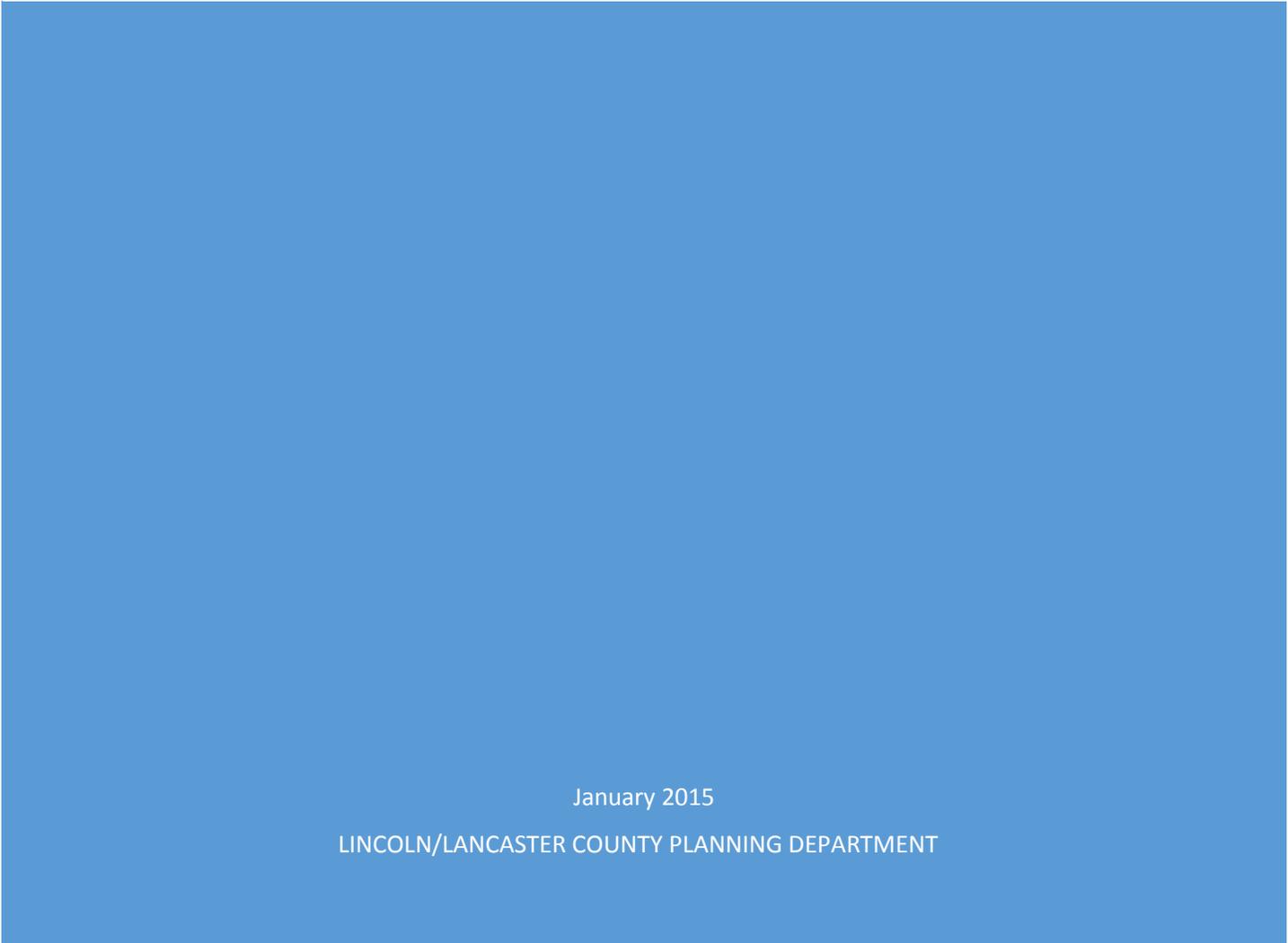




COMPLETE STREETS GAP ANALYSIS AND PRIORITIZATION STRATEGY

January 2015

LINCOLN/LANCASTER COUNTY PLANNING DEPARTMENT



Introduction

In September 2013, Mayor Beutler signed Executive Order 086476 which approved Administrative Regulation No. 35 establishing a policy for the development of Complete Streets. The purpose for this Executive Order/Administrative Regulation was to encourage the design and operation of a transportation system that is safe and convenient for all users, regardless of age, ability, or mode of transportation through the development of Complete Streets. The Complete Streets policy sets out to coordinate projects relating to the design, planning, construction, reconstruction, or rehabilitation of public and private streets, or development projects which would substantially impact or cause construction of public or private streets between City of Lincoln departments.

What are Complete Streets?

Complete Streets are public and private streets that include some combination of appropriate infrastructure, as determined by the surrounding context, that accommodate all modes of transportation, including private vehicles, mass transit, walking, and bicycling.

What is the Gap Analysis?

