



City of Muscatine Comprehensive Plan

Chapter 3: Transportation



Chapter 3: Transportation Infrastructure

Meeting the City of Muscatine’s current and future transportation needs is a critical component in maintaining and improving the quality of life in Muscatine and keeping it a desirable place to live and do business. In order to plan for the transportation infrastructure that will achieve this, Chapter 3 contains two major components. The first is a comprehensive review of the entire transportation infrastructure as it currently exists. The second component of this chapter contains the goals and implementation strategies, developed through a process of extensive input from the public and community stakeholders. Achievement of these goals will create an enhanced transportation infrastructure meeting the needs of Muscatine residents.

Specific components of existing transportation infrastructure analyzed include:

- Roadway System
 - Principal Arterials
 - Minor Arterials
 - Collectors
 - Local Streets
- Major Trip Generators
- Trends in Traffic Patterns
- Roadway Improvement Projects
- Trails and Sidewalks
- Transit
- Air Transportation
- Parking
- Rail Transportation
- Barge Transportation



Figure 1: Road, Rail, Trail, and River Transportation Infrastructure

Roadway System

To better review and evaluate the city's roadway system, the streets have been classified into functional categories. The Functional Classification System is a system developed by the United States Department of Transportation; and used to categorize roadways according to their function in moving vehicles within a community.

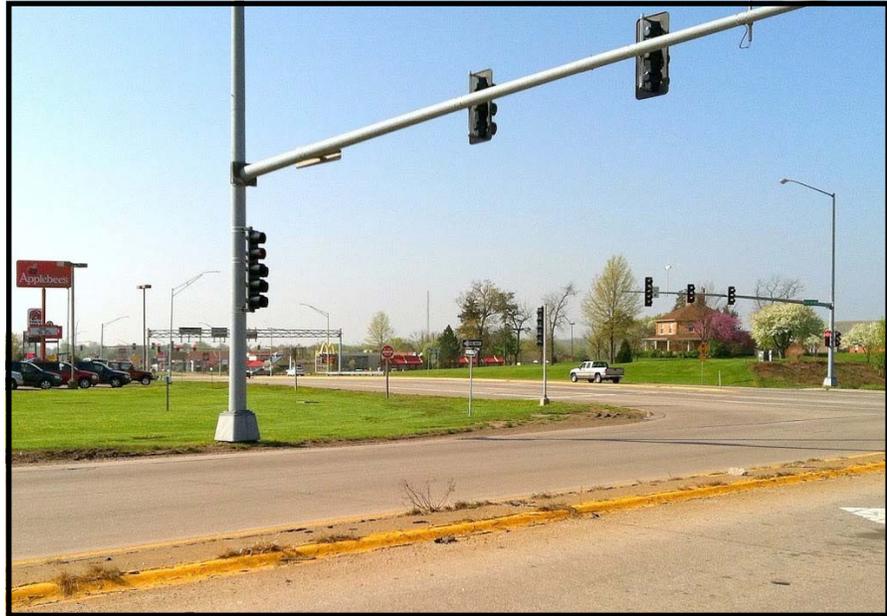


Figure 2: Example of a Principal Arterial

Roadways serve two primary and conflicting functions. The first function is mobility, moving the greatest amount of traffic along at the greatest speed possible with the minimal amount of disruptions to traffic flow. The other function is to provide access to adjacent land or individual properties. Vehicles entering and exiting a roadway decrease both the potential speed and volume of traffic already traveling on that roadway. Roadways designed to emphasize traffic capacity and speeds do so at the expense of access. Roadways designed to emphasize access do so at the expense of traffic capacity and speeds. How the design of a roadway balances the competing functions of mobility and speed determines its placement in the Functional Classification System.

The classification system adheres to a hierarchical structure to describe the operation of roadways within a transportation system. A higher functional classification implies higher traffic capacity and speeds, but with decreased access to adjacent land or individual properties. A lower classification implies greater access to adjacent land or individual properties, but lower traffic capacity and speeds.

Seldom does a trip involve travel on only one street, rather most trips involve travel on multiple streets, using a network of differing types of streets. Developing a functional classification provides a method for channeling traffic in a logical and efficient manner. Roadways are classified by the function they serve and not necessarily by the amount of traffic they carry; typically higher traffic volumes are generally found on higher classified roadways. This classification is used throughout this document to establish a functional hierarchy of roadways. The functional roadway classifications of Muscatine's transportation system are in descending order are: principal arterials, minor arterials, collectors, and local streets. If the transportation system works correctly, all portions of this hierarchy should work together to facilitate efficient and safe movement between origins and destinations.

Principal Arterials

Principal arterials provide direct, relatively high speed service for longer trips and large traffic volumes through and between cities and towns and between major elements of the urban area.

Mobility is emphasized and access is limited. They are of great importance in the transportation system as they connect major traffic generators, such as downtown and shopping areas to other major activity centers. They also carry a high proportion of the total area travel on a minimum of roadway mileage.

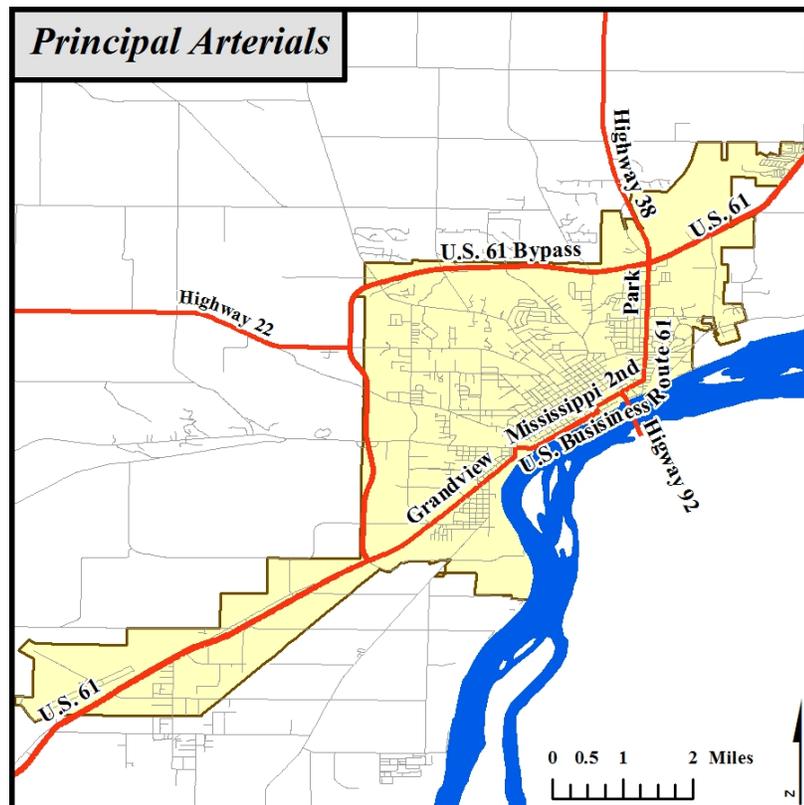


Figure 3: Principal Arterials in the Muscatine Area

Figure 3 illustrates roads classified as principal arterial in the Muscatine. U.S. 61 is the most important principal arterial in Muscatine. U.S. 61 is a major north/south route through the central United States. It runs along the banks of the Mississippi River from Minnesota to Louisiana. It links Muscatine to the Quad Cities and points beyond to the north; and to Burlington and points south. In Muscatine, U.S. 61 splits into U.S. 61 Bypass, a four-lane divided highway with partial control-of-access which follows the northern and western boundaries of the Muscatine; and U.S. 61 Business Route which follows the route that U.S. 61 formerly took through Muscatine prior to construction of the bypass. The Business Route is composed of Highway 38 (Park Avenue) and Highway 92 (East Second Street, Mulberry Avenue, Mississippi Drive and Grandview Avenue).

Highway 38 provides access to Interstate 80, a major transcontinental route, 15 miles to north of Muscatine. Highway 92 provides access to the Illinois side of the Mississippi River via the Norbert F. Beckey Bridge. Highway 22 provides access to points west of Muscatine. It also provides another route to the Quad Cities traveling northeast along the banks of the Mississippi River. However, this portion of the highway is not classified as an principal arterial.

All principal arterials in the Muscatine are state highways and thus controlled and maintained by the Iowa Department of Transportation. Because they are such vital components of Muscatine’s transportation infrastructure Goal T.11 of the Comprehensive Plan explicitly identifies the need for a continued close partnership between the City of Muscatine and the Iowa Department of Transportation to ensure that state highways in the Muscatine are fulfilling the needs of the community.

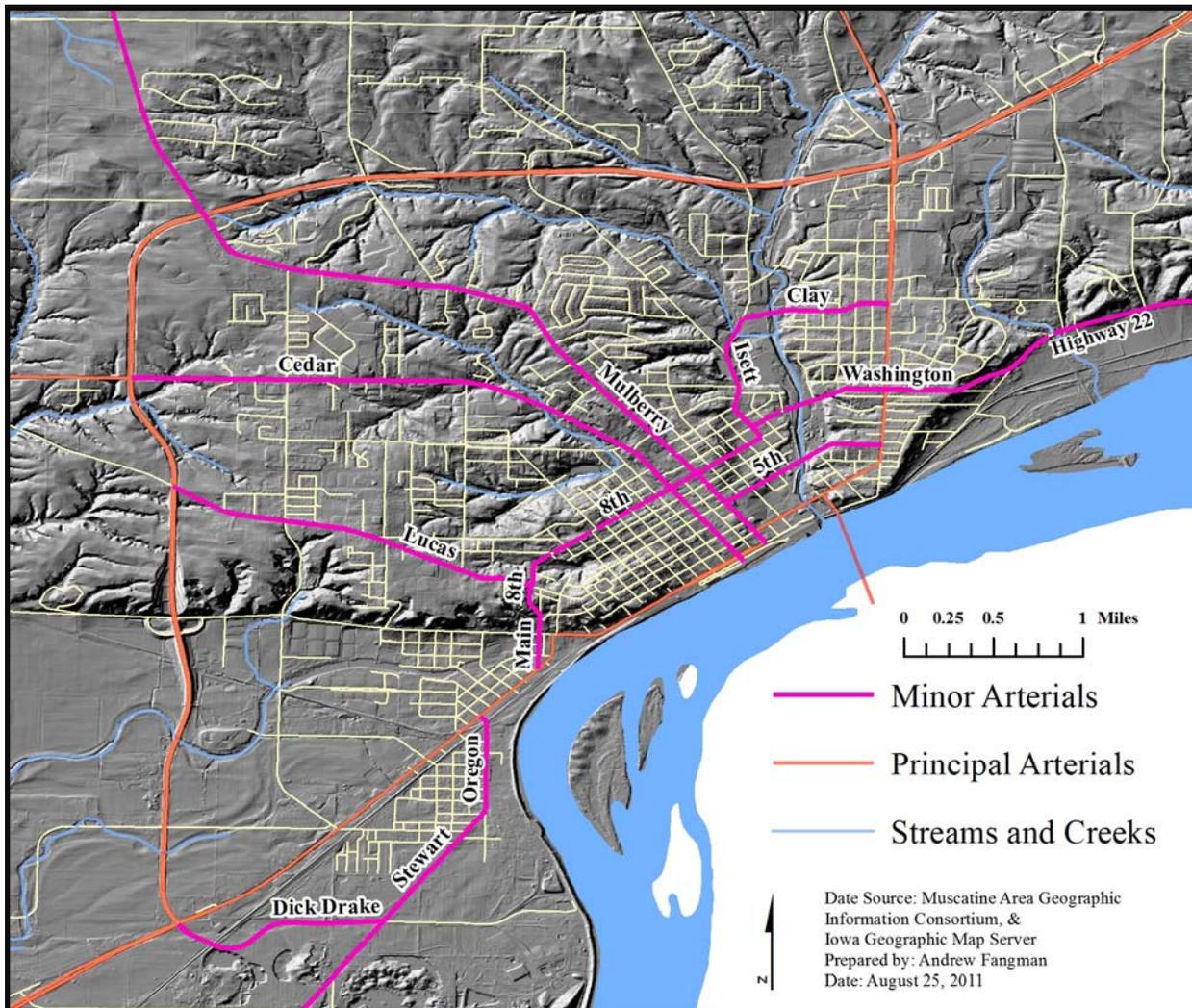


Figure 4: Minor Arterials and Topography

Minor Arterials

Roadways classified as minor arterials interconnect with and augment those classified as principal arterials. Like principal arterials the primary function of minor arterials is the smooth passage of through traffic. However, minor arterials make more provision for land access decreasing the potential speed and volume of traffic. Minor arterials serve geographic areas smaller than those served by principal arterials, but ideally should not penetrate identifiable neighborhoods.

The configuration of minor arterials in Muscatine has been largely determined by topographic constraints. Initial settlement in Muscatine occurred in the relatively flat area between the mouth of Mad Creek and West Hill. From this core the city grew outwards into areas containing numerous creeks, ravines, and bluffs. Avoiding terrain that is the most difficult to construct roads across is the dominant factor in determining the configuration of the minor arterials extending out from the City’s origin. Figure 4 illustrates the relationship of topography to the location of minor arterial streets. Muscatine’s topography has resulted in a radial pattern of minor arterial streets extending away from the downtown area and ultimately connecting with the principal arterials that encircle the community.

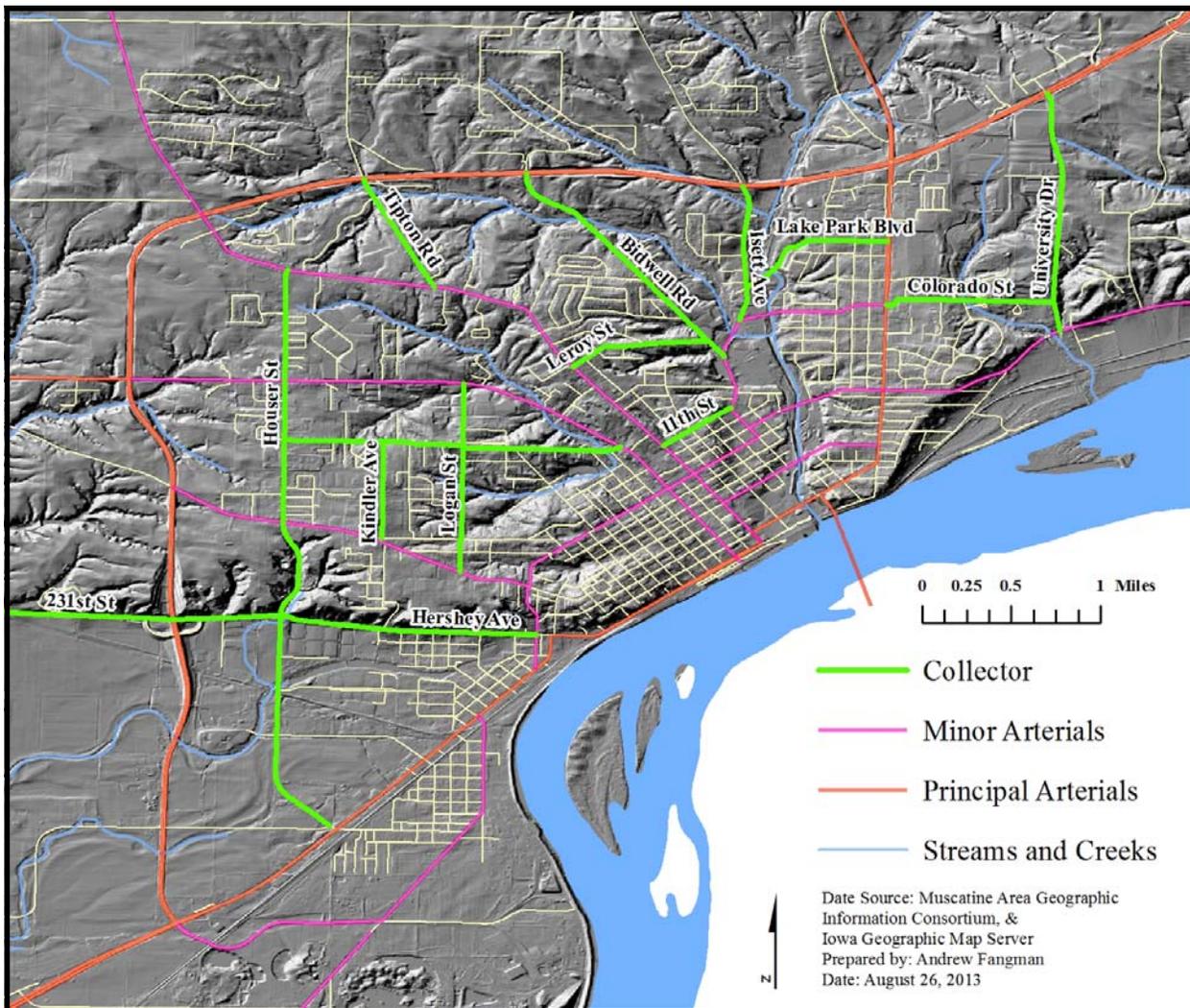


Figure 5: Collectors and Topography

Collectors

Collector streets provide direct service to local residential neighborhoods, commercial areas, local parks, churches, etc. Collector streets generally provide service to other traffic generators not directly served by arterial roads. Collector streets may penetrate neighborhoods and function to distribute trips from arterials through the area to their ultimate destination. Conversely, collector streets collect traffic from local streets in residential neighborhoods and channel it into the arterial street system.

Local Streets

The local street system includes all streets not included in one of the higher functional classifications. Local streets primarily serve residential areas and provide direct access to abutting land. Local streets offer the lowest level of mobility and through traffic movement is deliberately discouraged.

