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02.17.2021

Mount Joy Borough, PA

Active Transportation Implementation Guidebook

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Guidebook Endorsement

<<

[Major/Council Endorsement of the Active Transportation Implementation Guidebook]

This page will be written from the Borough's point of view and will express the importance of active transportation to the Council and community.

It will explain the Borough's view on why this guidebook is needed and will explain the Borough's commitment to let the guidebook guide their active transportation plans and projects.

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- Mount Joy Borough

With Support from:

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Executive Summary

"If you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places." –Fred Kent, Project for Public Spaces

Commitment to People

In keeping with the goals and objectives recommended in the Lancaster County Comprehensive Plan, the Donegal Region Comprehensive Plan and the Lancaster Active Transportation Plan, Mount Joy Borough has committed to pursuing development of active transportation facilities within the Borough. Through the development of an Active Transportation Implementation Guidebook, the Borough reflects an understanding that building an active transportation network can benefit the quality of life for the residents through promotion of physical activity, increased safety of travel, support of local businesses, and enhanced community character.

Overview

This Guidebook introduces the ideas and concepts that describe and support active transportation facilities and provides the Borough with tools to apply active transportation concepts to infrastructure improvement projects.

As a result of a thorough street inventory of cartway widths, presence of sidewalk, and adjacent land uses, an assignment of context zones was accomplished. Additional available information with respect to traffic volumes and right of way widths was gathered and roadway classifications were generated. This information was then used to develop the level of traffic stress for each roadway in the Borough. All of this information, as well as transit, parks, and planned recreational features such as the Emerald Necklace has been coupled with GIS mapping of street features to provide the Borough with a tool for analyzing goals and deficiencies in the active transportation network.

A selection of best practices and a menu of typical sections with a look-up table is included in the Guidebook to provide Borough staff with options for consideration. Examples of short term and long-term implementation projects are identified in the Guidebook. Additionally, a Model Ordinance has been provided in the Appendix.

Development Process

The Guidebook can be used to help inform Borough staff in the development of an Active Transportation Plan; where key destinations are determined, critical corridors are assigned, gaps or deficiencies in the active transportation network are identified, and priorities for infrastructure improvements can be set.

Table of Contents

Glossary of Terms

Active Transportation – Any self-propelled, human-powered mode of transportation, such as walking or bicycling. Since all transit trips end or begin with walking or bicycling, transit mode is frequently included as an active transportation mode.

ADA – Americans with Disabilities Act

Arterial – Wider, higher capacity and higher-speed roads that connect major destinations within an urban or rural area; Arterials are typically federal-aid roads and, as such, are eligible to receive federal funding for construction or improvement and are subject to federal oversight or guidance for their design.

Collector – A low to moderate capacity road which serves to move traffic from local streets to arterial roads.

Complete Streets – Streets designed and operated to enable safe use and support mobility for all users: including people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders.

Context Zone – A categorization defined by the physical atmosphere created by buildings, landscape, and activities that occur adjacent to or in proximity of the transportation network segments.

Level of Traffic Stress (LTS) – A quantification of the level of discomfort people feel when they bicycle close to traffic. Can be used as an objective criterion when assessing bikeway integration/typical section choice.

Local Street – A public thoroughfare which typically has the lowest speed limit and traffic capacity and often facilitates direct access to adjacent property

Multi-Use Path – Also known as shared-use path. A form of infrastructure that supports multiple modes of transportation separated from motor-vehicles. Typically includes pedestrians and bicyclists, but can include equestrians, cross-country skiers, and skaters. (Motorcycles and ATVs are normally prohibited).

Graphic/Image

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Multimodal infrastructure – Facilities that provide space and safe accommodations for all transportation types or modes.

Sharrow – A pavement marking in the form of two inverted V-shapes above a bicycle symbol. This marking indicates which part of a roadway should be used by bicyclists in areas where the roadway is shared by motor vehicles. A shared lane marking, used to remind/inform motorists to expect to share the travel way with bicyclists.

Street Typology – A system of street classification that defines the function of roadways beyond the conveyance of automobiles with a contextual approach, integrating adjacent land uses, multiple user groups, and the creation of a sense of place.

Traffic-Calming – The use of physical design and other measures to improve safety for pedestrians, bicyclists and motorists by discouraging speeding and other unsafe driver behaviors.

Urban Growth Area (UGA) – An area designated, within which urban growth is encouraged and outside of which more open space and natural areas are maintained.

Yield Roadway – A roadway where pedestrian, bicyclist and motor vehicle traffic are all served in the same slow-speed, low volume, travel area. Yield roadways serve motor vehicle traffic without lane markings in the roadway travel area. When motor vehicles are operating at very low volumes and low speeds, pedestrians and bicyclists are comfortable travelling on the cartway.

**Note: these definitions are for informational purposes and do not replace the definitions outlined in the Mount Joy Borough Subdivision and Land Development Ordinance and Zoning Ordinance.*

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Active Transportation Vision and Mission

Vision

Mount Joy seeks to create an interconnected network of streets, sidewalks, and other transportation facilities that safely accommodates all users and introduces physical activity into the daily lives of those who live in and visit the Borough.

Mission

By creating an Active Transportation Implementation Guidebook and adopting policies that further its goals, Mount Joy is making a commitment to create streets that are safe and accessible for everyone.

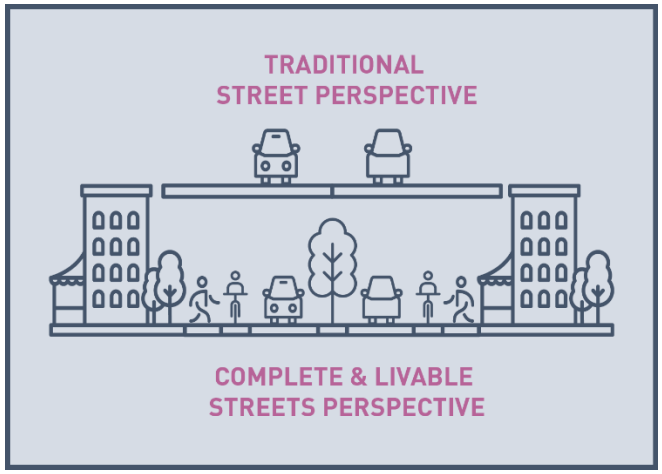
Covered Sidewalk between the Saint Mark's Church and the Borough Office

Introduction

Introduction

This Mount Joy Active Transportation Implementation Guidebook (Guidebook) will assist Mount Joy decision-makers (staff, council, and citizens alike) in providing support for the mobility needs of the community and encouraging healthy lifestyles by creating non-motorized transportation. In addition to economic and cultural benefits, developing a system of non-motorized transportation connections particularly for the elderly, youth, and disabled, who rely more heavily on non-motorized transportation, will contribute to a more equitable transportation network for people of all income levels, ages, and abilities. This Guidebook provides a purpose and guide for the governing body of the Borough to budget for transportation projects to benefit all users and provide greenspace for amenities.

The Guidebook was created as a tool for Borough staff and their citizens to identify where, why, and how to best incorporate new and safe active transportation features and amenities in the town. This Guidebook includes a menu of context-sensitive options from off-street multi-use paths and advisory shoulders to on-street dedicated bike lanes and shared route facilities. There is no one size fits all solution and the Guidebook will emphasize the incorporation of a modified design or new facility in the "right place."



What is Active Transportation and Why is it Important?

Active transportation describes transportation that is powered by human energy, such as walking or bicycling. Sometimes referred to as "non-motorized transportation," the term active transportation is preferable because it denotes a stronger connection between healthy lifestyles and transportation choices.

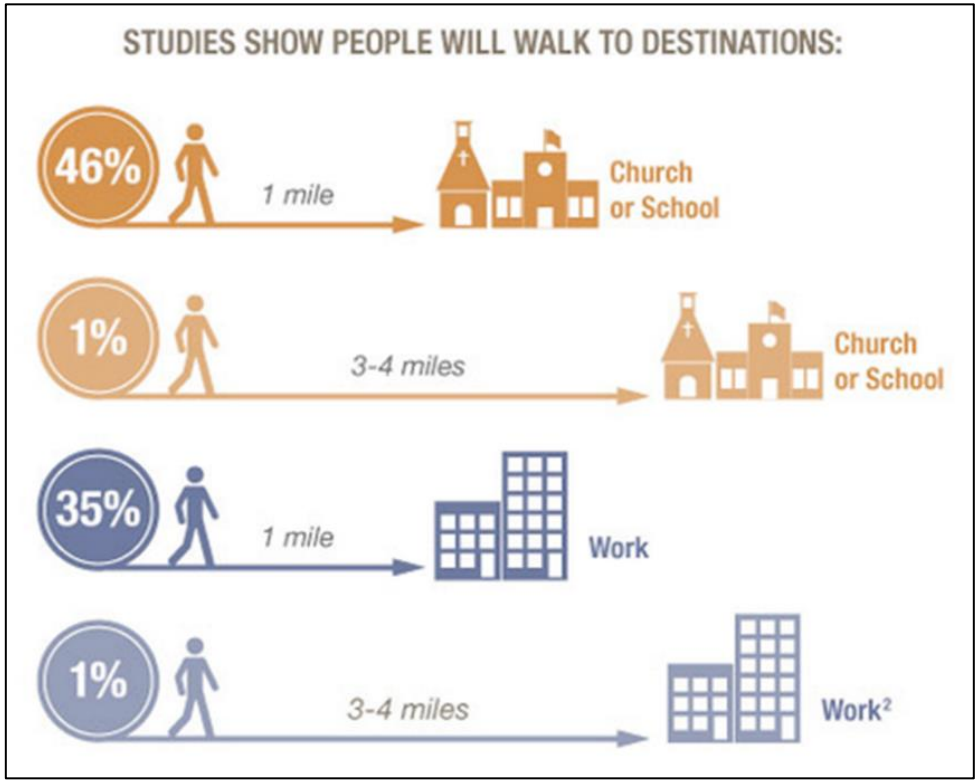
The built environment provides important cues that influence the transportation decisions people make. Features of the built environment include the design of our roads: the provision of sidewalks, trails, bicycle lanes; the compactness of development; and a mix of land uses. If it is easy and safe to walk and bike to a variety of destinations, people are more likely to choose active transportation.

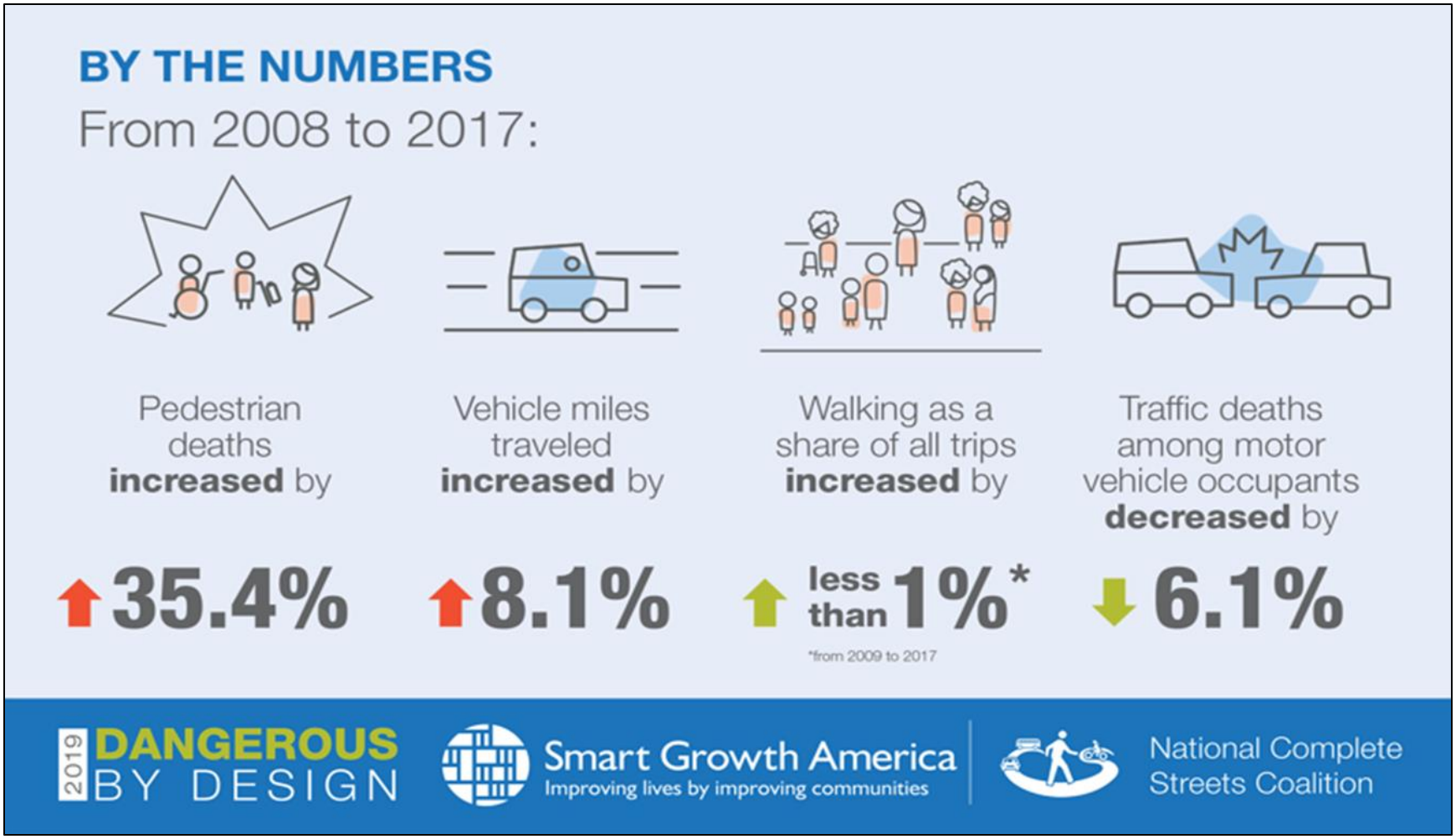
What Is Active Transportation?

Active transportation describes transportation that is powered by human energy, such as walking or bicycling. Sometimes referred to as "non-motorized transportation," the term active transportation is preferable because it denotes a stronger connection between healthy lifestyles and transportation choices.

There are many aspects of active transportation that can immensely benefit quality of life. The provision of active transportation improvements, such as bike lanes, multi-use trails, sidewalks, traffic-calming solutions, and public transportation, supports active travel and increased physical activity. Building a network that supports accessible, multimodal transportation can have a positive impact on everything from local economic vitality to health and safety outcomes. From the student who would like to bicycle to school to the store owner who would like more foot traffic past their window display to the senior citizen who would like to "age in place", redesigning roadways for all users brings a wealth of benefits and can leave a lasting impression for locals and visitors alike. The following is a sampling of the growing body of national and international research that supports Mount Joy's commitment to building safe roadways and adopting a complete streets policy specific to the needs and values of Mount Joy.

- A National Association of Realtors survey found most Americans would like to live in walkable communities where shops, restaurants and local businesses are within an easy walk from their homes, regardless of what type of neighborhood or house they live in.
- Nearly half of all trips in urban areas are three miles or less, and 28 percent are one mile or less – distances easily covered by foot or bicycle. Yet 60 percent of trips shorter than one mile are made by automobile.
- The Center for Disease Control (CDC) recommends Complete Streets with numerous studies linking obesity, diabetes, heart disease and physical inactivity. During the period between 1966 and 2009, the number of children who biked or walked to school fell 75 percent, while the percentage of obese children rose 276 percent.
- In a 2015 study ("Safer Streets, Stronger Economies") of 37 communities by Smart Growth America, positive changes in employment, business impact, property values, and private investment were revealed after Complete Streets improvements, suggesting that Complete Streets projects made the street more desirable for businesses.




BY THE NUMBERS
From 2008 to 2017:
Pedestrian deaths **increased** by
35.4%
Vehicle miles traveled **increased** by
8.1%
Walking as a share of all trips **increased** by
less than 1%*
*from 2009 to 2017
Traffic deaths among motor vehicle occupants **decreased** by
6.1%
2019 DANGEROUS BY DESIGN
Smart Growth America
Improving lives by improving communities
National Complete Streets Coalition

Goals of the Guidebook

Mount Joy has identified several goals associated with the development of its Active Transportation Implementation Guidebook.

The Borough seeks to create an interconnected network of streets, sidewalks, and other transportation facilities that safely accommodates all users and introduces physical activity into the daily lives of those who live in and visit the Borough. This means ensuring that residential areas within walking distance to schools have visible crosswalks and connective sidewalk networks, so students have adequate infrastructure to safely get to school each day. Accommodating users of all ages and abilities means ensuring existing and future infrastructure improvements are designed to do so, with proper signage to direct not only residents familiar with the Borough but also its growing number of visitors.

The Borough seeks to incorporate active transportation improvements into the planning, design, and operation of future transportation projects, whether new construction, reconstruction, rehabilitation or pavement resurfacing and restoration. This offers Mount Joy the opportunity to integrate active transportation concepts into the development of any new transportation project. Additionally, this Guidebook can provide direction as to which projects should be prioritized moving forward and align well with other local plans, including the Lancaster County Comprehensive Plan.

The Borough additionally wants to create "great streets"—the public places that encourage people to linger on foot, meet with neighbors, and engage in public life. Encouraging a lifestyle of getting outside and interacting in the Borough's key public areas also aligns with Mount Joy's desire to assist in creating a bicycle and pedestrian friendly community, which through biking and walking can help prevent heart disease and other chronic health conditions. To create public spaces that can become great places within the community, certain streetscapes on the Main Street corridor must also be improved, particularly in ways that support and preserve the small village heritage of the Borough.