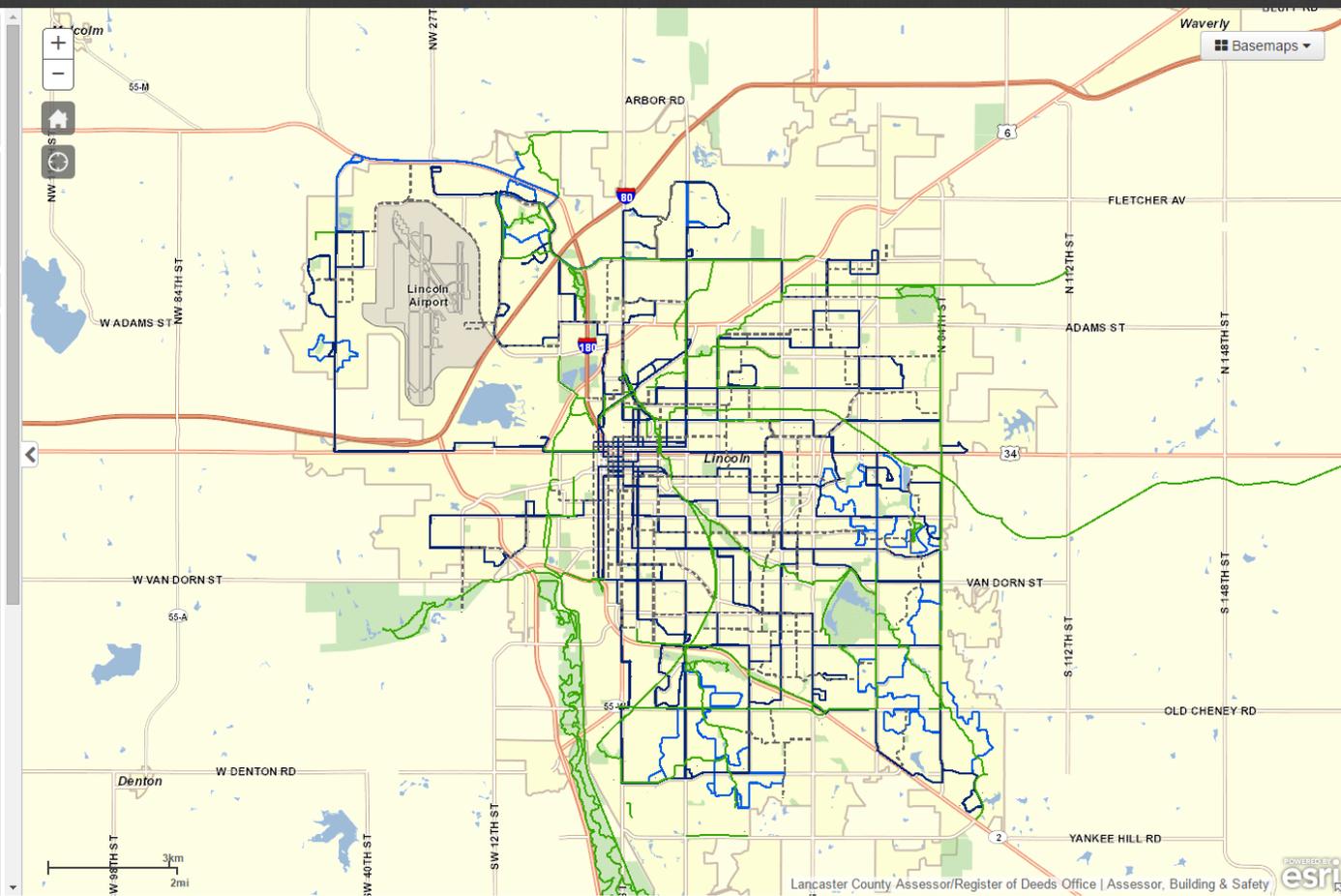
Part of the Administrative Regulation is to provide an Annual Report to the Mayor, the Pedestrian and Bicycle Advisory Committee and the StarTran Advisory Board which outlines the progress made toward implementing the Complete Streets policy. With the Administrative Regulation, a Complete Streets Committee was formed with the goal to evaluate current and future projects to ensure that all users are accounted for. The Complete Streets Committee is an interdepartmental group comprised of representatives from Planning, Public Works & Utilities, StarTran, Urban Development, Building and Safety, Parks and Recreation, and Health. One of the goals for the Complete Streets Committee in its first year of coordination, is to create a gap analysis and prioritization strategy. This strategy will help with project prioritization and selection on how to best spend funds that are allocated towards Complete Streets projects.

The Fiscal Year 2014/15 -2019/20 Capital Improvement Program (CIP) included, for the first time, a budget item for the Pedestrian and Bicycle Capital Program. In each programmed year, \$50,000 has been appropriated for "Complete Streets" type projects bringing the six year total to \$300,000 for projects that fit within the Complete Streets scope.

The gap analysis is a snapshot of the current system and outlines where gaps in the system are currently located. It is anticipated that the gap analysis study text and mapping will quickly become outdated as the transportation network changes and Complete Streets projects are installed. It is also important to note that the gap analysis and prioritization strategy is a supplemental work product to correlate with the completed Bicycle and Pedestrian Capital Plan, the forthcoming StarTran Transit Development Plan, the 2040 Long Range Transportation Plan, and the 2040 Comprehensive Plan.

In conjunction with the current snapshot, an online and interactive map has been launched. In an effort to keep the analysis from becoming stale, the online, interactive map will be a tool for the Complete Streets Committee to be updated as projects are completed, new data becomes available, or new gaps are identified. The online tool is accessible to the group for editing during meetings. A separate interface may be used for the public's use and information as Complete Streets project are selected and completed. The online tool currently looks like the screenshot on the following page.

- Identify
 - Choose "All Visible Layers" or a single layer for identify:
 - *** All Visible Layers ***
- ID Results
 - Click to select a feature
- Find
- Layers
 - Gap Points
 - Gap Lines
 - Complete Streets
 - Bike Rack
 - Bike Signs
 - Bus Stop
 - Trails
 - On Street Bicycle Routes
 - Sidewalks
 - StarTran Routes
 - StarTran Booster Routes
 - StarTran Saturday Routes
 - Bike Accidents
 - Pedestrian Accidents
 - Parcels
 - Floodplain and Natural Resources
 - Wetlands
 - Land Use and Growth
 - Zoning and Other Districts
 - Development Plans
 - Parcel Information



The analysis tool is a GIS map created with layers that can be turned on and off and include the following data: *sidewalks; bike routes; signage; trails; transit stops and their amenities; bike parking; crash data; traffic counts; identified gaps in the system; and other useful data*. This is data that is discussed in its current state in this gap analysis. The online tool will consistently be updated and an online public version may be made available to show completed projects.

Along with identifying gaps in this study, a prioritization strategy is outlined at the end of this report. The prioritization strategy will evaluate the *crash data, project impact, location of a project, traffic volume, and other useful data*. The prioritization strategy will be used to consider projects from the gaps identified in this document/online tool.

Current System

The current system is analyzed by evaluating the sidewalk network, trails, on-street bike routes, bike route signage, bus routes and stops, and bike parking. Typically, motor vehicles are accounted for when planning various road projects, as single occupancy vehicles make up the largest mode to commute to work at 81.1 percent. According to the 2013 ACS three-year estimates commuting to work options are listed in the table below.

Lincoln Commute	Percent
Drove Alone	81.1%
Carpooled	9.1%
Public Transportation	1.4%
Walked	2.7%
Bicycle	1.8%
Taxi/Motorcycle	0.7%
Worked at Home	3.2%

