist safety and better guide the development of quality facilities.

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Transit

With High Street abutting the western edge of the neighborhood, and its close proximity to both downtown and Ohio State, Weinland Park is currently one of the best served areas of the City by transit service. However, available data and public comments indicate a further need for increased and improved transit service in the neighborhood.

The Central Ohio Transit Authority (COTA) operates multiple bus routes through and adjacent to the neighborhood; these include five local routes, two crosstown routes, and three express routes, as well as Project Mainstream (on-call paratransit service). Table 9 and Exhibit 12 show the existing transit routes and stops within the study area. The majority of these routes can be accessed by Weinland Park residents along the High Street corridor with the exception of the #4 (Indianola Ave) and #8 (Hamilton Ave) Local Routes, the #96 (Fifth Ave) Crosstown Route, and the #52 (OSU/Airport) Express Route. Additionally, the OSU Campus Area Bus Service (CABS) East Residential Route runs along Summit and Fourth Streets in the study area.

While the availability of adequate transit service is vital to community mobility, the presence of bus routes alone is not enough to serve the transit needs of the neighborhood. A convenient and accessible transit system must also provide stops with key facilities for riders. Signage with route information is key for wayfinding, sufficient lighting is an important safety element, shelters and benches provide cover from wind and rain and places to rest, and garbage receptacles help to promote clean facilities.

There are a total of 68 bus stops located within the project area. Of these, approximately 15% have shelters, benches, and/or garbage receptacles. One issue encountered at some of the existing shelters is that they are situated in the center of the sidewalk, effectively eliminating the walking route for pedestrians. This illustrates that the placement of transit facilities must be carefully considered, particularly in areas where right-of-way is constrained and multiple modes must compete for limited space. Lighting, which is found at 55% of stops in the area, is more common, but this means that nearly half of the stops in the community are not lit after dark. Every stop currently has some type of signage, generally a sign post with the route names and numbers on them. A few (those with shelters) have route maps and information as well.

Table 9: Bus routes serving Weinland Park

Route	Type
2	Local
4	Local
5	Local
8	Local
21	Local (Night Owl)
31	Express
52	Express
54	Express
84	Crosstown
96	Crosstown
East Residential	Campus

Figure 37: The bus shelter at Sixth Ave & High St sits in the middle of the sidewalk, blocking the clear walking path for pedestrians

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Exhibit 12: Existing Bus Routes and Stops in Weinland Park

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Recommended Solutions

The recommendations chapter of this plan is divided into two sections, a "Toolbox of Treatments" and location based recommendations. The Toolbox of Treatments describes numerous mobility improvements, grouped by travel mode. These tools were selected to address the numerous issues and concerns expressed through public input and observed during the planning process. The Toolbox is intended to serve as an ongoing resource for use by the City and residents of Weinland Park to diagnose and address future mobility issues in the neighborhood. Each tool includes a description of its intended use and effects, pros and cons to consider, and a general cost estimate (or range of costs) for installation (insert footnote about costs)

The Location Based Recommendations section applies the tools from the Toolbox of Treatments to specific locations throughout the study area. For each location, the most appropriate tool, or combination of tools, was selected and applied to address the identified mobility problems. Some of the recommended improvements apply to the entire neighborhood, some to a roadway corridor, and others to specific sites or intersections. For each location, there is an explanation of the recommended improvement(s) and a justification for why that tool was selected.

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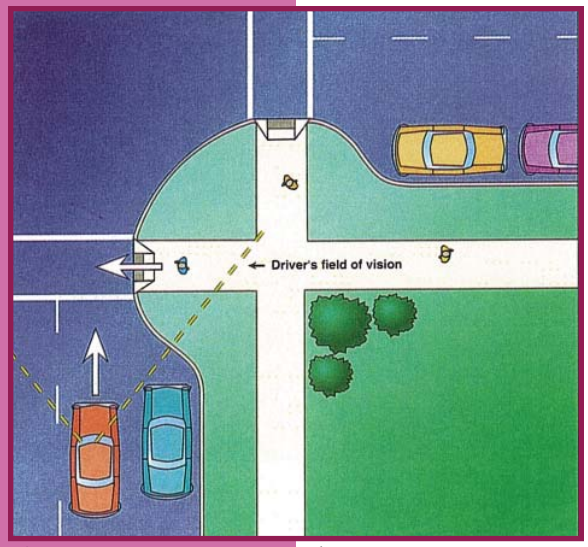

Figure 38: Intersection curb extensions improve the visibility of pedestrians by preventing cars from parking too close to the intersection

Figure 39: Example of an intersection curb extension in Hilliard, Ohio. It narrows the roadway through the intersection and shortens the crossing distance for pedestirans

Toolbox of Treatments

Automobile Tools

Curb Extensions

Curb extensions are improvement measures that are used in locations with on-street parking to improve pedestrian crossings and help control vehicle speeds by narrowing the roadway. Also called bump-outs, chokers, or curb bulbs, curb extensions can be installed at intersections or mid-block to reduce or reinforce lane widths by bringing the curb line out into the parking lane and closer to the travel lane (Figure 38).

When used at intersections, curb extensions improve both pedestrian and driver safety. Crossing distances are shortened and pedestrians are made more visible to drivers by moving them out from behind parked cars. Driver safety is improved by slowing vehicle speeds and by preventing vehicles from parking too close to the intersection, thus improving sight conditions. At mid-block locations they are most effective at reinforcing lane widths where on-street parking is allowed but not heavily used, and at improving the visibility and safety of pedestrians at mid-block crossings.

When considering the installation of curb extensions at an intersection, it is important

to consider the turning radius required by large vehicles such as buses, emergency vehicles, and trucks. They must also not encroach into the travel lane or bike lanes. The installation of mid-block curb extensions does require the removal of some on-street parking, and thus may not be appropriate on streets where parking is in high demand.

Curb extensions can range from $2,000 to $20,000 per corner depending on aesthetic treatments, street furniture and lighting, and drainage considerations.

Mini Circles

A mini circle is a raised island placed in an existing intersection around which traffic circulates. This tool improves intersection safety for vehicles and pedestrians by reducing vehicle speeds to 15mph or less. Vehicles circulate counterclockwise around the circle, reducing potential conflicts (Figure 40). At many stop controlled residential intersections, mini circles have replaced stop signs, resulting in reduced speeds, traffic violations, and crashes.

Along a street corridor, mini circles can be used in combination with curb extensions to calm traffic by alternately adding features to the center and the outside of the road. The ability of large vehicles such as buses, emergency vehicles, and trucks to navigate the intersection must be considered in the design of a mini circle. These vehicles can generally be accommodated with a truck apron or by allowing them to turn left in front of the circle. Adequate signage is also important to ensure drivers properly navigate the intersection.

Mini circles are relatively easy and cheap to install as little to no modification to the existing intersection is required. A landscaped mini-circle generally costs about $6,000. Maintenance responsibilities for the landscaping can also be taken on by property owners or a neighborhood association to help defray the costs of the improvement, particularly when the mini circle serves as a gateway feature into a residential area.

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Figure 40: Because all vehicles circulate the mini circle in the same direction, entering vehicles only need to look left for oncoming traffic

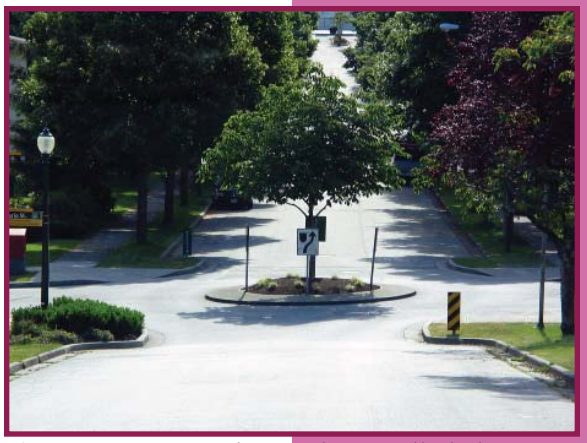

Figure 41: Mini circles can be installed along with curb extensions to provide maximum speed control at an intersection

Figure 42: Example of two small landscaped medians with a break for pedestrians

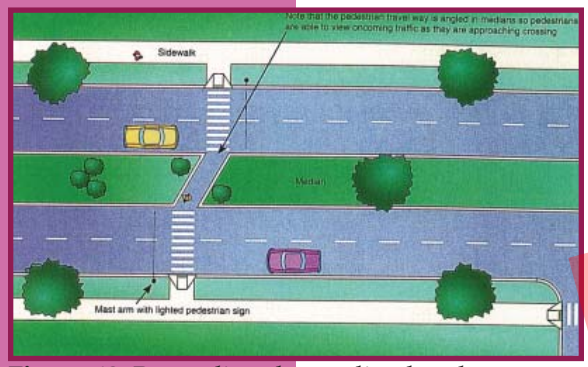

Figure 43: By angling the median break, pedestrians and cyclists can better see oncoming traffic before crossing

Figure 44: Onstreet parkig provides a barrier between pedestrians and traffic on the road

Raised Medians

This traffic calming measure controls vehicle speeds by introducing a raised barrier in the middle of a street, forcing drivers to the outside. Medians narrow the roadway (either physically or visually), provide motorists with left-turn pockets out of the flow of traffic, and serve as a crossing refuge for pedestrians. Adding landscaping and/or gateway signage to a median also serves as a cue to drivers that they are in a pedestrian environment where high speeds are not appropriate. Similar to mini circles, medians can be used in combination with curb extensions to calm traffic along a street corridor. Landscaping in a median must not obstruct the view of motorists on the road, particularly from pedestrians using the median as a crossing refuge. On streets without a center turn lane, on-street parking will likely have to be removed in order to maintain adequate lane widths; therefore, medians may not be an appropriate treatment on streets where parking is in high demand.

Raised medians tend to be higher cost measures, costing between $15,000 and $30,000 per 100 feet. Cost can be minimized by installing two small medians with a break in the middle for a pedestrian refuge (Figure 43). This also ensures that persons using mobility aids and pushing strollers can easily navigate the crossing. As with mini circles, landscaping maintenance can be taken on by property owners or a neighborhood association to help reduce costs.

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On-Street Parking

The provision of on-street parking presents multiple mobility benefits to motorists as well as users of other transportation modes. The availability of ample on-street parking improves convenience for residents and other motorists with destinations in the area, particularly in many urban neighborhoods where off-street parking is scarce or non-existent. Additionally, on-street parking helps to control vehicle speeds by creating some "friction" along the sides of a road. The presence of cars parked on the street forces drivers to slow down and raises their peripheral awareness. Finally, on-street parking creates a vertical barrier between the sidewalk and roadway, which improves both the safety and comfort of pedestrians. In commercial locations where parking is in particularly high demand, metered parking can be installed and function as a source of revenue for the City.

The cost to implement on-street parking in areas where it is restricted is often minimal, requiring only the removal of parking restriction signs and/or installation of parking signs. The cost of a new parking sign is approximately $300 installed.

Road Diet

A road diet is a tool that can be used to slow vehicle speeds by narrowing a roadway corridor either visually, by narrowing travel lanes, or by reducing the number of travel lanes, generally from four (two lanes in each direction) to three (one lane in each direction with a two-way left turn lane and/or median). The extra space created by a road diet is then often dedicated to improving multi-modal travel along the corridor through the creation of bike lanes, wider sidewalks, on-street parking, or landscaped buffers. The mobility benefits of road diets can include lower vehicle speeds, improved safety and comfort for pedestrians and cyclists, shorter crossing distances, and improved visibility and access to businesses.

Road diets offer benefits for motorists as well as pedestrians and bicyclists. By eliminating turning movements from the left through travel lane in each direction, motorist behavior becomes more predictable. Reducing the road to one lane in each direction also prevents the faster moving vehicles from weaving to pass slower moving vehicles. A road diet can generally be implemented on roads with average daily traffic (ADT) volumes of up to 18,000 with little impact to roadway capacity, although ADT's of over 20,000 can be converted following detailed analysis.