Lancaster County Comprehensive Plan

The County's vision for the future is a place where the City of Lancaster is the regional center of business and activity, and the boroughs and small villages are characterized by revitalized Main Streets that preserve the traditions and heritage of the County.

- The Borough's Guidebook will support this goal by providing ways for the safe, efficient, and convenient movement of people and goods while enhancing the economy.
- By following this Guidebook when planning for a project, the Borough will be consistent with the County Comprehensive Plan by working towards developing aesthetically pleasing, interconnected transportation systems that encourage walking, biking, and public transit, and discourage high-speed traffic.

The Guidebook not only demonstrates the Borough's commitment to active transportation implementation through new policies and an ordinance, but also contributes to important regional goals and objectives.

IMPORTANCE TO MOUNT JOY AND THE REGION

CONNECT PEOPLE	Provide easy access to assets and amenities, which will result in equitable transportation for all users – regardless of age, income or ability.
ENCOURAGE ACTIVITY	Promote active transportation to encourage healthy lifestyles while also supporting the needs of the community.
CONNECT MODES	Develop an aesthetically pleasing, interconnected transportation system that encourages walking, biking, and use of public transit.
INCREASE SAFETY	Design an environment where people can walk, bike, and use transit safely.
SUPPORT LOCAL BUSINESS	Establish ways for safe, convenient, and efficient movement of people and good to enhance the economy and encourage active transportation to support vibrant commercial areas.
ENHANCE CHARACTER	Create an opportunity for all users to access the Borough's assets, building target businesses such as outdoor recreational retailers, casual restaurants, and cultural and historic sites.
PLAN FOR GROWTH	Increase compact, mixed-use development in Urban Growth Areas (UGAs) and provide greenspace amenities for pedestrians, bicyclists, and transit service in and around the UGAs.

Contextual Framework

Mount Joy Borough is an ideal location for active transportation and complete street-based design. As one of a number of original, Pennsylvania Dutch villages formally platted in the early 19th Century, the physical characteristics of the community were built upon a foundation of walking. The Borough consists of largely traditional neighborhood design elements including compact, gridded street networks, a dense, complimentary mix of residential and commercial uses and a traditional "main street" corridor that is largely within a 5 to 10-minute walk from most of the community.

For the past half century, the Borough has evolved into a bedroom community of nearby employment centers of Harrisburg and Lancaster within the Donegal Region. Many of the newer streets supporting the growth of single use residential enclaves, beyond the original historic core neighborhoods of Mount Joy, are designed primarily for automobile travel. They are typical of conventional suburban street design, including a "dendritic" network pattern, larger block distances, wider pavement widths, and lack of dedicated facilities for pedestrians and cyclists. This generally encourages higher travel speeds and can serve as a barrier to active transportation.

Mount Joy Borough has historically supported various forms of active transportation, as shown in this historic image.

Graphic/Image
of Historic Mount Joy

The Emerald Necklace, a series of multi-use paths and greenways, surrounds the Borough's perimeter, but contains gaps. Many residential neighborhoods lack the adequate infrastructure to be safe and inviting for all users, including sidewalk connections to schools and other destinations. Additionally, several existing off-street trails lack connections to Mount Joy's designated pedestrian corridors on Angle Street, Donegal Springs Road, Marietta Avenue, Market Street, and Barbara Street. Mount Joy is also home to an active Amtrak rail line, which divides the town and severely limits north-south crossing options. The Mount Joy Train Station located on South Market Street was recently reconstructed.

Despite encouraging tourism and rail-based transportation options, the presence of the rail line and other safety issues in the Borough complicates opportunities for safe and accessible bicycle and pedestrian connectivity. Despite these challenges, Mount Joy's size and network of street connectivity provides a strong foundation upon which to build a policy of and approach to active transportation infrastructure implementation.

Integrating Active Transportation into Existing Development Processes

Mount Joy Borough has already taken the first steps towards integrating active transportation programs and projects by developing this Active Transportation Implementation Guidebook.

This Guidebook will provide clear direction and specific project recommendations for improving alternative transportation safety and accessibility within the Borough while allowing for smart growth.

Smart growth balances development and environmental protection, accommodating growth while preserving open space and critical habitat, reusing land, and protecting water supplies and air quality. This approach to urban planning emphasizes a multitude of transportation choices so people can opt for whichever mode best suits their travel needs, be it walking, riding a bike, taking transit, or driving.

Both the Donegal Region Comprehensive Plan and the Lancaster Active Transportation Plan have embraced smart growth and complete streets concepts to accomplish a variety of goals, including improving transportation safety for all users and enhancing the local economy. In Mount Joy, the Borough Subdivision and Land Development Ordinance requires applicants or landowners to construct gaps identified in the trails system, and bicycle parking as part of a major or new land development plan has been made mandatory.

This Guidebook provides a critical path through which Mount Joy can institutionalize its "great places" by balancing local economic growth and green space preservation with the transportation needs of the community.

The Guidebook is designed primarily as a tool for Borough staff and citizens to identify where, why, and how to best incorporate new and safe features and amenities in the town as funding or other opportunities permit. This will include a menu of context-sensitive options from off-street multi-use paths and advisory shoulders to on-street dedicated bike lanes and shared route facilities.

There is no one size fits all solution and the Guidebook will emphasize the incorporation of a modified design or new facility in the "right place."


Musser Road


Mount Joy Train Station


Angle Street Bridge

Creating every opportunity to incorporate incremental, or small-scale, active transportation improvements (such as adding context-sensitive sharrows or pedestrian-oriented signage to an already marked shoulder) into the planning, design, and operation of future transportation projects—whether new construction, reconstruction, rehabilitation, or pavement resurfacing and restoration—can have a significant impact on the community's ability to safely access key public spaces.

Beyond sidewalks and bike lanes, the Guidebook is designed to promote the quality of life in Mount Joy, to reduce traffic congestion while improving public health, and to attract new commercial and retail business to increase the tax base, increase residential values, and to create opportunities to enhance access to key commercial areas. For example, Mount Joy's Main Street commercial corridor and recently renovated train station are unique places where people gather, thus requiring options for safe access and accommodation of a variety of visitors, from local residents and families to tourists and the elderly.

Opportunities for Implementation

Within Mount Joy, there are existing trails without any connections to pedestrian corridors. On the other hand, many residential neighborhoods lack sidewalks for pedestrians or have sidewalks that do not provide connections to nearby amenities. These can be linked and expanded to create a network of active transportation corridors.

The Amtrak line is a barrier to bicycle connectivity especially in the Florin section. The only available crossing is the Angle Street Bridge, which has no shoulder, heavy truck traffic, and high vehicle speeds. Access for bicycles and pedestrians will be examined.

"Would be great to have a bicycle trail connecting Mount Joy to the river trail in Marietta, starting perhaps from the library." – Borough Resident

"No sidewalks or way to cross over railroad tracks that divide our community (I'm elderly, I bike on sidewalks)." – Borough Resident

Support of Regional, State, and Federal Objectives

This Guidebook and companion ordinance are both consistent with a number of key regional, state and federal objectives that support safe, accessible multimodal transportation and builds upon the region's initiatives around active transportation and complete streets.

Regional Objectives

Donegal Region Comprehensive Plan

The Donegal Region Comprehensive Plan contains general active transportation goals as well as recommendations specific to Mount Joy.

Objective 4.7 *Improve natural resource systems to preserve plant and animal habitat, protect the Region's natural heritage areas, and provide recreational trails.*

Action 4.7.1 describes plans to develop a green infrastructure strategy, using the Lancaster County Greenscapes plan as a foundation, and highlights Mount Joy's Emerald Necklace trail system as a key project.

Objective 5.2 *Create a Donegal region green infrastructure system linking parks and recreational areas and protecting natural resources.*

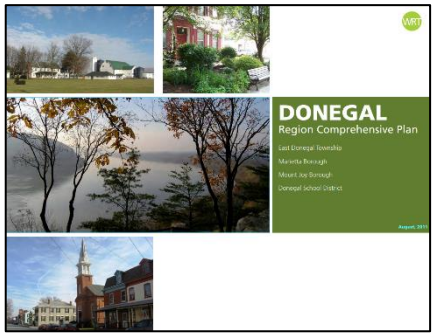
Actions include developing a green infrastructure plan, partnering with area municipalities to create regional links, completing Mount Joy's Emerald Necklace trail system, incorporating Safe Routes to School (SRTS) objectives, and socializing the network to encourage recreational tourism.

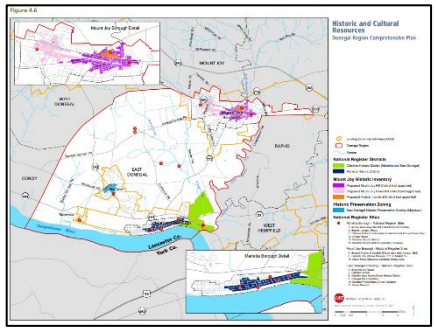
Objective 5.7 *Work with surrounding property owners to create a riparian buffer / conservation greenway along Donegal Creek and a recreational greenway along Little Chiques Greenway connecting Marietta and Mount Joy Boroughs.*

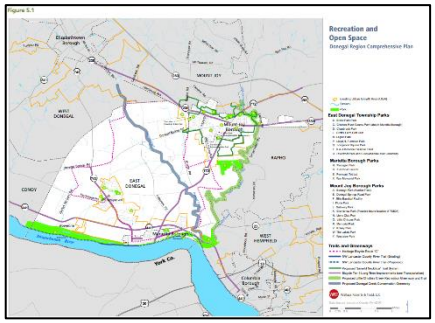
Action 5.7.3 details an effort to construct a green infrastructure connection the Boroughs of Marietta and Mount Joy.

Objective 7.2 *Thoroughly evaluate the traffic impact that new developments will have on the transportation network.*

Action 7.2.3 requires that any new developments be "*walkable, bikeable, and transit-accessible*" and that they create "*comfortable accommodations*" for these modes.







Donegal Region Comprehensive Plan (continued)

Objective 7.3 *Develop safe and convenient bicycle and pedestrian accommodations for every type of trip, and for all levels of ability.*

Actions 7.3.1 and 7.3.2 recommend developing a "Complete Streets" policy, following county, state, and federal guidance, and that new roadways be designed following complete streets best practices. Other recommendations in this section include evaluating the road network to determine where 4-foot bicycle lanes can be implemented, installing sidewalks on both sides of all roads in the Urban Growth Areas (UGAs), and creating off-road bicycle paths to increase comfort and safety for bicyclists.

Objective 7.4 *Educate residents and increase public awareness about transportation safety.*

Action 7.4.1 involves supporting a SRTS for the region which includes education about safe walking and cycling and the need for non-motorized infrastructure like multi-use paths and sidewalks.

Objective 7.5 *Increase roadway safety for all users throughout the Donegal region.*

Action 7.5.2 recommends "*identifying and prioritizing*" infrastructure improvements aimed at increasing safety and convenience for pedestrians, particularly in UGAs.

Objective 7.7 *Coordinate land use and transportation planning to increase opportunities for walking, cycling, and transit use. Increase compact, pedestrian friendly, mixed-use development in the Urban Growth Areas.*

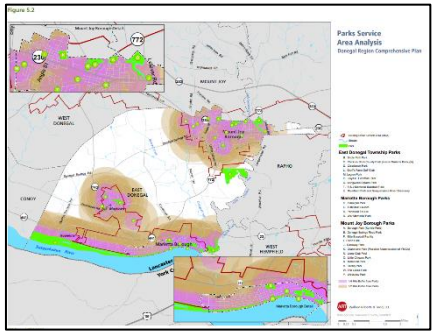
Recommendations include adopting "*guidelines to enhance the pedestrian environment*" by incorporating pedestrian-scale facades and design in the UGAs, encouraging infill in Mount Joy and Marietta, providing greenspace amenities in the UGAs.

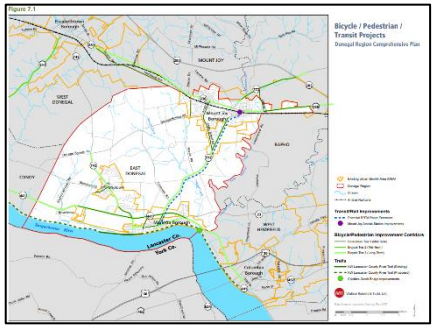
Objective 7.9 *Improve non-motorized access to the Mount Joy Amtrak station.*

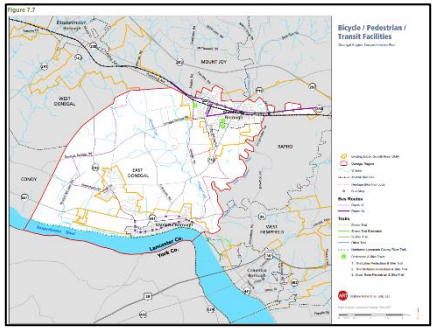
Actions include implementing the *Plan the Keystone – Mount Joy Main Street Study,* constructing bicycle shelters and parking, enhancing pedestrian and bicycle infrastructure along key corridors leading to the station, and encouraging transit-oriented development around the station.

Objective 7.11 *Improve access to transit service in the Donegal Region.*

Actions items relevant to Mount Joy include creating a direct transit connection between Marietta and Mount Joy, pedestrian connections to transit stops, and providing bicycle amenities at stops.







Regional Objectives

Lancaster Active Transportation Plan

Recommendation B1 - Implement Complete Streets

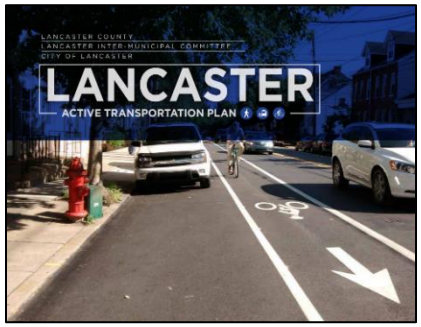
"Enact Complete Streets through county and municipal policies, ordinances, plans, and procedures."

Lancaster County Comprehensive Plan: Connections 2040 - The Transportation Element

"Target transportation investments to support Smart Growth"

Workshop by Lancaster County Planning Commission, Lighten Up Lancaster, & Coalition for Smart Growth

In 2017, these three organizations sponsored a workshop titled "Advancing a Complete Streets Agenda." The workshop was directed towards municipalities that have passed a Complete Streets Resolution or expressed a strong interest in moving forward with implementation of complete streets.



State Objectives

Pennsylvania Active Transportation Plan

"Biking and walking are integral elements of Pennsylvania's transportation system that contribute to community health, economic mobility, and quality of life."

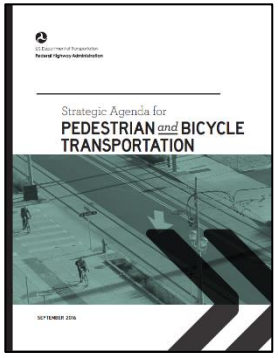
"Achieving success over the next five years and beyond will depend on statewide recognition of the value of Active Transportation, the development of regional and local Active Transportation plans, and the prioritization of resources."

Federal Objectives

FHWA Pedestrian & Bicycle Strategic Agenda

"FHWA will focus on building and improving complete multimodal networks; improving safety for nonmotorized travelers; increasing equitable pedestrian and bicycle access to jobs and essential services; and encouraging more people to use active transportation."

"Encouraging people to use active transportation modes instead of driving, especially for short trips, helps to preserve capacity on our nation's roadways, including National Highway System corridors."



Putting the Right Street in the Right Place

Best Practices

One of the primary objectives of Mount Joy is to create "great streets" that encourage locals and visitors to linger and engage in public spaces. Great streets and great places inspire a feeling of comfort and belonging, encouraging people to mingle together outside and foster a sense of community. These spaces are often sensitive to the context of their location but general best practices in design and the value of landscaping, lighting, and pedestrian safety have been established to help cities transform public space into great streets and places.

Complete streets and active transportation are about more than simply adding bike lanes and sidewalks to a roadway, but rather building a "network of opportunity" through a variety of choices responsive to local community context — ultimately putting the right street in the right place.

More significantly, great streets reflect the history, values, and culture of a community, unifying and rallying the full spectrum of constituent voices. Key questions that a community should ask when implementing projects around active transportation and complete streets:

- How does the project support locally-desired economic and real estate development opportunities?
- How does the project reshape our streets to create a better sense of place?
- How does the project allow our children to walk/bike safely to school?
- How does the project incorporate sustainable solutions, such as on-site treatment and attenuation, air quality, or even resiliency?
- How does the project support positive community health outcomes and social cohesion?

Graphic/Image of Street

Graphic/Image of Street

The following list of best practices provides a range of tools and approaches that can help Mount Joy build a network that supports connected, accessible transportation options and reinforcing the Borough's unique character and identity:

Make changes to the travel-way of wide streets (curb to curb) to increase space for pedestrians and streetscape amenities and encourage slower vehicular travel speeds. *Where possible, and especially in commercial areas like Main Street, changes to the street can be made to use more space, at least at specific moments, for other road users and to make space for walking and lingering downtown.*


West Main Street (PA 230)

Reduce the Width of Travel Lanes

Lane widths should be appropriate to the street and its context. Wide lanes are often defended in the name of safety, but it has been shown that 12' wide lanes rarely offer any additional safety over 10' lanes (Potts, Hardwood, and Richard. "Relationship of Lane Width to Safety for Urban and Suburban Arterials, 2007). They can actually enhance safety by increasing driver caution and encouraging slower speeds. Narrowing lanes can also free up space for activities and amenities that support the creation of a destination street.