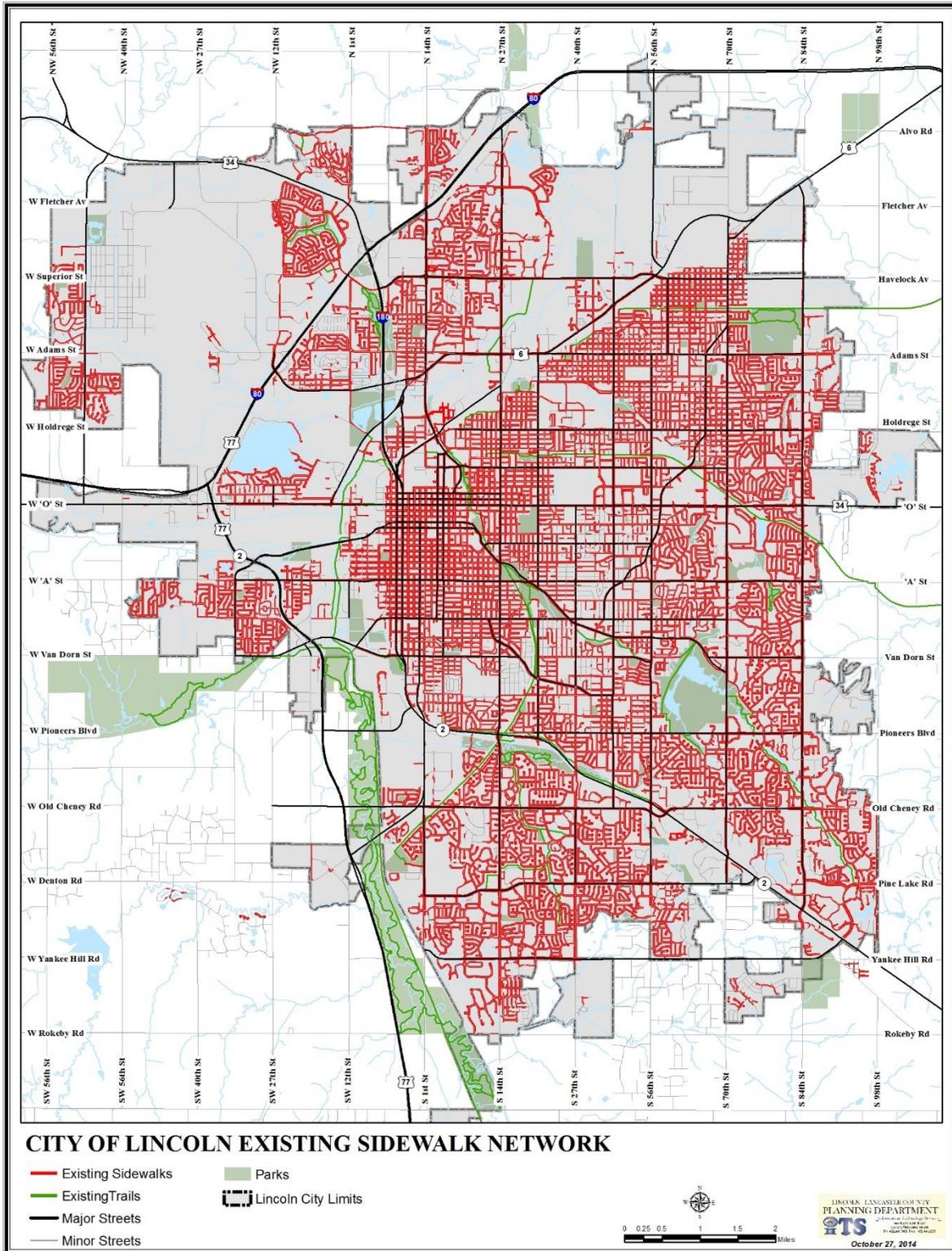
Complete Streets acknowledges the single occupancy vehicle commute for various trips but strives to implement Complete Streets where it makes sense. Complete Streets are ideal in areas where people have access to sidewalks, trails, bus routes, and amenities for those facilities.

Sidewalks

The existing sidewalk network was evaluated in 2013. There have been installations of additional sidewalks to fill in gaps and there is additional planned work on the sidewalk system in the city. As information becomes current, the sidewalk network will be updated in the online tool, most notably when new aerial photography becomes available (approximately every three years). There is a fairly comprehensive sidewalk network within city limits since the City has for several years required new development to include sidewalks on both sides of the street. As is noted in the Bicycle and Pedestrian Capital Plan, many of the older areas of the City are experiencing sidewalks that have developed cracks and heaving pavement and require maintenance, which can be particularly difficult for those with disabilities. The City of Lincoln is responsible for the maintenance and repair of sidewalks on arterial roads. On page 3 is a map depicting the sidewalk network based on 2013 aerials.

Recently, the City announced their progress on addressing a large backlog of sidewalk repairs. Since March 2014, the equivalent of 7.5 miles of sidewalks have been repaired or replaced. The rest of the sidewalk improvement backlog is scheduled to be eliminated by the end of 2015. In addition to the sidewalk repairs since March 2014, 250 sidewalk curb ramps have been repaired or installed throughout the City of Lincoln to ensure safe and convenient access for residents. In an effort to prevent any future backlog, the Mayor has stated that the City continues to work on an ongoing funding source for sidewalk maintenance and repair because of the important role sidewalks have in Lincoln. This effort was funded with roughly \$6.5 million from “certifications of participation,” Federal Transit Authority, Neighborhood Focus Area funding, and the Capital Improvement Program (CIP). The latest budget/CIP has increased the amount for sidewalk repair from \$500,000 annually to \$1 million.

Sidewalks



Trails

The City of Lincoln's trails network is a great asset to the community. With approximately 131 miles of hard surface and crushed rock trails, the trail network will get you across and around town. The City of Lincoln is always updating and working on connecting the public with trail access with 94 percent of residents having access to a trail within one mile of their home. The City of Lincoln, along with other bicycle advocacy groups, have been working on developing the trail system since 1978, when the Billy Wolff Trail was constructed. The Bicycle and Pedestrian Capital Plan, 2040 Comprehensive Plan, and the 2040 Long Range Transportation Plan identify the opportunity to improve and expand upon the existing trail network. In the fall of 2014, the American Planning Association (APA) awarded the Lincoln Trails Network a "Great Places In America: Public Space."

With a large trail network and an estimated 2 million users per year, the trails are in need of regular maintenance and upkeep. The City of Lincoln has an active bicycling presence that reports on maintenance needs and the Lincoln Parks and Recreation Department is quick to review the complaint and proceed with repairs/upkeep.

The trails have provided a strong framework for the bicycle network; however, it is not necessary or feasible to have trails connect every part of the city. In instances where there is not adequate right-of-way available to add in a separated trail, bike lanes and on street bike routes have been utilized to connect the system.

Bike Routes and Lanes

The on-street bike routes (refer to map on page 5) provide the local grid to connect the resident with their destinations and the trail system. Bike Routes are located on residential streets and low volume collector roadways where the automobile and bicyclist share the travel lane. These facilities are signed with bike route signs on both sides of the street at approximately five per mile or when a bike route might begin, end, turn on to an intersecting street, or intersect with another bicycle facility.