Road diets can quickly and effectively be implemented for very little cost (as little as $5,000/mile) by simply re-striping the road and altering signal operations. They can also be completed as long-term projects that include construction of landscaped medians, curb extensions, new pedestrian scale lighting, and gateway signage. These longer-term, more complex projects can cost up to $100,000 per mile.

Improved Lane Striping

Restriping a roadway to better define and narrow the lanes is a low cost but effective solution to improving safety. Narrowing the lanes to 10 or 11 feet can effectively slow vehicle speeds while providing room for on-street parking and/or bike lanes. When considering a change in road striping, it is important to consider the lane configuration at intersections and potential impacts on the level of service of the road, as significant changes could push unwanted traffic onto local streets. Additionally, the interaction of bicycles with traffic and parked cars must be considered. Generally, the cost to remove old lane striping and restripe new lanes is between $5,000 and $10,000 per mile.

Before - two travel lanes in each direction

After - one travel lane in each direction, one bike lane in each direction, and one center turn lane/landscaped median

Figure 45: Before and after images of a street that received a road diet. The street width remained the same and, aside from the median, all changes were made through lane striping

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Improved Signal Timing

Signal timing of roadways can have a significant influence on traffic operations. By timing the lights so that a vehicle traveling the speed limit proceeds without stopping, coordinated signal timing can be very efficient for automobile travel. The down side of extremely efficient auto travel is that it can adversely affect adjacent properties and people. Just as a river flowing too swiftly erodes its banks and presents a major barrier, a road along which large numbers of cars travel too quickly erodes away the adjacent community and makes safe crossings difficult.

On one way streets, signal timing can be optimized so that it has an even greater effect on roadway efficiency. Typically, roadway pairs were converted from two way operation to one way operation to take advantage of the vehicle progression through the corridor, moving large numbers of vehicles very quickly.

Long green times, accompanied by vehicle flows below capacity create a situation where vehicles can travel well above the speed limit. By shortening the cycle length, the free green time is reduced so that vehicles are rewarded for traveling at or below the speed limit rather than above it. This improvement is very inexpensive as the only cost is the staff hours required to re-time the signals.

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Pedestrian Tools

Sidewalks

Of utmost importance to pedestrian mobility is the presence of a comprehensive, well maintained sidewalk network that connects neighborhood residents to key destinations such as shopping and employment centers, entertainment venues, and other transportation modes such as transit.

The Columbus City Code calls for the provision of sidewalks in all subdivisions and site developments, and states that the abutting property owner is responsible for the construction, maintenance, and repair of sidewalk facilities. It also stipulates that the minimum width for sidewalks is four feet when there is a three foot buffer present and six feet when the sidewalk is next to the curb. While four feet is the minimum standard, the Federal Highway Administration (FHWA) and the Institute of Transportation Engineers (ITE) both recommend a minimum width of five feet to allow two people to pass or walk side-by-side comfortably, and a buffer of four to six feet.

In locations of heavy pedestrian activity such as schools, neighborhood retail centers, and parks, wider sidewalks and additional features such as street furniture and bike racks should be provided to accommodate multiple users and promote a vibrant and comfortable pedestrian environment. Roads with heavy vehicular traffic volumes and higher speeds should also have wider sidewalks and buffers between pedestrians and traffic to ensure safe and comfortable walking.

In developed areas such as Weinland Park, sidewalk construction and repair often occurs in bits and pieces over time. Key sections in need of repair or replacement should therefore be identified and addressed first. It is important to provide a smooth and continuous surface so that the sidewalk network is accessible to all users. This means extending the sidewalk through driveway aprons and alleys or including ADA compliant curb ramps. Equally important to the provision of sidewalks is the maintenance of a clear walking zone, which requires the clearing of debris and overgrown vegetation. While these maintenance issues are relatively easy to address, other obstructions such as street furniture, signs, and utility poles present greater challenges. If it is infeasible to move or remove these obstructions on their own, these changes should be incorporated into a larger roadway or utility improvement project. The cost to install a concrete sidewalk is approximately $11 per square foot

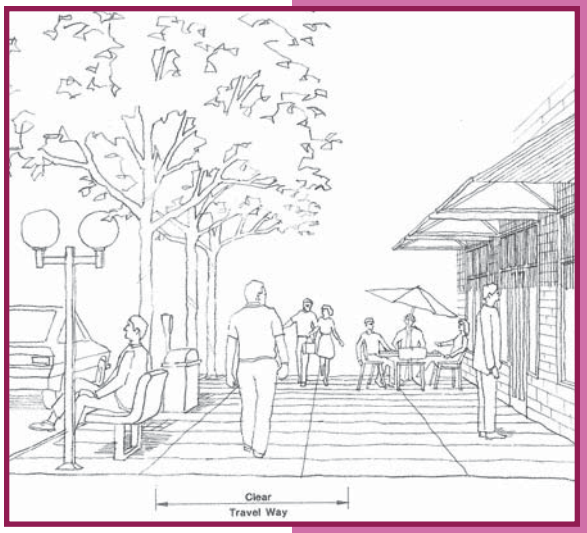

Figure 46: While street trees and furniture add to the pedestrian environment, they should not encroach into the clear walking zone

Figure 47: The sidewalks at the South Campus Gateway provide adequate shy space (brick), six feet of clear walking zone, and street furniture

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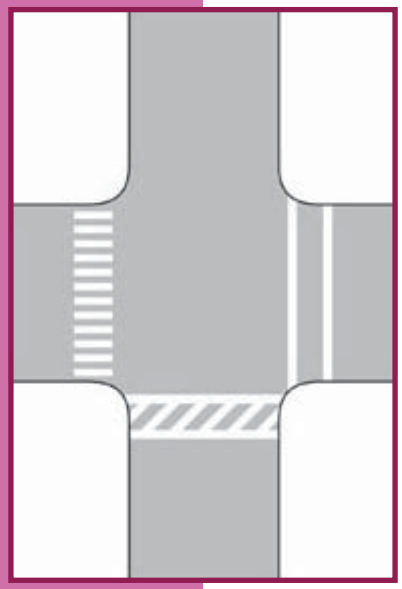

Figure 48: The three most common crosswalk markings are continental (left), zebra stripe (center), and standard/parellel (right)

Figure 49: Textured pavers can raise the visibility of crosswalks and improve aesthetics at an intersection

Crosswalk Markings/Upgrades

Well positioned and well marked crosswalks are important features of a good pedestrian network. Crosswalks designate crossing locations for pedestrians, and indicate to motorists the presence of pedestrian activity and the need to yield to pedestrians crossing the street. Crosswalks should generally be located at intersections where other traffic control measures are often in place and motorists are more aware and expectant of pedestrians and vehicles crossing their paths. However, when crossing at the nearest intersection forces pedestrians to travel out of their way, it may be necessary to install a mid-block crosswalk. In locations where a significant number of pedestrians choose to cross a street mid-block rather than walk to the nearest crosswalk, it likely indicates the need for a crosswalk. Efforts should be made to create a safe, legal crossing at these locations, if possible, rather than trying to force pedestrians to use existing but inconvenient facilities.

Heavy pedestrian traffic areas often require high visibility crosswalks to alert drivers to increased pedestrian activity. These crosswalks are particularly important near schools where large numbers of children cross the street during school arrival and dismissal. High visibility crosswalks can be installed using various striping patterns, colored pavement, and/or textured paving materials (Figures 48 and 49). The effectiveness of high visibility crosswalk markings is contingent on them catching a driver's attention. For this reason, they should only be installed at a few key crossing locations so that they remain distinctive. The materials and design of high visibility crosswalks must also be carefully considered. Some striping and paving materials such as thermoplastic, stamped/colored asphalt, and cobblestone can become slippery when wet. Ladder-style striping should be designed such that vehicle wheels pass between the stripes to maximize the durability of the striping. Both standard and high visibility crosswalks should be accompanied by some other form of traffic control, traffic calming, and/or signage in order to provide a benefit to pedestrian safety (cite FHWA report).

The cost to install standard crosswalk markings is approximately $400 per intersection, while the cost to install high visibility crosswalks can range from $1,200 per intersection for ladder-style crosswalk markings to $80,000 per intersection for textured pavement.

Exclusive Pedestrian Signal Phase

At some signalized intersections, where pedestrian volumes are extremely high or where the intersection size and/or configuration makes crossing particularly dangerous, an exclusive pedestrian phase may be justified. This solution introduces

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an additional phase into the traffic signal cycle where all directions of vehicular traffic experience a red light and all directions of pedestrian traffic have a walk signal. During this phase, pedestrians can cross in any direction, including diagonally, allowing them to navigate the intersection in one crossing rather than crossing individual legs. Implementation of an exclusive pedestrian phase should also be accompanied by the prohibition of right turns on red at the intersection to avoid potential conflicts.

Prior to using this tool, the current operation of an intersection must be analyzed to ensure that there is adequate capacity to accommodate a new signal phase. If the signal is part of an interconnected corridor, this analysis is even more important. In locations where this tool has not been used before, it may be necessary to install signage or pavement markings instructing pedestrians on how the signal phase works. Navigation of intersections with exclusive pedestrian phases presents a challenge to the visually impaired as the standard audible cues used at intersections do not work when all legs of an intersection have a walk signal at the same time. The use of the intersection by visually impaired persons must be taken into account when planning to use this measure.

The cost associated with adjusting an existing signal to include a pedestrian phase is very inexpensive, requiring only city staff time to change the signal operation. If new equipment or a new signal is required, the cost can elevate quickly, ranging from $40,000 to $200,000.

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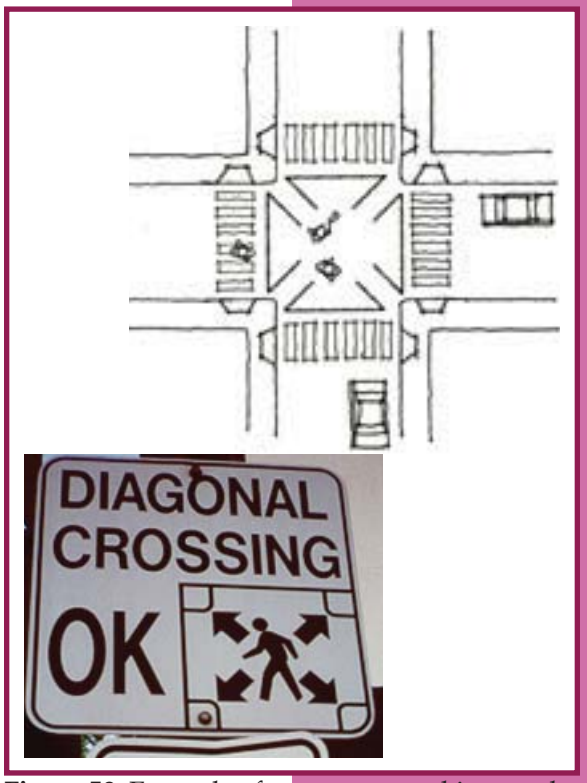

Figure 50: Example of pavement markings and signage allowing crossings in all directions at an intersection with an exclusive pedestrian phase

HAWK Beacon

A High-intensity Activated crossWalK, or HAWK, beacon is a new type of pedestrian beacon that is best used at mid-block crossing locations where high vehicle speeds and/or volumes necessitate a traffic control device, but full signalization is not appropriate. The HAWK beacon, first used in Tucson, Arizona, consists of two side-by-side red lights above a central yellow light (Figures 51 and 52). The beacon remains dark until activated by a pedestrian, at which point the single yellow light begins to flash and then turns solid. It then turns solid red forcing vehicles to stop and giving the pedestrian a walk sign. Next, the two red lights begin flashing alternately and the pedestrian sees a flashing don't walk sign. At this time vehicles may proceed after yielding to any pedestrians in the crosswalk. Finally, the flashing red light returns to dark, allowing traffic to proceed, while pedestrians see a solid don't walk sign and must activate the beacon to cross.