Add a Median or Pedestrian Islands

The center of the street separating traffic in opposing directions can be widened and defined using paint, curbs, or landscaping to create a median. Medians can help with access management by limiting turning locations and holding space for turn lanes, as well as in traffic calming, by effectively narrowing the travel-way in each direction. They can shorten crossing distances for pedestrians by creating refuge islands as well.

Add Sidewalk Bump-Outs

Also known as curb extensions, bump-outs are expansions of the curb line into the roadway adjacent to the curb (typically into an on-street parking zone) installed at intersections or mid-block locations. They also create a visual narrowing of the roadway, which typically results in vehicle speed reductions. Consideration should be given to reductions in parking and alternations in street drainage when installing curb extensions.

Graphic/Image

Reduce the Number of Travel Lanes

Often referred to as a road diet, reducing the number of travel lanes from two lanes of through traffic in each direction to one lane in each direction with a center turning lane can maintain vehicular traffic efficiency while reducing overall vehicular travel-way width and freeing space for cyclists, pedestrians, or streetscape amenities.

Establish designated space in the travel-way for cyclists, encouraging cycling but discouraging cycling on the sidewalk. *Promoting cycling is a great way to reduce vehicular congestion while increasing residents' mobility around downtown and supporting goals such as more active lifestyles. Most residential streets in the downtown Mount Joy grid are already bike friendly by virtue of relatively low automobile speeds and volumes. Providing safe bike accommodations on Main Street will provide an important link between the Mount Joy Train Station, downtown shops, and residential areas to the north and south of Main Street.*

Create Designated On-Street Bike Lanes (Standard or Parking Protected)

Bike lanes create designated space for cyclists through striping of physical separation. Parking-protected bike lanes use parked cars as the buffer between cyclists and moving vehicles.

Graphic/Image

Designate the Outer Travel Lanes as Sharrows

Sharrows are lanes designated for cyclists and vehicles to share equally. They can be used to create travel routes for cyclists, and calm traffic, improving the safety of the street for all users. With constrained right of way, Main Street is an excellent candidate to introduce sharrows and invite cyclists to share the road.

Poplar Street

Designate Bike Routes on Parallel and Perpendicular Streets

Bicycle connections on adjacent streets in addition to facilities on Main Street itself will help expand the bicycle network for Mount Joy, enabling and encouraging cycling as a viable mode of transportation. Cyclists need a network, not just a lane.

Provide Amenities to Make People Friendly Places

People want to feel like the space they are in was designed with their safety, satisfaction, and best interest in mind. Even the smaller touches on street spaces can influence peoples' perceptions that a place is welcoming and intentionally programmed for people. Crosswalk treatments help pedestrians feel visible when crossing the street, pedestrian countdown signals/lighting keep people at the forefront of energy efficiency and safety, and additional signage makes a substantial difference in how people can easily navigate around a space. Site furnishings like resting areas, bicycle racks, and trash receptables invite people to dwell in a space that they can comfortably access and conveniently keep clean. Great places, including great streets, additionally rely on public art elements to create a sense of place, interest, and neighborhood identity.

"Main Street is my favorite walking [destination], the sidewalks and lighting are excellent at any time of day." – Borough Resident

Elements of Great Streets & Places

Qualities of Great Places

According to the *Project for Public Spaces*, the top four qualities of great places are "they are **accessible**; people are engaged in **activities** there; the space is **comfortable and has a good image**; and finally, it is a **sociable** place: one where people meet each other and take people when they come to visit." *("What Makes a Successful Place?" RSS, Project for Public Spaces, 2020, www.pps.org/article/grplacefeat.*)

Guiding Principles of Great Streets

- Connect People to Places
- Include Multimodal Features (Pedestrians, Bicycles, Transit, Vehicles, etc.)
- Safe & Accessible for All Users
- Offer Transportation Choices
- Compliment the Land-Use Context
- Promote the Community's Goals
- Good Image/Identity

"What matters is not how fast vehicles move, but how many places people can reach within a given time period."

("Great Corridors, Great Communities" RSS, Project for Public Spaces, 2008).

Street Image

Image Source: "What Makes a Successful Place?" *RSS*, Project for Public Spaces, 2020, www.pps.org/article/grplacefeat.

Place & Street Typologies

There is an inextricable relationship between streets and adjacent land use context. The Borough's existing and future land uses should inform the design of streets, and vice versa. When designing roadways and integrating new facilities and countermeasures, focusing only on traffic volume and speed is less productive than adopting a holistic, contextual approach that considers nearby land uses, multiple users, and the creation of a sense of place.

Context classification broadly identifies the various built environments that exist within a community, describing the general characteristics of land use, development patterns, and roadway connectivity along the transportation network providing cues as to the types of uses and user groups that will likely utilize the roadways. This in turn can help the Borough determine suitable projects and facilities that match the context, including user types and modal priorities, lane configurations, speed, design vehicles and other safety countermeasures.

This approach is consistent with national best practices and direction, including the 2018 American Association of State Highway and Transportation Officials (AASHTO) "Policy on Geometric Design of Highways and Streets" (*a.k.a the "Green Book")* and the National Cooperative Highway Research Program (NCHRP) "Report 855: An Expanded Functional Classification System for Highways and Streets".

Land-Use Context Classifications in Mount Joy

The land within the Borough can be categorized based on its general land-use. This Land-Use Context describes the human activities that occur on the land (social, economic, etc.), the make-up of the buildings (type, density, etc.), the presence of environmental habitat/green elements, and more.

The images below show examples of the five land-use contexts within Mount Joy Borough and **Figure 1** shows the extents of these land-use classifications throughout the Borough.

Five Land-Use Contexts:

C1: Rural/Open Space

C2: Suburban Residential

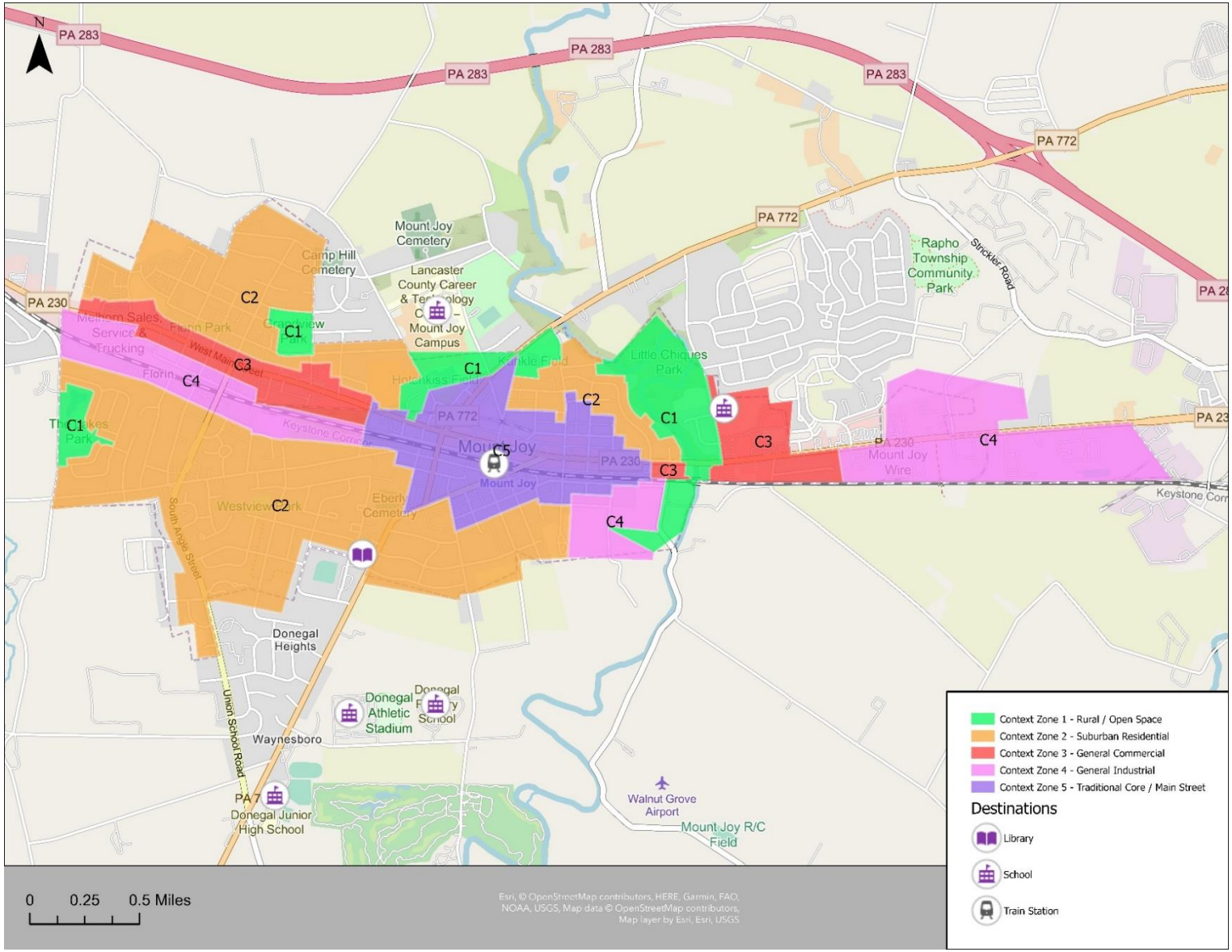
C3: General Commercial

C4: General Industrial

C5: Traditional Core/Main St.

C1: Rural/Open Space	**C2**: Suburban Residential	**C3**: General Commercial	**C4**: General Industrial	**C5**: Traditional Core/Main St.
Graphic/Image	Graphic/Image	Graphic/Image	Graphic/Image	Graphic/Image

Figure 1: Land-Use Context Map



Street Typologies

The streets within the Borough can be classified based on their relative roles within the transportation network.

The widely accepted roadway classification system is the FHWA's Federal Functional Classification System (FFCS). This system takes into consideration land accessibility, but it emphasizes regional mobility connections between people and good centers.

While accounting for the FFCS within the Borough, and applying its concepts for other Borough roadways not designated on the FFCS, **Figure 2** shows the distribution of these street typologies throughout Mount Joy Borough.

**Note: these street typologies do not replace those defined in the Mount Joy Borough ordinances.*

	Mobility Need	**Land Access**
Highway/Freeway:	high mobility	low/limited access
Arterial/Boulevard:	med./high mobility	low/med. access
Collector/Avenue:	med./low mobility	med./high access
Local Street:	low mobility	high access

These road characteristics provided under the FFCS are not always consistent with the actual street designs. For example, the portion of SR 230 (Main Street) that runs through downtown Mount Joy is designated as a "Arterial/Boulevard" but has a high degree of land access need because of its business frontage and on-street parking.

For purposes of this Guidebook, the Highway/Freeway street typology isn't present and thus not applicable.

Arterial/Boulevard

Graphic/Image

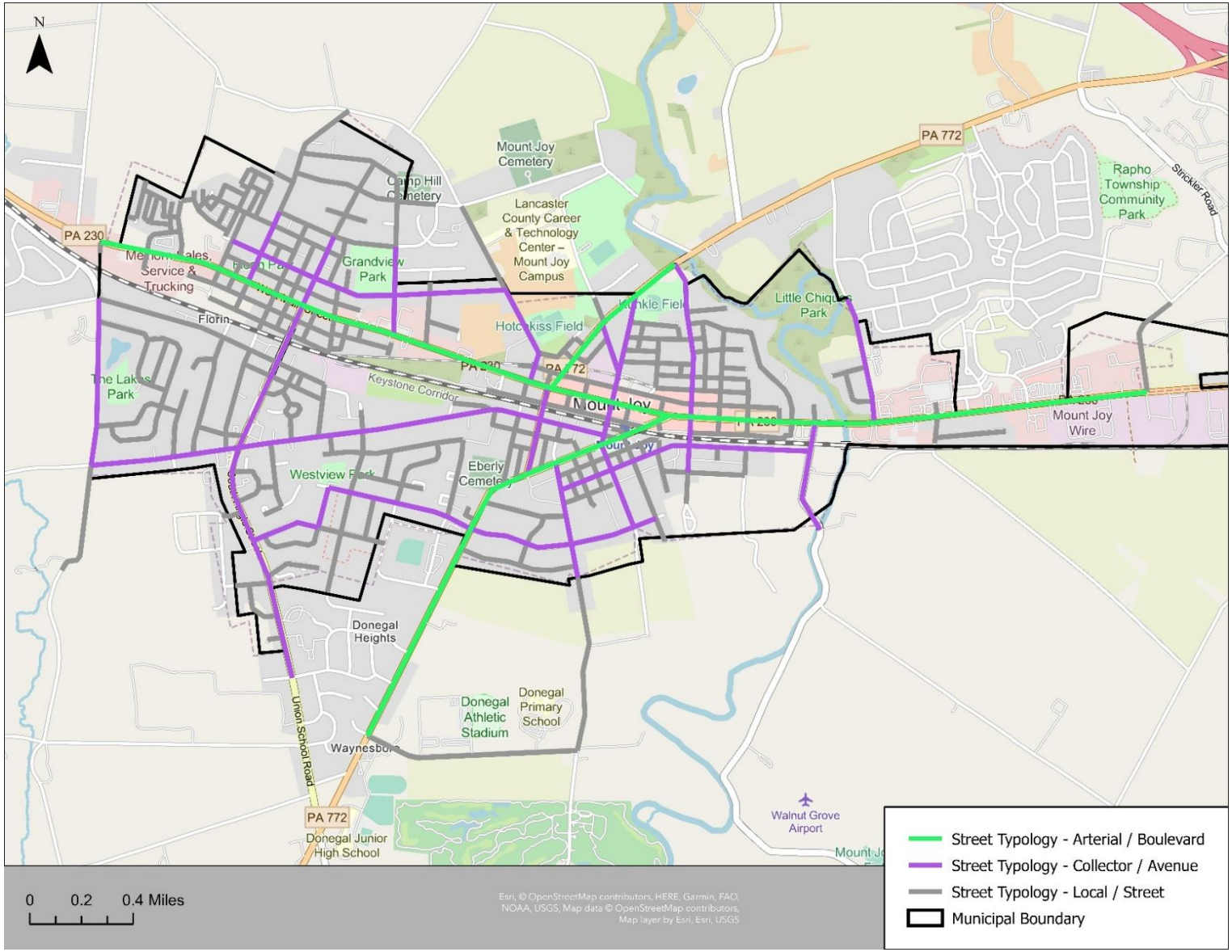
Collector/Avenue

Graphic/Image

Local Street

Graphic/Image

Figure 2: Street Typology Map



Context-Sensitive Design Treatments & Countermeasures

Many smaller towns and rural communities like Mount Joy desire to preserve their small-town character and are often apprehensive that the addition of sidewalks or major "urban" infrastructure could diminish that appeal. At the same time, many want to improve active transportation and safety for all users. In this case, context-sensitive design solutions such as a paved shoulders and yield streets can serve as a visual separation for pedestrians and bicyclists without completely changing the nature of the street. The following treatments focus on opportunities (many at a low cost) to make incremental improvements balanced with the geographic, fiscal, or other limitations faced by smaller communities such as Mount Joy.

Traditional auto-centric design perspectives focus heavily on the role of the roadway within the vehicular transportation network, without considering the adjacent land-use context. Context-sensitive design treatments and countermeasures for transportation work to better align roadway design with the adjacent land-use context.

As described in the previous section, the portion of SR 230 (Main Street) may be designated as a "Arterial / Boulevard" for its full length through Mount Joy, but the design and functional operation of the portion within the downtown context varies from the portions on the outskirts of the Borough.

These context-sensitive design elements convey to roadway users that this portion of the roadway is different than the others (and roadway users should modify their behaviors accordingly). These elements can also convey who the intended users of the roadway are (ex: the presence of bicycle lanes clearly conveys that this roadway was designed to accommodate bicyclists).

Designated Space for Active Modes: These countermeasures aim to better accommodate active transportation users along a roadway by providing active transportation amenities.

- Pedestrian Sidewalk
- Bicycle Lanes (Traditional, Protected/Buffered)
- Shared-Use Path/Sidepath
- Paved Shoulder for Pedestrians/Bicyclists
- Bicycle Boulevard (Neighborhood Bikeways)
- Bicycle/Pedestrian Yield Roadways

Dedicated Space Graphic/Image

Dedicated Space Graphic/Image

The 'designated space' active transportation countermeasures are best utilized under specific context and street typology combinations, as shown in the table below.

Table 1: Active Transportation Amenities by Context Zone and Street Typology

Context Zone-Character Area	**Street Typology**	Yield Roadway	Bicycle Boulevard (Neighborhood Bikeway)	Paved Shoulder	Shared-Use Path/ Sidepath	Pedestrian Sidewalk	Bicycle Lanes	Protected/ Buffered Bicycle Lanes
C1- Rural/Open Space	Arterial/Boulevard			X	X			
	Collector/Avenue			X	X		X	
	Local Street	X	X		X			
C2- Suburban Residential	Arterial/Boulevard			X	X	X		X
	Collector/Avenue			X	X	X	X	
	Local Street	X	X		X	X		
C3- General Commercial	Arterial/Boulevard			X	X	X		X
	Collector/Avenue			X	X	X		X
	Local Street	X	X		X	X	X	
C4- General Industrial	Arterial/Boulevard			X	X	X		
	Collector/Avenue			X	X	X		X
	Local Street				X	X	X	
C5- Traditional Core/Main Street	Arterial/Boulevard					X		X
	Collector/Avenue					X	X	
	Local Street	X		X		X	X	

Other Supplemental Context-Sensitive Countermeasures:

Speed Management Strategies: These countermeasures aim to reduce roadway speeds to better match the adjacent land-use context and its multimodal usage.