Major Trip Generators

Major trip generators are the nonresidential activities that either produce or attract large number of trips. These are the locations that traffic from residential areas is traveling to and from. Unlike residential areas into which traffic disperses, traffic tends to converge on these locations, increasing the potential for congestions. It is important to take note of major trip generators to identify the potential impacts they could have on traffic operations, major traffic generators are shown on Figure 7 on the next page.

The collection of professional and governmental offices, retail and hospitality establishments located within downtown Muscatine represent a major traffic generator. Access to the downtown is generally provided by Cedar Street, Mulberry Avenue, Highway 92, Mississippi Drive, and 5th Street as well as numerous local streets.

The two largest concentrations of commercial land use in Muscatine are found along Park Avenue north of Washington Street and the U.S. 61 Bypass from just east of its intersection with Park Avenue to University Drive. There is also significant industrial land uses located in these corridors. The concentration of so many traffic generators makes these two street segments the busiest in Muscatine. The Park Avenue/U.S. 61 Bypass is the most trafficked intersection in Muscatine.

Nodes of commercial land use are found in the vicinity of the Cedar Street/Houser Street intersection and along Grandview Drive southwest of downtown. Smaller pockets of commercial land use are scattered throughout the remainder of the city.

The industrial areas located throughout Muscatine constitute major trip generators. There are several distinct nodes of industrial activity in Muscatine. (Figure 7, page 8). These industrial uses generate a large amount of truck traffic. Some industrial establishments generate, between 13,000- 15,000 truck trips per year. The vast majority of this truck traffic is bound to or originating from points outside the city. Routes to industrial sites and to arterials leading out of Muscatine need to accommodate significant truck traffic. Any future road improvement projects need to take this into consideration.

Schools are a significant traffic generator and are the causes of some of the most significant traffic congestion issues in Muscatine. Nearly all daily trips to and from schools tend occur in



Figure 6: Traffic Congestion in the Vicinity of the Soccer Complex

small window of time at the beginning and then at the end of the school day. These surges in traffic often exceed the amount of traffic that the street serving a school can handle effectively causing congestion and delays. Congestion and delay caused by large numbers of vehicles trying to enter or leave a site in a very short period of time fashion is also found at the Muscatine Soccer Complex and Kent-Stein Park where events cause large amounts of traffic to enter or leave within a very small window of time.

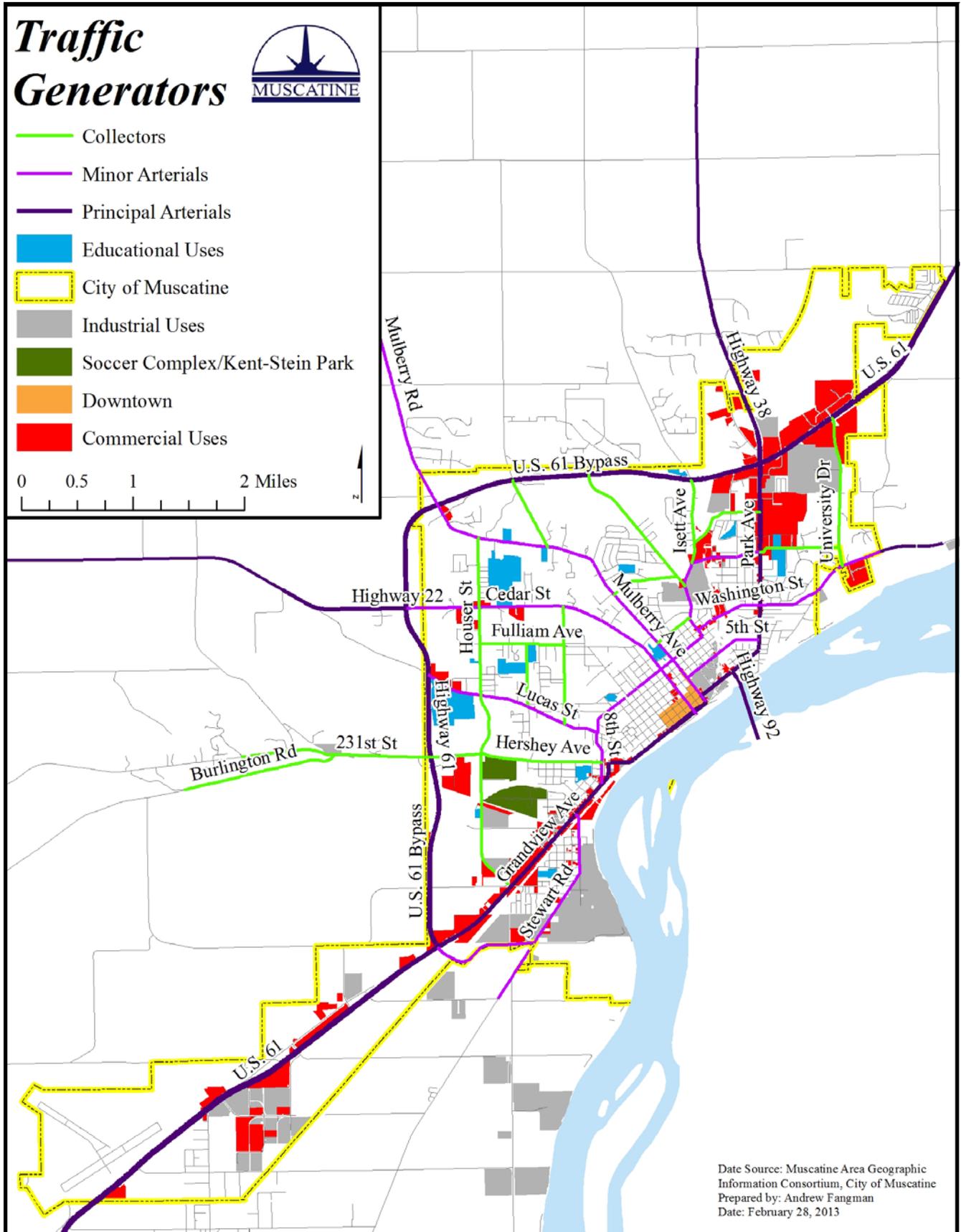


Figure 7: Traffic Generators

Trends in Traffic Patterns

Figure 10, 11, and 12 depict changes in traffic counts for specific locations between 1998 and 2010. Understanding how traffic patterns have shifted over the course of 13 years is a necessary foundation to plan for future infrastructure improvements and development. Of specific concern are street segments where traffic counts have significantly increased and are likely to continue to increase. As development occurs along these street, the necessary infrastructure improvements are made to accommodate traffic increases resulting from development.

University Drive and Mulberry Avenue as it approaches U.S. 61, are the two street segments that have shown the greatest increase in traffic between 1998 and 2010. Both have the potential for the amount of traffic traveling of them to increase as development in these areas continues. This is also true for Houser Street, but to a lesser degree.

Within the City of Muscatine, University Drive saw the greatest increase in the amount of traffic between 1998 and 2010. At the southern end of University Drive, traffic at the intersections with Colorado Street and Highway 22 increased by 31% and 33% respectively. At the northern end, traffic accessing University Drive from U.S. 61 increased by nearly 74%. Two factors likely account for this increase in traffic. First, significant residential growth has occurred along University Drive. Between 2000 and 2010, a total of 107 housing units were constructed in locations that are accessible only by University Drive. Secondly, Park Avenue is the only north-south arterial east of Mad Creek. University Drive is classified as a collector but is increasingly acting as arterial, as some traffic that formally used Park Avenue has shifted over to University Drive.

While traffic has greatly increased on University Drive, traffic on the corresponding section of Park Avenue between Highway 22 and U.S. 61 has declined between 11% and 15%. For traffic heading to the retail and employment establishments along U.S. 61, between Park Avenue and University Drive, and to and from points north on U.S. 61, University Drive is the more attractive option because of the lack of traffic lights and less traffic entering and exiting the road. Additionally a number of retail operations that were formerly located along Park Avenue have shifted to new locations on U.S. 61.

It is likely traffic on University Drive will continue to increase much of the land that fronts University Drive remains undeveloped. Development of this land, and on nearby land along U.S. 61 will over time increase the amount of traffic on University Drive.

The planned 2014 reconstruction of Colorado Street also has the potential to increase the amount of traffic on University Drive by significantly upgrading this major link between University Drive and Park Avenue.



Figure 8: University Drive

Traffic on the Mulberry Avenue immediately south of U.S. 61 increased by 63.2%. (Figure 11, page 3-12). This due to recent residential and commercial development in the this area. The development of a movie theatre and associated commercial subdivision is likely to increase traffic along this stretch of Mulberry Avenue even further.

A significant amount of land in this area remains undeveloped, so further increase traffic along this portion of Mulberry Avenue is likely as this areas continues to developed

Currently Mulberry Avenue, between the U.S. 61 Bypass and Houser Street, is an aging narrow rural style two lane road, lined by deep ditches, which lacks curb, gutter, shoulder or sidewalks. As traffic increases on this aging rural style road it becomes increasing inadequate to serve its new function as arterial road in urbanized area. For this reason that Goal T.6 of the Comprehensive Plan makes the reconstruction of Mulberry Avenue from Houser Street to the U.S. 61 Bypass shall be the top transportation infrastructure improvement priority after completion of projects currently underway on Cedar Street and Colorado Street.



Figure 9: Development near the U.S. 61/Mulberry Avenue Intersection

Traffic on many streets declined between 1998 and 2010. Unlike an increase in traffic that can be attributed to a new development causing an increase in traffic, it is much more difficult to attribute the cause of a decline in traffic to a single easily identifiable cause. Likely declines are a result of a combination of 3 major factors population declines in certain areas of the city, relocation of retail establishments, and the different economic climates of 1998 and 2010.

The River Center, South End, and Island Planning Districts all had population declines between 2000 and 2010, 5.2%, 4.3%, and 3.5% respectively. Not surprisingly many of the streets passing through these areas saw a decline in traffic.

Between 1998 and 2010, several retail outlets relocated from the Park Avenue corridor to locations along U.S. 61. This resulted in a major shifted in traffic patterns as customers, employees, and suppliers followed these businesses to their new locations.

It is important to note over the last 13 years, 1998 happened to have the lowest unemployment rate and 2010 the highest of those years. The unemployment rate in 2010 was more than two and half times higher than that in 1998, a fact that undoubtedly has an impact when traffic counts from those two years are compared.

The impact of the economy on traffic patterns between 1998 and 2010 is well illustrated by the fact there were notable declines in the traffic counts for nearly all road segments serving major industrial centers, aside from the area at the intersection of U.S. 61 and University Drive. However, barring plant closures these declines in traffic are likely not permanent.

Overall the amount of traffic entering/exiting t Muscatine declined between 1998 and 2010. Traffic counts at the city limit line on 13 segments of roads declined by 8.85% between 1998 and 2010. The only place where an increase in traffic entering/exiting the city were recorded was at Mulberry Avenue and Tipton Road. The decline in traffic entering/exiting the city is likely attributable to changes in economic conditions between 1998 and 2010.



City of Muscatine, Iowa—Comprehensive Plan

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Figure 10: Traffic Counts—Eastern Muscatine

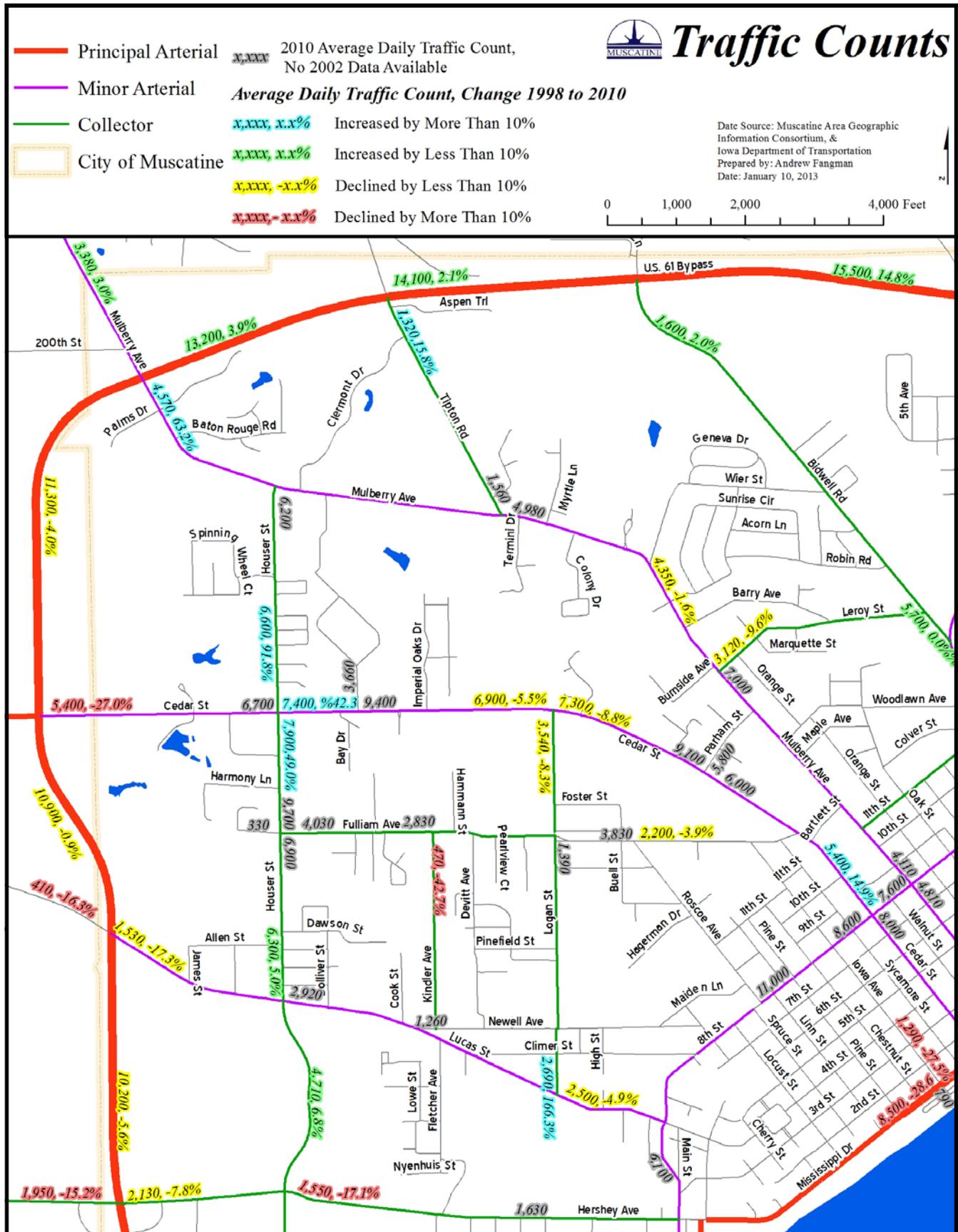


Figure 11: Traffic Counts—Western Muscatine

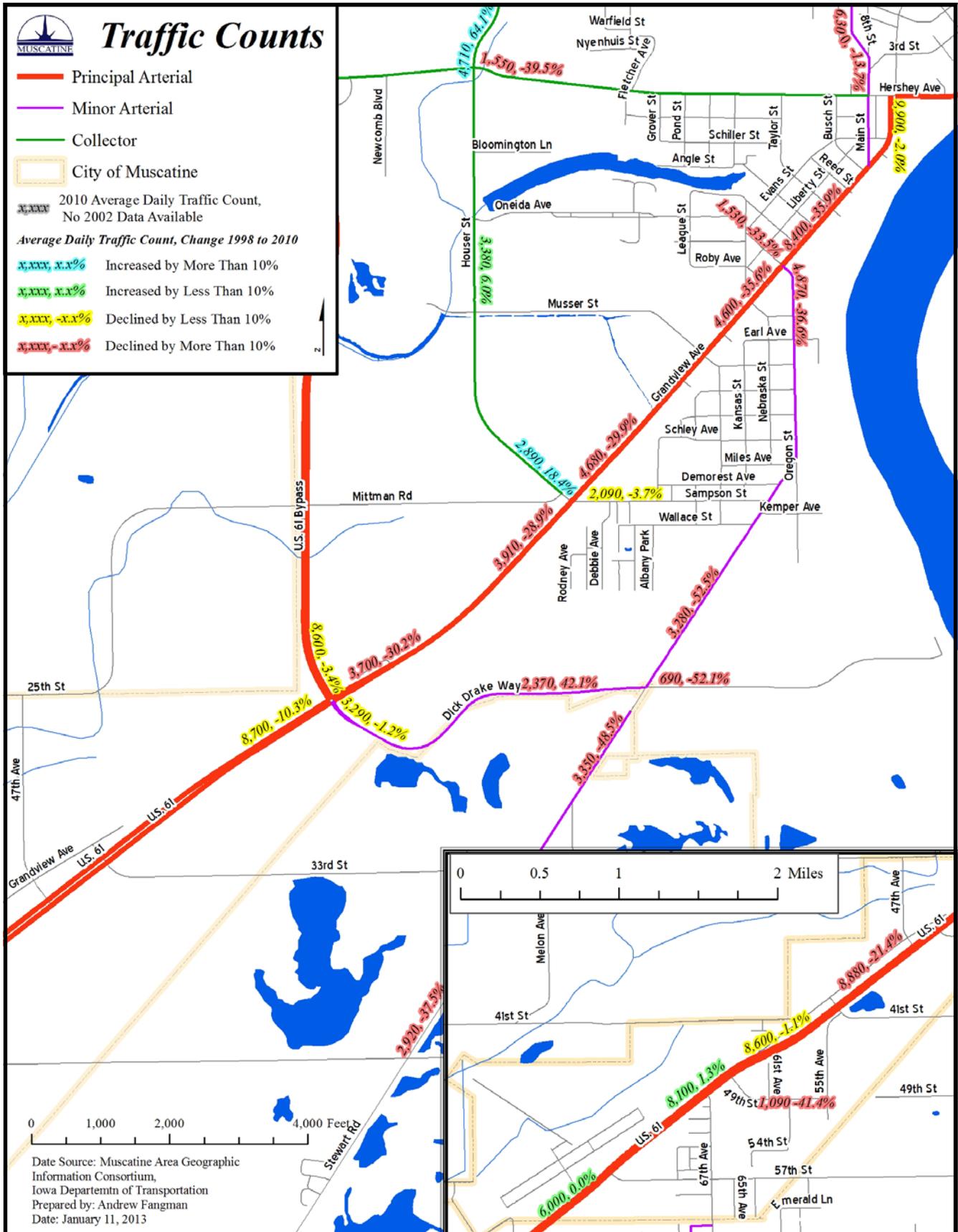


Figure 12: Traffic Counts—Southern Muscatine

Roadway Improvement Projects

Currently there are three major capital improvement projects underway that will lead to major improvements to the streets of Muscatine. All of Colorado Street and significant portion of Cedar Street will be reconstructed and enhanced. The West Hill sewer separation project will result in complete rebuilding of many older streets.