Figure 51: Example of a HAWK beacon and associated signage

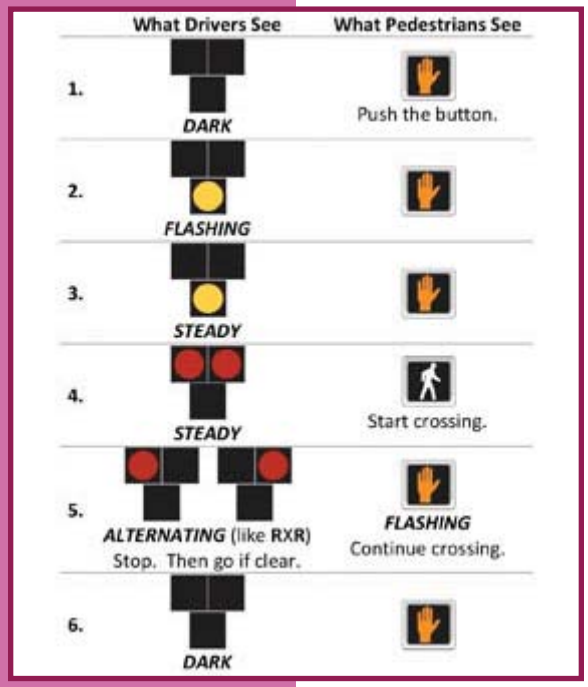

Figure 52: Diagram of a HAWK beacon cycle

Figure 53: Example of pedestrian scale lighting

HAWK beacons create less vehicular traffic delay than a standard signal and have been shown to improve pedestrian safety and motorist compliance (NCHRP 3-71, Journal of Transportation Engineering, Vol. 134, No. 6, June 2008, pp. 262-271, (doi 10.1061/(ASCE)0733-947X(2008)134:6(262)). As this treatment is not yet included in the Manual of Uniform Traffic Control Devices (MUTCD), permission is required from FHWA to install the device on an experimental basis. Numerous cities, including Alexandria, VA, Golden, CO, and Portland, OR, have recently installed HAWK beacons and they are expected to be included in the MUTCD in the near future.

The cost to construct a HAWK beacon on a one-way road is approximately $50,000; the cost for a two-lane road is approximately $75,000.

Pedestrian Scale Lighting

Pedestrian scale lighting typically utilizes light fixtures and poles that are more comfortable and compatible with rest of the human environment. The poles are shorter than the traditional roadway light poles and the fixture is oriented to provide more uniform illumination levels in the travel lanes, parking lanes, and the sidewalk. Pedestrian scale light fixtures should be spaced more closely together than standard street lights and be present on both sides of the street to ensure even lighting levels. Particular attention should be paid to street lighting at crossing locations to ensure that pedestrians are visible to motorists.

Good street lighting is also a key componenet of Crime Prevention Through Environmental Design, or CPTED. The concept of CPTED focuses on designing the built environement to reduce or eliminate opportunities for criminal behavior. When designed correctly, street lighting effectively deterrs crime by the combination of shadows and bright spots that are created by the "cobra" light fixtures that are typically installed along streets.

Awaiting cost estimate of ped scale lighting from the City.

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Bicycle Tools

Bike Lanes

A bike lane is a striped or otherwise separated travel lane for the exclusive or semi-exclusive use of bicycles. They are most commonly found on major collectors and arterial streets where vehicle speeds and volumes warrant separation of the two modes.

In addition to providing a designated space for cyclists on the road, bike lanes help to control vehicles speed by narrowing the roadway and improve pedestrian safety and comfort by creating a buffer between the sidewalk and vehicle travel lanes. When installing bike lanes, it is critical to provide adequate room from on-street parking to prevent "dooring" issues. The merging of right-turning vehicles and cyclists in a bike lane is also an important consideration, particularly when an intersection includes a dedicated right turn lane. One issue that should be addressed through education rather than design is the perception that cyclists are required to use a bike lane if one is provided. This misconception often leads to driver frustration and safety concerns when a cyclist is seen using other travel lanes.

The cost to re-stripe an existing roadway with bike lanes is approximately $5,000 per mile for the pavement markings. New signage, colored pavement, and signal alterations will all increase the cost of installation.

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Figure 54: The bike lanes on this arterial road are wide enough to for cyclists to avoid doors opening in the parking lane while remaining out of traffic

Shared Lane Markings (Sharrows)

The sharrow is a relatively new type of pavement marking that indicates the recommended location for cyclists to ride in a shared travel lane. It also serves as a reminder to motorists to be attentive to bicycles using the road. Sharrow markings consist of two chevrons above a bicyclist symbol and are most often placed on the right-hand side of wide outside lanes (14+ feet wide).

Although not yet officially approved for general use by FHWA (will be included in the next update to the MUTCD), sharrows have been widely tested and well received. They are most effective in locations where "dooring" is a problem and where aggressive motorist behavior squeezes cyclists to the outside edge of the road.

The cost to place sharrows along a mile of road is approximately $5,000 (assumes markings every 100 feet at $100 per marking).

Figure 55: Example of a sharrow pavement marking. Columbus recently installed similar markings on Milton Ave

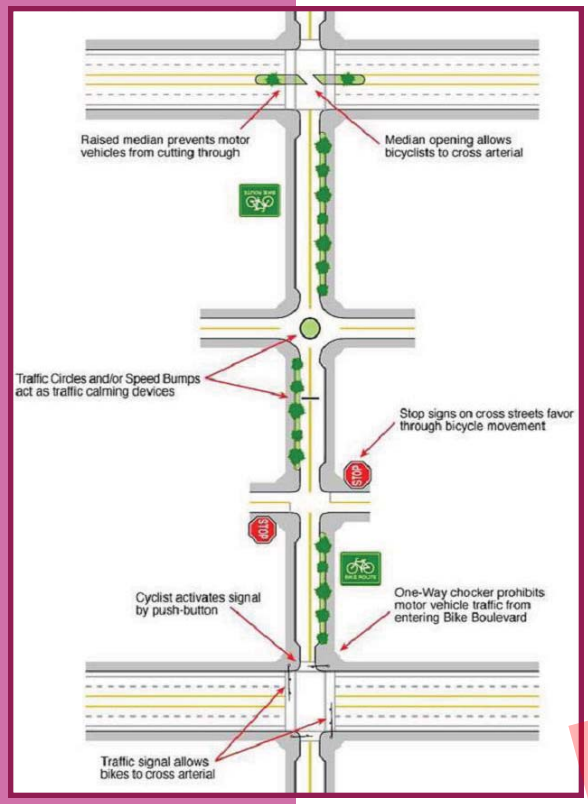

Figure 56: Diagram of the elements used to prioritize bikes and discourage through vehicular traffic on a bicycle boulevard

Figure 57: Covered bicycle parking with U-style racks

Bike Boulevard

A bicycle boulevard is a public street on which bicycles are given priority over other modes of travel. Cut-through vehicular traffic is often prohibited by allowing through movements only to cyclists. This can be accomplished through signage, pavement markings, traffic calming measures, signalization or more commonly some combination of these. Bike boulevards can be implemented on low volume roads to connect gaps in a bicycle route or to provide a safe alternative parallel to an arterial roadway that is not conducive to bicycle travel. Some of the most common tools used to create a bike boulevard include: pavement marking and signs identifying the facility, mini-circles and curb extensions to calm traffic, and diverters and medians which force vehicles to turn while allowing the through movement by cyclists.

Careful consideration must be given to the location and design of bike boulevards, because they often involve limiting vehicular movements along a road, creating potential access problems for residents and businesses. Adequate directional and identification signage alerting cyclists to the bike boulevard is also important since they are often on smaller, less obvious streets.

There can be a wide range of costs associated with the construction of a bike boulevard. If only signage and pavement markings are used, the cost can be very similar to that of bike lanes or sharrows at approximately $5,000 per mile. As traffic calming measures and signalization elements are added the cost can elevate quickly to well over $100,000.

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Bike Parking

As with the motorized transportation network, a complete bicycle network must include adequate and convenient parking for its users once they reach their destinations. Bike racks should be readily visible and accessible at key destinations such as retail locations, places of employment, and entertainment destinations. On-street bicycle parking should also be provided within the right-of-way along major transportation corridors. Bike lockers should also be made available in certain locations where longer-term, more secure parking is required.

Nearly as important as the provision of bicycle parking is the type and location of the parking facilities. Bike racks that support the frame of a bike (preferably two points of contact), such as the U-style and serpentine racks, are preferable to traditional fence style racks, which only support the wheel and are more likely to damage bikes attached to them. Bike racks/lockers should be installed on a paved surface and be located near

building entrances, transit stops, and other high traffic, highly visible areas. Installing bike parking behind buildings, in poorly lit areas, or otherwise out of sight not only makes them less convenient to find and use, but it also makes them less secure due to a lack of surveillance.

The cost to install bike racks can range greatly based on style and materials. Bike racks generally cost between $75 and $150 per bike to install; bike lockers cost between $500 and $2,000 per bike to install, but are usually paid for through rental fees.

Figure 58: Bike lockers, which provide secure, long-term storage, are ideal at airports and transit stops

Transit Tools

Increased Frequency and Span of Service

Increasing the frequency and/or extending the hours of service on existing bus routes can be a low cost way to improve mobility options for area residents for whom transit is not currently convenient or feasible. An increase in the frequency of buses along a route reduces the potential wait time for riders by increasing the likelihood that a bus will come when the rider needs it. This improved convenience can play an important role in the decision making process of potential riders, particularly if it means getting to work on time or if the travel time becomes comparable to driving and parking.

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Extending the hours of service of an existing route can be an even more important factor in making transit a viable transportation option. Reliable transit service during off-peak hours is especially important to individuals who work evening and nighttime jobs. Many people can currently take the bus to work, but service does not run late enough for them to make the return trip home. Along with serving people who work evening and night shifts, late night/early morning transit service also provides people with an alternative to driving to entertainment venues.

Figure 59: COTA's new system maps, like this one at Seventeenth Ave & Summit St provide riders with important route information

There may be no cost associated with increasing the frequency of service on a route if the number of stops can be condensed by eliminating those that are under-utilized. However, if no stops can be eliminated it may be necessary to add an additional bus to the route, this could cost between $300,000 and $500,000 for a new bus, driver, and fuel.

Upgraded Bus Stops

The comfort, safety, and accessibility of the stops along a bus route can have a significant impact on how individuals perceive, and whether or not they use public transit. Because every transit rider begins and ends their trip as a pedestrian, the

presence of good pedestrian facilities around a bus stop is important. Easy access to bus stops for disabled and elderly users is of particular importance because these groups are often more reliant on transit service than other members of the community.

Figure 60: COTA's new standards for bus stop design provide riders with key amenities such as shelters, benches, trash recepticles, and maps

In addition to good pedestrian facilities adjacent to a bus stop, there are also several other amenities that can improve the comfort and safety of users while waiting for the bus. The provision of benches and shelters improves comfort, especially for elderly and disabled users, while waiting for the bus. Route maps and schedules provide important wayfinding information to non-regular users of the system. Good lighting increases visibility at the stop, thus improving safety and comfort while waiting at night. Finally, trash receptacles help to keep the stop and surrounding area free of trash and debris, which improves the aesthetic character of the stop and the comfort of users.

In 2004, COTA developed new standards for bus stop design, location, and amenities (see Figure 60 and Appendix #). These include new typical sections and plans, as well as an updated shelter design and route mapping. According to COTA policy, a new shelter can be installed at a stop if a daily average of at least 25 riders board at that location, while benches, trash receptacles, and signage can be installed by special request. When considering the installation of a new bus shelter or bench, it is important to ensure that there is enough space to maintain adequate pedestrian facilities. In areas with limited right-of-way, this may mean that an easement needs to be acquired that allows the bus stop facilities to be placed outside of the right-of-way.

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Did you know?
COTA saw a 10% increase in overall ridership in 2008 over 2007, and unlike past spikes when fuel costs rose, ridership continues to climb despite a retreat in gas prices .