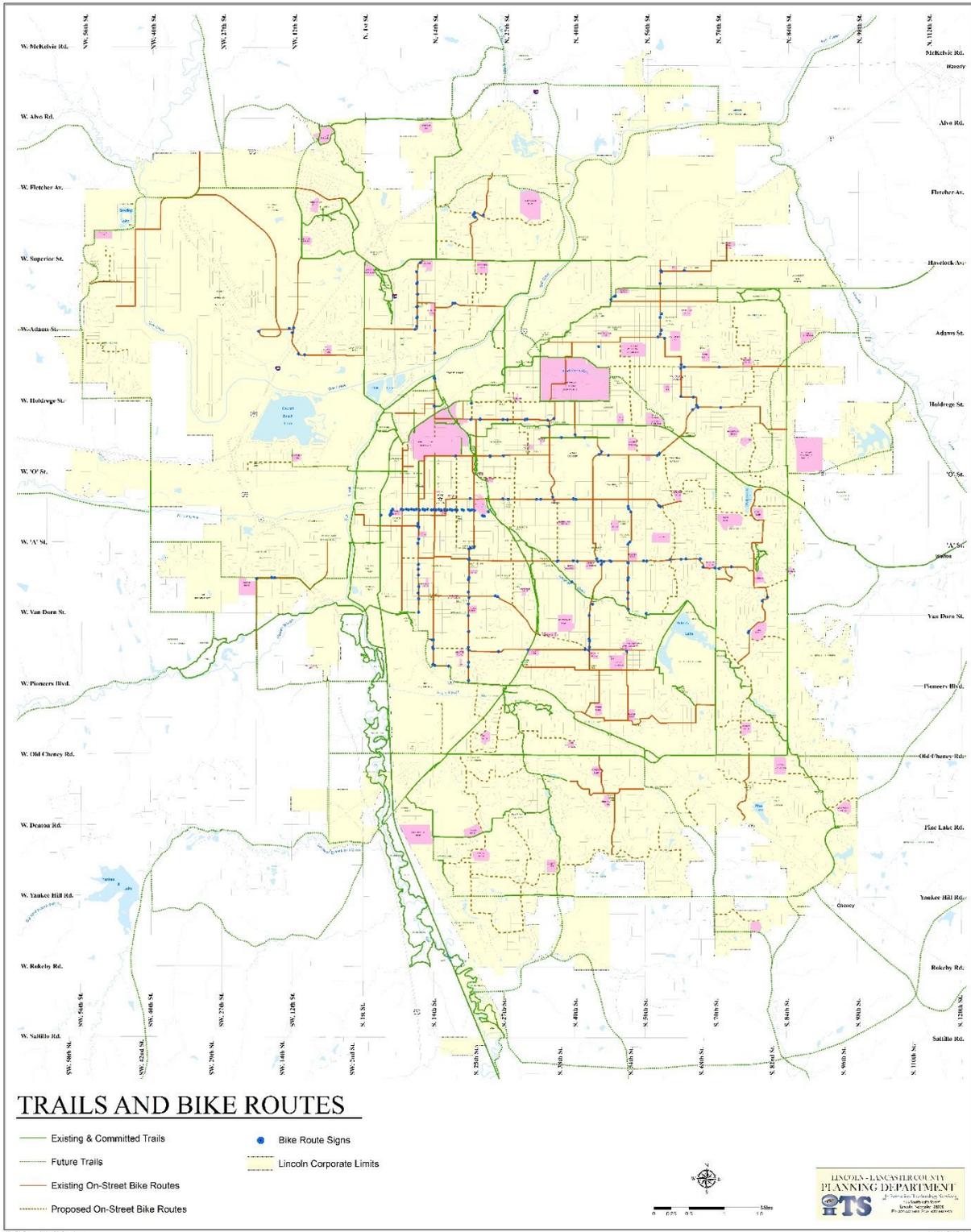
Many of the existing bicycle routes have been neglected and have missing signs and route designations. There are also many areas of the City where bicycle routes are missing. This lack of a maintained bicycle network limits bicycle mobility and travel.

The Pedestrian and Bicycle Advisory Committee formed a subcommittee that reviewed the current and proposed bike routes. The committee made suggestions regarding the prioritization for bike route signage. Routes were selected that would get users in and out of the downtown area efficiently, in and out of East Campus, and other key areas around the community. The Pedestrian and Bicycle Advisory Committee will review the subcommittee recommendation and provide a formal list to the Complete Streets Committee.

A bicycle lane is a bikeway on a portion of a street that has been designated by striping, signage, and pavement markings for the preferential or exclusive use of bicycles. The City of Lincoln currently has bike lane markings on 11th and 14th Streets in the downtown and areas south of downtown. The bicycle lanes give some visibility to the users; however, there are some safety concerns between bicyclists and motorists who find the bicycle lanes confusing and do not understand how to interact or safely cross in-between lanes of traffic. There are also some limitations to additional bike lanes on exiting streets where pavement widths are not large enough to accommodate delineated lanes.

The city of Lincoln has bid out the N Street protected bikeway project and will be undertaking construction in the spring of 2015. This facility will provide physical separation through the use of raised curb and landscaping to keep cyclists separated from automobiles. The N Street project is expected to be installed from the Billy Wolff trail (approximately 22nd Street) to the Arena Drive trail. This will make an important east/west connection into, through, and out of downtown Lincoln that is not available to the bike network today.

Trails and Bike Routes/Lanes



Transit Routes and Stops

StarTran operates 19 bus routes on weekdays and 12 routes on Saturdays with no Sunday service. StarTran identifies most stops on each route with a blue and green bus stop sign; currently, the bus will stop at all corners outside the downtown loop. This policy is under discussion in the update of the Transit Development Plan.

StarTran is at the beginning stages of updating the Transit Development Plan to evaluate their service. The last Transit Development Plan was completed in 2007. Based on the recommendations by the consultant, StarTran may implement those that will improve service to their clients. The routes will also receive fixed bus stop recommendations. The data in the Transit Route and Stops (refer to map on page 7) will be in need of updates once the Transit Development Plan has been completed and implemented. The online mapping tool will be updated with any route changes and bus stop updates. The Complete Streets Committee will evaluate the updated information and look for new gaps in the system and reprioritize project funding.