Cedar Street from Parham to Houser will be completely reconstructed and widened to a 3 lane configuration. A 10-foot-wide, multi-use trail will run along, but separated from the north side Cedar Street running from Parham to Houser will also be constructed as part of this project. This project has been divided into three phases. Phase I, culvert extension, was completed in 2011. Phase II, relocation of utilities occurred in 2012. Phase III, reconstruction of Cedar Street and construction of the adjoining trail occurred in 2013.

The Colorado Street reconstruction project includes the reconfiguring of Colorado Street as a three lane urban roadway with two through lanes and a center left turn lane. It will also feature a straightening out of the roadway curve that currently exists just east of Park Avenue intersection. Also included will be a right turn lane for northbound traffic at the intersection of Park Avenue and Colorado Street. This project will be completed by the fall of 2014.

The West Hill Sewer Separation Project is a project to fulfill a federal mandate. Aging combined sewers will be replaced with new and separate storm and sanitary sewers. It is the largest single public works project ever undertaken by the City of Muscatine, Figure 13 below depicts the extent of this project. Due to the size and cost, this project has broken into multiple phases with completion of the final phase to occur in 2028. Construction on the first phase will begin in the spring of 2012. This project will also result in a major upgrade to the City's street infrastructure. Nearly all the work will be in the public right-of-way requiring full width pavement and asphalt restoration. Additionally there will be new, replaced, and repaired sidewalks, driveway aprons, curb and gutter, and handicap ramps.

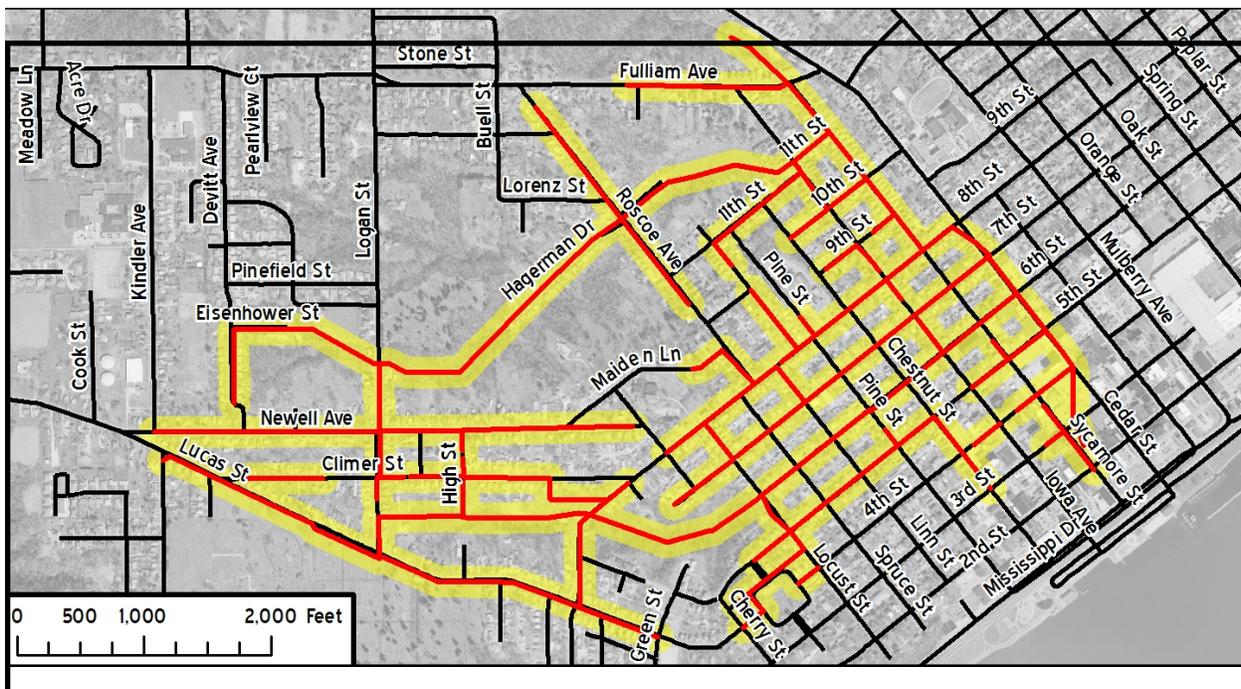


Figure 13: Extent of the West Hill Sewer Separation Project



The City of Muscatine is continually engaged in projects and activities to maintain existing transportation infrastructure. Goal T.2, states that maintaining existing roads, inclusive of curbs, handicap ramps, and railroad crossing, to a Pavement Condition Index Score of 60 or better, through the appropriate overlay, full depth patching, and crack sealing projects, as the highest transportation related goal of the Comprehensive Plan.

The Comprehensive Plan calls for transportation capital improvement projects that are already underway to be completed, Goal T.1. Additionally, the Comprehensive Plan also establishes and prioritizes goals for what transportation capital improvement projects should be pursued next.

Goal T.6 calls for the reconstruction of Mulberry Avenue from Houser Street to the U.S. 61 Bypass to adequately serve current and anticipated future traffic volumes. improvement priority. Following the completion of projects currently underway on Cedar Street and Colorado Street, the rebuilding of Mulberry Avenue from Houser Street to the U.S. is Muscatine's top transportation improvement priority.

Goal T.7: Lucas Street, Reconstruct Lucas Street from Houser Street to the U.S. 61 Bypass. Lucas Street is currently an aging narrow rural style two lane road, lined by deep ditches, lacking curb, gutter, shoulder or sidewalks. Realignment of the Lucas Street/U.S. 61 Bypass intersection to create a 90 degree intersection, as the current geometry of this intersection is a hazard, is also call for. This project should occur after the reconstruction of Mulberry Avenue contained in Goal T.6 is accomplished, due lower traffic volumes.

Goal T.8 calls for the improvement Houser Street from Lucas Street Grandview Avenue and redesign of the Grandview/Mittman/Sampson intersection, including the installation of permanent traffic signals.



Figure 14: Mulberry Ave. Between Houser St. and the U.S. 61 Bypass



Goal T.3, The Mississippi Drive Corridor Project, includes the reconstruction of 1.6 miles of U.S. 61-Business (pavement & curb/gutter); street lighting, landscaping, gateway features; pedestrian crossings and sidewalk improvements; traffic signals and geometric improvements; and storm drainage improvements and roadway embankment work intended to improve flood protection. Goals T.5 and T.6 of the Comprehensive Plan call for the remainder of Business 61 (Park Avenue and Grandview Avenue) to be reconstructed in similar manner.

The goals of the Comprehensive Plan identify two new roadways that should be constructed. The 38/61 Connector Road, and a new connection between Mulberry Avenue and Cedar Street using Palms Drive.

Goal T.10 call for a new road connection Highway 38, at it's northern intersection with Park Avenue West and U.S. 61 at New Era Road. The construction of a 38/61 Connector Road should be paid for by development that will be accessed by it. The 38/61 Connector Road should be constructed to the design standards and route recommended by t The 38/61 Connector Road Study. Development within this corridor should only be permitted to occur in a manner that leaves a viable corridor for the construction of the 38/61 Connector Road.

Goal T.9 calls for the extension of Palms Drive to Cedar Street to form an additional connection between Mulberry Avenue. Currently Palms Drive is a short road that serves as access to a commercial subdivision off of Mulberry Avenue. Any future extension of Palms Drive should be paid for by adjoining development. Any future extension of Palms Drive should be designed to the collector street standards which would allow Palms Drive to adequately serve as a connector between Cedar Street and Mulberry Avenue. Development within this corridor should only be permitted to occur in a manner that leaves a viable corridor for the extension of Palms Drive to Cedar Street.

Goals T.11 is a complete streets policy designed to improve both Muscatine's image and its function by providing a safe and attractive environment for street users of all ages and abilities such as including motorists, pedestrians, bicyclists, mass transit, children, senior citizens, individuals with disabilities, freight carriers, emergency responders and adjacent land users. This policy will apply to future road construction projects, and is not intended to be used is sole justi-



Figure 15: Current Terminus of Palms Drive

Trails and Sidewalks

Infrastructure designed to serve non-motorized travel is a key component of Muscatine’s transportation infrastructure. A transportation network that allows citizens to travel to their desired destination by foot or bike is necessary for Muscatine to have a complete network of transportation infrastructure able to serve the needs of those unable or who do not desire to travel by automobile. Goal T.12 of this Comprehensive Plan states: *“Members of the community should have the opportunity to travel safely to their destination by foot, bike or other non-motorized means. Children should be able walk or bike to their school safely. To achieve this goal critical routes for non-motorized travel, linking all schools, parks, bus stops, most major employment and shopping centers, and are located within 400 feet of most residences in Muscatine will be identified. These routes will be made safe and attractive for travel by foot, bike, wheelchair, and all other forms of legal non-motorized travel.”*

To achieve this goal the City of Muscatine will work with community members and stakeholders to identify and map critical routes for non-motorized travel linking all schools, parks, bus stops, most major employment and shopping centers, and those located within 400 feet of most residences in Muscatine. Once these routes are identified a detailed implementation plan to make the identified critical routes for non-motorized travel safe will be developed and then implemented in a systematic way.

It is particularly vital that all schools are connected to residential areas they serve by a complete network of sidewalks so that students can safely walk to school. Children being more able to walk or bike to school is of great benefit to the community. Walking or biking to school improves the health of Muscatine’s youth. Additionally, many of the most serious traffic delays in Muscatine are caused by large amounts of vehicles trying to access schools at arrival or dismissal time. Increasing the number of students who bike or walk to and from school is an effective way to help alleviate these traffic problems. Creating safe routes to school is a key step in increasing the number of students who walk or bike to school.

Networks safe routes for non-motorized travel should initially be constructed as smaller networks that radiate out from each school into the residential areas that they serve. These school centered networks of safe routes for non-motorized travel will be linked together to form a community-wide network of routes for non-motorized travel. This approach will maximize short and medium term benefits during the process of accomplishing the goal the long term goal of a complete network of transportation infrastructure.

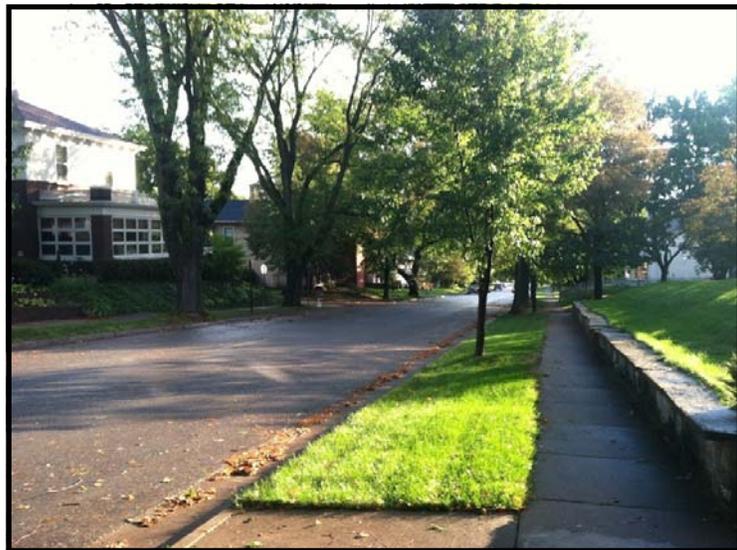


Figure 16: An Existing Sidewalk



Sidewalks and trails are the components of safe routes for non-motorized travel. Trails will serve as the backbone of the envisioned network of safe routes for non-motorized travel. They will function in a manner similar to arterial streets in the road network, moving larger volumes of non-motorized traffic longer distance across Muscatine. Sidewalks will have a similar role to collector and local streets. Figures 16 through 20 on the following page depict the existing sidewalk and trail infrastructure in Muscatine.

The Muscatine Riverfront Trail is the backbone of the trail system, running from Musser Park to the intersection of Solomon Road and Keener Road. It is a paved multi-use trail, walkers, bikers, runners and in-line skaters using right-of-way that is separated from all roadways and has a minimal crossing of

roadways. A connector composed of bike lanes and dedicated trails connect the southern terminus of the Riverfront Trail to Kent-Stein Park. Additional trails exist along the northern reaches of Mad Creek, at the Community Y, and at Discovery Park/Muscatine Power and



Figure 17: Muscatine Riverfront Trail

Water headquarters. A new trail running parallel to the north side of Cedar Street from Parham Street to Houser Street will be constructed in 2013.

Muscatine sits at the junction of two federally recognized trail systems, The American Discovery Trail, which crosses the nation from San Francisco to Delaware; and the Mississippi River Trail, which runs along the Mississippi River from Minnesota to Louisiana. The Muscatine Riverfront Trail is a recognized component of both these trail systems. From the northern terminus of the Muscatine trail network both national trails follow/share Solomon Road to New Era Road to Wildcat Den State Park and then to the Quad Cities area. These trails will follow a route going south from Musser Park to Louisa County via an extension to the trail network that will terminate at 41st Street and then on to Louisa County via shared road and a few short trail segments.



Figure 18: Trail

The trail system as envisioned in Muscatine is not yet complete. Goal T.13 of the Comprehensive Plan, details seven desired extensions to the existing trail system and prioritizes these extensions. Once built, this expanded trail network will form the backbone of the identified critical non-motorized transportation routes, serve as the local segment of national Mississippi River Trail and American Discovery Trail, as well as being recreational amenities that enhances the quality of life in Muscatine.



The highest priority trail extension, Project T.13.A, is the one that connects Musser Park and Wiggins Road through the construction of a new trail running from Kent-Stein Park/Muscatine Soccer Complex to 41st Street. Project T.13.B, the next highest priority, would create a connection between the existing trail networks at Kent-Stein Park/Muscatine Soccer Complex and at Discovery Park/Muscatine Power and Water offices. Completion of this trail extension would mean that all major park and recreational amenities would be linked to together by a continuous trail network.

Projects T.13.C and T.13.F would connect the existing Mad Creek Greenbelt trail to the riverfront trail at the Mouth of Mad Creek. The extension of trail along Mad Creek from the Mouth of Mad Creek to Washington Street, taking advantage of the new 5th Street which constructed in manner to allow a trail to pass under 5th Street has been deemed a higher priority because of difficult terrain along Mad Creek between Washington Street and Lake Park Boulevard .

Project T.13.D is a trail connecting the Mulberry Avenue/U.S. 61 Bypass to the existing Mad Creek Greenbelt Trail at the U.S. 61 Bypass underpass along an existing utility easement. Goal T.13 also call for a connection to be made between the southern end of the Cedar Street Trail at Parham Street to the Riverfront Trail. Because of the built up nature of this area, the routing and the actual form, trail, bike lane, enhanced sidewalk, or a combination of these three, of this connection will need to be the subject of further study and discussion.

Goal T.12 of this Comprehensive Plan states: “*Members of the community should have the opportunity to travel safely to their destination by foot, bike or other non-motorized means.*” This can only be achieved is the necessary sidewalk infrastructure is in place. While trails will form the backbone of the envision network of critical routes for non-motorized travel, nearly all non-automobile trips will begin and end on sidewalks. In order for Goal T.12 to be accomplished three improvements are necessary to sidewalk infrastructure in Muscatine.

- Gaps in the sidewalk network will have to be closed, creating a comprehensive city-wide network of sidewalks.
- Areas not served by sidewalks or trails at all will have to be addressed sidewalk and or trail extension.
- Maintenance and repair of existing sidewalk infrastructure to ensure that is safe and attractive to use.

Figures on pages 3-21 through 3-27 depict Muscatine’s current network of sidewalks and trails. The current sidewalk network is most complete in the downtown area and residential areas, except for those constructed during the period of time when sidewalks were not required to be installed in new subdivisions.

Forthcoming improvements to Cedar Street and Colorado Street, which include trail and sidewalk construction, will greatly improve the infrastructure network for non-motorized travel. Bike and pedestrian access to schools will greatly be enhanced by these two projects. Currently there are no safe routes to walk or bike to Colorado School and safe bike and pedestrian access to Muscatine High School exists only from Mulberry Avenue.