Neighborhood Circulator (LINK) Route

A neighborhood circulator is a bus route that serves a small area with frequent service. The purpose of a circulator route is to connect residents of the neighborhood to larger regional transit routes, such as High and 11th Street in Weinland Park, and key local destinations, such as grocery stores, community facilities, and/or large employment centers. COTA currently runs one circulator route, called a LINK, in the Linden neighborhood. The vehicle used for the LINK route is smaller (30 feet long) than a normal bus (40 feet) and is much quieter, allowing it to primarily run on collector and residential streets. The Linden LINK operates on a 30 minute loop through the neighborhood, which is designed to maximize convenience and access. The cost to ride the LINK is $0.50.

Other Tools

Gateway Features

Whether on a grand scale, such as a signature development or roundabout, or on a smaller scale, such as landscaping or distinct signage, gateways serve many important purposes for a community. Most importantly, they create a focal point that reinforces the unique identity of a neighborhood and can foster a sense of pride and belonging among residents.

Gateway features also serve as physical and psychological cues to motorists that htey are entering a different type of driving environment, one in which pedestrians and slower speeds should be expected. In order to ensure their effectiveness as a traffic calming measure, gateways should be combined with other tools such as medians, curb extensions, or roadway narrowing.

The placement of a gateway feature must be carefully considered prior to installation. Particularly when placed at an intersection or in the median of a road, it must not block motorists' view of oncoming traffic or traffic control devices. Additionally, when placed on the side of the road, gateway features should not encroach on the clear walking zone for pedestrians.

The cost for gateway features/signage can vary greatly depending on the size and scale of the improvement. Signs can range from several hundred dollars installed for standard street signs, to approximately $100,000 for an arch similar to those along High Street (Figure 61), to several million dollars for a roundabout or other large scale improvement.

Wayfinding Signage

Similar to motorists following street signs, pedestrians and cyclists rely on visual cues to orient themselves and navigate their surroundings. For this reason, wayfinding and destination signage are important components of a multi-modal environment. The scale, appearance, placement, and visibility of signage should be consistent and easily understood by both local and visiting travelers. Wayfinding signage also benefits area businesses by making them more visible and easily accessible to potential customers.

The cost of wayfinding map kiosks like those in downtown Columbus (Figure 62) is approximately $5,000-$6,000 installed, while the cost of destination signs like those downtown (Figure 63) is approximately $1,000 installed.

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Figure 61: Arches, such as these in the Short North, once helped to define the character of Columbus and carried electric lines up High Street

Figure 62: Wayfinding signage, like this map kiosk, are important tools for pedestrians and cyclists

Figure 63: Destination signs also help visitors to an area find key locations

Streetscape Improvements

The presence of landscaping and street furniture (benches, trash receptacles, bus stops, etc.) along a road can improve safety for all users while greatly enhancing the pedestrian environment and aesthetics of a corridor. A street that is lined with trees and other landscaping appears narrower to motorists than the same street without any vegetation. This induces slower vehicle speeds and helps differentiate the vehicular and pedestrian environments. More concretely, street trees and other vertical treatments such as benches and planters provide a physical barrier between vehicles and pedestrians, which reduces the potential for conflicts between the two modes.

A welcoming pedestrian environment should include benches and other furniture that improves comfort and encourages interaction and activity on the street. These features, along with aesthetic landscape enhancements have positive benefits for adjacent properties as well, adding vibrancy to commercial and residential areas. Landscaping can also reduce the environmental impacts of a road corridor by capturing and treating stormwater on-site rather than allowing it to flow directly into the sewer.

In urban areas, where right-of-way is often tight, it can be difficult to identify adequate space for streetscape improvements. Street furniture and landscaping should not be installed at the expense of the clear walking zone; however, in many locations this can be overcome by combining them with other improvements such as medians, mini-circles, and curb extensions. Continued maintenance cost is another issue that must be considered in the planning and budgeting of improvements. The cost of streetscape improvements can range from as little at $1,000 to over $10,000 depending on the planting materials and use of street furniture. As suggested with previous tools, some of the maintenance costs can be offset by having residents take-on upkeep responsibilities for the landscaping.

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Location Based Recommendations

The following location based recommendations apply the previously discussed tools to specific areas and sites in Weinland Park. Descriptions are provided for each recommended project and a number assigned in parentheses. The project number corresponds with Table 10, which lists, for each recommendation, number, suggested tool, location, travel mode impacted, and relevent comment categories that the improvement will address. Finally, Exhibits 14-17 are maps that illustrate the type and location of the recommended improvements, with the corresponding number listed next to each.

Neighborhood Improvements

Sidewalk maintenance and replacement program (1)

Given the number of resident concerns related to poor sidewalk conditions, the extensive need for improvements identified during the sidewalk inventory, and the importance of creating a safe and continuous network, sidewalk improvements should be addressed at a neighborhood scale. In Columbus, installation and maintenance of sidewalks is the responsibility of the adjacent property owner. In Weinland Park, this has resulted in inconsistent sidewalk conditions, with some owners performing necessary maintenance and others allowing the sidewalk to fall into disrepair.

In order to achieve a consistently high quality sidewalk network it is recommended that an assessment program be instituted throughout the neighborhood. Upon agreement by a certain percentage of property owners in the neighborhood (generally 60%) an assessment would be applied to each property. The funds generated by the assessment would then be used to pay for sidewalk improvements using the City's existing contracts to reduce costs. The sidewalk inventory completed for this plan should be used to prioritize the improvements, with those sections rated F (impassible or complete disrepair) being completed first. The key benefit of a neighborhood-wide assessment program is that the cost of sidewalk improvements is spread among all property owners. This reduces the impacts on any given resident, and, over several years, will result in improved sidewalk conditions throughout the entire neighborhood, which benefits all residents.

As an alternative to developing a neighborhood assessment program, the Weinland Park Community Civic Association could begin a systematic code enforcement initiative to improve sidewalks. Specific streets could be selected by the community

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for code enforcement efforts by the City as a way to spur property owners to repair their sidewalks. A certain percentage of residents on the street should agree to the enforcement efforts to ensure it is supported. Existing City contracts could be used to repair sidewalks along selected streets using this approach as well.

Bicycle Parking

Convenient and secure bicycle parking is needed throughout Weinland Park. Numerous comments highlighted the lack of bike parking, particularly at major destinations, in the neighborhood. Bike racks should be installed in highly visible locations, preferably near the main entrance of the following facilities/businesses:

- COTA stop at Fifth Avenue and High Street (2)
- Third Hand Bike Co-op (3) – Fifth Avenue between Summit and Fourth Streets
- Godman Guild (4) – corner of Sixth Avenue and Sixth Street
- Weinland Park (5) – between Fourth and Summit Streets
- Weinland Park Elementary (6) – corner of Seventh Avenue and Fourth Street
- Schoenbaum Family Center (7) – corner of Seventh Avenue and Summit Street
- Kroger (8) – corner of Seventh Avenue and High Street
- Dollar Tree (9) – corner of Seventh Avenue and High Street
- Indianola Park (10) – Indianola Avenue between Eighth and Ninth Avenues
- Directions for Youth and Families (11) – corner of Ninth and Indianola Avenues
- Kelly's Carry-Out (12) – corner of Eleventh Avenue and Fourth Street

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The City of Columbus currently installs bike racks within the public right-of-way upon request using its 311 Call Center. Residents or business owners can simply place a request and, as long as adequate right-of-way exists, a rack will be installed. This service can be used to install racks at some of the above listed locations, as well as other high demand locations in the neighborhood.

Gateway Features

The installation of gateway features/signs is recommended for the key entrances to Weinland Park along arterial and collector streets to reinforce the neighborhood setting and encourage slower vehicle speeds. Uniform entrance features should be installed at the following intersections:

- Fifth Avenue at High Street (13)
- Fifth Avenue at the railroad bridge (14)
- Fourth Street at Fifth Avenue (15)
- Seventh Avenue at High Street (16)

- Summit Street at Twelfth Avenue (17)
- Eleventh Avenue at the railroad bridge (18)

The University Area Commission has been working on a project to develop gateway signage for the entire district for several years. Gateway features at these locations for Weinland Park are consistent with those efforts, and could be completed as a part of that project. Arches would be ideal gateway features for the neighborhood as they would provide continuity with other gateway signs installed in adjacent neighborhoods and would maintain a link to the history of th area.

Wayfinding/Destination Signage (19)
The presence of wayfinding signage throughout Weinland Park will help guide pedestrians, cyclists, and motorists alike to key destinations in and around the area. A wayfinding system should be developed for the entire University Area to provide continuity for users and to ensure the inclusion of all important businesses and attractions in the area. Examples of some destinations in Weinland Park could include the South Campus Gateway, Weinland Park, Indianola Park, and the Godman Guild, along with any other businesses and/or facilities identified by the community.

Neighborhood Circulator (LINK) Route (20)
A COTA LINK route through Weinland Park would add transit connections from the residential areas of the neighborhood to nearby retail, employment, and community destinations. Additionally, the circulator would connect residents to larger transit routes, thus improving access to other areas of the City. A potential route for the circulator is shown in Exhibit 13.

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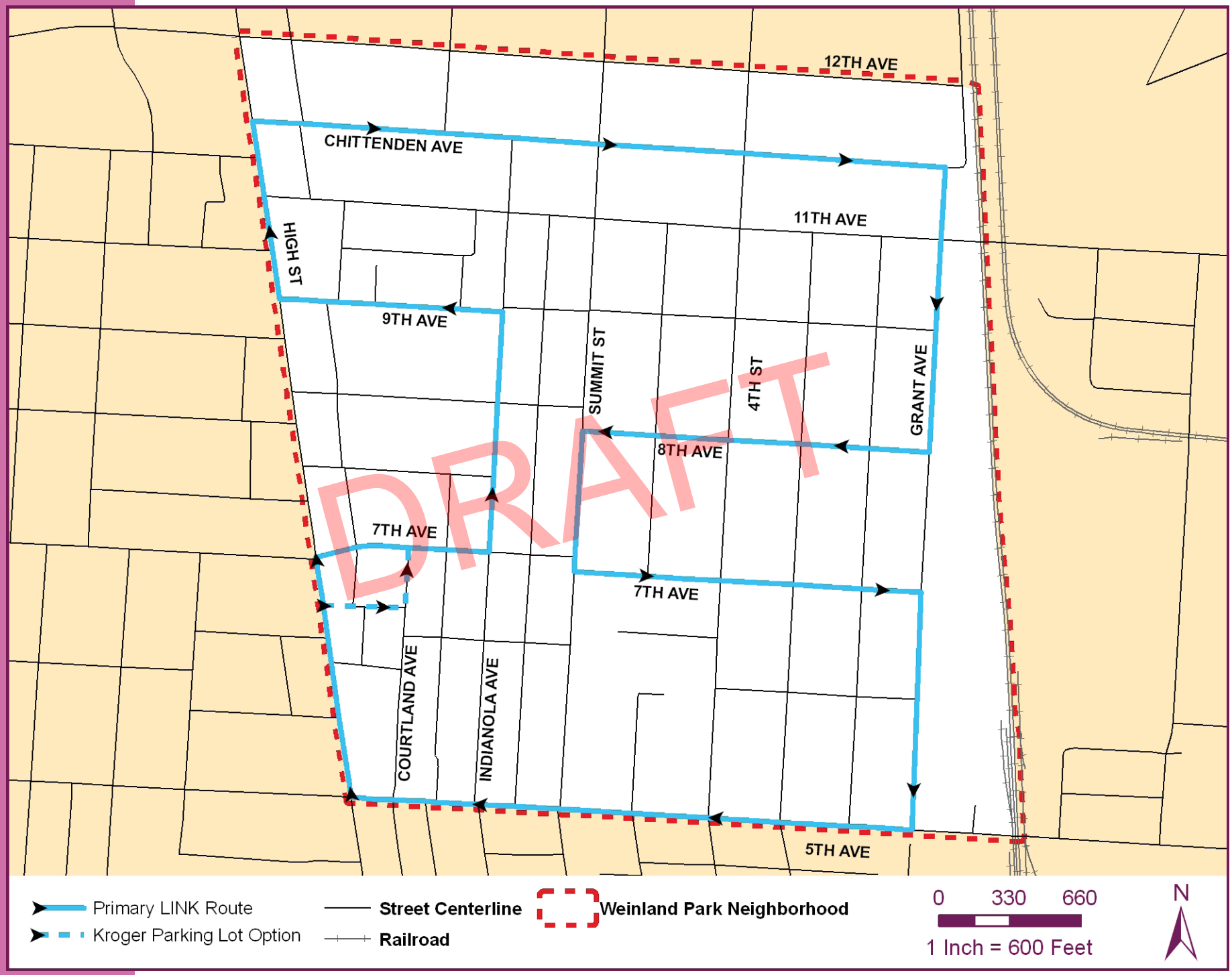
Corridor Improvements

Road Diet on Fifth Avenue (21)
Traffic analyses indicate that the existing and future volumes can be accommodated with one through lane in each direction and a combination of median and center turn lane, without significantly degrading roadway performance. This improvement will help to alleviate the observed speeding problem and improve pedestrian and bike safety along Fifth Avenue by narrowing the corridor for vehicles and providing additional space for other modes.