- horizontal deflection (chicanes, lateral shift, median island, choker)
- vertical deflection (speed humps, raised crosswalks/intersections)
- roundabouts/traffic circles
- speed limits transitions

Intersection Treatments: These countermeasures aim to better accommodate active transportation users within the confines of an intersection.

- Reduced Corner Curb Radii
- Curb Bulb2outs/ Curb Extensions
- Pedestrian Refuge Islands at Crosswalks
- Crosswalks (Pavement Markings)
- Leading Pedestrian Interval (LPI) at Traffic Signals
- Bicycle Boxes/Through Bike Lane Pavement Markings

Intersection Treatment

Graphic/Image

Intersection Treatment

Graphic/Image

Intersection Treatment

Graphic/Image

Speed Management

Graphic/Image

Speed Management

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Speed Management

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Speed Management

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Intersection Treatment

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Intersection Treatment

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Intersection Treatment

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Intersection Treatment

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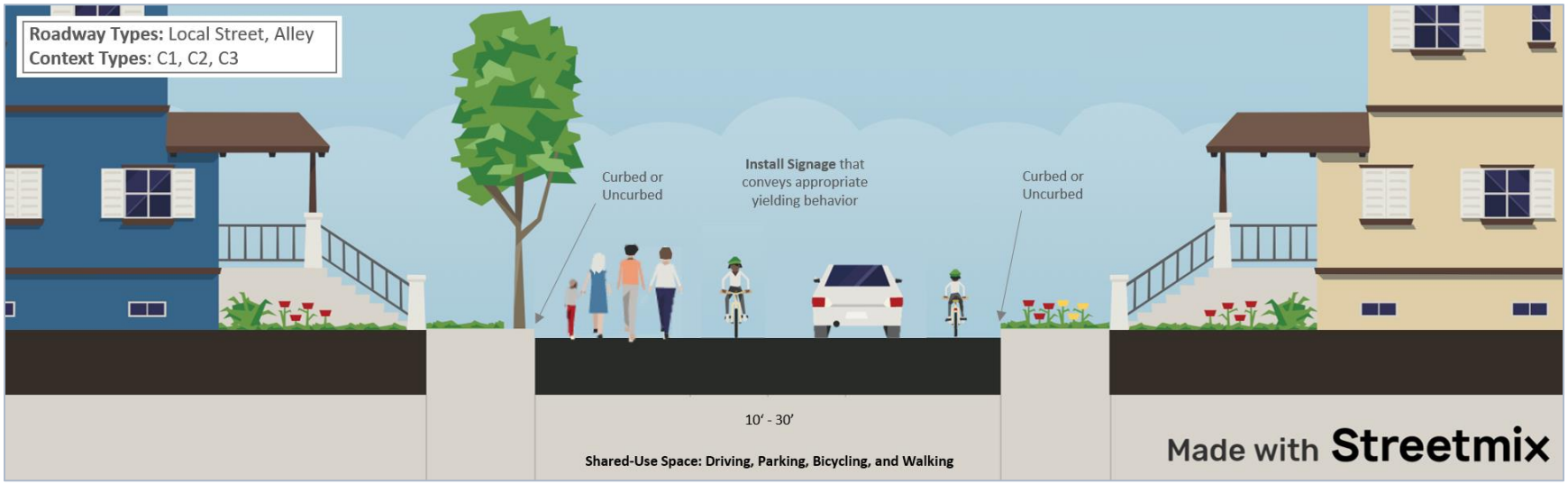
Illustrative Typical Sections

The following typical sections illustrate different opportunities for implementing active transportation facilities on the street network. They correspond with the facility types referenced in **Table 1: Active Transportation Amenities by Context Zone and Street Typology**. Each design provides a space for cyclists, vehicles and pedestrians, with varying degrees of separation. Using Table 1, the Borough can use context zone and street typology to consider which of the typical sections to implement. Existing roadway widths, available right-of way, and traffic volume will also contribute to which of the typical sections is most appropriate.

Figure 3: Typical Section 1 – Pedestrian/Bicycle Yield Roadway

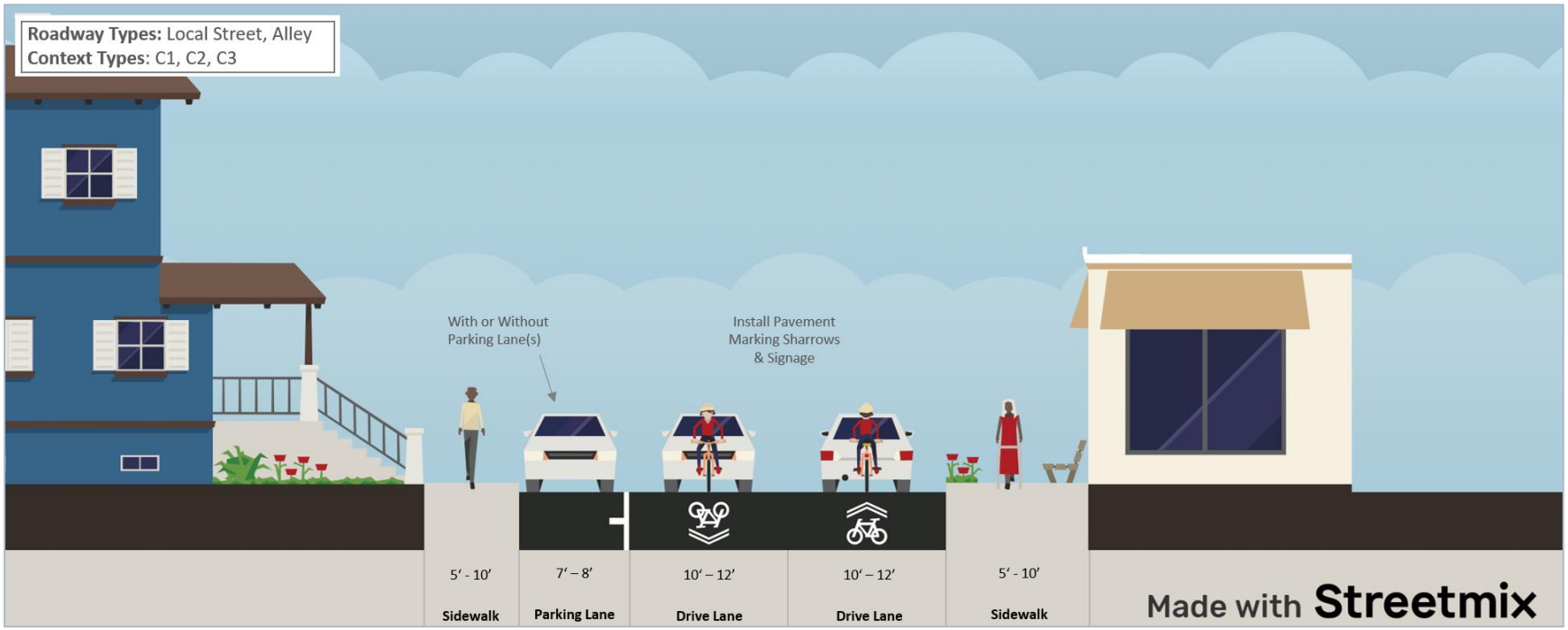


Purpose: Pedestrian/bicycle yield roadways provide for driver, bicyclists, and pedestrians within the paved cartway. On these roadways, the multimodal users travel at low speeds without dedicated space for any one mode (i.e. each mode has claim to the roadway space and yields to the other modes when passing is necessary).

In Pennsylvania, because of current laws, pedestrians must walk as near as practical to the roadway edge if no sidewalk or shoulder is provided (and on the left side if walking on a two-way roadway). For bicyclists, Pennsylvania law indicates that on a roadway with no center line bicycles may be ridden anywhere on the right side of the roadway.

Features: Signage (describing yield conditions) where there is a higher frequency of shared use activity, little to no pavement markings

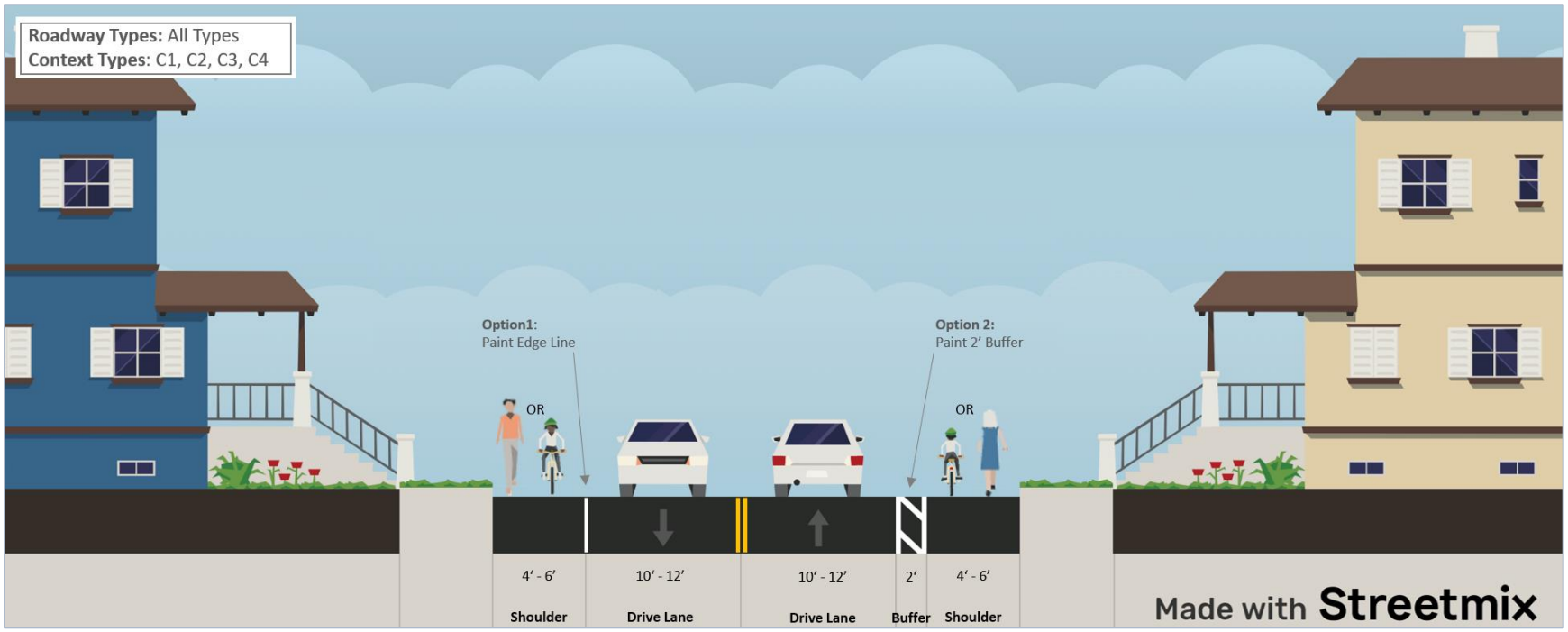
Figure 4: Typical Section 2 – Bicycle Boulevard/Neighborhood Bikeway



Purpose: Bicycle boulevards highlight the presence of bicyclists on the roadway, within the drive lanes. This traffic control adds an increased sense of legitimacy for bicyclists to 'use the full lane'. These facilities can better accommodate bicyclists without modifying the roadway width or constructing an adjacent active transportation facility like a shared-use path/sidepath. Note that not all bicyclists will be comfortable traveling in mixed traffic if the vehicular volumes or speeds are too high. This facility is best for roadways with low vehicular speeds and/or volumes.

Features: Pavement markings (sharrows) and signage

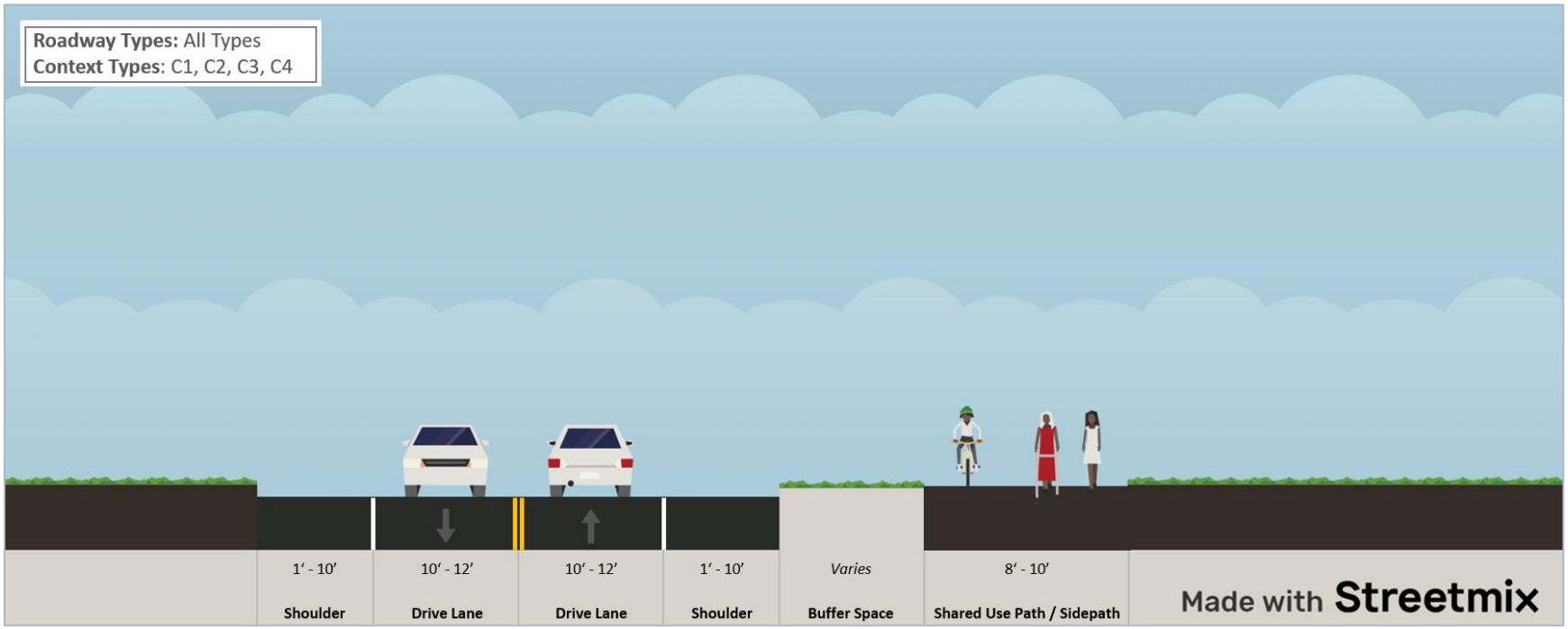
Figure 5: Typical Section 3 – Pedestrian/Bicycle Activity on Paved Shoulders



Purpose: Pedestrian/bicycle use on paved shoulders allows for the repurposing of vehicular shoulders for active transportation use. These shared-used spaces can accommodate active transportation users without modifying the roadway width or constructing an adjacent active transportation facility like a shared-use path/sidepath or sidewalk. *Because the shoulder is shared by both bicyclists and pedestrians, this design is not ideal in situations with relatively high bicycle and/or pedestrian volumes.*

Features: Painted edge line, *(optional: painted buffer space)*

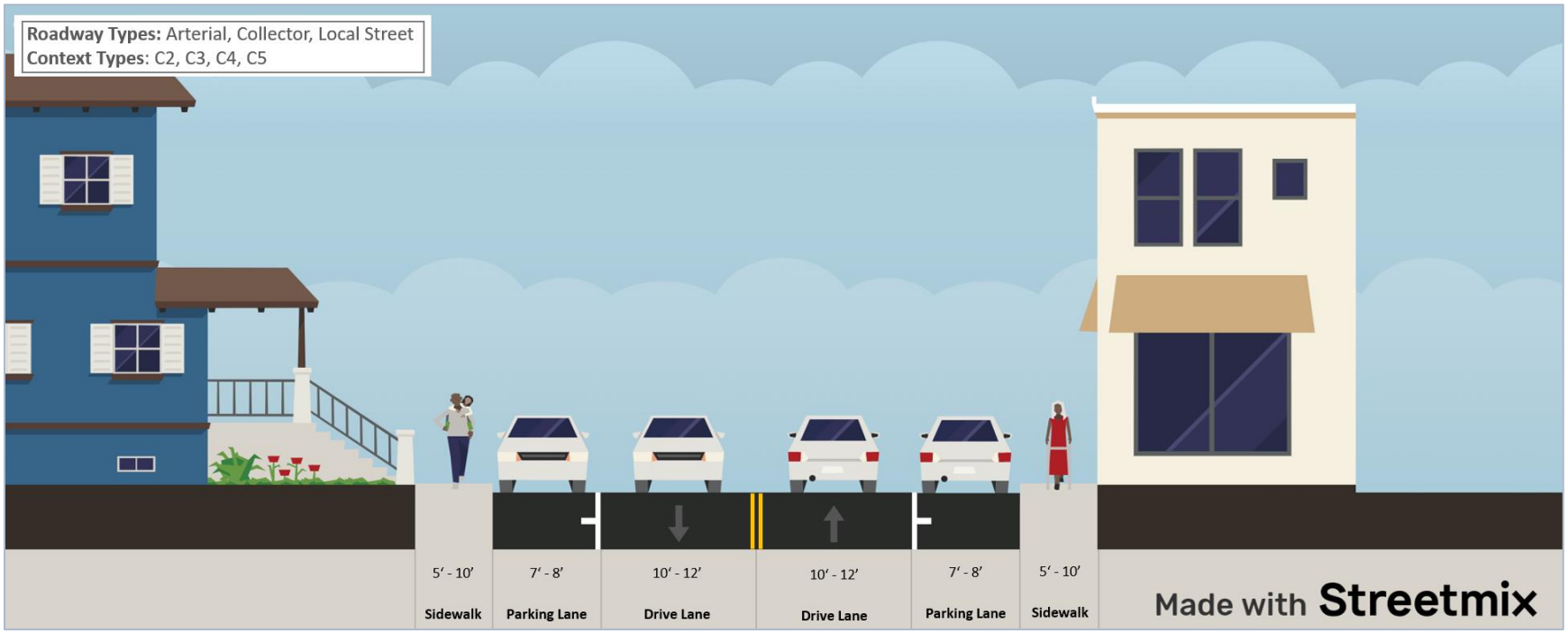
Figure 6: Typical Section 4 – Buffer Separated Shared-Use Path / Sidepath



Purpose: Shared-use paths/sidepaths create dedicated space for bicyclists and pedestrians outside of the roadway. A sidepath follows parallel to the roadway whereas a shared-use path may diverge from the roadway orientation. In either case, a shared-use path/sidepath includes some form of buffer space between the roadway and the path. The complete physical separation from the roadway increases the level of comfort for pedestrians/bicyclists who would otherwise need to use the roadway shoulder. The ADA-compliant surface also improves access for all active transportation users. These mixed-use facilities accommodate both directions of travel and may or may not have delineated 'travel lanes' for each direction.