Figure 19 Pedestrian Traffic on Cedar Street Near the High School

The proposed projects also improve the overall quality of the bike and trail network by linking currently isolated segments of trails and sidewalks into a more complete city-wide network. Future improvements to major streets should continue the process of improving, enlarging, and connecting the sidewalk and trail network.

Completion of the Cedar Street and Colorado Street projects will still leave two major deficiencies the sidewalk and trail networks. The area northeast of the Highway 38/ U.S. 61 junction has become one of the most important retail and employment centers in the City of Muscatine. Currently there are no safe routes for pedestrians to access this area from the rest of the City. In addition there are no sidewalks and trails in the portion of the city southwest of Dick Drake Way.



Figure 20: Ribbon Cutting for a New Trail Segment

Maintenance of sidewalks is the responsibility of the adjacent property owners. Muscatine City Code details the standards to which sidewalks must be maintained to. There is also the requirement for all new subdivisions to include sidewalks. The procedure by which the City Council may add new sidewalks in other areas of the city is also contained in City Code. The subdivision regulations contained within City Code require new subdivision to leave easements for future trail construction along identified routes of future trails.

A detailed implementation plan will be developed to make the identified critical routes for non-motorized travel safe. The detailed implementation plan will identify measurable standards for what constitutes a safe route for pedestrian, bicyclist, wheelchair, and other relevant non-motorized use. Standards regarding width, condition, the Americans with Disability Act, etc. will be developed for sidewalks, trails, streets and crossings. Multiple standards may be developed in order to account for factors such as traffic levels, topography, and existing infrastructure.

This plan will include detailed inventory of existing sidewalks and trails located along identified critical routes for non-motorized travel. Gaps where no sidewalks currently exist will be identified. Crossings along identified critical pedestrian/bike routes will be inventoried and those not meeting standards identified. Inspection of the condition of existing sidewalks will NOT be done as part of this inventory.

The implementation plan will include a list of capital improvement projects addressing the gaps and deficiencies identified in the inventory. Examples of these projects include the construction of new sidewalks, construction of new trail segments, improvements to crossings, and enhancements to existing sidewalks, trails, and streets. The implementation plan will detail the sequence and location in which inspection and maintenance of existing sidewalks and capital improvement projects need to be completed in order to grow a network of critical routes for non-motorized travel outward from each school and the ultimately link them together into a community-wide network of safe routes for non-motorized travel.