Exhibit 13: Potential Weinland Park COTA LINK Route



Bike Lanes on Fifth Avenue (22)
The Bicentennial Bikeways Plan calls for the installation of bike lanes on Fifth Avenue, a need that was also raised during the public input stage of the project. Implementation of the road diet on Fifth Avenue will result in the space necessary to install a five-foot bike lane in each direction. The bike lane will not only provide cyclists with dedicated space on the road, but will also help to control vehicle speeds and provide a buffer between vehicular traffic and pedestrians on the sidewalk.

Sidewalk Installation on Sixth Avenue (23)
Installing new sidewalk along Sixth Avenue from Indianola Avenue to Summit Street and from Fifth Street to Sixth Street will complete the sidewalk network in Weinland Park. These improvements will make connections to key pedestrian destinations including Weinland Park and Godman Guild from the residential areas of the neighborhood.

Sharrows on Eleventh Avenue (24)
The addition of sharrows along Eleventh Avenue between High Street and Grant Avenue will create an east-west bike route on the north side of Weinland Park. This improvement is recommended in the Bicentennial Bikeways Plan and was expressed as a need in public comments.

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Shared Signed Roadway on High Street (25)
The bike safety improvements along High Street coincide with the recommendations of the Bicentennial Bikeways Plan, which include the installation of sharrows, "Share the Road" signage, and a public education campaign. Given the high volume of vehicles and cyclists, this is a high priority project for the City and some of these improvements are already in place.

Bicycle Boulevard on Pearl Street and Courtland Avenue (26)
The conversion of Pearl Street and Courtland Avenue to a bike boulevard from Fifth Avenue to Twelfth Avenue would provide cyclists with an alternative route to High, Summit, and Fourth Streets, all of which are high volume and higher speed streets. The Bicentennial Bikeways Plan calls for a bike boulevard on Pearl Street; however, it would only extend as far south as Seventh Avenue. Continuing the facility south to Fifth Avenue on Courtland Avenue will connect the bike boulevard with the bike lanes to be installed on Fifth Avenue, thus creating a more continuous network. It also allows for the extension of the bike boulevard further south into the short north along Pearl Street.

Summit and Fourth Street Improvements

The one-way pair of Summit and Fourth Streets were by far the most significant concerns of Weinland Park residents and project stakeholders alike. The vehicular speed, volume, and crash analyses support these concerns, showing that speeding and safety problems exist throughout this corridor.

The need for safety and mobility improvements along Summit and Fourth Streets must be balanced with the potential for regional transit improvements in the form of LRT. As explained in the existing conditions chapter, the renewed possibility of LRT along Columbus' north corridor could mean substantial mobility benefits for numerous neighborhoods to the north of downtown, including Weinland Park.

The addition of a north/south LRT line could impact traffic along Summit and Fourth Streets in ways that can not yet be predicted. As such, it is not currently feasible to develop permanent solutions to all of the mobility issues along this corridor. Instead, multiple intermediate improvements are recommended for the corridor from Warren Street to Hudson Street to better control vehicle speeds and improve safety for all modes of travel, while not inhibiting future LRT options. These suggestions are based on current traffic conditions, with the understanding that some additional analysis of short-term future traffic demand will be necessary to ensure their feasibility.

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- Improved signal timing (27) – This improvement will help to address the speeding issue on Summit and Fourth Streets, thereby improving safety as well. The timing of traffic signals throughout the corridor will be altered to encourage vehicles to travel at or below the posted speed limit rather than rewarding motorists for traveling above it. This will be accomplished by reducing the "green band" of the signals so that vehicles traveling above the speed limit will be stopped at red lights while vehicles traveling at or below the speed limit will receive green lights (see Figures 64 and 65). Altering the signal timing will also improve connectivity across Summit and Fourth Streets by decreasing the amount of time a pedestrian has to wait to cross them at a signalized intersection.

- Removal of parking restrictions (28) – Currently both Summit and Fourth Streets have peak hour on-street parking restrictions on one side of the street south of Chittenden Avenue. On Summit Street parking is not permitted on the west side of the street between 7:00am and 9:00am and parking is restricted on the east side of Fourth Street from 4:00pm to 6:00pm.

Figure 64: Existing signal timing on Summit and 4th St permits vehicles moving at excessive speeds to pass through all green lights

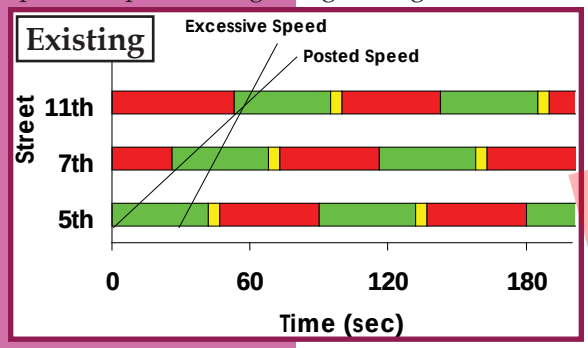
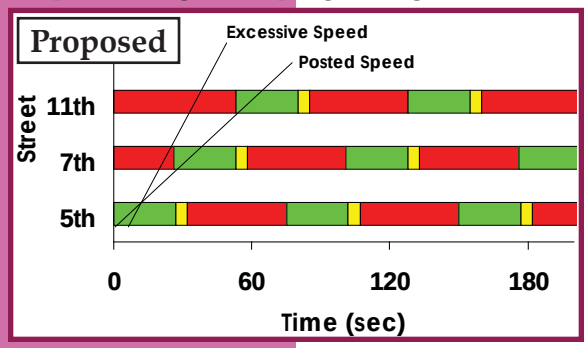


Figure 65: The proposed signal timing will reduce the green band so that speeding cars can not pass through multiple green lights



Analysis indicates there is adequate excess capacity to allow on-street parking on both sides of Summit and Fourth Streets at all times while maintaining acceptable levels of service. Removing the parking restriction will provide needed parking in the community, control vehicle speeds, and provide pedestrians with a buffer from traffic during the time of day when volumes are the highest.

- Bike lanes (29) – Recommended in the Bicentennial Bikeways Plan, the addition of a bike lane along Summit and Fourth Streets was the single greatest need expressed by cyclists throughout the planning process. Vehicle speeds and volumes along these roads currently make this corridor uncomfortable and unsafe for cyclists, despite their designation as signed bike routes. The recommendation is for the addition of a southbound bike lane on Summit Street and a northbound lane on Fourth Street.

- Lane striping (30) – Both Summit and Fourth Streets appear to have excess capacity based on today's traffic, along with overly wide travel lanes, and unclear pavement markings, all of which contribute to speeding and safety concerns along this corridor. By re-striping these roads to narrow the travel lanes and define permanent on-street parking and bike facilities, they will become safer and more accessible to users of all transportation modes.

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Figures 66 and 67 show the existing and recommended typical sections for Summit and Fourth Streets. For segments between intersections, Summit and Fourth Streets would each have permanent, parking lanes on both sides, a bike lane, and two travel lanes. At intersections, the left parking lane would be replaced by a left-hand turn lane, and the right parking lane could be replaced by curb extensions. This lane configuration maintains the same vehicular capacity as currently exists during off-peak hours on Summit and Fourth Streets, which traffic analyses indicate is adequate, with current volumes, even during peak travel times. To the north of Chittenden Avenue, where the two streets widen to 50-52 feet, the additional space could be used to widen sidewalks and/or the parking lanes.

While each of these improvements maintains Summit and Fourth Streets as a one-way pair, the intent of this plan is not to suggest that one-way operation is prefferable to two-way operation in the long-term. Conversion of the corridor to two-way operation is a more permanent solution that would require substantial alterations to both streets

and to corridor traffic patterns, whereas the recommended solutions can be completed as intermediate steps with with only minor signing and lane striping changes. For this reason, two-way conversion of Summit and Fourth Streets was deemed infeasible at this time because of the unknown impacts of the potential LRT line. However, as studies of the LRT line advance, two-way conversion should continue to be analyzed as a viable permanent solution for the corridor.

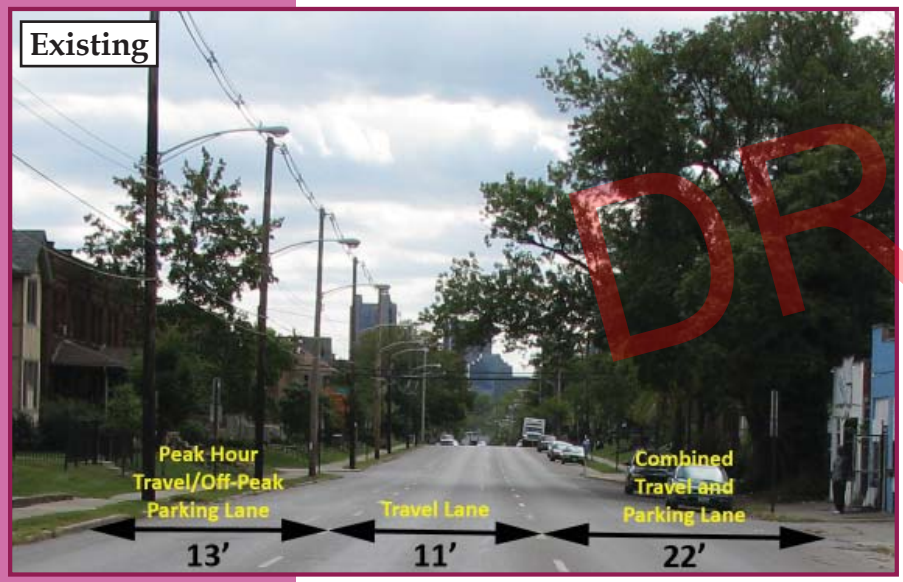

Figure 66: The existing lane striping on Summit and 4th St is poorly defined and provides overly travel lanes, which can lead to higher intances of speeding and crashes

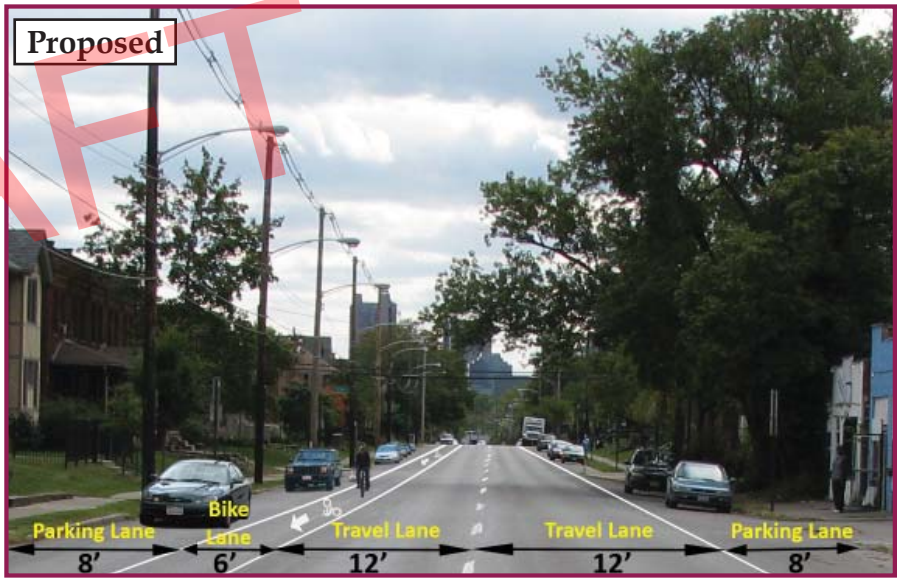

Figure 67: The proposed lane striping will better define the travel lanes, provide room for a bicycle lane, and increase permanent on-street parking, all within the existing right-of-way

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Site Specific Improvements

Textured Pavement Crosswalks at the High Street/Fifth Avenue Intersection (31)
Since 2000, this intersection has had the highest number of pedestrian crashes in the study area. Due to traffic volumes and right-of-way constraints, alterations to the traffic signal and/or intersection configuration are not currently feasible. Changing the crosswalks to textured pavers will raise the visibility of the intersection for motorists, giving particular emphasis to the pedestrian crossing areas.