Features: Paved path, buffer space, signage, ADA curb ramps, (*optional: path pavement markings*)

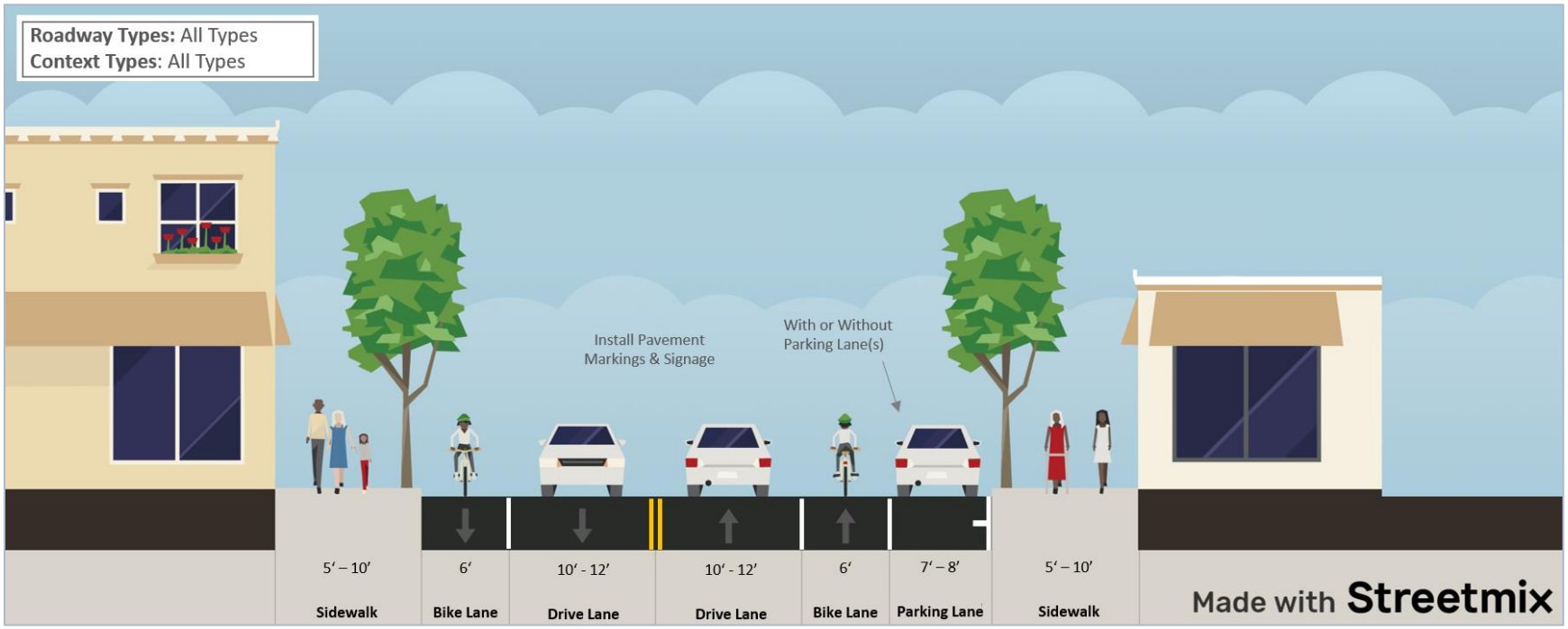
Figure 7: Typical Section 5 – Curbed Sidewalks



Purpose: Pedestrian sidewalks created dedicated space for pedestrians outside of the roadway. This increases the level of comfort for pedestrians who would otherwise travel on the roadway. The ADA-compliant surface also improves access for all active transportation users.

Features: Concrete or paved sidewalk, ADA curb ramps

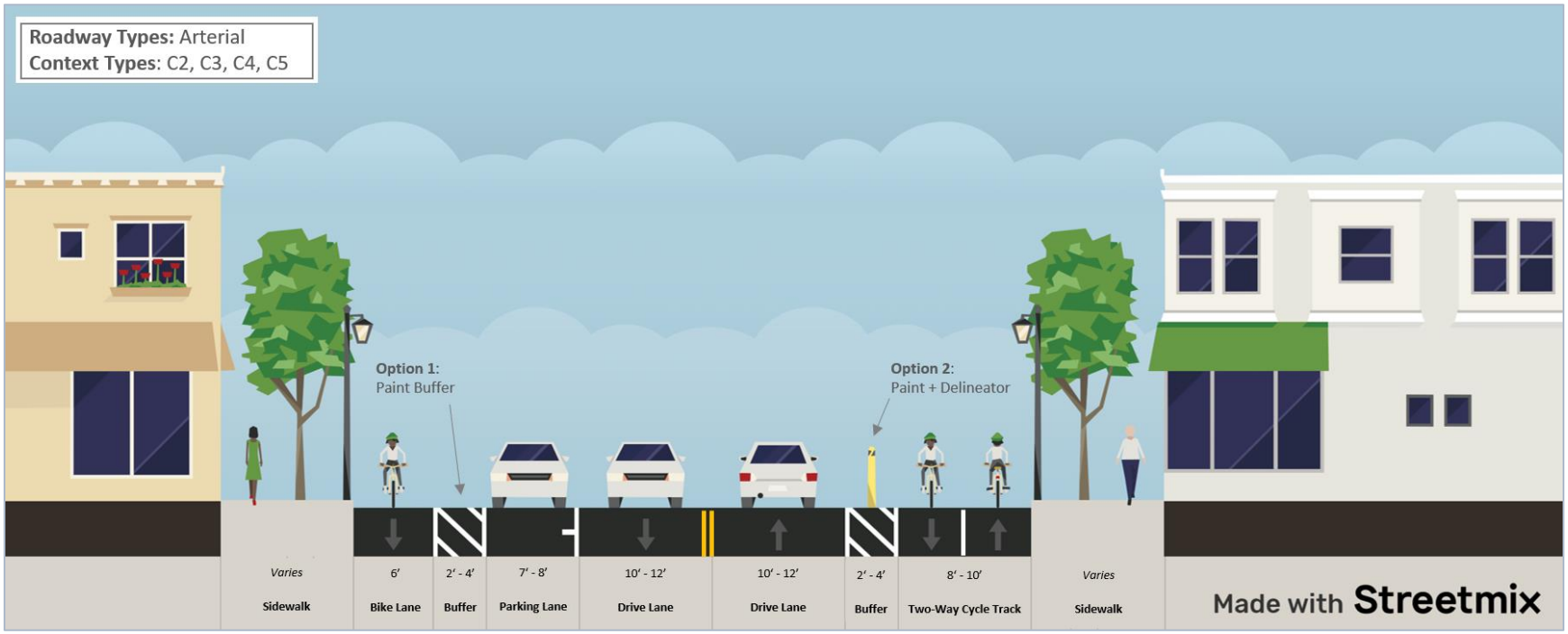
Figure 8: Typical Section 6 – Dedicated Bicycle Lanes



Purpose: Bicycle lanes create dedicated space for bicyclists on the roadway that is directly adjacent to drive lanes or parking lanes. This dedicated space highlights the presence of bicyclists on the roadway and increases the level of comfort for bicyclists by reducing the frequency of interactions between modes.

Features: Bicycle lane pavement markings and signage

Figure 9: Typical Section 7 – Protected/Buffered Bicycle Lanes



Purpose: Protected/buffered bicycle lanes provide dedicated space for bicyclists on the roadway that includes a physical separation between the drive lane and/or parking lane with either a painted buffer or a painted buffer with delineators. This dedicated space for bicyclists highlights the presence of bicyclists on the roadway. The additional separation from moving vehicles increases the level of comfort for bicyclists on the roadway and reduces the frequency of interactions between modes.

Features: Painted buffer space (*optional: delineators*)

Engagement—Public Input

Overview of Public Process

Community engagement is a core component of the active transportation planning process. This should be an early and continuing part of any transportation and project development program. Engaging citizens and addressing potential conflicts at the beginning of a project's planning process can positively influence the efficiency and outcome, building the collective interest and buy-in of the community at large.

Workshop

At the beginning of the Guidebook development process, the Borough Council, Borough Planning Committee members and Borough staff participated in a Complete Streets and Active Transportation 101 workshop. The workshop included the presentation of general concepts and ended with breakout groups identifying local areas of concern and along with priorities.

Survey

A communitywide survey/questionnaire was developed and made available on the Borough website to gather information from the community at large regarding perceptions and concerns with a focus on walking, biking, and transit.

The survey was comprised of 17 questions and enabled an analysis which accounts for age, residency (or other interest in the Borough) and primary reasons for using different modes of travel. There were three open ended questions in the survey, allowing for the public to bring attention to issues otherwise unidentified.

More than 200 responses to the survey were received. The survey was extended to account for the effects of the COVID-19 community impacts.

Field Audit

A pedestrian/bike/transit environmental quality audit was conducted to determine and establish the current status of the transportation network as it relates to the various modes of travel within the Borough. Observations of opportunities for safety and operational enhancements were also recorded. The results of the field audit/inventory were used to inform the development of this guidebook.

Workshop

Developing Understanding of Active Transportation Facilities and Identifying Issues and Priorities

The workshop took place on January 21, 2020 and brought together Mount Joy Borough Council members, Planning Committee members, and Borough staff. Led by Community and Mobility Planner, Fred Jones and Transportation Engineer, Todd Trautz of Michael Baker International, the workshop provided an opportunity to present the concepts and roles of active transportation facilities.

The intention of the workshop was to inform Borough members and staff what Active Transportation Planning was and was not, and to gather input from these stakeholders on what were the issues and priorities of the Borough related to active transportation facilities.


January 2020 Workshop Presentation

Presentation

The workshop began with a presentation describing and illustrating the rationale for considering developing a network of active transportation facilities in a community:

Who uses active transportation facilities?

- Everyone –pedestrians and bicyclists of all ages and abilities

Why do we need them?

- Contribute to safer streets/spaces for pedestrians and bicyclists
- Restore confidence in walking and biking
- Address the changing behaviors related to new work habits and sense of place of communities.

What modal travel issues do they address?

- Convenience
- Safety
- Comfort
- Accessibility
- Predictability
- Affordability
- Reasonable travel times

Who can benefit from a network of active transportation facilities?

- Children
- Older adults
- People living with disabilities
- Transit users
- Destination and adjacent business owners

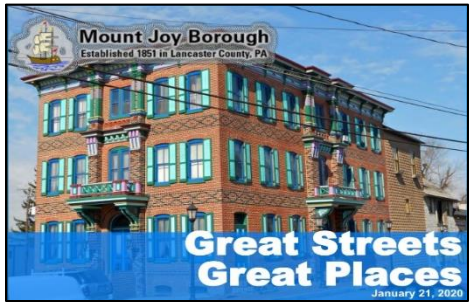
The presentation showed many examples and photographs of different facility types already implemented in other communities and illustrated the positive potential impact such facilities can have on communities.

Breakout Exercise

Following the presentation was a breakout exercise. The workshop attendees broke into two groups. Each group identified walking, biking, and transit issues they were aware of within the Borough. Each group identified "big idea" solutions that could be investigated further within the Borough as part of the Active Transportation Implementation Guidebook development. Top issues and areas of concern identified by the breakout groups included:

- Concern about walkability across the Amtrak Railroad tracks
- Goal of developing a sense of place along Main St. in the Florin area
- Goal of connectivity between parks along the planned Emerald Necklace
- Goal of connecting gaps along the Emerald Necklace
- Concern regarding and need for reevaluating the planned connectivity of the Emerald Necklace in the area of Longenecker Road
- Concern regarding challenges of working with PennDOT and Amtrak on projects that are crossing or along their ROW
- Goal of including 'spoke' bike/trail connections into the Borough from the Emerald Necklace
- Goal of improving the designated PA bike route along Main St.

Graphic/Image




January 2020 Workshop Breakout Exercise

Survey Feedback Results

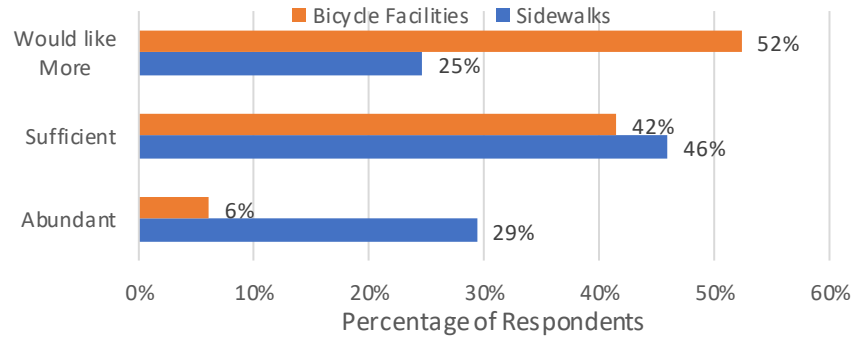
Existing Conditions

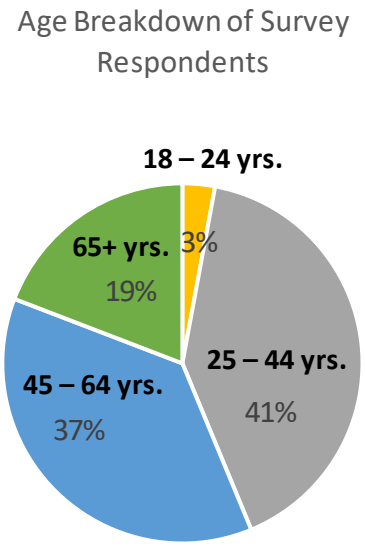
Multiple survey questions asked respondents about their perspectives on the existing active transportation amenities within the Borough.

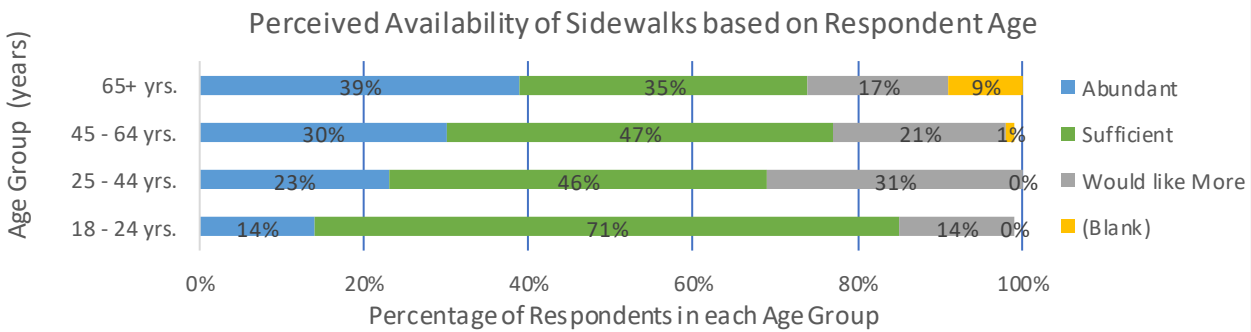
When asked about the availability of active transp. facilities:

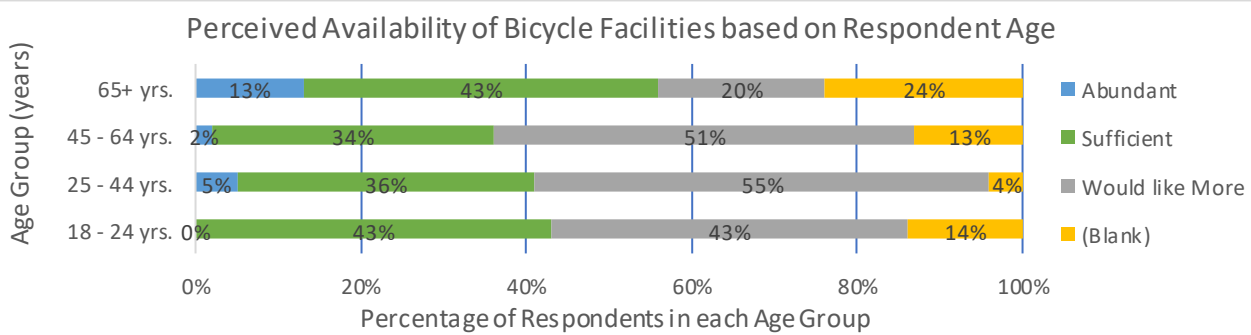
- 52% of respondents would like more bicycle facilities
- 25% of respondents would like more sidewalks

When the results were broken down by the respondents' age group: the majority of those in the 25 to 64 yrs. and 45 to 64 yrs. age groups would like more bicycle facilities.