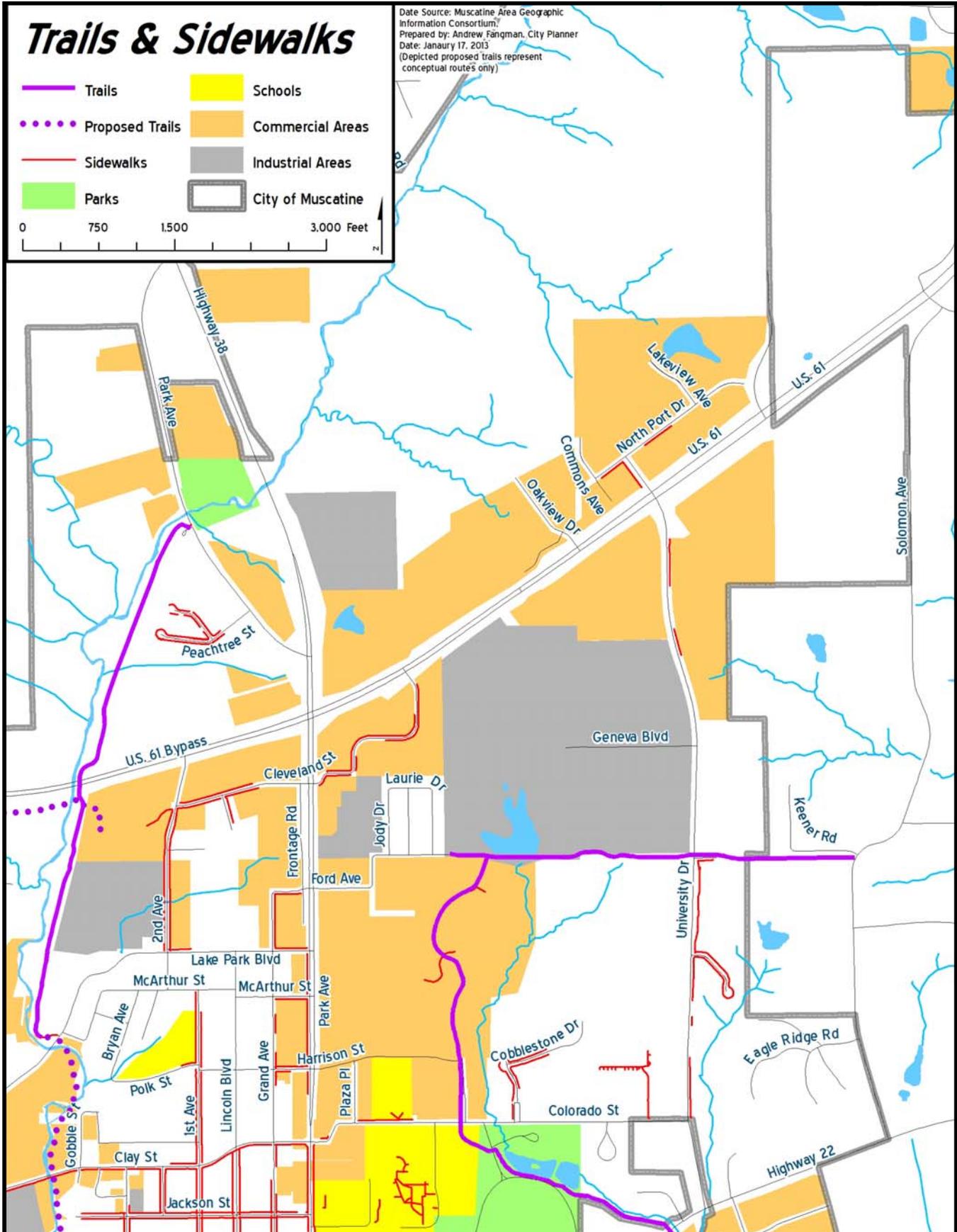


Figure 21: Trails and Sidewalks—Northeastern Muscatine

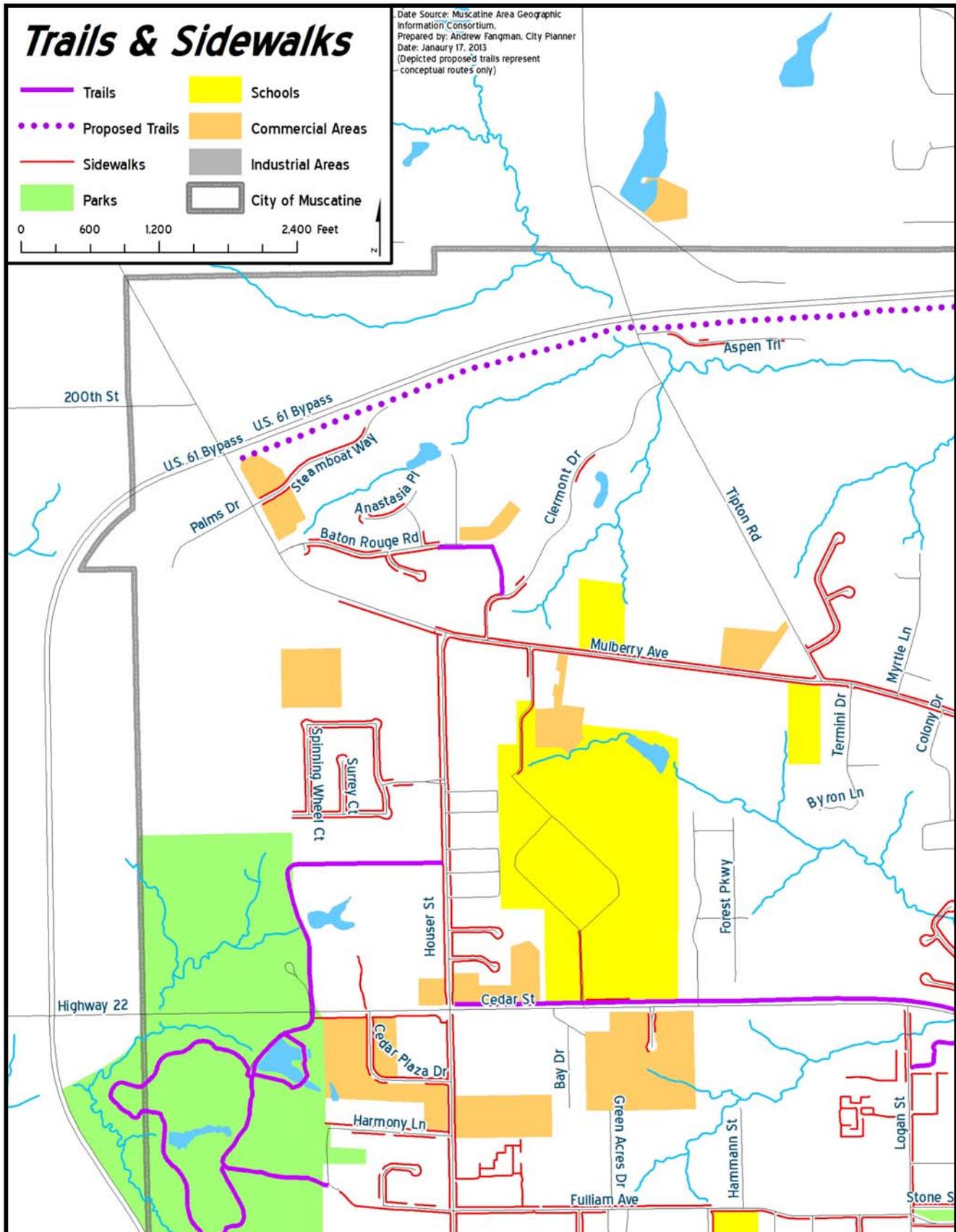


Figure 23: Trails and Sidewalks—Northwest Muscatine

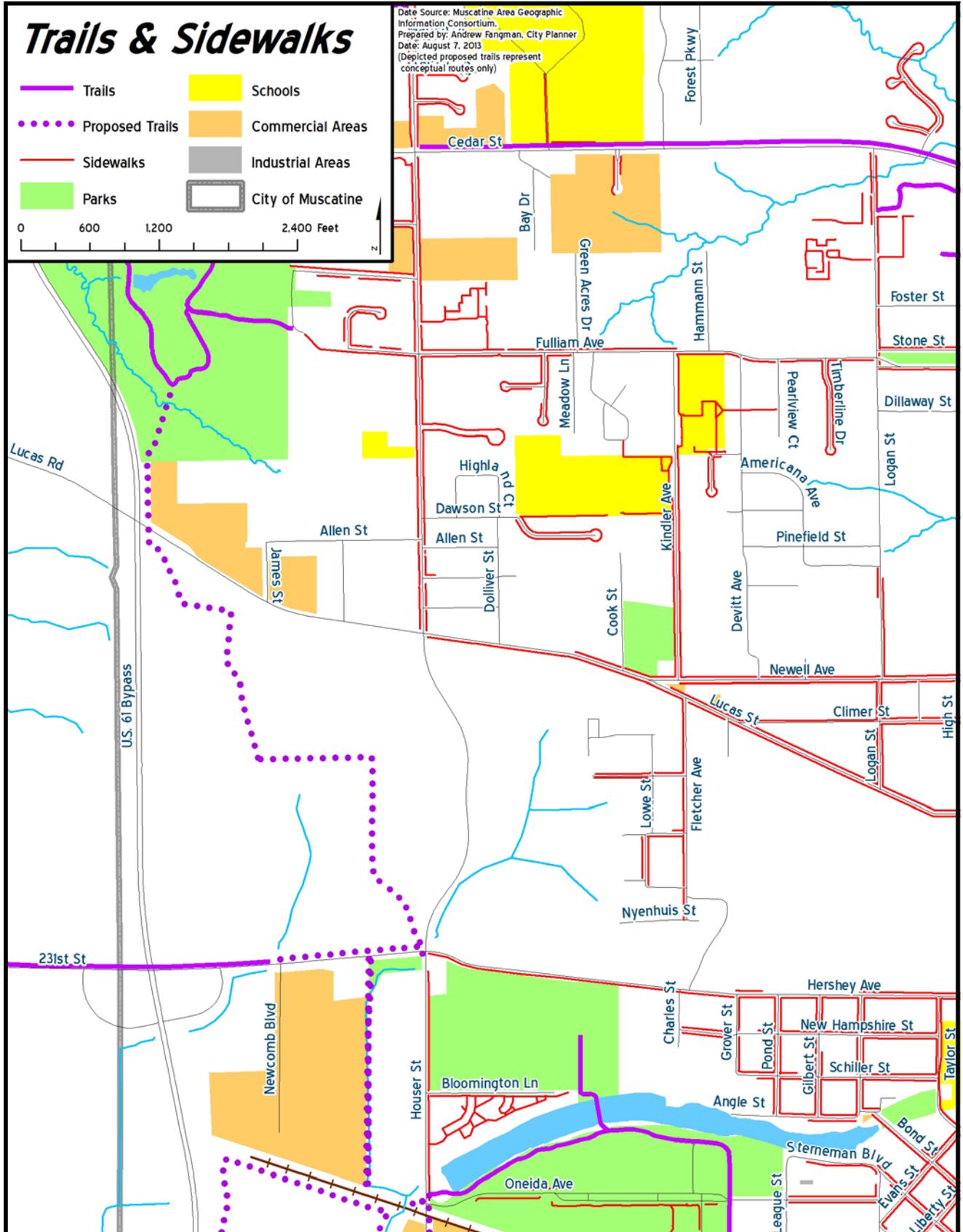


Figure 24 Trails and Sidewalks—West Central Muscatine

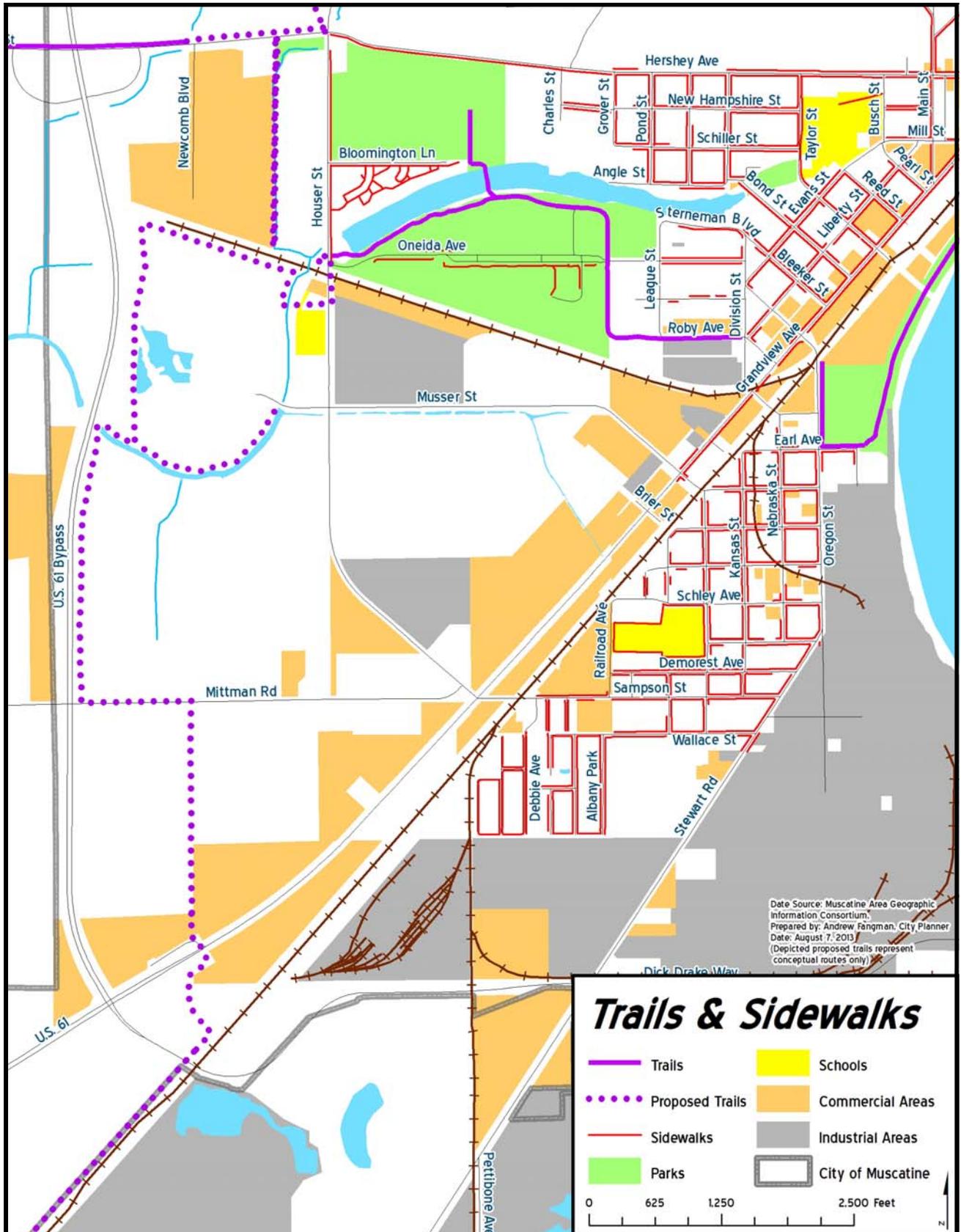


Figure 26: Trails and Sidewalks—South End

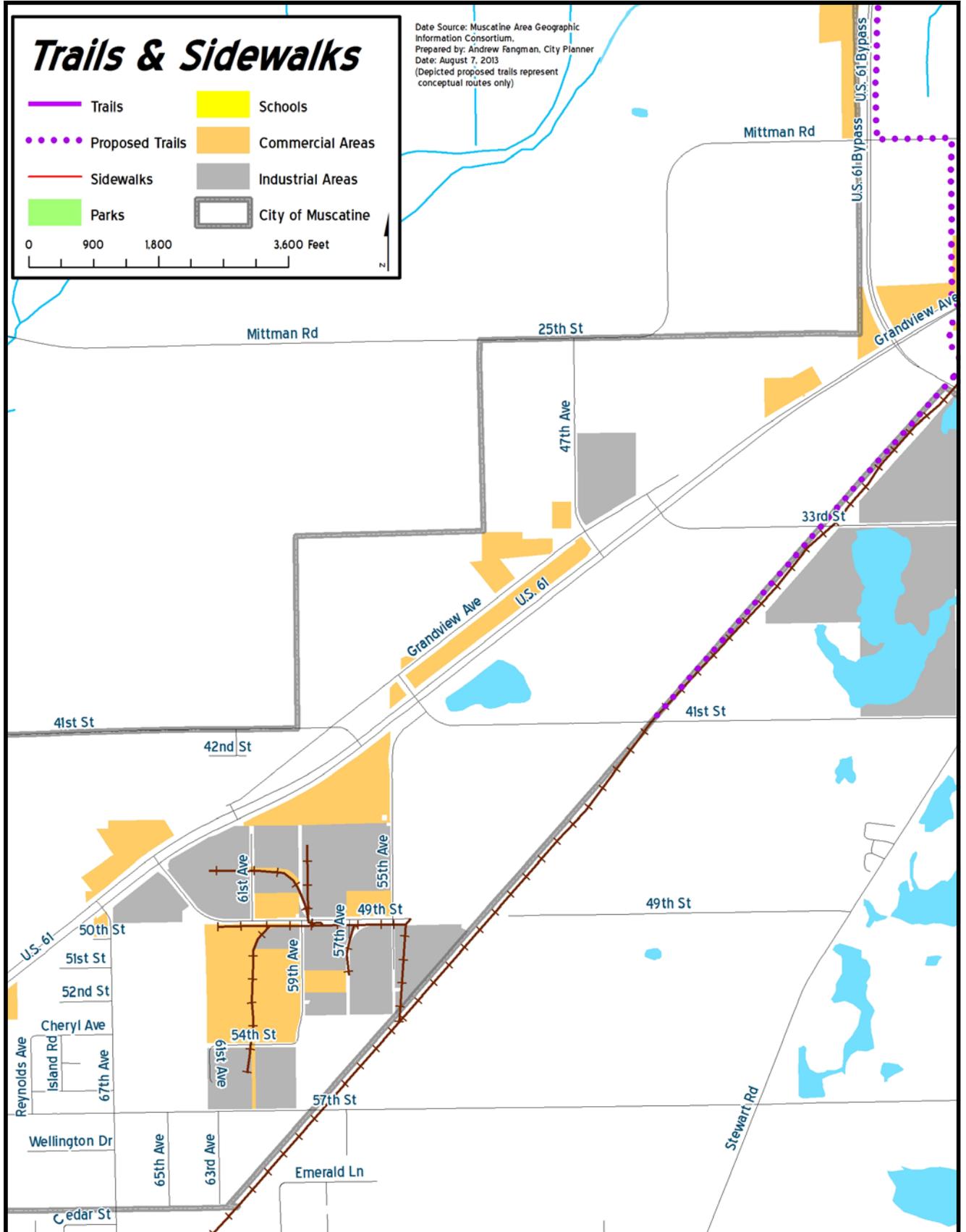


Figure 27: Trails and Sidewalks—Island Area



Transit

The City of Muscatine operates a fixed-route transit system (MuscaBus) and a curb-to-curb paratransit service. Currently the city utilizes the Public Works Building as both the administrative and maintenance center for the transit system. The building is ADA accessible and was constructed in 1985. It is anticipated that no facility growth will be required.

MuscaBus has operated with 10 small buses, all equipped with wheelchair lifts. One additional bus was added in 2009 for the new shuttle service between Muscatine and Wilton. The system consists of three full-time fixed routes see Figure 32, one additional fixed route which operates for four hours during peak travel times on weekdays; paratransit system for senior citizens and the disabled; an evening service for individuals to travel to employment and employment-related destinations; and a shuttle service between Muscatine and Wilton. The Muscatine Transportation Advisory Commission, appointed by the city council, assists the council and transit supervisor in establishing operating policies and procedures for the system.

Figures 28 through 31 detail recent transit ridership trends.

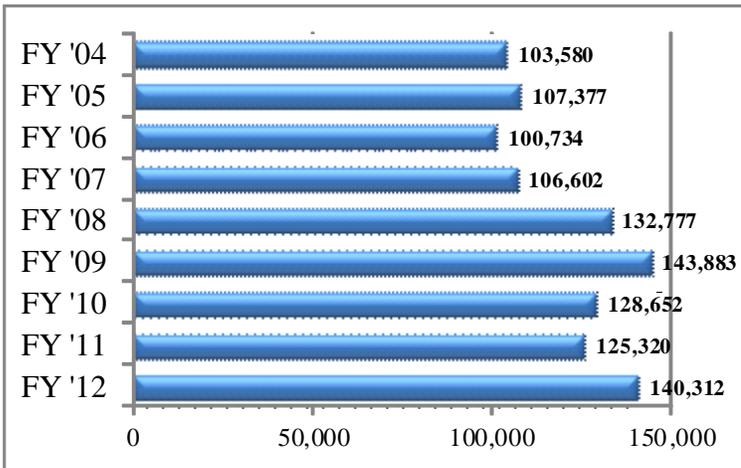


Figure 28: Route Ridership History

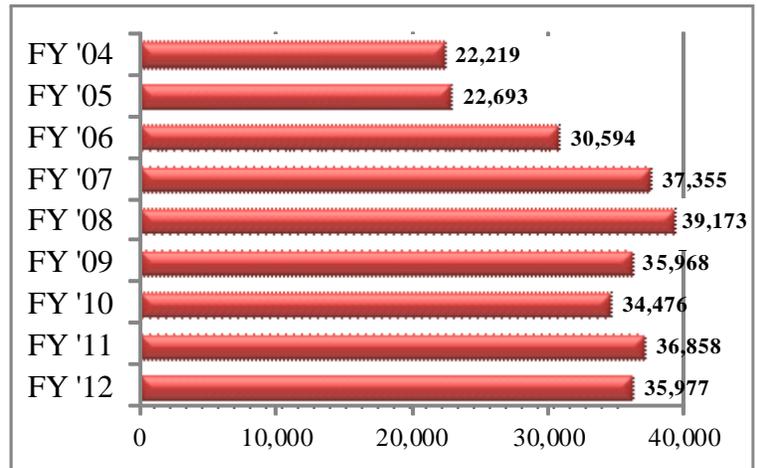


Figure 29: Paratransit Ridership History

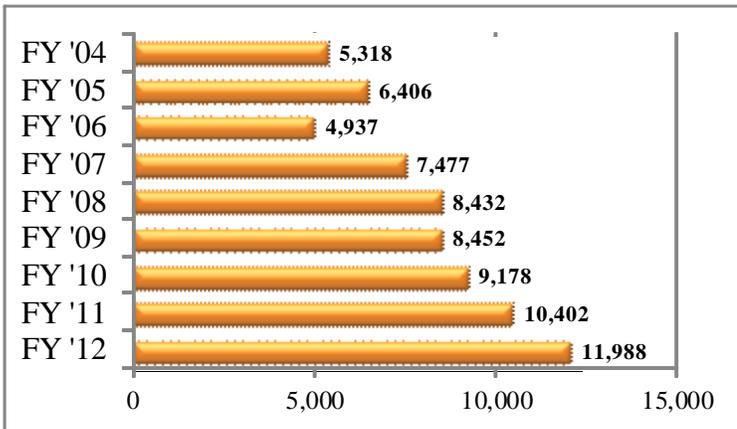


Figure 30: Night Services Ridership History

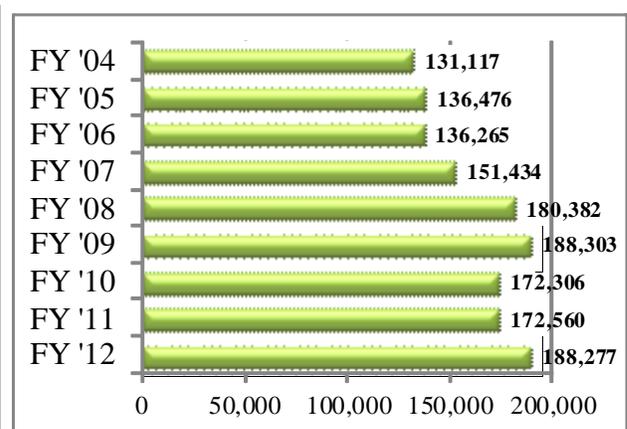


Figure 31: Transit Ridership History (All Services)

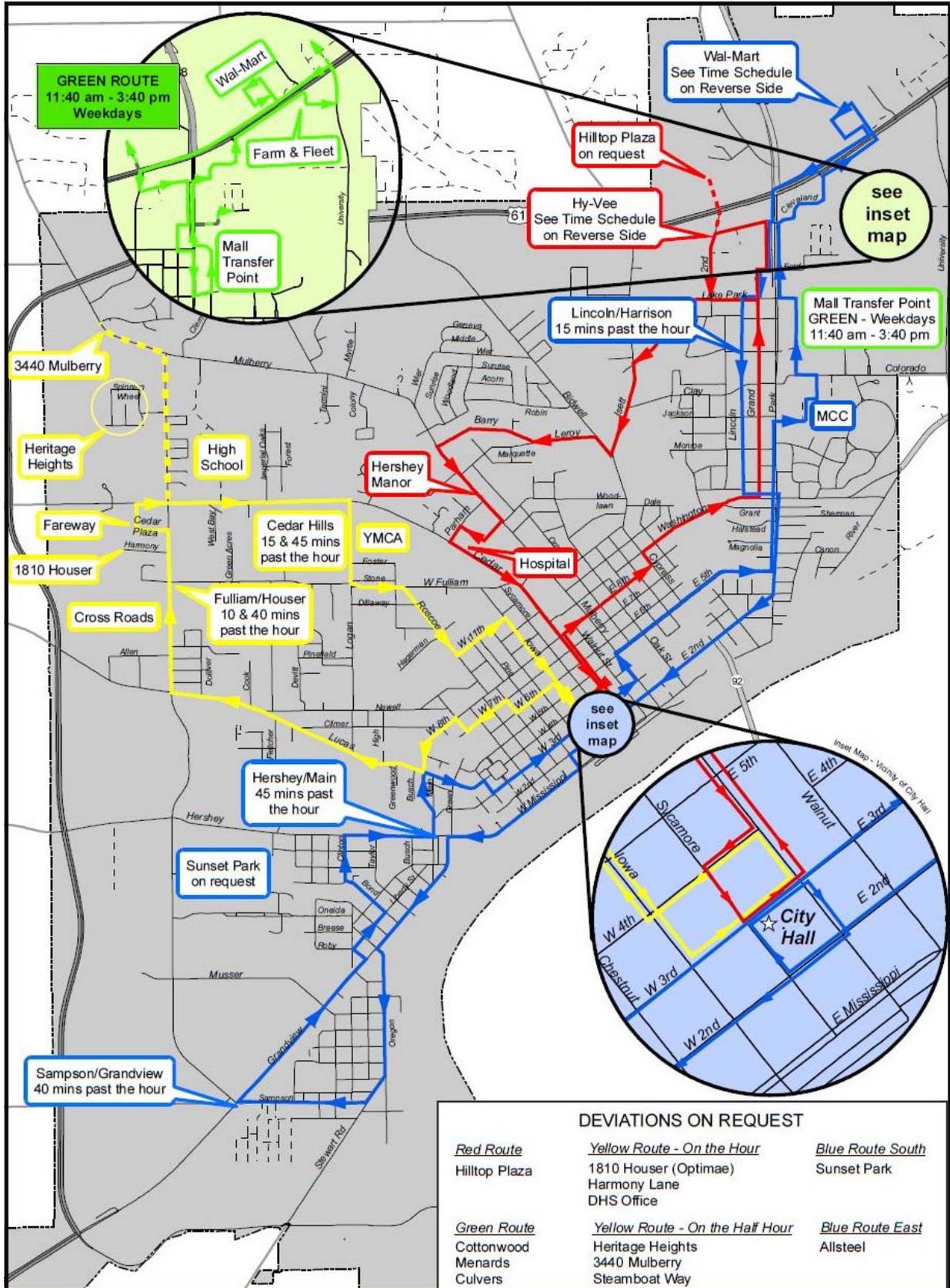


Figure 32: Fixed Transit Routes

Air Transportation

The Muscatine Municipal Airport (MUT) is located in the southwestern portion of the city along U.S. 61. It provides a non-commercial facility for use by the entire community. The airport assists in promoting industrial and commercial growth in Muscatine by providing a nearby modern airport facility for use by local corporations and private individuals.

The Airport includes a terminal building constructed in 2004, two corporate hangars, 20 T-hangars a maintenance building, and 2 community hangar that can store approximately 15 to 20 small airplanes. The airport has a 5,500 foot main runway and a 4,000 foot crosswind runway. Currently all 20T-hangeas are leased with a waiting list for those desiring to lease a T-hangar.

The airport is operated through contractual agreement by an airport manager who oversees the general operation of the facility. The city has also contracted a fixed base operator who provides various business functions and services to users of the airport. The fixed base operator provides airplane maintenance, charter services, flight services, and sales of airplanes, fuel, and other services required by the aviation industry. Currently, Carver Aero Inc. serves both as the airport manager and the fixed base operator.

The nearest airport with commercial service is the Quad Cities International Airport in Moline, Illinois, 35 miles northeast of Muscatine. Five airlines fly to 12 destinations out of the Quad Cities International Airport. The Eastern Iowa Airport, in Cedar Rapids, which is 58 miles to the northwest of Muscatine is served by four airlines flying to 12 destinations.

Goal T.14 cover the Muscatine Municipal Airport. It states; *“To continue to provide safe and efficient aviation facilities and services to the community which will promote commercial and industrial growth and stability of the City, and provide for the needs of the recreational and leisure activities involving aviation.”* This will be accomplished by working with the State of Iowa and the Federal Aviation Administration on airport maintenance and improvement projects as detailed in the adopted Airport Capital Improvement Program and the airport long range needs

assessment. Goal T.14 also establishes projects to maintain existing airport infrastructure to be the highest priority.



Figure 33: Muscatine Municipal Airport Location



Figure 34: Muscatine Municipal Airport

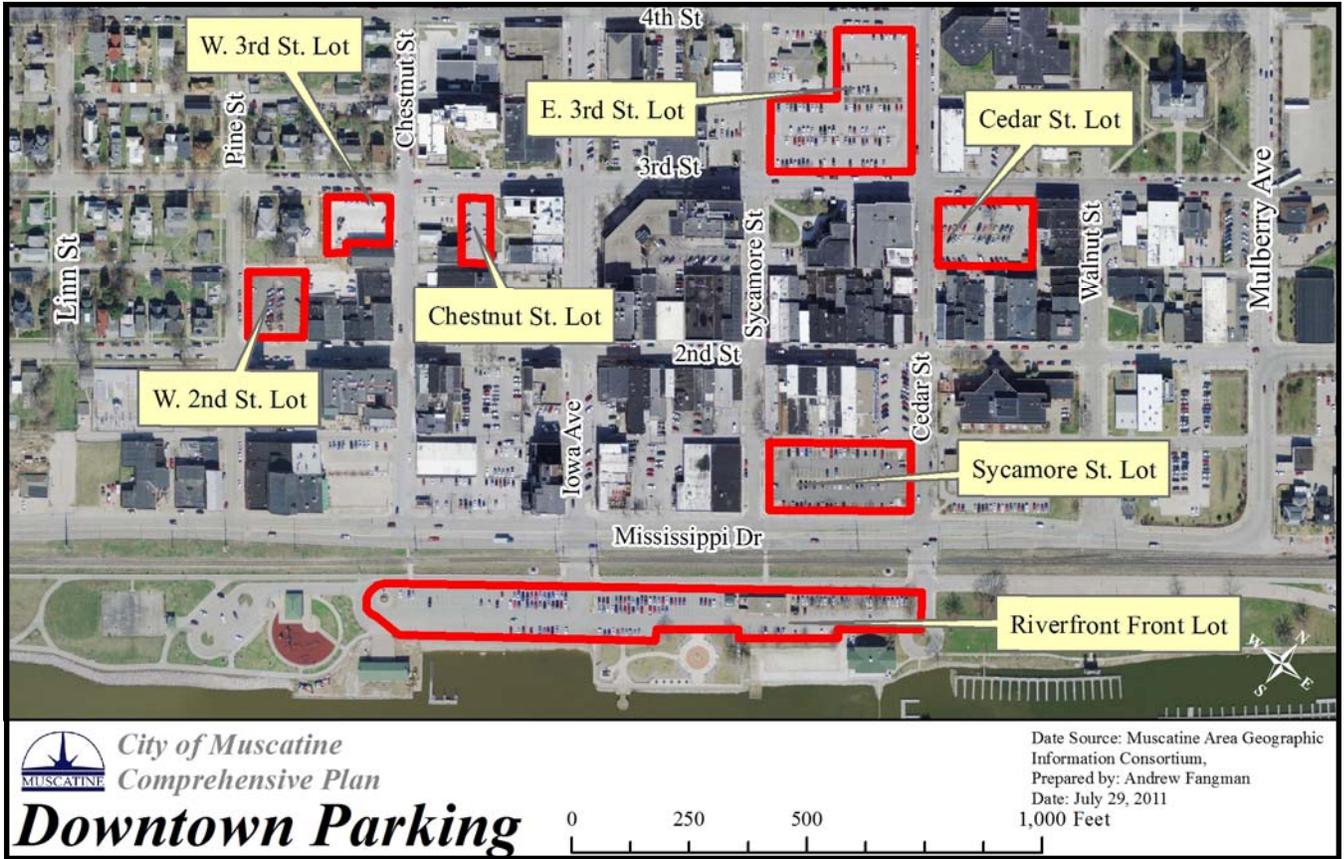


Figure 35: Downtown Parking

	On-Street	Chestnut	W. 2nd St.	Sycamore	W. 3rd St.	E. 3rd St.	Cedar St.	Riverfront	Total
Free Parking	143	0	16	13	0	0	5	542	719
2 Hour Meter	289	0	5	0	0	0	0	0	294
10 Hour Meter	55	19	15	42	0	9	0	0	140
Leased	0	0	4	46	0	149	50	0	249
Reserved	0	7	0	0	24	0	0	0	31
Handicapped	14	1	1	3	1	0	2	17	39
Total	501	27	41	104	25	158	57	559	1,472

Table 1: Downtown Parking

Parking

The City of Muscatine maintains 1,427 parking spaces in the downtown area. Approximately 35% of these parking spaces are on-street parking with about 69% of on-street parking spaces metered. These on-street parking spaces are primarily intended to serve the short-term parking needs of customers of downtown businesses. The large 514 space parking lot located along the riverfront accounts for 36% of the total municipally-owned downtown parking spaces. It accounts for 74% of all free parking spaces. The remaining 29% of parking spaces are contained in six smaller parking lots scattered across the downtown area. These parking lots are mostly intended to be used to serve longer-term parking needs, such as parking for those employed downtown. Nearly 90% of parking spaces located in these lots are leased, reserved for a specific user or have 10-hour parking meters.