Raised Median on Fifth Avenue East of High Street (32)
A raised median on Fifth Avenue at the western end of the study area will produce numerous benefits to mobility. It will serve as a gateway to the neighborhood, transition drivers to the road diet, provide a pedestrian crossing refuge, and reinforce the bike boulevard and access management by allowing bikes to cross Fifth Avenue on Courtland Avenue, but preventing vehicles from doing the same. With a road diet in place on Fifth Avenue, the median should begin just east of the westbound left turn lane on Fifth Avenue and extend east across Courtland Avenue. The entire median could be raised and landscaped, or it could be a combination of raised and painted median to help reduce costs.

Move Bus Shelter at High Street and Sixth Avenue (33)
This bus shelter currently sits on the sidewalk, blocking the clear walking zone for pedestrians. It should be moved behind the sidewalk onto an easement in conjunction with the construction of the new Kroger building. This will provide more room for persons waiting for the bus and a clear walking path for pedestrians.

HAWK Beacons on Summit and Fourth Streets at Weinland Park (34 & 35)
These beacons are recommended to improve the safety of pedestrians crossing Summit and Fourth Streets to access the park, Weinland Park Elementary School, and the OSU Schoenbaum Center. Currently there are no pedestrian crossings between Fifth and Seventh Avenues on either of these streets. The HAWK signals will create controlled pedestrian crossings at the path along the south side of the park that will have less impact to vehicular traffic than full signals.

Projected pedestrian volumes at these new crossing locations are not known as there is no way to accurately predict the latent demand for a crossing that does not currently exist. Through further study, it may be possible to estimate potential usage by identifying the number of pedestrians crossing mid-block and those using adjacent

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crossing locations and then identifying their origins and destinations. This study could be completed as a part of the Safe Routes to School Travel Plan for Weinland Park Elementary School.

In this plan, the HAWK beacons at these locations are recommended as demonstration projects. Based on their use in other cities, the mid-block location of the crossings, vehicle speeds and volumes on Summit and Fourth Streets, and the presence of substantial pedestrian destinations, these were identified as appropriate locations for HAWK beacon installations on an experimental basis.

Exclusive Pedestrian Signal Phase at Summit Street/Seventh Avenue Intersection (36)
This intersection was the most frequently noted problem location by residents, is a high pedestrian crash intersection, and is heavily used by children walking to school and the park. By introducing an exclusive pedestrian phase into the signal cycle, potential conflicts between pedestrians and vehicles will be eliminated, and pedestrians will be permitted to cross the intersection in any direction, thus reducing the number of illegal crossings that occur. This improvement should coincide with a pedestrian education effort primarily targeted toward students at Weinland Park Elementary School. Such a program could be incorporated into a Safe Routes to School program.

Crosswalk and Improved Pedestrian Signage on High Street at Euclid Avenue (37)
Through resident input, the need for a pedestrian crossing of High Street at this location was identified due to the presence of the library on the west side of High Street. The installation of ladder style crosswalk markings and high visibility signage on the south side of Euclid Avenue is recommended to provide a safe pedestrian crossing and improve access to the library.

Raised Median on Eighth Avenue at Pearl Street (38)
The installation of a raised median at this location will aid in the creation of a bike boulevard along Pearl Street by managing access. The intersection will become a right-in/right-out for vehicles, while a small break in the median will allow cyclists to make left turns and through movements on Pearl Street as well. This will reinforce the priority of cyclists on Pearl Street and encourage vehicles to use High Street.

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Curb Extensions

These measures are recommended for numerous intersections throughout Weinland Park as a means of improving walkability by reducing pedestrian crossing distances. The curb extensions may provide some vehicular speed reduction on long straight stretches of road, particularly when used in conjunction with other tools. Preliminary analysis of vehicle turning movements indicates that buses and fire trucks can navigate these devices even on the local streets in Weinland Park. However, the final dimensions for these improvements will need to be developed for each location individually during detailed design. Curb extensions are recommended at the following locations:

- Seventh Avenue east of High Street (39) – North side of Seventh Avenue from High Street to Pearl Street. This will better align the Seventh Avenue/High Street intersection and help control vehicle speeds. The lanes on Seventh Avenue will shift slightly to better align with King Avenue to the west of High Street. It will also shorten the crossing distance for pedestrians and help control the speed of westbound traffic on Seventh Avenue. Speeding at this location was raised as a concern in public comments and verified with speed and volume counts.
- Euclid Avenue east of High Street (40) – Both sides of Euclid Avenue for approximately 300 feet. This section of road is overly wide for a local street (38 feet), which encourages cut-through traffic and speeding. The curb extensions will narrow the west end of Euclid to match the width along the rest of the street (26 feet), creating a uniform width that is appropriate for a residential street.
- Ninth Avenue east of High Street (41) – South side of Ninth Avenue for approximately 330 feet. This will narrow the eastbound travel lane on Ninth Avenue, which is currently 16 feet wide.
- Courtland Avenue at Sixth Avenue (42) – This split intersection is approximately halfway between Fifth and Seventh Avenues. It is a good location for curb extensions as a way to break-up the long straight stretch that otherwise has no traffic controls for vehicles on Courtland. The offset alignment will create a chicane effect that will effectively control speeds. Curb extensions here will also help to emphasize Courtland Avenue as a bike boulevard.
- Courtland Avenue at Seventh Avenue (43) – Along the north side of Seventh Avenue at this intersection. This will help to reduce the speeding that was observed with westbound traffic on Seventh Avenue by narrowing the overly wide westbound lane.
- Pearl Street at Eleventh Avenue (44) – All but the northwest corner (which is required for a right turn lane) of this split intersection. They will control vehicle speeds and improve walkability along Eleventh Avenue and help to reinforce

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Pearl Street as a bicycle boulevard.

- Pearl Street at Chittenden Avenue (45) – The eastern two corners of the intersection. Provides vehicular speed control and continues bicycle boulevard on Pearl Street.
- Pearl Street at Twelfth Avenue (46) – The eastern two corners of the intersection. Provides vehicular speed control and enforces bicycle boulevard on Pearl Street.
- Indianola Avenue at Fifth Avenue (47) – Will help to define the transition from Fifth Avenue, a minor arterial street, to Indianola Avenue, which is residential in nature. They should only be located on the Indianola Avenue side of the corners to avoid conflicts with the new bike lanes, which are recommended as a part of the Fifth Avenue road diet.
- Indianola Avenue at Seventh Avenue (48)
- Indianola Avenue at Euclid Avenue (49) – The two western corners of the intersection. This will continue traffic calming along both streets and discourage cut-though traffic on Euclid Avenue.
- Indianola Avenue at Ninth Avenue (50) - The addition of curb bulbs in combination with a raised median will provide enforced vehicle path deflection and controlled speeds through this intersection.
- Indianola Avenue at Chittenden Avenue (51)
- Indianola Avenue at Twelfth Avenue (52)
- Hamlet Street at Seventh Avenue (53) – Two northern corners of the intersection. Provides speed control and shortens the crossing distance at the entrance to Weinland Park Elementary School and the Schoenbaum Center.
- Hamlet Street at Eighth Avenue (54)
- Hamlet Street at Eleventh Avenue (55)
- Fifth Street at Fifth Avenue (56) – Helps to define the transition from Fifth Avenue, a minor arterial street, to Fifth Street, a residential street. They should only be located on the Fifth Street side of the corners to avoid conflicts with the new bike lanes, which are recommended as a part of the Fifth Avenue road diet.
- Fifth Street at Sixth Avenue (57)
- Fifth Street at Eighth Avenue (58)
- Fifth Street at Eleventh Avenue (59)
- Sixth Street at Seventh Avenue (60)
- Sixth Street at Ninth Avenue (61)
- Sixth Street at Eleventh Avenue (62)

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Mini Circles

These traffic calming measures are recommended for numerous intersections throughout Weinland Park as a means of controlling vehicle speeds and improving intersection safety. They are most effective when alternated with curb extensions in order to break-up long straight stretches of road. As with the curb extensions, preliminary analysis indicates that these tools can be navigated by buses and emergency vehicles in the neighborhood, but the final dimensions will be set during detailed design. Mini circles are recommended at the following locations:

- Indianola Avenue at Sixth Avenue (63) – Public comments and traffic counts identified speeding along Indianola Avenue. Will work in conjunction with curb extensions to calm traffic along the corridor.
- Indianola Avenue at Eighth Avenue (64) – Public comments and traffic counts identified speeding along Indianola Avenue. Will work in conjunction with curb extensions to calm traffic along the corridor. Consultation with the fire department must occur during design to ensure that access is not impeded.
- Indianola Avenue at Eleventh Avenue (65) – Public comments and traffic counts identified speeding along Indianola Avenue. Will work in conjunction with curb extensions to calm traffic along the corridor.
- Hamlet Street at Ninth Avenue (66)
- Fifth Street at Seventh Avenue (67) – Addresses comments received regarding speeding at this intersection.
- Fifth Street at Ninth Avenue (68)
- Sixth Street at Sixth Avenue (69)
- Sixth Street at Eighth Avenue (70)

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Table 10: Recommended mobility improvements for Weinland Park

Project Number	Recommended Improvement	Location	Mode	Comment Category(s)
1	Sidewalk Installation and Replacement Program	Weinland Park neighborhood	Pedestrian	Pedestrian Sidewalks
2	Bicycle Parking	COTA stop at Fifth Ave & High St	Bicycle	Bike
3	Bicycle Parking	Third Hand Bike Co-op	Bicycle	Bike
4	Bicycle Parking	Godman Guild	Bicycle	Bike
5	Bicycle Parking	Weinland Park	Bicycle	Bike
6	Bicycle Parking	Weinland Park Elementary School	Bicycle	Bike
7	Bicycle Parking	OSU Schoenbaum Family Center	Bicycle	Bike
8	Bicycle Parking	Kroger	Bicycle	Bike
9	Bicycle Parking	Dollar Tree	Bicycle	Bike
10	Bicycle Parking	Indianola Park	Bicycle	Bike
11	Bicycle Parking	Directions for Youth and Families	Bicycle	Bike
12	Bicycle Parking	Kelly's Carry-Out	Bicycle	Bike
13	Gateway Feature	Fifth Ave at High St	Other	Driver Behavior, Other
14	Gateway Feature	Fifth Ave at the railroad bridge	Other	Driver Behavior, Other
15	Gateway Feature	Fifth Ave at Fourth St	Other	Driver Behavior, Other
16	Gateway Feature	Seventh Ave at High St	Other	Driver Behavior, Other
17	Gateway Feature	Summit St at Twelfth Ave	Other	Driver Behavior, Other
18	Gateway Feature	Eleventh Ave at the railroad bridge	Other	Driver Behavior, Other
19	Wayfinding/Destination Signage	University Area	Other	
20	Neighborhood Circulator (LINK) Route	Weinland Park neighborhood	Transit	Transit
21	Road Diet	Fifth Ave - High St to railroad tracks	Roadway	Automobile, Bike, Driver Behavior, Other
22	Bike Lanes	Fifth Ave - High St to railroad tracks	Bicycle	Bike