Bike Parking

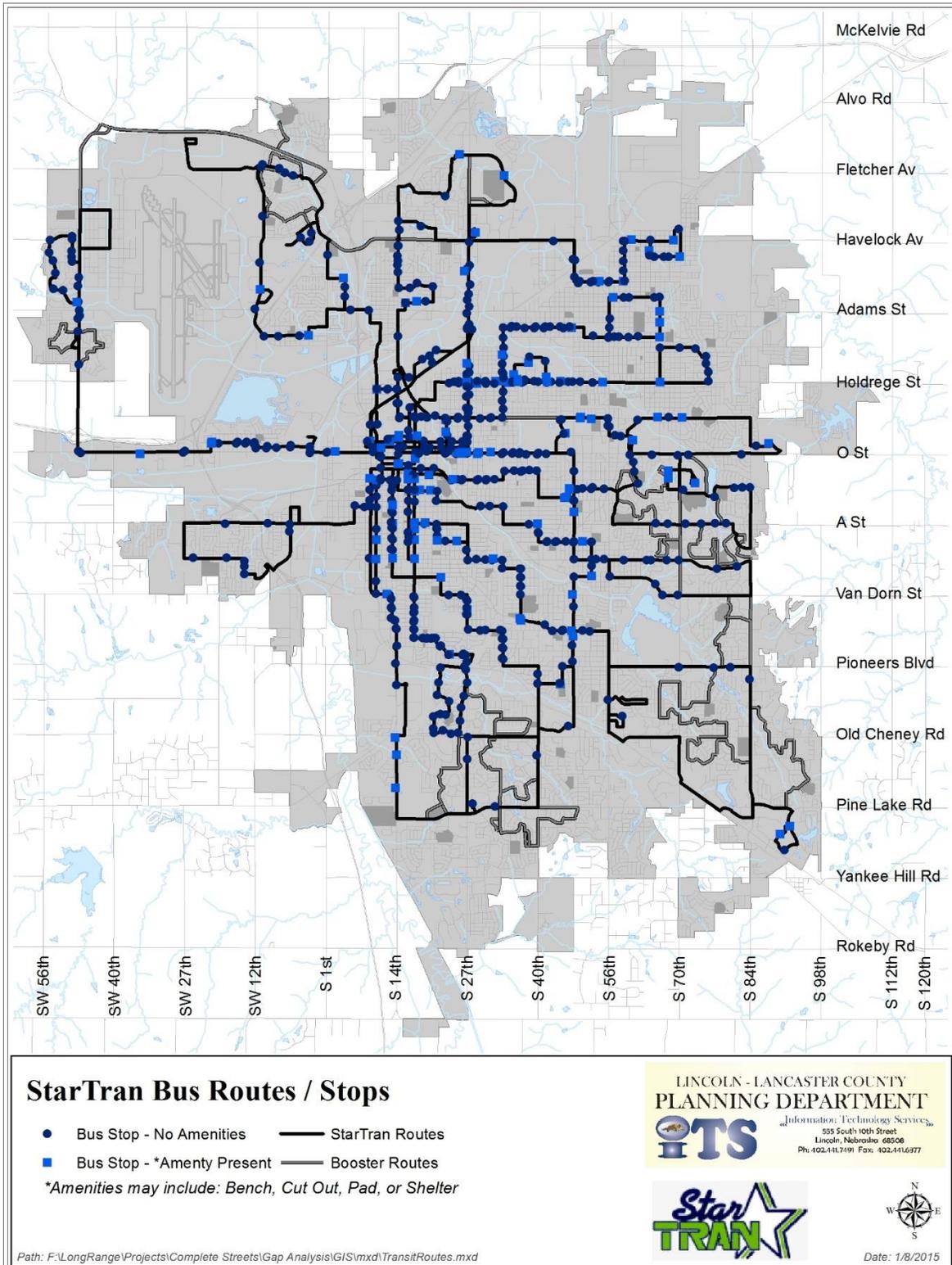
Convenient and secure bicycle parking should be provided at the destination end of a trip. Inadequate bicycle parking facilities and fear of theft are major deterrents to bicycle transportation. A sufficient supply of effective bicycle parking requires a properly designed rack in an appropriate location for the type of use. Bicycle racks should be highly visible so bicyclists can spot them immediately when they arrive from the street. A visible location also discourages theft and vandalism.

There are many types of bicycle racks and lockers available. Some are suitable for certain situations but not others, and some designs are unsuitable anywhere. There are two general categories of bicycle parking requirements: long-term and short-term.

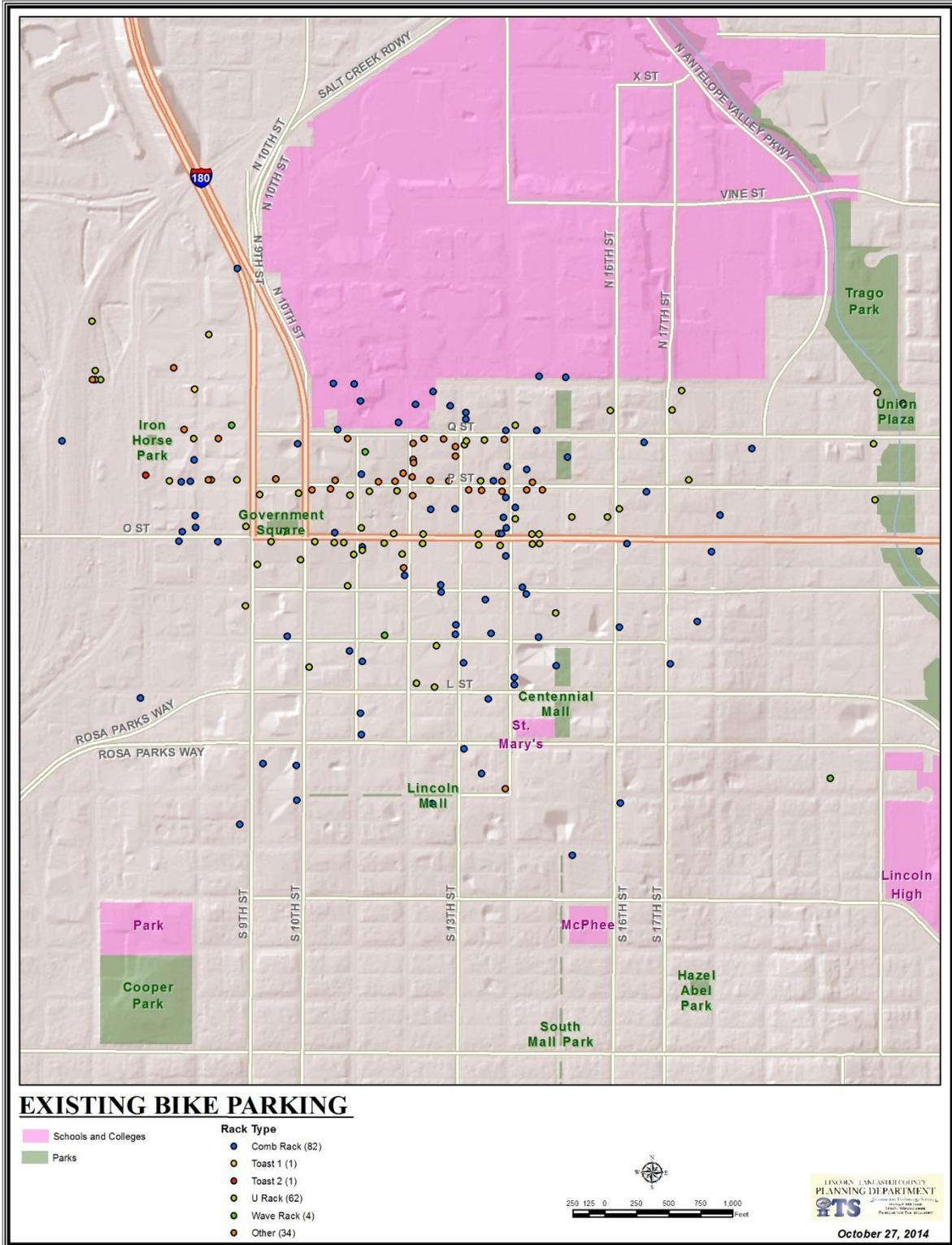
Urban Development Parking Services is currently taking an inventory of bike racks, lockers, storage that is housed within all public parking garage facilities. Parking Services has made bike parking a priority in all of their garages. Parking Services has noted that they would also like to transition away from single space to multi-space parking meters using license plate recognition technology for enforcement. Shifting away from the single space meters will provide opportunities to place bike racks at the old parking meter post locations. While this project is not a top priority for Parking Services, they would like to see implementation to a multi-space system in the next five years.