Rail Transportation

The Canadian Pacific Railroad operates on the railroad tracks that run through Muscatine in a northeast/southwest alignment. (Figure 25, page 3-33). These tracks connect with the nationwide rail network in Davenport to the northeast and Ottumwa to the southwest. There are seven rail spurs extending off the mainline that serve industrial users in Muscatine.

Figure 36, shows the average number trains that pass through road crossings on a daily basis, as reported to the United States Department of Transportation. The busiest crossings in Muscatine are at Iowa Avenue and Cedar Street. Rail traffic through these intersections does not impact the free flow of traffic because only vehicular and pedestrian traffic at these intersections are those accessing riverfront parking lot and recreational amenities. Other rail crossing of heavily trafficked street such as at Grandview Avenue, Houser Street, 2nd Street, 5th Street, and Washington Street are rail spurs with minimal rail traffic and limited impact on vehicular traffic.

The area roughly bounded by the Mississippi River, Grandview Avenue, and Dick Drake Way is the one portion of Muscatine where the configuration of the railroad tracks has the potential to make access to the rest of the city difficult. The location of Fire Station #2 on Stewart Road ensures that businesses and residents within this area are reachable by emergency responders regardless of any streets blocked by rail traffic.

At present there is no passenger rail service that directly serves the Muscatine. The nearest Amtrak stations are south of Muscatine in Mount Pleasant and Burlington. Efforts to extend passenger rail service between Chicago and Iowa City, via the Quad-Cities, are progressing. When this line becomes operational will provide additional options for passenger rail service for Muscatine residents.

Barge Transportation

As part of the inland waterway system, the Mississippi River provides the Muscatine area with a link to the Mississippi tributaries, the Gulf of Mexico, the Great Lakes, and connections to foreign ports. The navigation season lasts just over 10 months in the portions of the river in the Muscatine region. However, the season's length does vary and tows will operate as long as there are commodities to move and ice conditions do not present serious risks.

Currently there are 12 river terminals, 10 in active use and 2 are inactive, in the Muscatine area. Figure 37 on page 3-34 depicts the location of the river barge terminals in the Muscatine area. All of them are located downstream of the point where the Mississippi River bends and resumes a southerly course. It has been the long standing policy of the City of Muscatine that riverfront industrial uses be located downstream of this point

Information on ownership and the type of material handled at each terminal can also be found in Figure 37. Materials being shipped through these terminals are nearly all high volume bulk commodities such as grain, coal, chemicals, and crude materials such as sand and gravel. The ability to ship such material cheaply by barge is vital to a significant portion of the industrial sector of the Muscatine economy. The availability of waterborne transportation is an asset that Muscatine has but many other cities in the Midwest do not. This presents an economic development opportunity, particularly in an era of rising fuel costs.

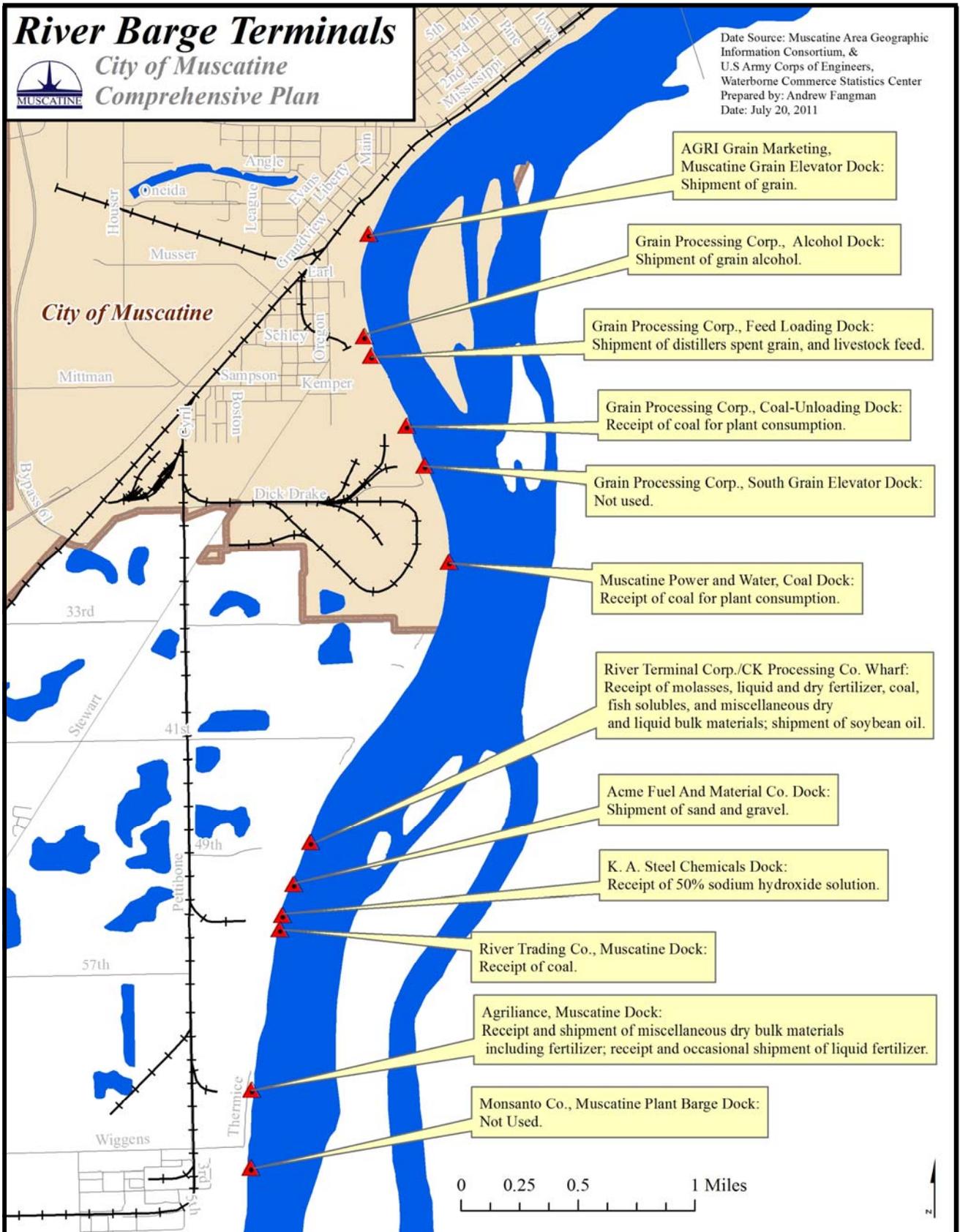


Figure 37: River Barge Terminals

Transportation Goals and Implementation Strategies

In order for goals to be achieved there must be strategies to implement the vision of a better Muscatine as laid out in the Comprehensive Plan. Each goal contained in the plan is accompanied by specific implementation strategies necessary to make that goal a reality.

There are three types of implementation strategies: policies, actions, and projects. Policies contain the standard which, if followed in all city actions and activities subject to review by the City, will advance the goal that they support. Policies contained within the comprehensive plan are advisory and compliance is not mandatory, however when taking an action contrary to what is contained in the plan this fact should be noted and an explanation given.

Actions detail the specific initiatives that the City can take to achieve a listed goal. Actions include such things as creating the necessary regulations to implement a goal, perform a study to understand how a goal might be achieved, or identify funding to achieve a goal.

Projects are specific capital improvement projects that if constructed would advance a listed goal. When the city develops future capital improvement plans, strong consideration should be given to these specific projects listed in the comprehensive plan.

Goal T.1: Complete Current Projects

Complete transportation related capital improvement projects currently underway.

Policy T.1.A: Highest priority should be given to the projects for which City of Muscatine has already begun to construct, design, or study (See Figure 38).

Policy T.1.B: As future phases of the West Sewer Separation Project are designed and constructed, to determine if work being done as part of the West Sewer Separation Project can be leveraged to achieve other goals set forth in the Comprehensive Plan.

Project T.1.C: Complete the West Hill Sewer Separation Project by 2028.

Action T.1.D: Complete the 38/61 Connector Study.

Project T.1.E: Cedar Street reconstruction.

Project T.1.F: Colorado Street reconstruction.

Project T.1.G: Musser Park to Wiggins Road Trail.

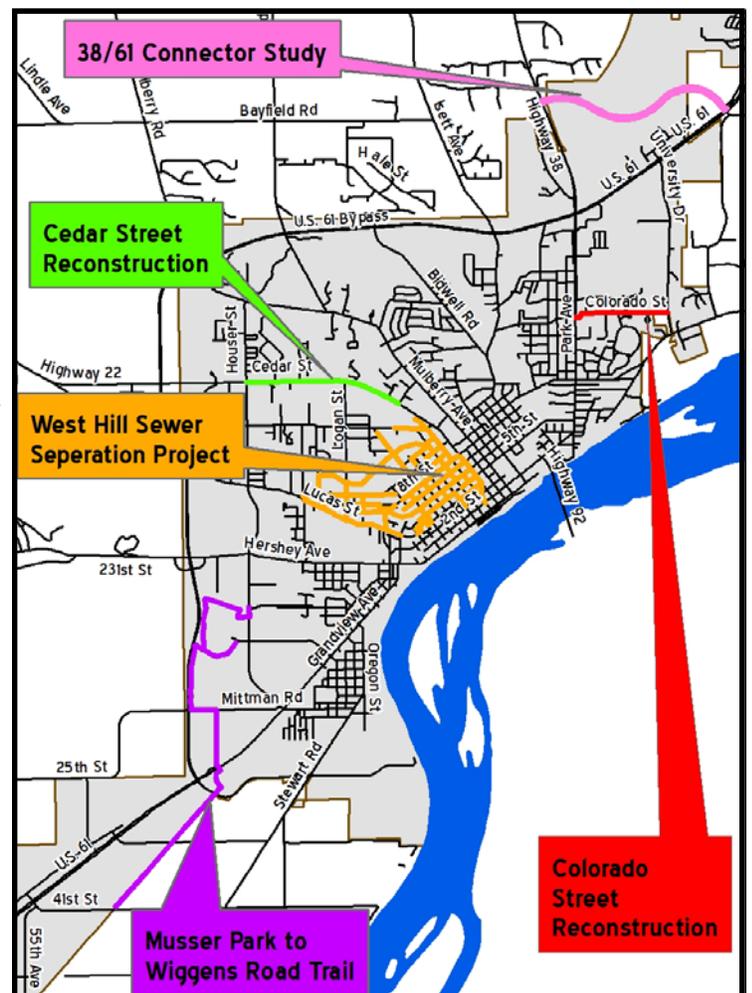


Figure 38: Goal T.1



Goal T.2: Roadway Maintenance

Maintain existing roads, inclusive of curbs, handicap ramps, and railroad crossings, to a Pavement Condition Index Score of 60 or better, through the appropriate overlay, full depth patching, and crack sealing projects.

Policy T.2.A: The maintenance of existing roadways is a high priority, only the projects identified in Goal T.1 and Goal T.6 are of an equal priority.

Policy T.2.B: Roadway maintenance projects for segments of road to be reconstructed during the West Hill Sewer Separation Project or for which plans for reconstruction are part the adopted City of Muscatine Capital Improvement Plan, shall be considered the lowest priority for roadway maintenance projects.

Action T.2.C: A comprehensive roadway inventory from which pavement condition index scores are derived should be conducted at least once every three years.

Action T.2.D: Annually develop a list of roadway maintenance projects, overlays, full depth patching, and crack sealing necessary to achieving the goal of all segments of City of Muscatine roadways of having a pavement condition index score of 60 or better.

Action T.2.E: Increase annual funding for roadway maintenance projects from \$500,000 to \$750,000.

Action T.2.F: Annually developed a list of projects necessary to meeting American with Disability Acts standards regarding handicap accessible intersections.

Project T.2.G: All projects annually identified as necessary to achieving the goal of all segments of City of Muscatine roadway of having a pavement condition index score of 60 or better.

Project T.2.H: Projects necessary to meeting American with Disability Acts standards regarding handicap accessible intersections.

Goal T.3: Mississippi Drive Corridor (U.S. 61 Business)

Reconstruction of 1.6 miles of Mississippi



Figure 39: Extent of the Mississippi Drive Corridor



Goal T.4: Park Avenue Corridor (U.S. 61 Business)

Enhance and improve Park Avenue south of the U.S. 61 Bypass and 2nd Street from Park Avenue to the Norbert F. Beckey Bridge. Improvements to Park Avenue and 2nd Street are critical to the revitalization and enhancement of the Park Avenue Corridor and creating an attractive gateway into Muscatine, both major goals of the Comprehensive Plan.

Policy T.4.A: Enhancement and improvements to the following aspects of Park Avenue should be pursued in tandem with a similar effort along Grandview Avenue as the logical extension of what will be accomplished along U.S. 61 Business with the Mississippi Drive Corridor Project.

Policy T.4.B: Infrastructure improvements and enhancements to Park Avenue will be part of a comprehensive effort to revitalize and enhance the Park Avenue Corridor

- Pavement & Curb/Gutter
- Street lighting
- Lane Configuration
- Landscaping
- Gateway Features
- Sidewalks and Pedestrian Crossings
- Traffic Signals
- Intersection Geometry
- Storm Water Drainage
- Overhead Utility Lines

Policy T.4.C: Planning that will precede infrastructure improvements and enhancements to Park Avenue will specifically examine the following issues:

- Low maintenance aesthetic enhancements, because Park Avenue is a key gateway into Muscatine and plays an important role in the way that Muscatine is perceived.
- Conversion to a three lane configuration (South of Colorado Street). This type of configuration could possibly spur development along this stretch of Park Avenue by making it easier for left turning traffic to access businesses along the street. The current four line configuration creates very narrow travel lanes., Switching to a three lane configuration, in addition to allowing for the creation of a dedicate travel lane, would allow for the travel lanes to be widened to a standard width.
- Improvements to the Park Avenue and 5th Street intersection. This is a tight corner and there are concerns regarding larger vehicles trying to make this turn.
- The geometry of the five-way intersection of Park Avenue, 4th Street, 2nd Street should be improved

Action T.4.D: Work with community stakeholders and the Iowa Department of Transportation to develop a plan to improve and enhance Park Avenue.

Action T.4.E: Work with state and federal partners to fund project.

Project T.4.F: Improve and enhance Park Avenue.



Figure 40: Extent of the Park Avenue Corridor



Goal T.5: Grandview Avenue Corridor (U.S. 61 Business)

Enhance and improve Grandview Avenue between U.S. 61 and Green Street. Improvements to this segment of Grandview Avenue are critical to the revitalization and enhancement of the Grandview Avenue Corridor and creating an attractive gateway into Muscatine, both major goals of the Comprehensive Plan.

Policy T.5.A: Enhancement and improvements to the following aspects of Grandview Avenue should be pursued in tandem with a similar effort along Park Avenue as the logical extension of what will be accomplished along U.S. 61 Business with the Mississippi Drive Corridor Project.