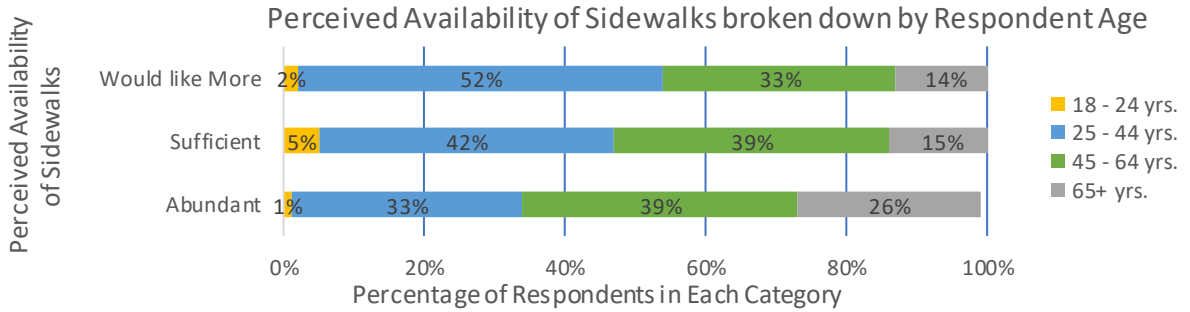
Existing Conditions, Continued

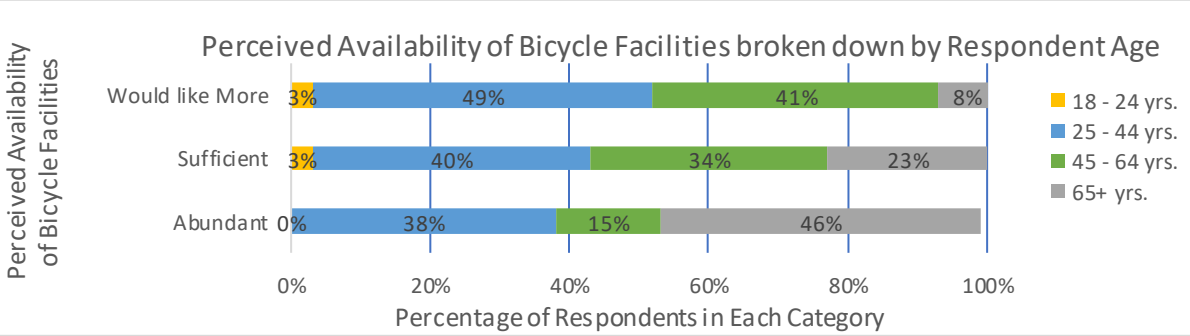
When the responses within each "Perceived Availability" category were broken-down by age: the majority of those who "Would like More" active transportation facilities were in the 25 to 44 yrs. and 45 to 64 yrs. age groups.

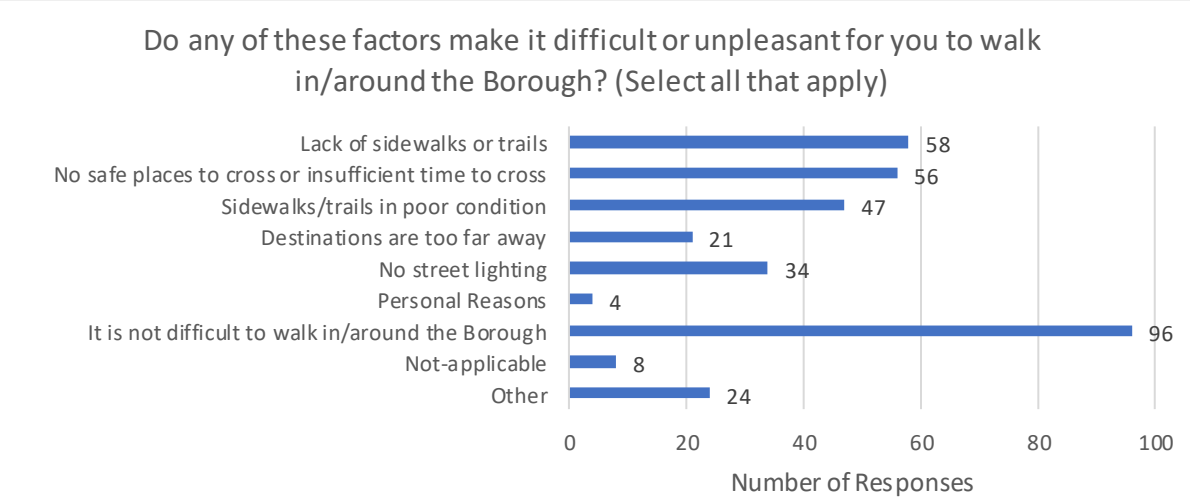
When asked whether specific factors make it difficult or unpleasant to walk in/around the Borough:

- 96 responses indicated "it is not difficult"
- 58 responses indicated "lack of sidewalks or trails"
- 56 responses indicated "no safe place/insufficient time to cross"
- 34 responses indicated "no street lighting"

Graphic/Image







Existing Behaviors

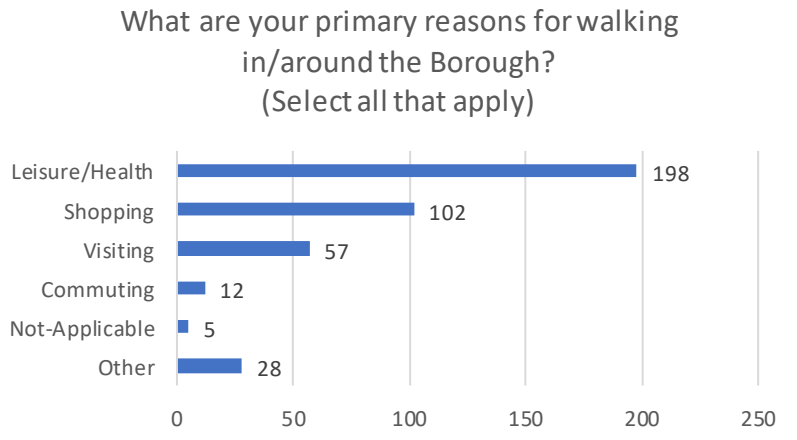
Multiple survey questions asked respondents about their active transportation behaviors.

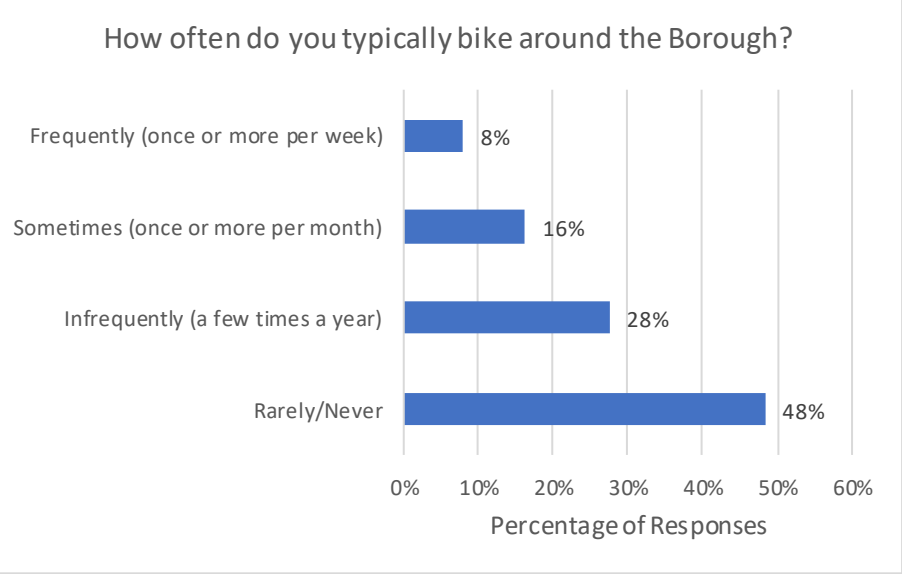
When asked about their frequency of walking or biking, the breakdowns almost mirror images one another:

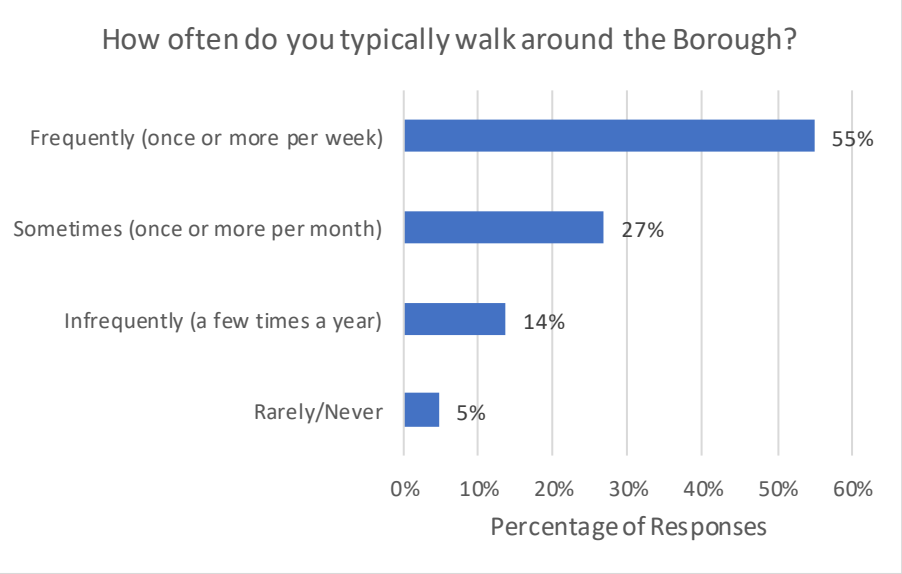
- 48% bicycle "Rarely/Never"
- 55% walk "Frequently (once or more per week)"

This mirrored relationship may relate to the perceived availability of sidewalks vs. bicycle facilities. When the results were cross-examined with perceptions of availability:

- 33% of respondents who indicated they "Rarely/Never" bicycle indicated they would like more bicycle facilities.
- 0% of respondents who indicated the "Rarely/Never" walk indicated they would like more sidewalks.







Latent Demand for Active Transportation

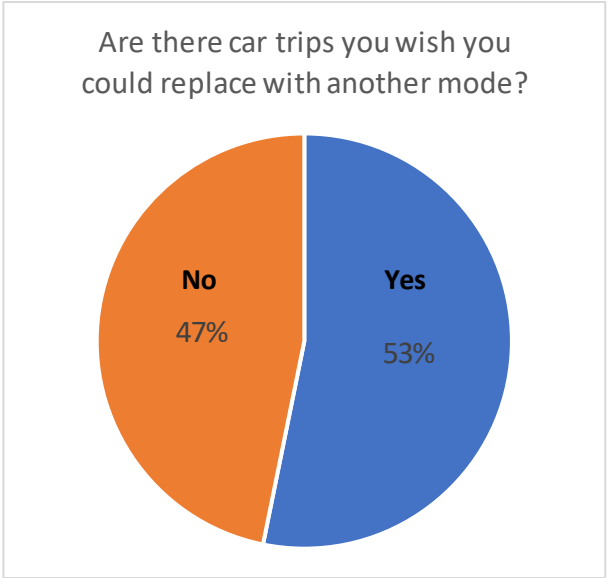
Sometimes, people would like to travel on a roadway using an active transportation mode but feel uncomfortable or unsafe doing so with the current level of multimodal accommodation. This unseen demand for multimodal activity on the roadway is referred to as "latent demand".

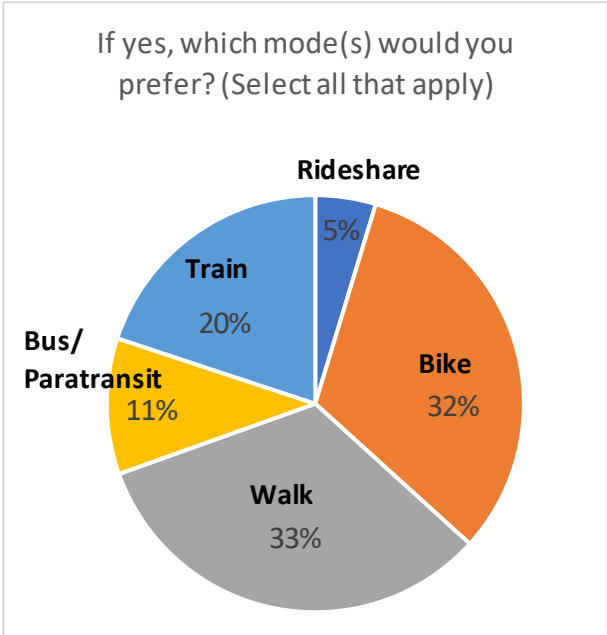
Two survey questions explored the latent demand for active transportation within Mount Joy Borough:

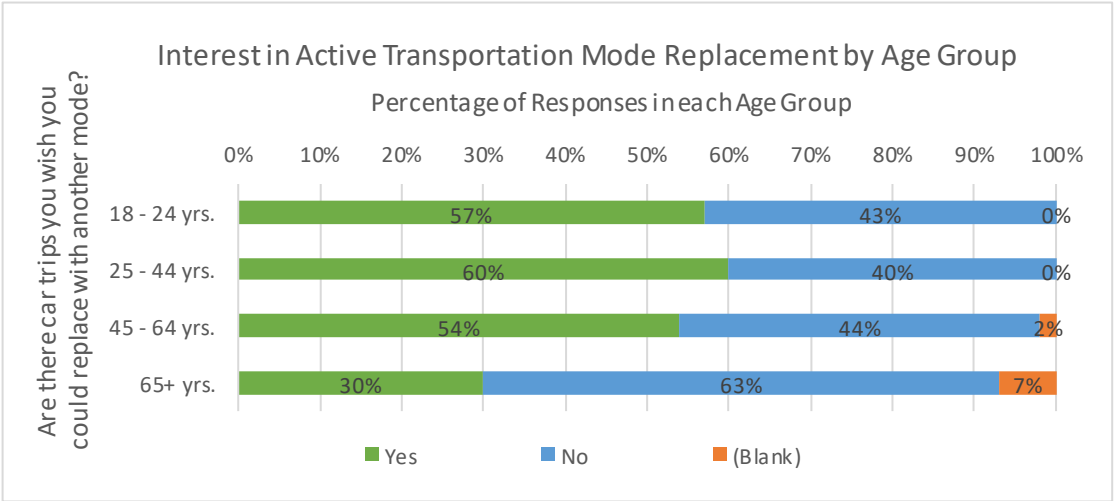
- Are there car trips you wish you could replace with another mode?
- If yes, which mode(s) would you prefer? (Select all that apply)

Over half of the survey respondents (125 or 53%) indicated they would like to replace a car trip with another mode. Of those respondents that indicated they would like to replace a car trip, bicycling and walking modes each represented about 30% of all responses. This indicates that there is latent demand for active transportation.

When the results are broken down by age group: the 65+ yrs. age group is less interested in replacing car trips with another mode of active transportation than other age groups.