An assessment of bicycle parking in the downtown area was done in 2013 and can be seen in the Bicycle Parking map on page 11. While there is a fair amount of bicycle parking spread throughout the downtown area, there is a need for additional spaces to meet the demand as well as a need to upgrade the quality and locations of the racks. There is also a need to reevaluate the downtown parking to not only identify where parking locations are, but to determine the amount of bicycle parking available at each location.

Bus Routes and Stops



Bike Parking



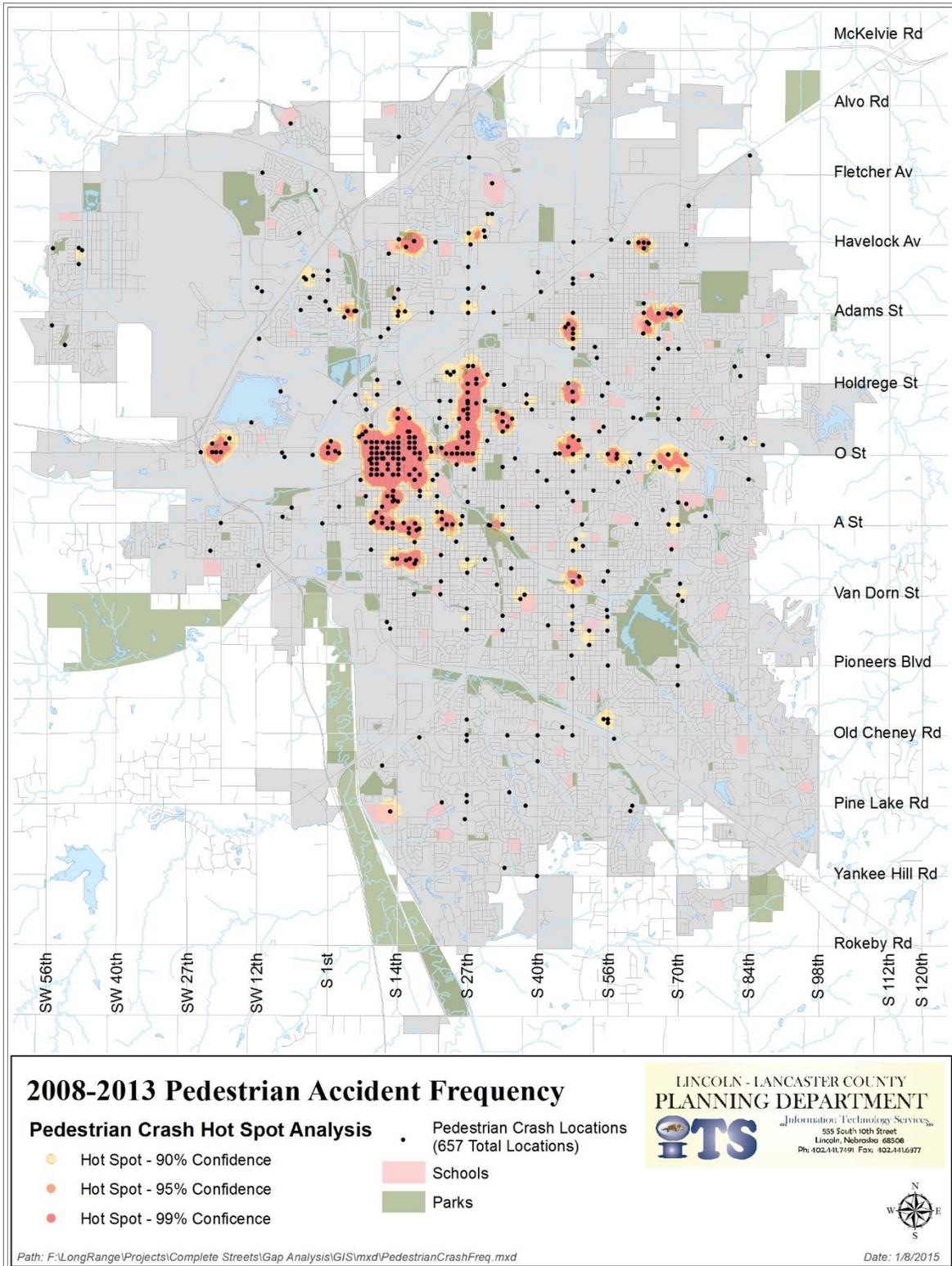
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Crash Data