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Table 10: Recommended mobility improvements for Weinland Park

Project Number	Recommended Improvement	Location	Mode	Comment Category(s)
23	New Sidewalk Installation	Sixth Ave - Indianola Ave to Summit St and Fifth St to Sixth St	Pedestrian	Pedestrian Sidewalks
24	Shared Lane Markings (Sharrows)	Eleventh Ave - High St to railroad tracks	Bicycle	Bike
25	Shared Signed Roadway	High St - Fifth Ave to Twelfth Ave	Bicycle	Bike
26	Bicycle Boulevard	Pearl St - Fifth Ave to Twelfth Ave	Bicycle	Bike
27	Improved Signal Timing	Summit and Fourth St - Warren St to Hudson St	Roadway	Automobile, Driver Behavior, Pedestrian Crossings
28	Removal of Parking Restrictions	Summit and Fourth St - Warren St to Chittenden Ave	Roadway	Automobile, Driver Behavior
29	Bike Lanes	Summit and Fourth St - Warren St to Hudson St	Bicycle	Bike
30	Lane Striping	Summit and Fourth St - Warren St to Hudson St	Roadway	Automobile, Driver Behavior
31	Textured Pavement Crosswalk	Fifth Ave/High St intersection	Pedestrian	Pedestrian Crossings
32	Raised Median	Fifth Ave just east of High St	Roadway	Automobile, Driver Behavior, Pedestrian Crossings, Bike, Other
33	Relocate Bus Shelter	High St at Sixth Ave	Transit	Transit, Pedestrian Sidewalks
34	HAWK Signal	Summit St at south park path	Pedestrian	Pedestrian Crossings
35	HAWK Signal	Fourth St at south park path	Pedestrian	Pedestrian Crossings
36	Exclusive Pedestrian Signal Phase	Seventh Ave/Summit St intersection	Pedestrian	Pedestrian Crossings
37	Crosswalk and Improved Pedestrian Signage	High St at Euclid Ave	Pedestrian	Pedestrian Crossings
38	Raised Median	Eighth Ave at Pearl St	Roadway	Automobile, Bike, Driver Behavior, Pedestrian Crossings, Other
39	Curb Extensions	Seventh Ave east of High St	Roadway	Driver Behavior, Pedestrian Crossings
40	Curb Extensions	Euclid Ave east of High St	Roadway	Driver Behavior, Pedestrian Crossings
41	Curb Extensions	Ninth Ave east of High St	Roadway	Driver Behavior, Pedestrian Crossings

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Table 10: Recommended mobility improvements for Weinland Park

Project Number	Recommended Improvement	Location	Mode	Comment Category(s)
42	Curb Extensions	Courtland Ave at Sixth Ave	Roadway	Driver Behavior, Pedestrian Crossings
43	Curb Extensions	Courtland Ave at Seventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
44	Curb Extensions	Pearl St at Eleventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
45	Curb Extensions	Pearl St at Chittenden Ave	Roadway	Driver Behavior, Pedestrian Crossings
46	Curb Extensions	Pearl St at Twelfth Ave	Roadway	Driver Behavior, Pedestrian Crossings
47	Curb Extensions	Indianola Ave at Fifth Ave	Roadway	Driver Behavior, Pedestrian Crossings
48	Curb Extensions	Indianola Ave at Seventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
49	Curb Extensions	Indianola Ave at Euclid Ave	Roadway	Driver Behavior, Pedestrian Crossings
50	Curb Extensions with Raised Median	Indianola Ave at Ninth Ave	Roadway	Driver Behavior, Pedestrian Crossings
51	Curb Extensions	Indianola Ave at Chittenden Ave	Roadway	Driver Behavior, Pedestrian Crossings
52	Curb Extensions	Indianola Ave at Twelfth Ave	Roadway	Driver Behavior, Pedestrian Crossings
53	Curb Extensions	Hamlet St at Seventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
54	Curb Extensions	Hamlet St at Eighth Ave	Roadway	Driver Behavior, Pedestrian Crossings
55	Curb Extensions	Hamlet St at Eleventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
56	Curb Extensions	Fifth St at Fifth Ave	Roadway	Driver Behavior, Pedestrian Crossings
57	Curb Extensions	Fifth St at Sixth Ave	Roadway	Driver Behavior, Pedestrian Crossings
58	Curb Extensions	Fifth St at Eighth Ave	Roadway	Driver Behavior, Pedestrian Crossings
59	Curb Extensions	Fifth St at Eleventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
60	Curb Extensions	Sixth St at Seventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
61	Curb Extensions	Sixth St at Ninth Ave	Roadway	Driver Behavior, Pedestrian Crossings
62	Curb Extensions	Sixth St at Eleventh Ave	Roadway	Driver Behavior, Pedestrian Crossings
63	Mini Circle	Indianola Ave at Sixth Ave	Roadway	Automobile, Driver Behavior
64	Mini Circle	Indianola Ave at Eighth Ave	Roadway	Automobile, Driver Behavior
65	Mini Circle	Indianola Ave at Eleventh Ave	Roadway	Automobile, Driver Behavior
66	Mini Circle	Hamlet St at Ninth Ave	Roadway	Automobile, Driver Behavior
67	Mini Circle	Fifth St at Seventh Ave	Roadway	Automobile, Driver Behavior
68	Mini Circle	Fifth St at Ninth Ave	Roadway	Automobile, Driver Behavior
69	Mini Circle	Sixth St at Sixth Ave	Roadway	Automobile, Driver Behavior
70	Mini Circle	Sixth St at Eighth Ave	Roadway	Automobile, Driver Behavior

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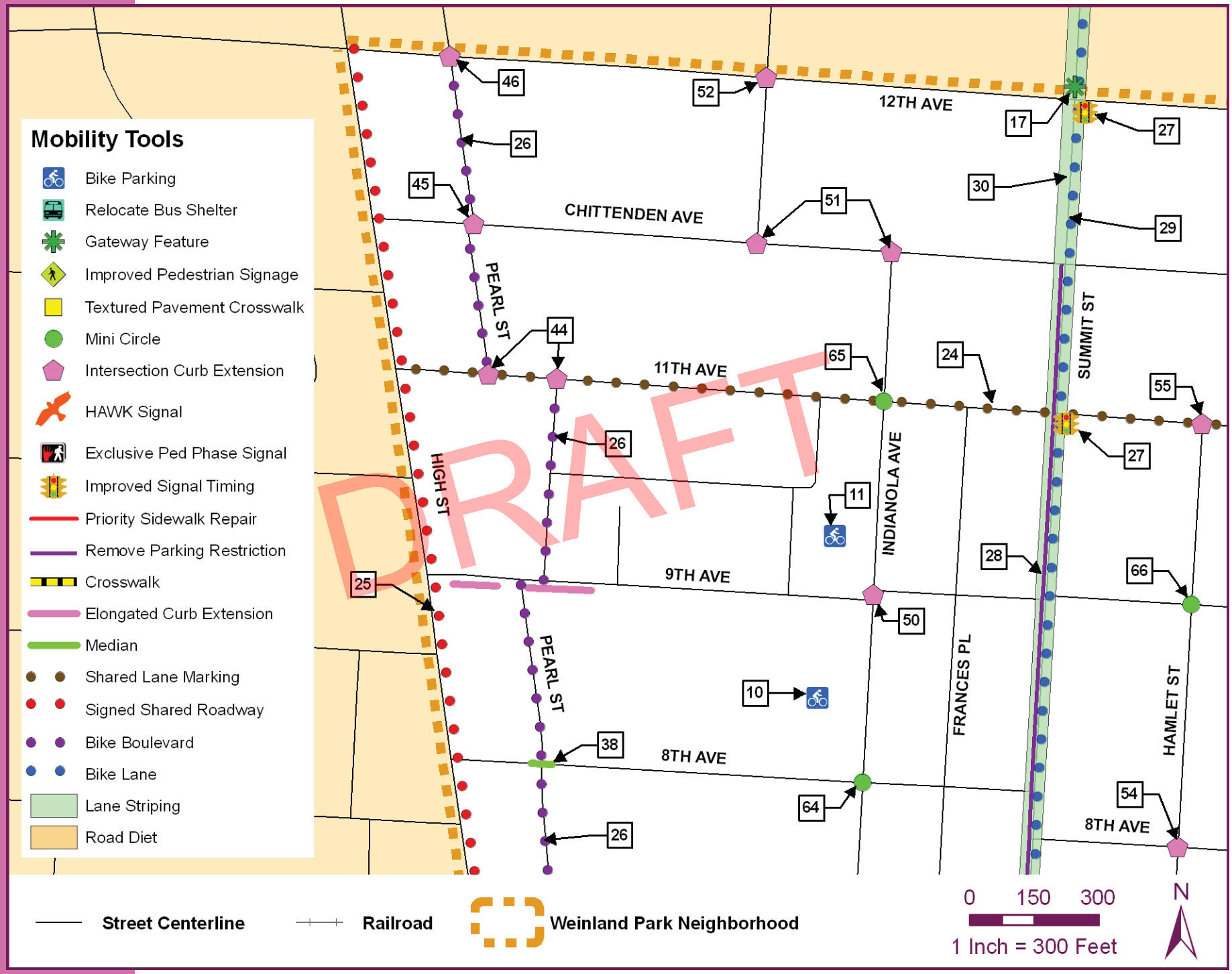
Exhibit 14: Recommended Solutions Map - Northwest Quadrant