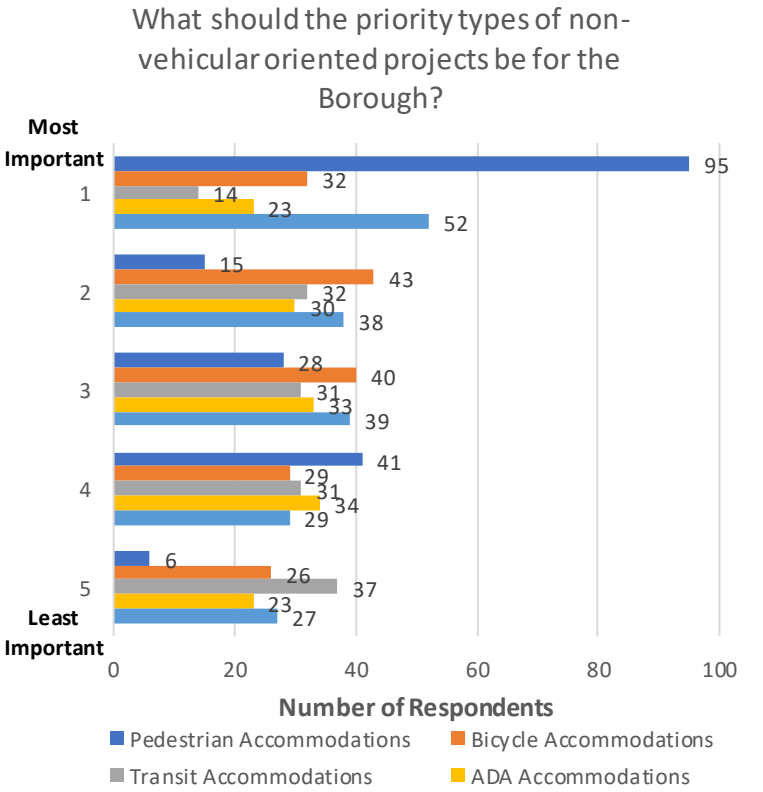


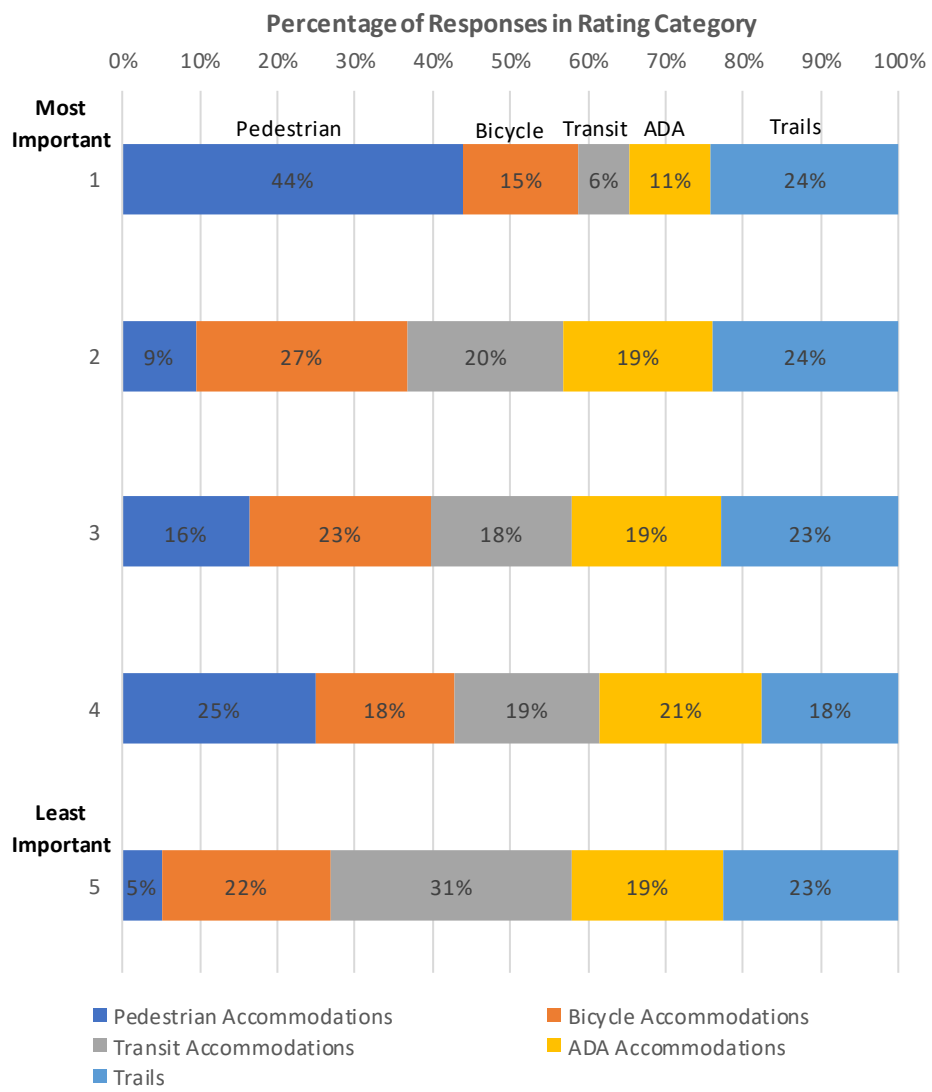


Future Priorities

The survey asked respondents about their thoughts on how to prioritize different types of active transportation projects (i.e. how important the different types of transportation are in order to prioritize accordingly).

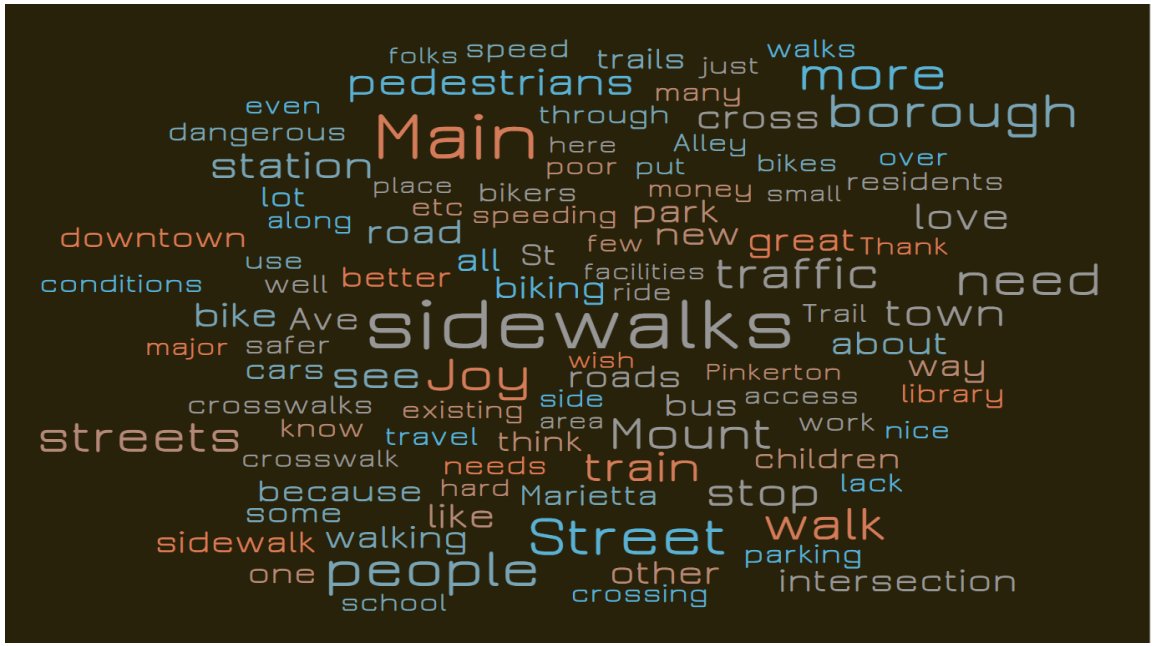
Pedestrian accommodations were identified as a top priority: 95 respondents (~40% of all respondents) rated pedestrian accommodations as "Most Important". Pedestrian accommodations represented 44% of the "Most Important"





Open-Ended Comments

This word cloud represents the open-ended responses to the final survey question: *"Any additional comments or concerns about walking, biking, or accessing buses or trains in Mount Joy Borough?"* The larger the word, the more frequently it appeared in the comments. There were strong opinions provided and the overall support for active transportation amenities was mixed (some in favor/some not in favor).



"Cars go too fast and don't stop for pedestrians in the crosswalks"

"Would love to see more large trails like Susquehanna River or Conewago Recreational."

"Having stroller accessibility to the library and the park from N. Barbara Street would be SO helpful to me & [lots of other young families]."

"NO NEW SIDEWALKS!!!"

"#1 should be a connection to Donegal Schools from the borough. This should be a priority."

Would like to bike to Little Dippers with family. Would like [to walk/bike to school] & library."

"...Driver speed is my main safety concern"

"More streets just need to be paved."

"More and more people are finding themselves unable to afford a car these days. Mount Joy is a great walking town we just need safer ways to cross Main Street and more places where we can safely cross the train tracks. Thank You for looking into this. This is a subject which is very important to me. I am a senior who walks a lot and there are many other folks in Mount Joy who walk, not for enjoyment, but because they have to for everyday chores."

"Crosswalks on all major intersections"

"Great new train station, walk for my health but unsafe without sidewalks"

"I wish there was a walking or biking trail in town. Walking on main street is very easy and all the shops downtown are easily accessible. Train access and parking is also great."

"Pedestrians should not have to walk on streets of highly used roads."

"I am disappointed [our town authorities believe] that sidewalks are not necessary. It's about funding, not whether they should exist or not."

"I have a concern that this is a backhanded way of installing sidewalks in the borough when the majority of residents voiced their opposition. There seems to be an agenda to get sidewalks one way or the other."

"Even though some neighborhood streets on the north side of town lack sidewalks ... I don't feel this prohibits or discourages me from walking those streets because the streets are so wide."

Building the Network

Network-Based Approach

An active transportation network works best when there is connectivity for all modes of travel throughout the network, giving all users safe and convenient access to priority destinations. To assist the Borough in transforming the existing network of streets and sidewalks to an active transportation network, the features and challenges of the existing Mount Joy network are discussed; with a particular focus on pedestrian mode, bicycle mode, transit mode, and curbside management.

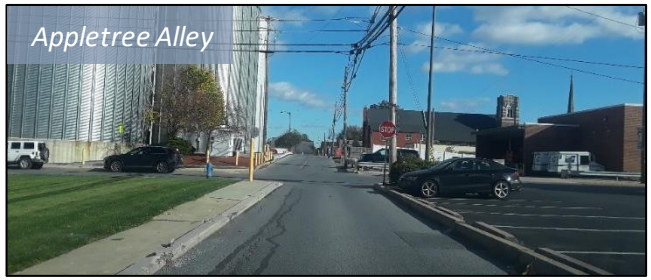
The descriptions and maps of the existing and proposed pedestrian facilities, bicycle facilities, and transit facilities in this chapter can be used to inform the Borough when evaluating the existing street network. The Borough can use the maps and GIS layers to identify gaps and deficiencies in the existing network. This can be a useful tool when considering projects and priorities. The map and GIS layers can be viewed in more detail at the Mount Joy Active Transportation Guide GIS website.

To help implement active transportation facilities, the level of traffic stress (LTS) for the Borough street network has been computed and is shown graphically as a GIS layer. The LTS can be used as a factor to consider when selecting an appropriate typical section; with lower levels of traffic stress allowing for typical sections that provide less separation between modes.

This chapter has the following focus areas:

- Existing Network Features and Challenges
- Pedestrian Mode
- Bicycle Mode
- Transit Mode
- Latent Demand and Level of Traffic Stress
- Overall Network and Major Needs
  - Corridor Based Improvement
  - Shared Use Trail Improvements
  - Nodal/Intersection Improvements
  - Transit Improvements
  - Curbside Management/Freight

Main Street (PA 230)


Appletree Alley


Donegal Springs Road


Park Avenue

Existing Network Features and Challenges

Features

- Older parts of Mount Joy Borough are a basic grid system with many alleys. This allows for versatility and options for development of alternative active transportation routes.
- Newly constructed Amtrak Station located centrally in Borough and easily accessible from established primary arterials.
- All (seven) railroad crossings are grade separated

Challenges

- High speed railroad tracks transect Mount Joy Borough parallel to Main Street from east to west. The railroad tracks cut the Borough into a northern portion and a southern portion. There are seven crossings in six-mile length of town, two of which are old stone-arch underpasses with little/no room for pedestrians. On the western part of town there is up to a mile between crossings.
- Primary arterials into and through Mount Joy Borough evolved from rural two-lane roads with narrow lane widths and without shoulders. There is little room on the existing travel-ways for other modes of travel (pedestrians or bicycles).

Pedestrian

Mount Joy Borough is pursuing the creation of an interconnected network of streets and sidewalks that is safe and inviting for all users, including pedestrians of all ages and abilities.

Bicycles

Aside from PA Bicycle Route J-1 on Main St. there are no specifically marked bike lanes or bicycle boulevards within the Borough. The grid system and layout of residential areas lends itself to the development of a bikeable network.

Transit

Mount Joy Borough is the location of a regional/commuter Amtrak Station. It is also served by Red Rose Transit buses with daily service between Lancaster City and Elizabethtown

Pedestrian-Mode

The existing sidewalk network within the Borough has been inventoried and is shown on the adjacent map. Existing sidewalks vary in width, condition, and character commensurate with adjacent land uses and time (era) of development. There are some bituminous side paths and neighborhood trail systems; when adjacent to a street, these have been inventoried as part of the sidewalk network.

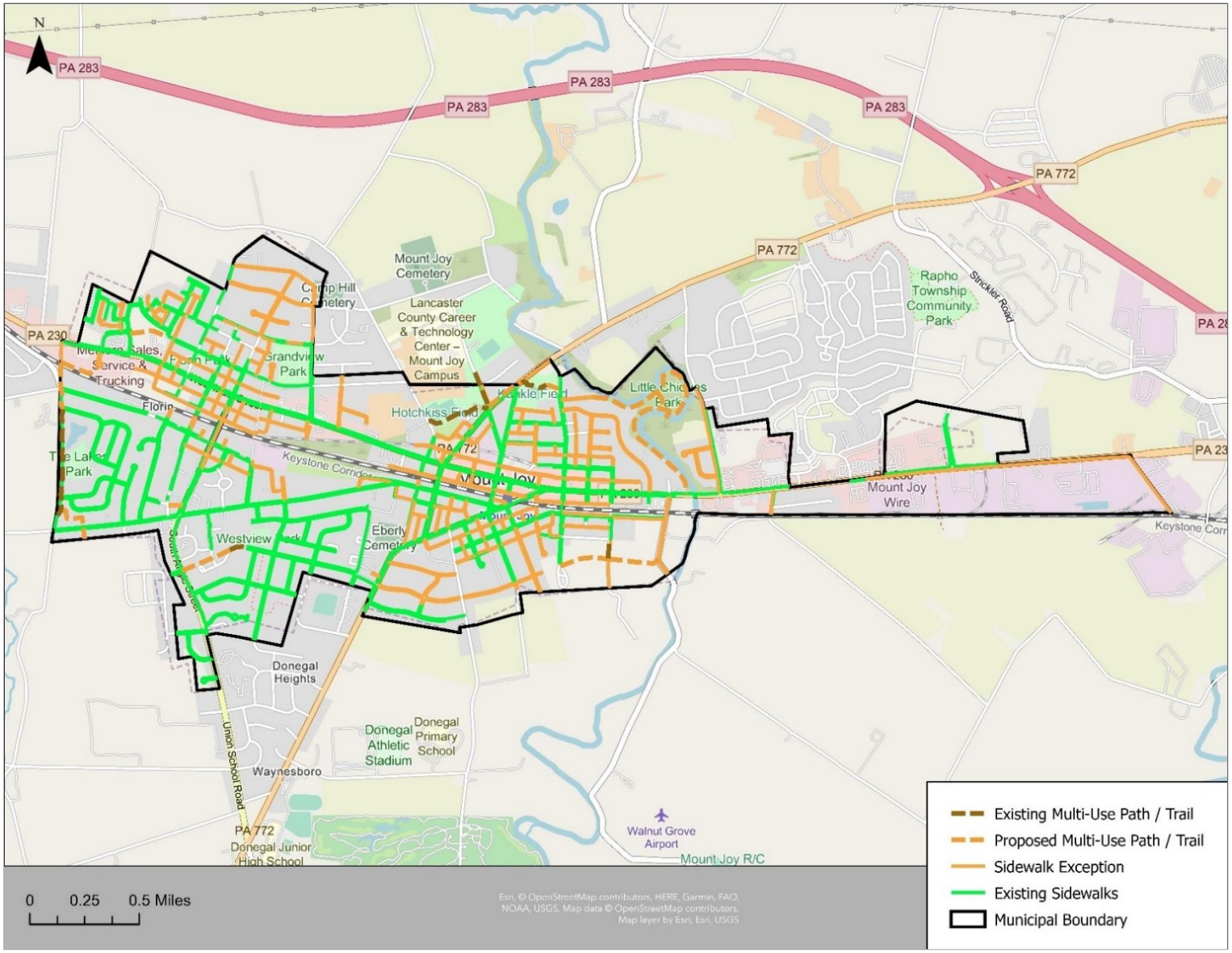
The Mount Joy Borough official map, adopted in 2013, has designated Barbara St, Market St., Marietta Avenue, Donegal St, Donegal Springs Rd, Angle St and Old Market St as pedestrian corridors. The Donegal Region Comprehensive Plan has additionally identified Main Street, Lefever Road, Angle St./Union School Road, Marietta Ave./ Anderson Ferry Road and Manheim Street as pedestrian improvement corridors within and near the Borough.

A particular challenge is providing safe and convenient pedestrian crossings of the Amtrak railroad tracks. The potential for improving existing crossings should be incorporated into the planning and design of future transportation projects; including new construction, reconstruction, rehabilitation, or pavement restoration and resurfacing. Due to the high train volume and speed, a comprehensive plan for safe and convenient crossings may need to be developed and specific grade separated pedestrian crossings pursued as independent projects.

A recreational multi-use trail (pedestrians and bicyclists) is proposed to be developed around the perimeter of Mount Joy Borough. It is called the Emerald Necklace and to date, two sections of it have been constructed: one along Musser Rd. (2000 ft.) and one along Old Market St. (700 ft.)