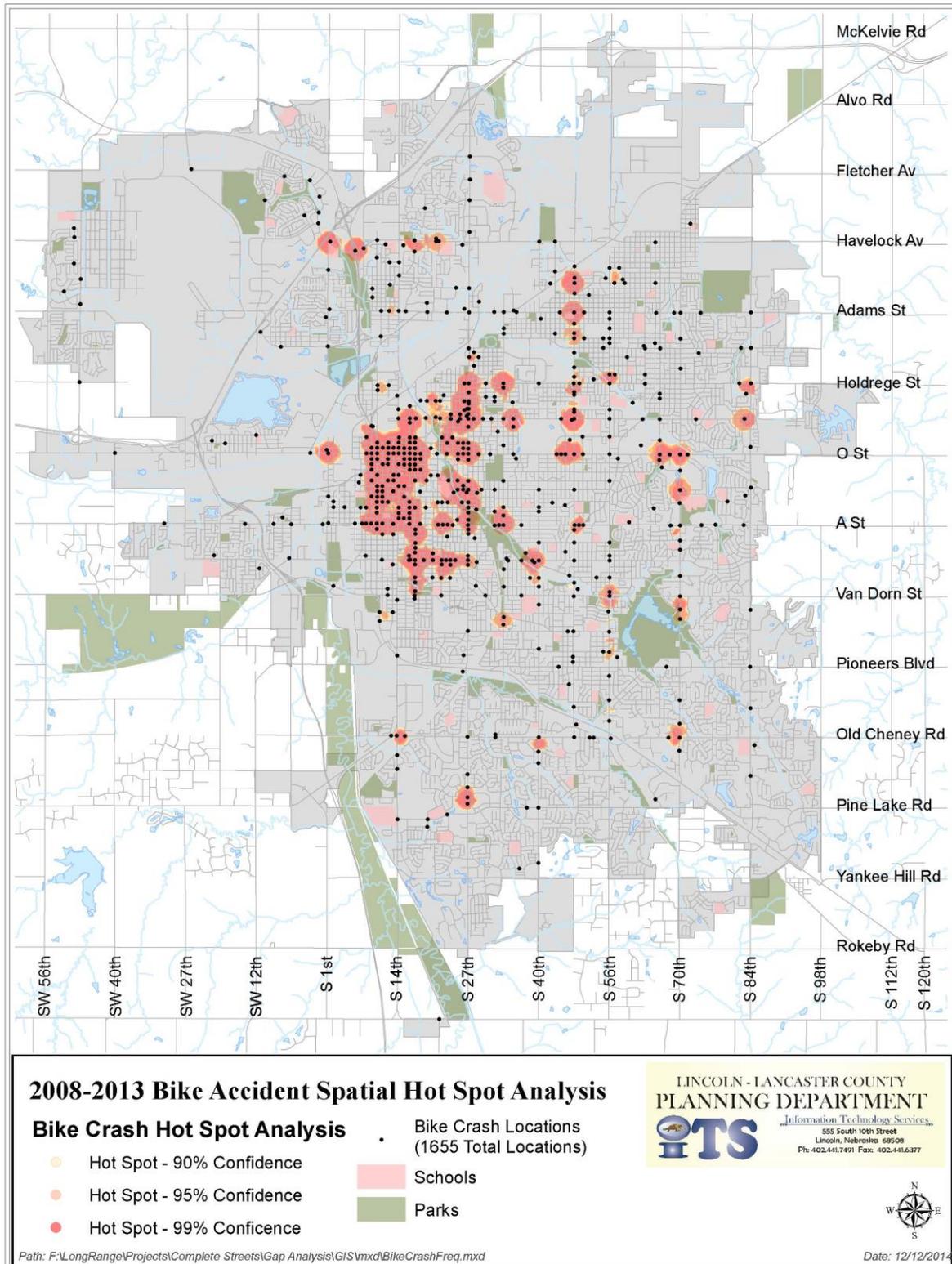
Crash data from 2008 – 2013 was evaluated for both pedestrian and bicycle frequency (as shown in maps on page 10 and 11). A Hot Spot Analysis was conducted on the 2008 – 2013 data to assess areas of frequency where crashes were occurring. The Hot Spot Analysis tool calculates the Getis-Ord G_i^* statistic for each feature in a data set. The Getis-Ord G_i^* statistic identifies those clusters of points with values higher in magnitude than you might expect to find by random chance. Based on the G_i^* statistic, each feature in the dataset has a z-score. Those with a higher z-score indicates a more intense clustering of high values, or hot spots. Those areas with a lower z-score indicate a clustering of lower values.

Each point on both the pedestrian and bicycle crash maps indicate a crash location. Values for each point can vary between one crash and 18 crashes. The hot spot layer underneath the points indicate the level of frequency of crashes in each map.

Pedestrian Crash Frequency



Bicycle Crash Frequency



Gaps in the Current System

The gaps in the current system were evaluated by the Complete Streets Committee in order to determine the first round of funding for Complete Streets type projects to move forward with implementation. The following list is taken mostly from input by the Bicycle and Pedestrian Capital Plan recommendations, the Complete Streets Committee and the Pedestrian and Bicycle Advisory Committee input.

Sidewalk connections to schools

- West side of South 40th Street south of Highway 2 from Sweetbriar to Wildbriar
- Cornhusker Highway from North 11th Street to North 1st Street
- West side of South 27th Street from Tipperary Trail to Jameson
- Near Holmes Elementary School, North of A Street, install sidewalk along the east side of Fall Creek Road
- Near Lakeview Elementary, install a sidewalk along the north side of P Street from Capitol Beach Blvd. and Bell Street
- Near Pershing Elementary, install a sidewalk on the east side of 65th Street across from the school site between Knox Street and Fremont Street
- Near Randolph Elementary, install a north/south sidewalk on the west side of 38th Street between A and D Street
- Near Rousseau Elementary, install a sidewalk along the north side of Calvert Street west of Hanson Drive
- Near West Lincoln Elementary, install a sidewalk on the south side of Nance Ave east of the school between 4th and Chester Street
- South side of A Street from SW 24th Street to SW 38th Street

Sidewalk connections to trails

- Washington Street within the existing ROW (Rock Island) 120 feet
- Everett Street within the existing ROW (Rock Island) 50 feet
- Arlington Street within existing ROW (Rock Island) 50 feet
- Franklin Street within existing ROW (Rock Island) 70 feet
- Unimproved pedestrian easement between 2626 and 2640 Colonial Drive (Rock Island) 200 feet
- 29th Street within existing ROW (MoPac) 85 feet on south and 35 feet on north
- Fontenelle Street within existing ROW (MoPac) 100 feet
- 45th Street within existing ROW (MoPac) 50 feet on north and 45 feet on south
- North 48th Street - potential for a switchback to get direct access to 48th Street? (MoPac) 225 feet (estimate)
- North 52nd Street within existing ROW (MoPac) 45 feet to the north
- East of 84th Street to the YMCA soccer fields to the north - land owned by LPS, length is undetermined, grades may be an issue (MoPac) 660 feet (estimate)
- West of North 84th Street - potential for switchback to get direct access to 84th Street? (Murdock) 225 feet (estimate)
- Dunn Avenue within existing ROW (Helen Boosalis) 15 feet to the north