- Pavement & Curb/
Gutter
- Street lighting
- Lane Configuration
- Landscaping
- Gateway Features
- Sidewalks and
Pedestrian Crossings
- Traffic Signals
- Intersection Geometry
- Storm Water Drainage
- Overhead Utility Lines

Policy T.5.B: Infrastructure improvements and enhancements to Grandview Avenue will be part of a comprehensive effort to revitalize and enhance the Grandview Avenue Corridor

Policy T.5.C: Planning that will precede any infrastructure improvements and enhancements to Grandview Avenue will specifically examine the following issues.

- Low maintenance aesthetic enhancements. Grandview Avenue is a key gateway into Muscatine that plays an important role in the way that Muscatine is perceived.
- The burial of existing overhead utility lines to enhance the appearance of the Grandview Avenue corridor.

Action T.5.D: Work with community stakeholders and the Iowa Department of Transportation to develop a plan to improve and enhance Grandview Avenue.

Action T.5.E: Work with state and federal partners to fund project.

Project T.5.F: Improve and enhance Grandview Avenue from U.S. 61 to Green St.



Figure 41: Extent of the Grandview Avenue Corridor



Goal T.6: Mulberry Avenue

Reconstruct Mulberry Avenue from Houser Street to the U.S. 61 Bypass to adequately serve current and anticipated future traffic volumes. Currently this segment of Mulberry Avenue is an aging narrow rural style two-lane road, lined by deep ditches, which lacks curb, gutter, shoulder or sidewalks. Traffic has increased by 63.2% between 1998 and 2010. Continuing development will further increase the amount of traffic on this segment of Mulberry Avenue.

Policy T.6.A: After completion of projects currently underway on Cedar Street and Colorado Street, reconstruction of Mulberry Avenue from Houser Street to the U.S. 61 Bypass shall be the top transportation infrastructure improvement priority.

Action T.6.B: Apply for Surface Transportation Program funding to reconstruct Mulberry Avenue from Houser Street to the U.S. 61 Bypass at the next available opportunity.

Action T.6.C: Because funding for full reconstruction is unlikely to be available prior to 2016, identify any feasible and affordable interim improvement that could be utilized for this section of Mulberry Avenue,

Project T.6.D: Construct identified interim improvements.

Project T.6.E: Reconstruction of Mulberry Avenue from Houser Street to the U.S. 61 Bypass.

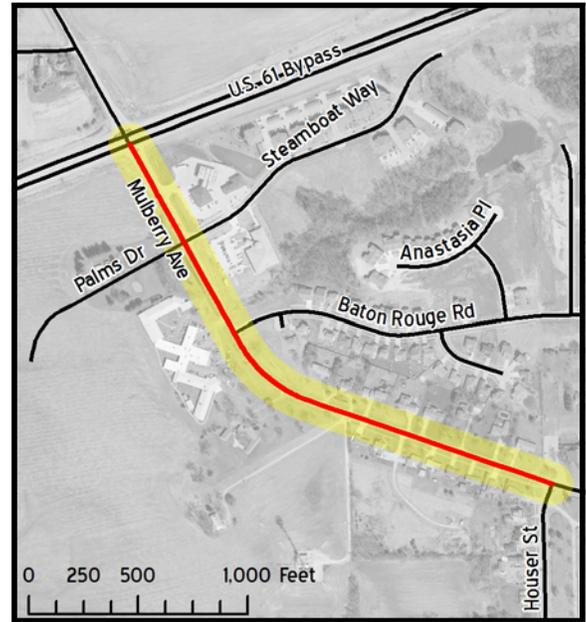


Figure 42: Portion of Mulberry Ave. Covered by Goal T.6

Goal T.7: Lucas Street

Reconstruct Lucas Street from Houser Street to the U.S. 61 Bypass. Lucas Street currently an aging narrow rural-style two-lane road, lined by deep ditches, and lacks curb, gutter, shoulder or sidewalks, from Houser Street to the Bypass. Realign the Lucas Street/U.S. 61 Bypass intersection to create a 90 degree intersection, as the current geometry of this intersection is a hazard.

Policy T.7.A: The reconstruction of Lucas Street from Houser Street to the U.S. 61 Bypass and realignment of the Lucas Street/U.S. 61 Bypass intersection should occur after the reconstruction of Mulberry Avenue, due to lower traffic volumes.

Action T.7.B: Identify and pursue the appropriate funding sources.

Project T.7.C: Reconstruction of Lucas Street from Houser Street to the U.S. 61 Bypass including the realignment of the Lucas Street/U.S. 61 Bypass intersection to create a 90 degree intersection.

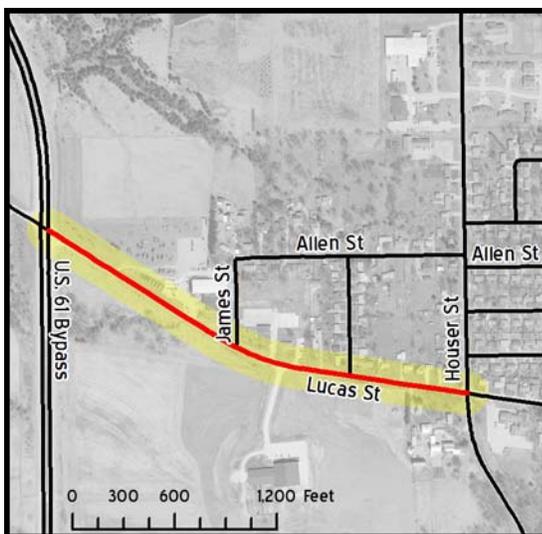


Figure 43: Portion of Lucas St Covered by Goal T.7

Goal T.8: South Houser Street Corridor

Improve Houser Street from Lucas Street to the Mittman Road and Mittman Road from Houser Street to Grand view Avenue. Redesign the Grandview/Mittman/Sampson intersection, including the installation of permanent traffic signals.

Policy T.8.A: The improvement of Houser Street from Lucas Street to the Mittman Road and Mittman Road from Houser Street to Grand view Avenue is a lower priority than improvements to Mulberry Avenue and Lucas Street

Policy T.8.B: The redesign of the Grandview/Mittman/Sampson intersection, including the installation of permanent traffic signal, is a higher priority than improvements to Houser Street and Mittman Road.

Action T.8.C: Identify and pursue the appropriate funding sources.

Project T.8.D: Improvements to identified sections of Houser Street and Mittman Roads.

Project T.8.E: Redesign of the Grandview/Mittman/Sampson intersection, including the Installation of permanent traffic signals.

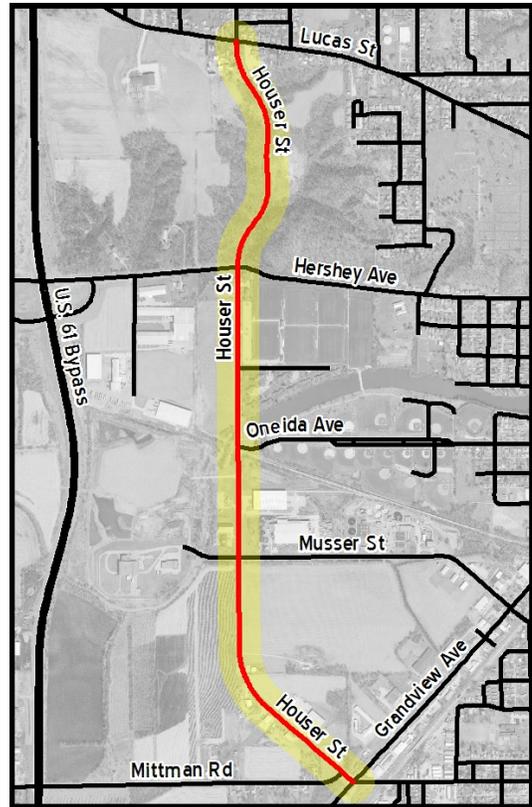


Figure 44: Extent of Goal T.8

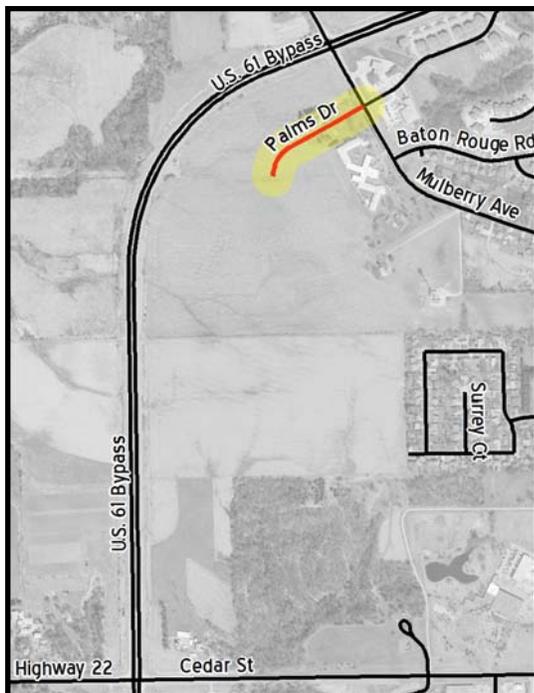


Figure 45: Current Extent of Palms Drive in Relation to Mulberry Avenue and Cedar Street

Goal T.9: Palms Drive

Extend Palms Drive to Cedar Street forming an additional connector between Mulberry Avenue and Cedar Street. Currently Palms Drive is a short road that serves as access to a commercial subdivision off of Mulberry Avenue.

Policy T.9.A: Any future extension of Palms Drive should be paid for by development along the future extension.

Policy T.9.B: Any future extension of Palms Drive should be designed to collector street standards which would allow Palms Drive to adequately serve as a connector between Cedar Street and Mulberry Avenue.

Policy T.9.C: Development within this corridor should only be permitted to occur in a manner that leaves a viable corridor for the extension of Palms Drive to Cedar Street.



Goal T.10: 38/61 Connector Road

A new connector road should be constructed between a Highway 38 and U.S. 61 as recommended by the 38/61 Connector Road Study.

Policy T.10.A: The construction of a 38/61 Connector Road should be paid for by development that will be accessed by it.

Policy T.10.B: The 38/61 Connector Road should be constructed to the design standards and route recommended by the 38/61 Connector Road Study.

Policy T.10.C: Development within this corridor should only be permitted to occur in a manner that leaves a viable corridor for the construction of the 38/61 Connector Road. Development should also leave open a viable route for the extension of University Drive to 180th Street.

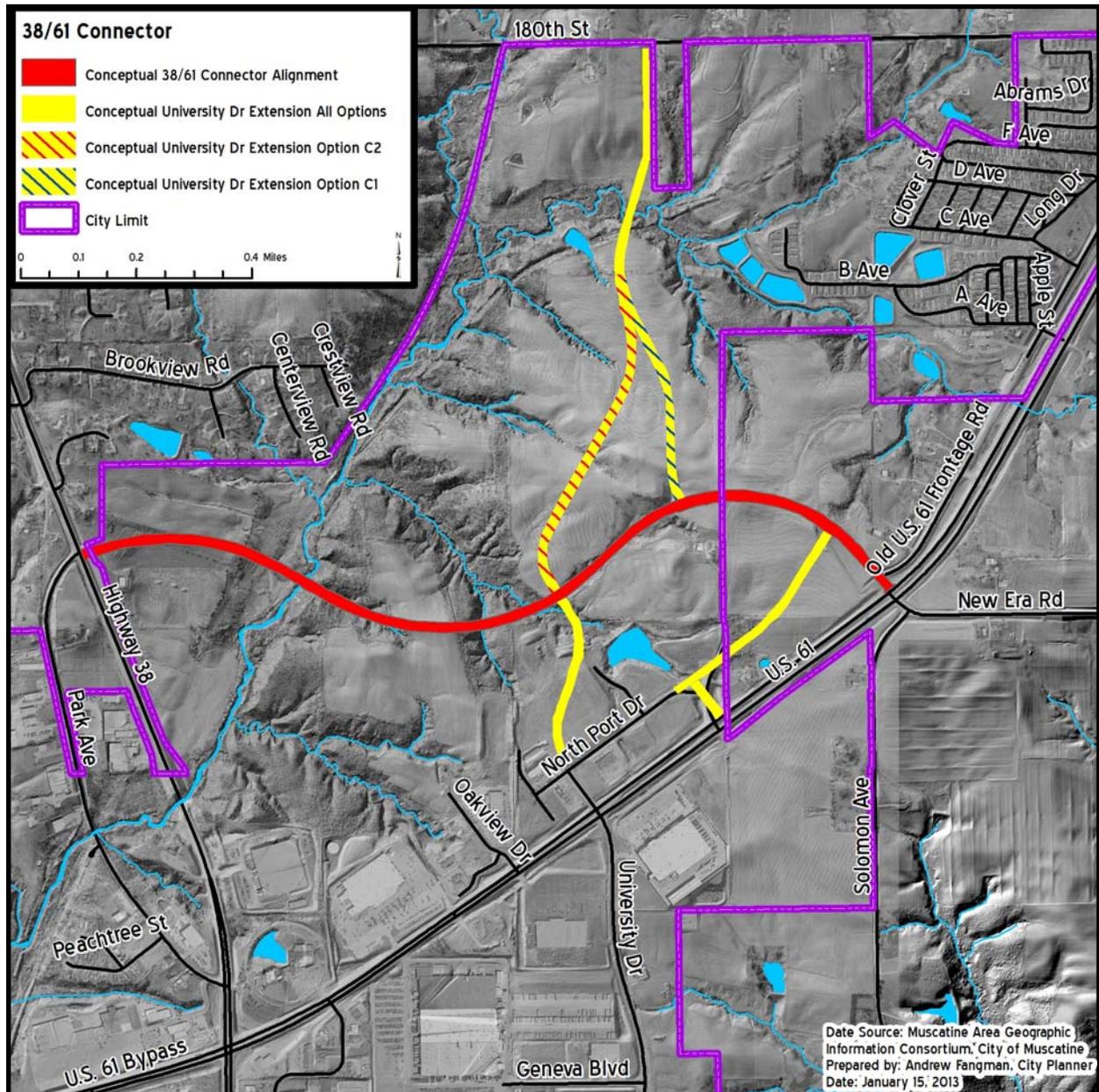


Figure 46: Conceptual 38/61 Alignment



Goal T.11: Complete Streets

Improve both Muscatine’s image and its function by providing a safe and attractive environment for street users of all ages and abilities such as including motorists, pedestrians, bicyclists, mass transit, children, senior citizens, individuals with disabilities, freight carriers, emergency responders and adjacent land users.

Policy T.11.A: The design, operation and maintenance of the City of Muscatine street network will create a connected network of streets accommodating in a safe, easily accessible, convenient, comfortable, and visually appealing manner users of all ages and abilities, including motorists, pedestrians, bicyclists, mass transit, children, senior citizens, individuals with disabilities, freight carriers, emergency responders and adjacent land users.

Policy T.11.B: Implementation of the goal of complete streets will guide the planning, funding, design, construction, operation, and maintenance of all new and modified streets in the City of Muscatine. The City shall approach every transportation improvement project phase as an opportunity to create safer, more accessible streets for all users. These phases include, but are not limited to: planning, programming, design, right-of-way acquisition, construction, construction engineering, reconstruction, operation and maintenance. Other changes to streets and rights-of-way, including capital improvements, re-channelization projects and major maintenance, should also be considered.

Policy T.11.C: When any of conditions listed in the bulleted points below exist in a specific project location, an exemption to the Complete Streets Policy may be granted. For an exemption to be granted a determination that incorporating new bicycle, pedestrian, and or public transit facilities is impracticable and/or undesirable must be made. This determination may occur during the budget and capital improvements program approval process or when project plans and specifications are being prepared. Any granted exemptions will be reported in writing with supporting data that indicates the reason for the granting the exemption. This report will be made available to the City Council prior to approval of the project plans and specifications in question.

- Non-motorized users are prohibited on the roadway.
- Severe topographic constraints exist.
- There is documentation that there is an absence of current and/or future need.
- The cost of accommodations, including potential right-of-way acquisition, for a particular mode is excessively disproportionate to the need and potential benefit of a project.
- The project involves ordinary maintenance activities designed to keep assets in acceptable condition, such as cleaning, sealing, spot repairs, patching and surface treatments.
- Scarcity of population, travel, and attractors, both existing and future, indicate an absence of need for accommodation of non-motorized users.



- Where a reasonable and equivalent project along the same corridor is already existed or is programmed to provide facilities exempted from the project at hand.

Policy T.11.D: Transportation infrastructure serving non-motorized user should be linked to form a comprehensive network of community-wide network of routes for non-motorized travel that allow for members of the community to travel safely from their home to their destination by foot, bike, or by other non-motorized means and for children to be able walk or bike to school safely.

Policy T.11.E: The City of Muscatine will work with the Iowa Department of Transportation to upgrade state highways, excluding U.S. 61 and the U.S. 61 Bypass, running through Muscatine to the complete streets goal.

Policy T.11.F: For a privately constructed street to be accepted by the City of Muscatine it must be built in compliance the complete street standards established to achieve the complete streets goal.

Policy T.11.G: The City of Muscatine shall follow accepted or adopted design standards and use the best and latest design standards available in urban design and street design, construction, operations and maintenance. When implementing this complete streets goal the City will be not be precluded from considering innovative or nontraditional design options where a comparable level of safety for users is present or provided.

Policy T.11.H: Keep street pavement widths to the minimum necessary.

Policy T.11.I: Where physical conditions warrant, plant trees whenever a street is newly constructed, reconstructed, or relocated.