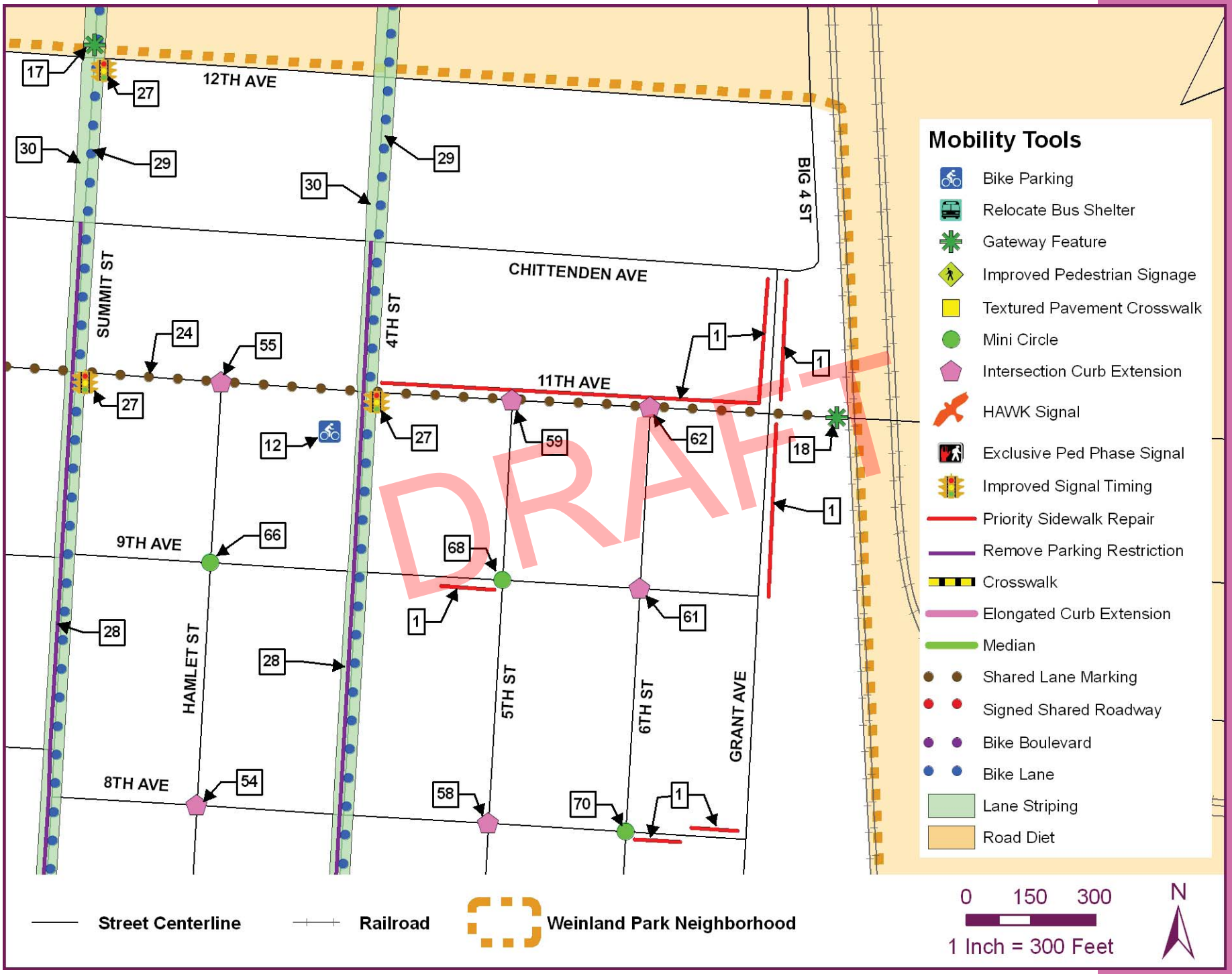
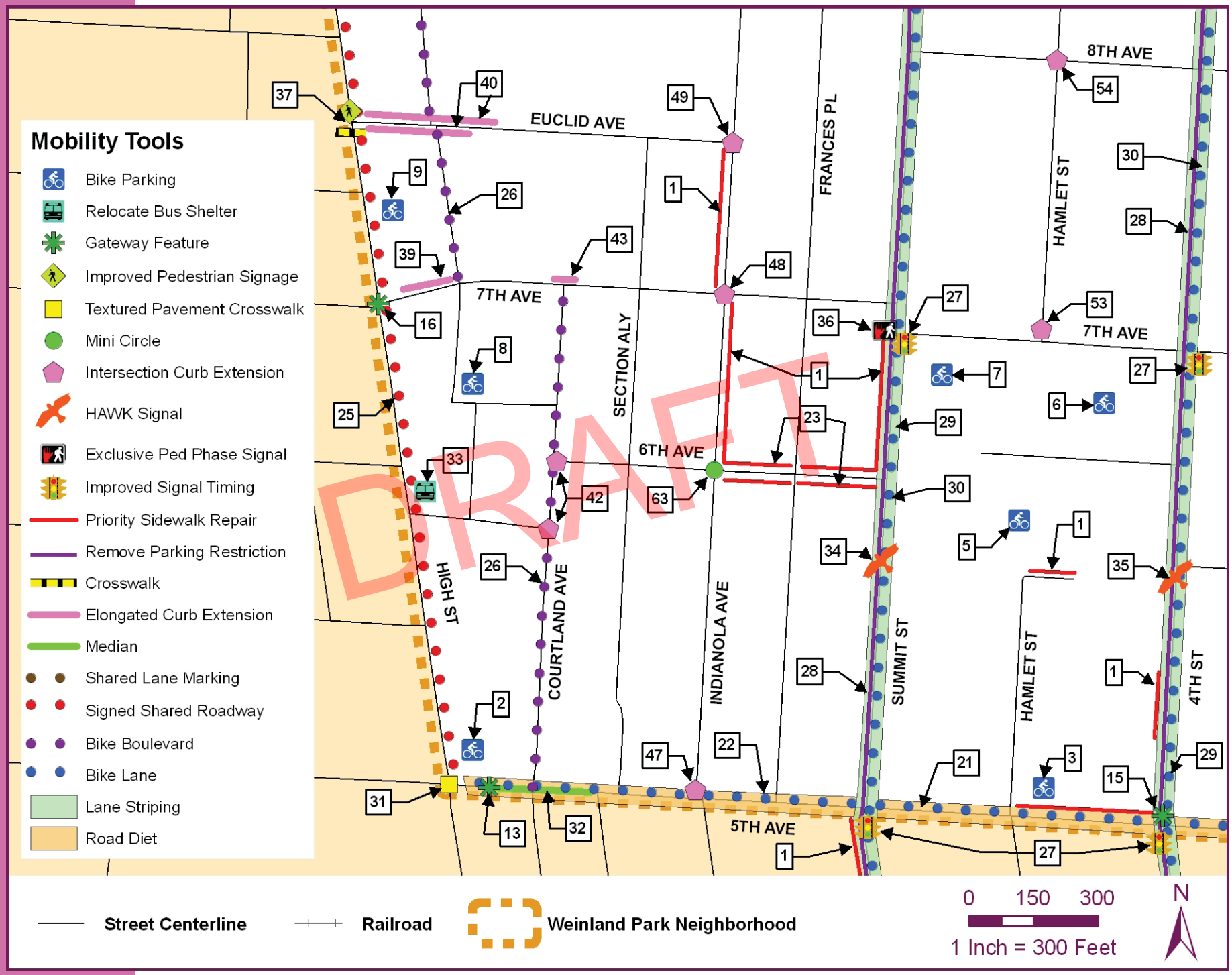


Exhibit 15: Recommended Solutions Map - Northeast Quadrant

Exhibit 16: Recommended Solutions Map - Southwest Quadrant



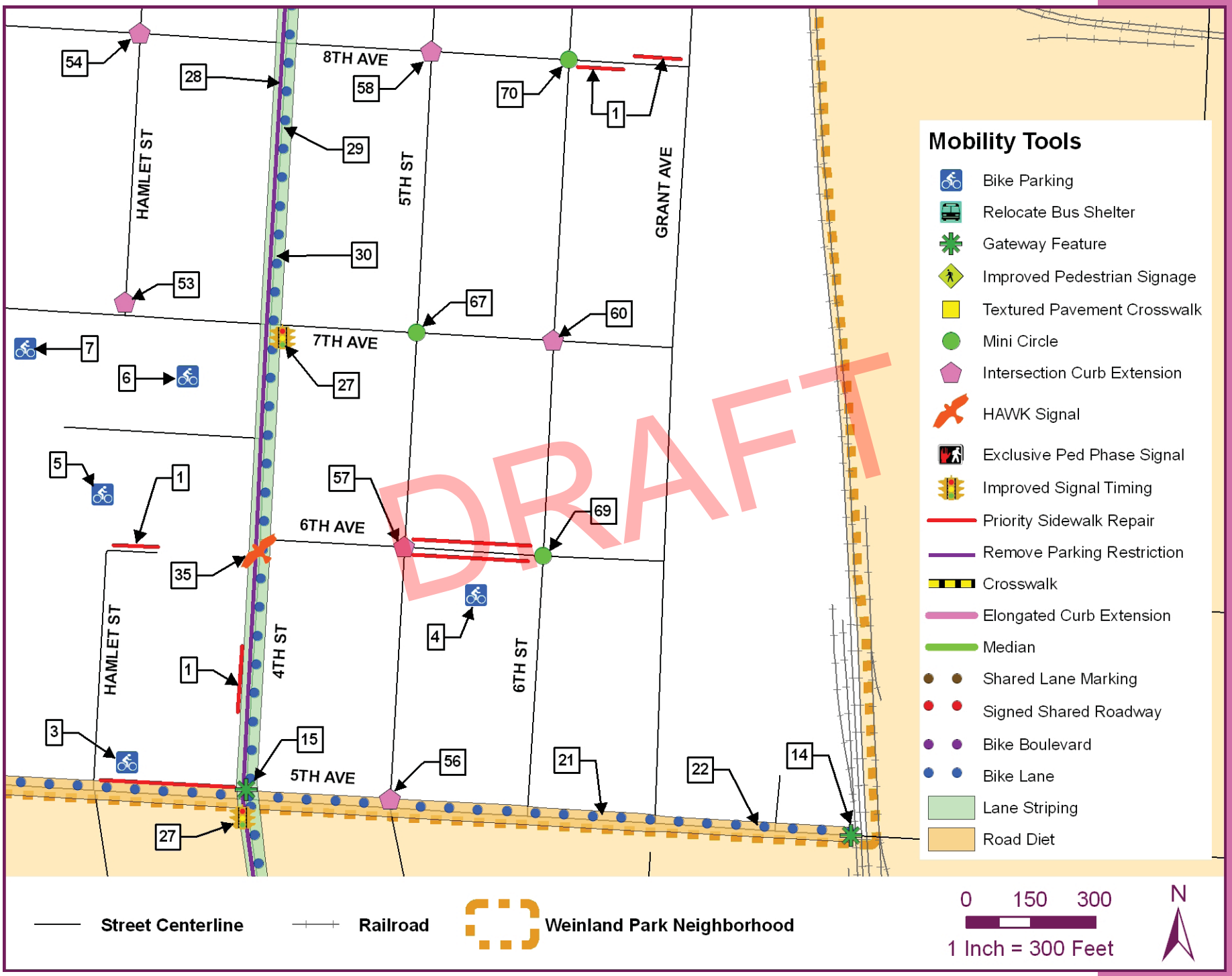


Exhibit 17: Recommended Solutions Map - Southeast Quadrant

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Prioritization and Implementation

Possibly the most important part of any plan is the prioritization of recommendations and development of an implementation strategy. Without these key elements, it is unlikely that the improvements called for in the plan will ever come to fruition. During this final stage of the planning process, members of the project team and City staff worked closely with the Steering Committee, consisting of Weinland Park residents and stakeholders, to identify which mobility improvements are the most critical to the community and how to best implement those solutions over the coming years.

This stage also represents a transition of roles in the planning process. Up to this point, the City and the project team have guided the planning process through the identification and analysis of issues and the development of recommendations. From this point forward, the community is responsible for working with the City to implement the plan according to the strategy set forth in this chapter.

Plan Prioritization

As with the identification of critical mobility concerns and locations, the community was called upon to prioritize the recommended improvements. The first step in this prioritization process was to gain preliminary input from the entire community regarding the recommendations called for by the project team. As previously mentioned in the Issues and Concerns chapter, a community open house meeting was held in June 2009 at which the draft recommendations were presented and attendees were given the opportunity to rank those which they felt should be given the highest priority, as well as those that they felt should be the lowest priority. Several blank spaces were also provided for residents to write in improvements that they felt should be included.

Those improvements that garnered the most positive and negative support at the open house are shown in Table 11. Of those solutions, one that was written-in (converison of Summit and Fourth Streets to two-way operation) and two that were recommended by the team (curb extensions on Summit and Fourth Streets at Fifth Avenue) were deemed infeasible due to the need to consider light rail accommodation in the future. However, they are still shown in this table to reflect the level of support each gained.

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Table 11: Initial prioritization of improvements from June 2009 open house meeting

#	Recommended Improvement	Location	Positive Votes	Negative Votes
36	Exclusive Pedestrian Signal	Seventh Ave/Summit St intersection	8	0
27	Improved Signal Timing	Summit and Fourth St - Warren St to Hudson St	8	0
29	Bike Lanes	Summit and Fourth St - Warren St to Hudson St	7	0
15	Gateway Feature	Fifth Ave at Fourth St	5	0
21	Road Diet	Fifth Ave - High St to railroad tracks	5	0
N/A	Conversion to two-way operation	Summit and Fourth St - Warren St to Hudson St	4	2
N/A	Curb extensions	Fifth Ave/Summit St intersection	3	0
3	Bicycle parking	Third Hand Bike Co-op	3	0
N/A	Curb extensions	Fifth Ave/Fourth St intersection	3	0
34	HAWK signal	Summit St at south park path	3	0
25	Shared signed roadway	High St - Fifth Ave to Twelfth Ave	3	0
31	Textured pavement crosswalk	Fifth Ave/High St intersection	0	1
65	Mini circle	Indianola Ave at Eleventh Ave	0	1

Using this initial input from the community, the Steering Committee worked to further refine and prioritize the recommended improvements . . .

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