Bike Route Signage

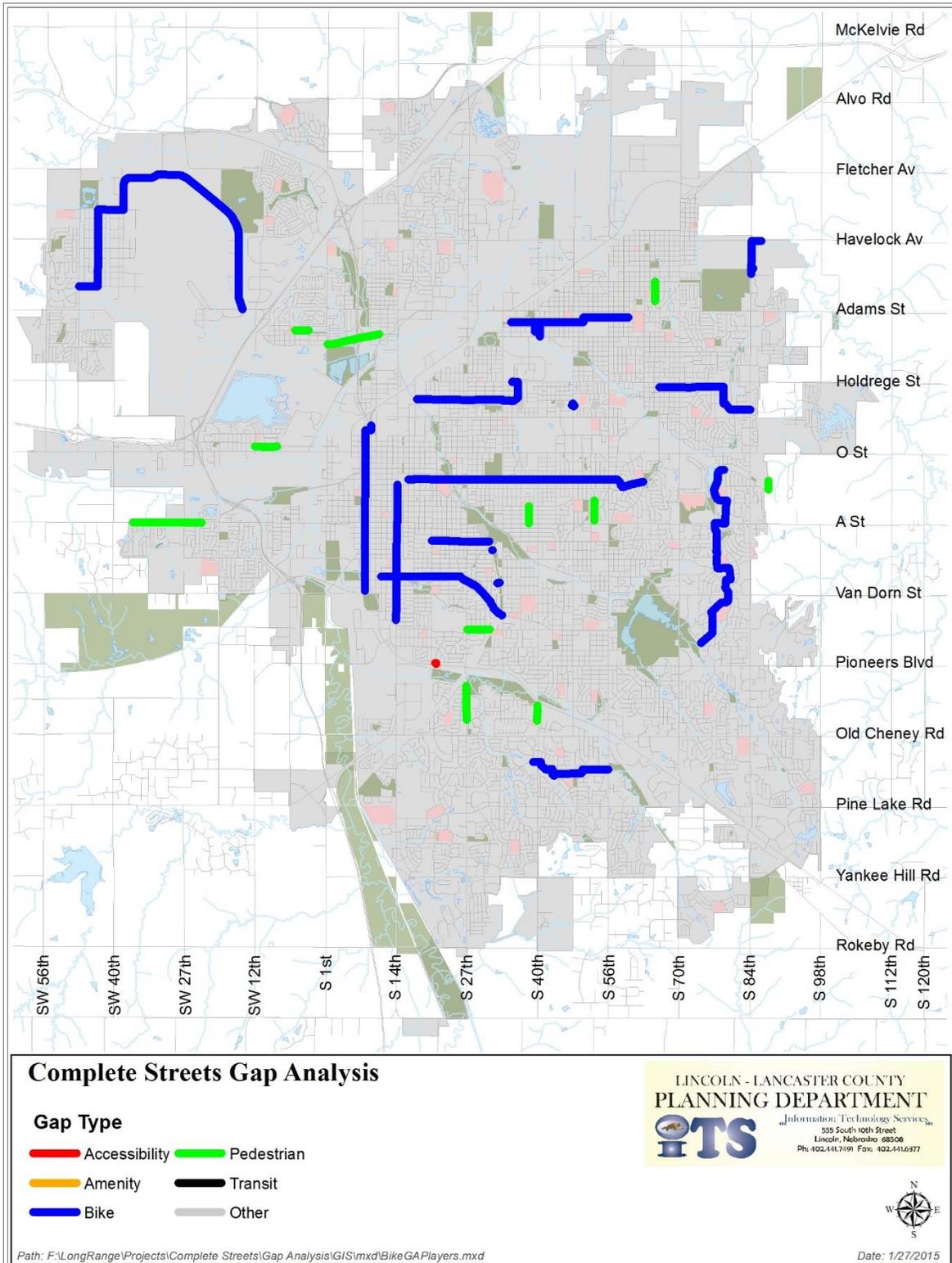
- J Street (existing bike route with some signage) additional signage
- 8th Street (existing bike route with no signage)
- 14th Street (existing bike route with some signage) additional signage south of bike lanes
- Y Street (existing bike route with some signage) additional signage
- N 41st/Madison/N 50th/Cleveland (existing bike route)
- N 40th Street (existing bike route with some signage) additional signage
- West portion of Sumner (existing/proposed bike route)
- Sheridan (existing/proposed bike route) additional signage
- Air Park Rd/NW 44th/W Cuming/NW 38th/North Park Rd (existing bike route)
- Starr St/N79th/E Avon Ln (existing bike route with some signage) additional signage
- Faulkner Dr/Browning St/Crooked Creek Dr/Birch Hollow Dr/London Rd (existing bike route)
- Hazelwood Dr/Cottonwood/A St/S 77th/Lake/Devoe/S 79th/S 77th (existing bike route with some signage) additional signage

Trail connections

- Murdock Trail to the Lancaster County Event Center

A map with the identified gaps can be found on page 16 of the analysis. These projects are also identified on the online tool with additional information. As projects are selected, they will be marked accordingly on the online tool. Again, the gap analysis tool will be constantly updated with information as it becomes available and gaps will either be chosen as completed or as a new gap with the opportunity for improvements.

Complete Streets Identified Gaps



Prioritization Strategy

The Complete Streets Committee has reviewed the information presented in the gap analysis portion of the study and has made a recommendation on how to evaluate the information to prioritize projects. The committee will review possible projects on an annual basis and determine which projects will move forward to be funded. During the first round of Complete Streets funding, needs were discussed at several meetings and various projects were presented to the group. The committee then discussed the projects, identified costs for individual projects, and an agreement was met on how to best spend the limited funding to make an impact.

Each project will be evaluated on the cost of the project, crash data, the existing environment (population, terrain, school proximity), who the project would benefit, and the location of the project to ensure that the funding for Complete Streets projects is not concentrated in a single or only a few areas of the community.

Conclusion

The first and second year of funding have been selected with the \$50,000 annually allocated to the Complete Streets projects. The current projects selected attempt to identify projects geographically around the community. The projects include:

- Arlington Street (north side) connection to the Rock Island Trail – estimated cost \$16,000
- Dunn Avenue (west side) ADA and connection to Helen Boosalis Trail – estimated cost \$11,000
- 29th Street (north side) connection to the MoPac Trail – estimated cost \$34,000
- 52nd Street (east side) connection to the MoPac Trail – estimated cost of \$20,000
- Bike route signage along priority routes - \$10,000
- Bike racks around the community - \$3,000

The selected projects adds up to a total cost of \$94,000. Initially these projects were selected to be completed in the first year of the Capital Improvement Program. Unfortunately, the costs of project implementation are expensive which makes closing the gaps in the transportation network a slow process. Ideally, in the future, there will be a greater effort to increase the amount of funding to complete these type of projects to adequately meet the demand for funding.

The Gap Analysis is a snapshot of the current system and its needs. There will be an ongoing effort to maintain and update the information included in the study. In order to identify and fund projects that work to close the gaps in the transportation network for all users, the information should be concise and present an accurate picture of how the network functions. The online tool will be maintained and used by the committee to continue discussions on network gaps and to help inform the public as to how the funds allocated to Complete Streets projects are being utilized.