Policy T.11.J: To further the Complete Streets policy to ensure that the transportation project development process will include early consideration of the land use and transportation context of the project, the identification of gaps or deficiencies in the network for various user groups that could be addressed by the project, and an assessment of the tradeoffs to balance the needs of all users. The context factors that should be given high priority include the following:

- Whether the corridor provides a primary access to a significant destination such as a park or recreational area, a school, a shopping / commercial area, or an employment center;
- Whether the corridor provides access across a natural or man-made barrier such as a river, creek, divided highway, or railroad;
- Whether the corridor is in an area where a relatively high number of users of non-motorized transportation modes can be anticipated;
- Whether a road corridor provides important continuity or connectivity links for an existing trail or safe route for non-motorized travel network; or
- Whether nearby routes that provide a similar level of convenience and connectivity already exist.



- Whether nearby routes that provide a similar level of convenience and connectivity already exist.

Action T.11.K: A detailed inventory of the pedestrian and bicycling facility infrastructure will be conducted.

Action T.11.L: The City of Muscatine shall collect data measuring how well the streets of the City of Muscatine are serving each category of users. Data may include: latent demand, existing levels of service for different modes of transport and users, collision statistics, bicycle and pedestrian injuries and fatalities, or others.

Action T.11.M: The City of Muscatine shall put into place performance standard with measurable benchmarks reflecting the ability of users to travel in safety and comfort. Performance standards may include: transportation mode shift, miles of new bicycle facilities or sidewalks, percentage of streets with tree canopy and low design speeds, public participation, or others.

Action T.11.M: Update all necessary and appropriate codes, standards and ordinances to ensure that design components for all new or modified streets further the goal of complete streets.

Action T.11.N: The City of Muscatine will examine all planned capital improvements projects to determine if they can be leveraged to advance the goal of complete streets.

Action T.11.O: The City of Muscatine, working with community members and stakeholders, will identify and map critical routes for non-motorized travel linking schools, parks, bus stops, most major employment and shopping centers, and residential areas.

Action T.11.P: A detailed implementation plan will be developed to make the identified critical routes for non-motorized travel safe. The detailed implementation plan will include a list of capital improvement projects addressing the gaps and deficiencies identified in the inventory. The implementation plan will also detail the sequence and location in which inspection and maintenance of existing sidewalks and capital improvement projects need to be completed in order to build a network of critical routes for non-motorized travel outward from each school and the ultimately link them together into a community-wide network of safe routes for non-motorized travel.



Goal T.12 Safe Routes for Non-Motorized Travel

Members of the community should have the opportunity to travel safely to their destination by foot, bike, or by other non-motorized means. Children should be able walk or bike to their school safely. To achieve this goal critical routes for non-motorized travel, linking schools, parks, bus stops, most major employment and shopping centers, and that are located within 400 feet of most residences in Muscatine will be identified. These routes will be made safe and attractive for travel by foot, bike, wheelchair, and all other forms of legal non-motorized travel.

Policy T.12.A: All streets, sidewalks, trails, and pedestrian crossings along identified critical routes for non-motorized travel will be improved and maintained to standards ensuring that they are safe for travel by foot, bike, wheelchair, and all other forms of legal non-motorized travel.

Policy T.12.B: In order to accomplish this long term goal and to maximize short and medium term benefits of networks, safe routes for non-motorized travel that radiate out from schools to the residential areas that they serve will be established. Then these school centered networks of safe routes for non-motorized travel will be linked together to form a community-wide network of routes for non-motorized travel.

Policy T.12.C: The identified network of routes for non-motorized travel will be divided into segments. A segment is defined as existing sidewalks between the intersection of critical routes for non-motorized travel or critical destination such as schools, parks, trailheads, etc. Inspection and the resulting maintenance/repairs will occur on a segment by segment basis. Inspection and the resulting maintenance/repair activity should encompass an entire segment to ensure that useful links in creating a network of safe routes for non-motorized travel are being created.

Policy T.12.D: Capital improvement projects and sidewalk inspection activities occurring along the segments of critical routes for non-motorized travel are a priority.

Policy T.12.E: Capital improvement projects and sidewalk inspection activities that link together smaller completed networks of safe routes for non-motorized travel routes are a priority.

Policy T.12.F: Capital improvement projects and sidewalk inspection activities that leverage planned road improvement projects, trail extensions, and the West Hill Sewer Separation Project are a priority.

Policy T.12.G: Capital improvement projects and sidewalk inspection activities that can be accomplished through a partnership between a school, business, institution, property owner, community group, or other governmental agencies and the City of Muscatine are a priority.



Action T.12.H: The City of Muscatine, working with community members and stakeholders, will identify and map critical routes for non-motorized travel linking schools, parks, bus stops, most major employment and shopping centers, and those located within 400 feet of most residences in Muscatine.

Action T.12.I: A detailed implementation plan will be developed to make the identified critical routes for non-motorized travel safe.

Action T.12.J: The detailed implementation plan will identify measurable standards for what constitutes a safe route for pedestrian, bicyclist, wheelchair, and other relevant non-motorized use. Standards regarding width, condition, the Americans with Disability Act, etc. will be developed for sidewalks, trails, streets and pedestrian crossings. Multiple standards may be developed in order to account for factors such traffic levels, topography, and existing infrastructure.

Action T.12.K: The detailed implementation plan will include detailed inventory of existing sidewalks and trails located along identified critical routes for non-motorized travel. Gaps where no sidewalks currently exist will be identified. Crossings along identified critical pedestrian/bike routes will be inventoried and those not meeting standards identified. Inspection of the condition of existing sidewalks will **NOT** be done as part of this inventory

Action T.12.L: The detailed implementation plan will include a list of capital improvement projects addressing the gaps and deficiencies identified in the inventory. Examples of these projects include the construction of new sidewalks, construction of new trail segments, improvements to crossings, and enhancements to existing sidewalks, trails, and streets.

Action T.12.M: The implementation plan will detail the sequence and location in which inspection and maintenance of existing sidewalks and capital improvement projects need to be completed in order to build a network of critical routes for non-motorized travel outward from each school and the ultimately link them together into a community-wide network of safe routes for non-motorized travel.

Project T.12.N: Capital improvement projects and the inspection and maintenance of existing sidewalks will occur on an ongoing basis at a rate determined by available funds and opportunities to leverage other capital projects and community partnerships. This work will be performed in a prioritized manner until identified critical routes for non-motorized travel are brought up to standard.



Goal T.13: Trails

Trails are an important asset to the community. They form the backbone of the identified critical non-motorized transportation routes, serve as the local segment of national Mississippi River Trail and American Discovery Trail, and are a recreational amenity that enhances the quality of life of Muscatine residents. The existing network of trails should be extended and expanded to better serve these important functions.

Policy T.13.A: Trail extension and enhancement projects for which there are opportunities to construct through a partnership between a school, business, institution, property owner, community group, or other governmental agencies and the City of Muscatine are the highest priority.

Policy T.13.B: Trail extension projects are listed below in order of priority, see Figure 47 for location.

Action T.13.C: Identify a feasible route for connecting the southern end of the Cedar Street Trail and the Riverfront Trail.

Project T.13.D: Musser Park to Wiggins Road Trail.

Project T.13.E: A trail connecting Kent Stein Park/Muscatine Soccer Complex to the existing trail network at Discovery Park.

Project T.13.F: A trail running along Mad Creek from Washington Street connecting to the existing trail network at the riverfront.

Project T.13.G: Trail connecting the Mulberry Avenue/U.S. 61 Bypass to the existing to the existing Mad Creek Greenbelt Trail at the U.S. 61 Bypass underpass

Project T.13.H: A trail connecting the Cedar Street Trail and the Riverfront Trail as identified in Action T.14.C.

Project T.13.I: A trail running along Mad Creek from Washington Street connecting to the existing Mad Creek Greenbelt Trail at Lake Park Boulevard.

Project T.13.J: Provide trail amenities - mile markers, benches, trail heads etc.

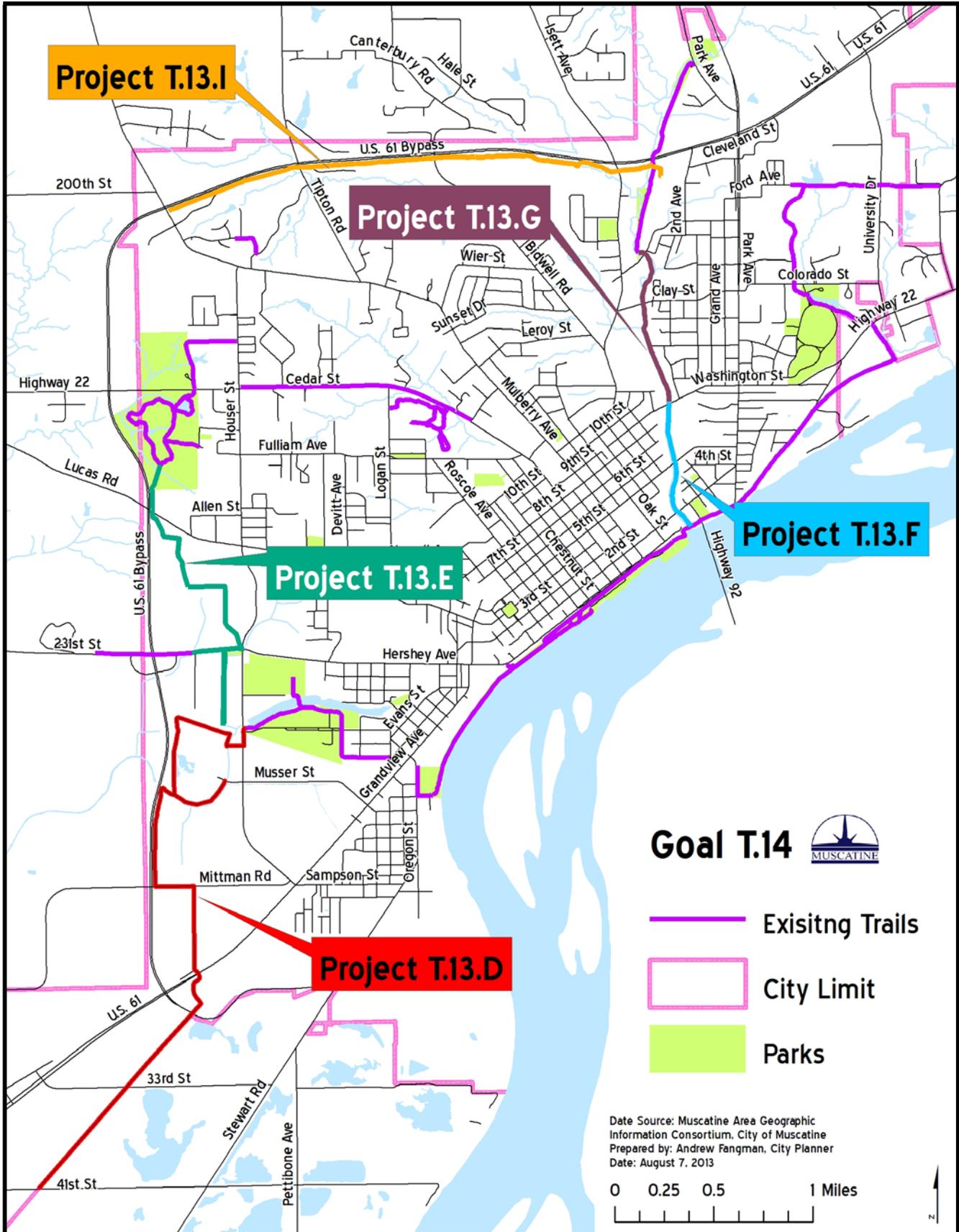


Figure 48: Conceptual Routes of Proposed Trail Extension, routes depicted are conceptual only, final routes may vary



Goal T.14: Muscatine Municipal Airport

To continue to provide safe and efficient aviation facilities and services to the community which will promote commercial and industrial growth and stability of the city, and provide for the needs of the recreational and leisure activities involving aviation.

Policy T.14.A: Working with the State of Iowa and the Federal Aviation Administration, airport maintenance and improvement projects as detailed (and listed below) in the adopted Airport Capital Improvement Program and the airport long range needs assessment, projects should be constructed in the identified sequence.

Policy T.14.B: In the event that there is inadequate funding to accomplish all the listed projects, those needed projects to maintain existing airport assets shall take priority over the construction of new capital improvements.

Policy T.14.C: Land use in the vicinity of the airport shall be regulated in a manner that ensures the use of land in the vicinity of the airport is compatible with the continued aviation operation and does not create an unacceptable risk to the safety of both airport users and those living and working nearby.

Action T.14.D: The City of Muscatine will work with the Iowa Department of Transportation, Muscatine County, Louisa County, and the City of Fruitland to make sure that land use regulations ensure that land use in the vicinity of the airport is compatible with the continued aviation operation at the airport and that it does not create an unacceptable risk to the safety of both of the airport users and those living and working nearby.

Project T.14.E: Runway 6/24 and rehabilitation and airfield joint sealing, FY 2014.

Project T.14.F: T-hangar apron drainage improvement, FY 2014.

Project T.14.G: Airport layout plan update, FY 2015.

Project T.14.H: Connector road between hangar access road and T-hangars, FY 2015.

Project T.14.I: Upgrade fuel facility with submersible pump, FY 2016.

Project T.14.J: T-hangar apron expansion, FY 2016 (design) FY 2017 (construction).

Project T.14.K: T-hangar apron construction, FY 2016 (design) FY 2017 (construction).

Project T.14.L: Taxiway B pavement maintenance, FY 2017.



Project T.14.M: Runway 12/30 pavement maintenance, FY 2018.

Project T.14.N: Apron pavement maintenance, FY 2019.

Project T.14.O: T-hangar reconstruction, FY 20201.

Project T.14.P: Airfield pavement maintenance, FY 2021.

Project T.14.Q: Snow removal equipment, FY 2022.

Project T.14.R: Snow removal equipment building/municipal hangar, FY 2023

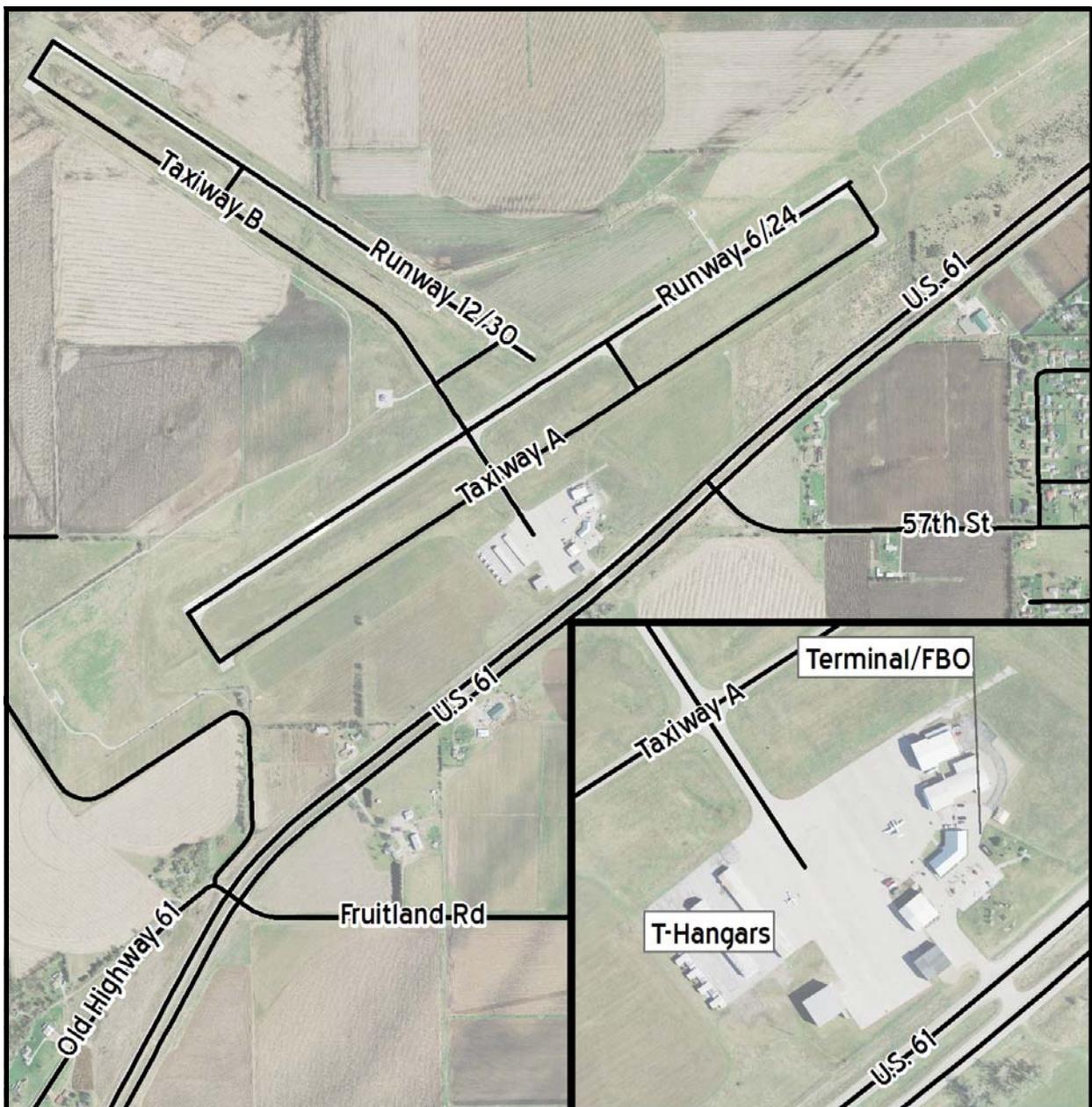


Figure 49: Muscatine Municipal Airport