Image Source: Google Maps, Street View

Figure 10: Existing and Proposed Pedestrian Facilities



Bicycle-Mode

A number of regional and local planning documents have included bicycling and bicycle networks as part of a robust transportation system desired in Mount Joy and the surrounding region. These plans include:

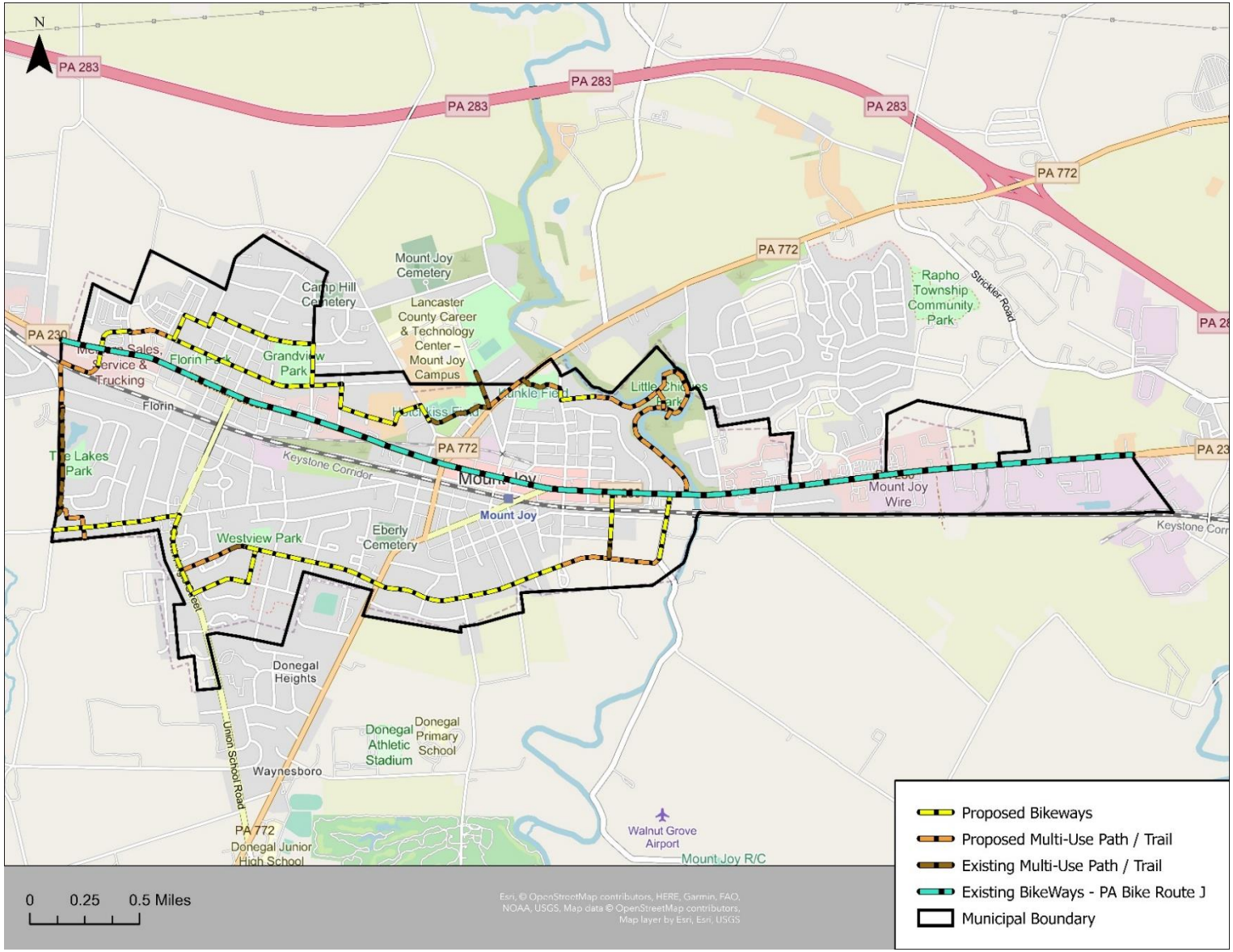
- Lancaster County Active Transportation Plan (2019)
- Donegal Region Comprehensive Plan (2011)
- Lancaster County Comprehensive Plan (2018)

Bicycle Route J-1 is designated along Main Street through Mount Joy Borough. This route is signed with PA Bike Route signing, however there are no designated bike lanes or bicycle facility pavement markings or signing promoting the use of this roadway for bicycles. At the time of this writing, there are no other designated bicycle facilities or bike lanes within the Borough limits. The Donegal Regional Comprehensive Plan has identified PA 772 as a future potential designated PA Bicycle Route.

The Mount Joy Official Map includes a proposed multi-use trail combined with an existing roadway network designated as neighborhood bikeways to comprise a recreational loop around the perimeter of Mount Joy Borough (known as the Emerald Necklace.) Designation and delineation of these roadways, as well as spurs that facilitate bicycle access to the Emerald Necklace has been identified as a goal of both local representatives (in the workshop) and citizens (in the Survey results).

Image Source: Google Maps, Street View

Figure 11: Existing and Proposed Bicycle Facilities



Transit-Mode

Amtrak Train Station

- New Station opened October 2019
- Provides regional and commuter rail service westward to Harrisburg and Pittsburgh, and eastward to Philadelphia and the Northeast Corridor.
- Survey respondents universally expressed positive feedback for station and rail transit availability
- Incorporate bicycle and pedestrian connectivity to train station as a priority destination for active transportation planning

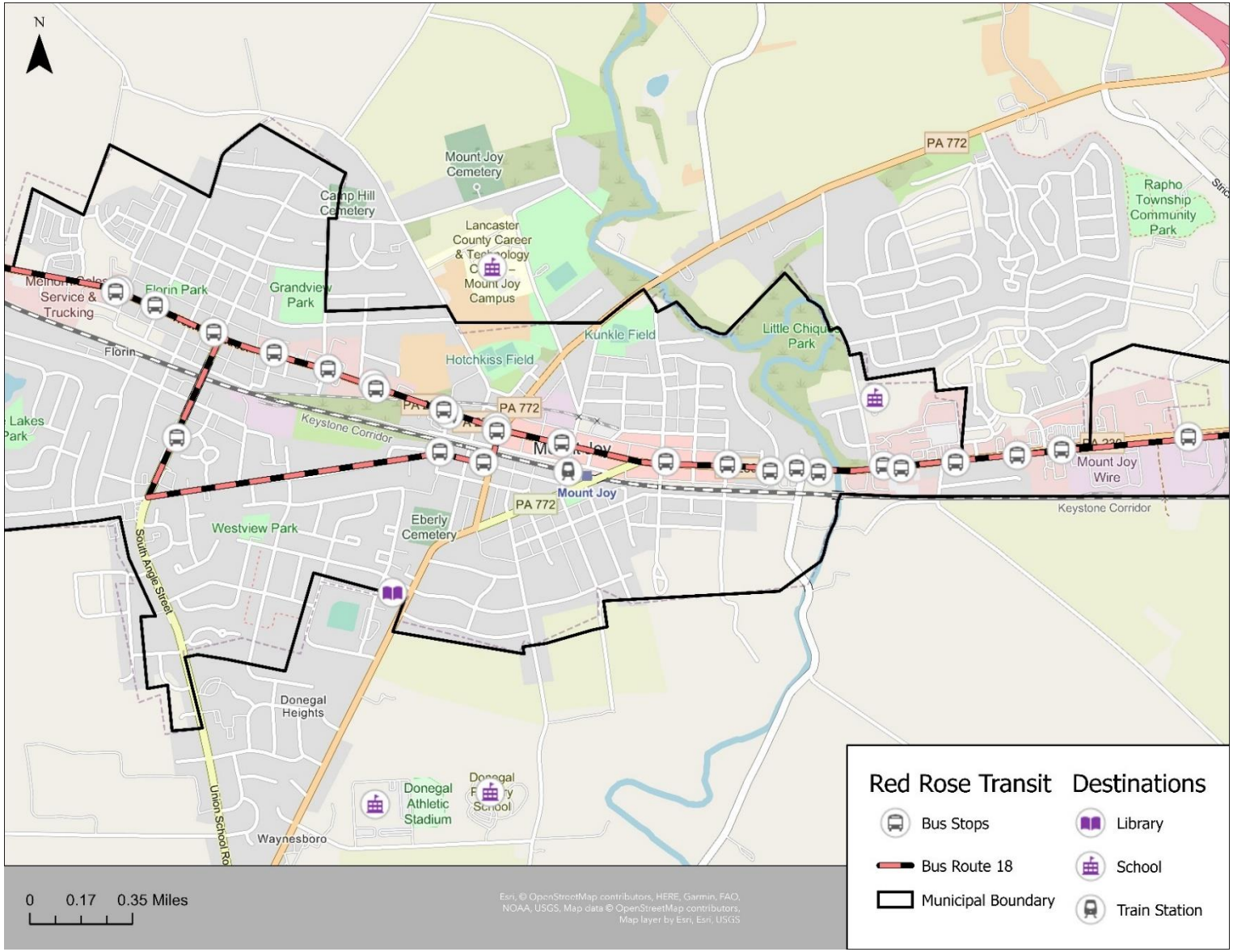
Bus Service

- Ten buses per day in each direction provide regional Red Rose Transit bus service between Lancaster City and Elizabethtown, PA with service between 5:30 am and 6:00 pm.
- Incorporate bicycle and pedestrian connectivity to bus service as a destination for active transportation planning.
- Evaluate bus stop(s) along Main Street to facilitate pedestrian accessibility to transit.
- Relocate bus stops near available parking and near train station for multi-modal trips.

Image Source: Google Maps, Street View

Image Source: Google Maps, Street View

Figure 12: Transit Bus and Train Network



Latent Demand/Low Stress Network Analysis

Latent Demand: Sometimes, people would like to travel on a roadway using an active transportation mode but feel uncomfortable or unsafe doing so with the current level of multimodal accommodation. This unseen demand for multimodal activity on the roadway is referred to as "latent demand".

Low Stress Network Analysis: One way to identify locations with potential latent demand is to perform a traffic stress network analysis. This analysis assigns a relative level of traffic stress (on multimodal users) based on the roadway speed, number of vehicular lanes, and traffic volumes.

As described on the right graphic, different types of cyclists will feel comfortable under different levels of traffic stress. For example, "strong and fearless" cyclists are comfortable under high levels of stress.

Graphic/Image

Graphic/Image

Level of Traffic Stress (LTS) Criteria for Mixed Traffic

	Motor Vehicle Volume (Average Daily Traffic)		
Speed Limit	0 – 3,000	3,000 – 6,000	6,000+
0 to 25 mph	LTS 1* or 2*	LTS 3	LTS 4
30 mph	LTS 2* or 3*	LTS 3	LTS 4
35+ mph	LTS 4	LTS 4	LTS 4

Note: * Use lower value for streets without marked centerlines or classified as residential. Use higher value otherwise.

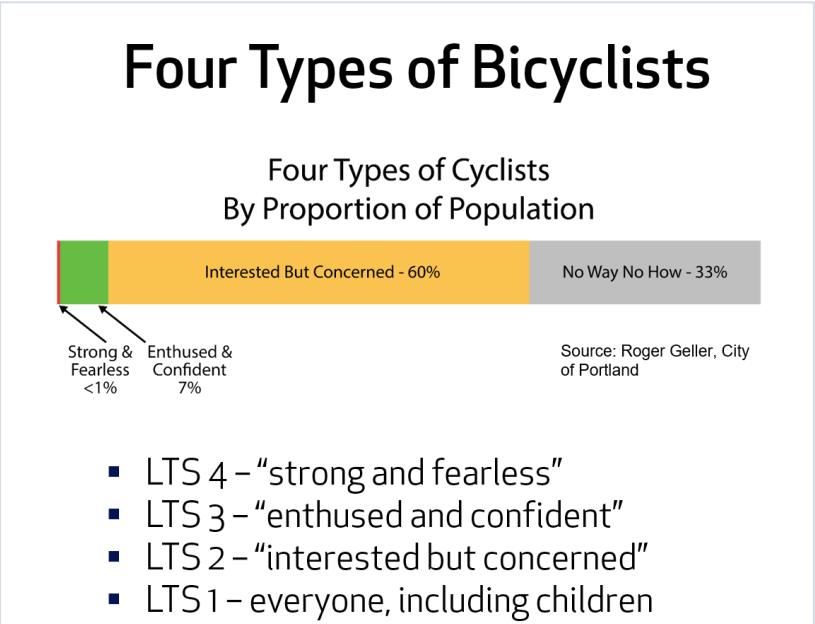
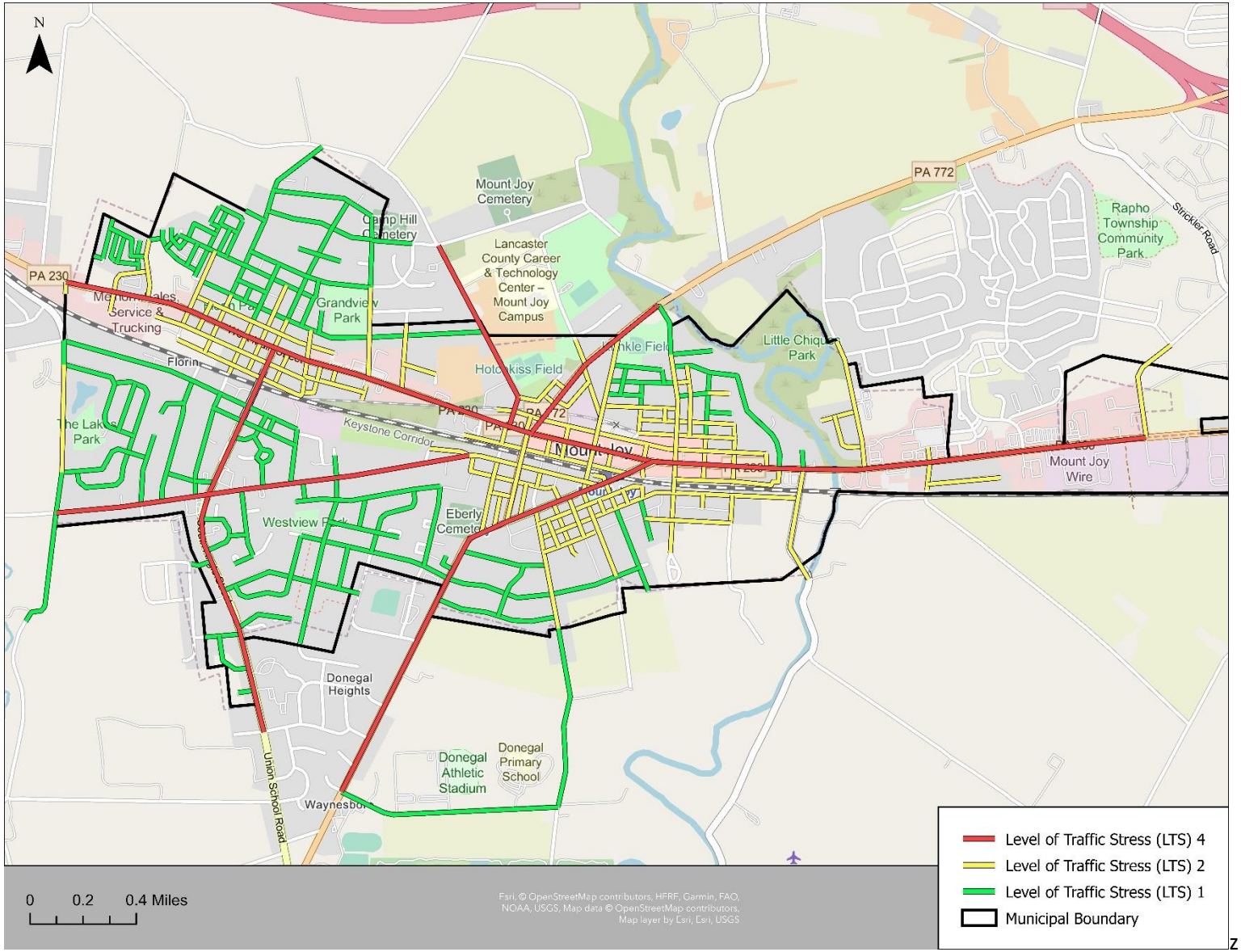


Figure 13: Level of Traffic Street (LTS) Network



Overall Multimodal Network and Major Needs

Creating the interconnected network of streets, sidewalks, and recreational facilities in Mount Joy that accommodates all users (vehicles, pedestrians, and bicycles) will require improvements to many components of the transportation system. Improvements can be addressed incrementally and incorporated into future transportation projects.

Corridor-based improvements

For each corridor or street within the borough; vehicular, pedestrian and bicycle use and need can be assessed and the level of traffic stress (LTS) reviewed to determine the appropriate implementation of bicycle and pedestrian facilities. When choosing the appropriate facility, thought should be given to how the corridor or street contributes to the multi-modal accessibility of priority destinations (schools, library, transit and train station, recreational facilities, parks, and business districts.) Appropriate implementation should also consider the context of the surrounding land use and contribute to the character of Mount Joy.

Image Source: Google Maps, Street View

Shared Use trail-based improvements

The preliminary concept for the Emerald Necklace includes significant portions which are envisioned to be shared use path/trail through parks and more rural areas. Shared use paths and trail-based improvements can also be considered to provide for pedestrians and bicycles along arterials in less developed areas to address LTS 4 conditions.

Nodal/Intersection-based improvements

Intersections are recognized points of friction in any transportation network and providing for all modes of travel at these decision points should not be overlooked when implementing bicycle and pedestrian facilities. Projects that are intersection focused (such as signal upgrades or pavement marking) can be forward looking in their inclusion of features that will address current issues and accommodate future implementation of pedestrian or bicycle facilities on the approaches to the intersection.

Image Source: Google Maps, Street View

Transit Access Improvements

All transit trips start or end with a walking or biking trip. The Borough should expect higher pedestrian and bicycle trips along routes that provide access to transit facilities (Main St and arterials to the Train Station). Since bus routes typically have stops coming and going, there is an expectation that the pedestrians will want to cross the street in the vicinity of the bus stops. Projects that address the pedestrian and bicycle networks that feed into the transit facilities (train station and bus stops) should focus on unobstructed access and safe, convenient crossings. The Donegal Region Comprehensive Plan identified a goal of pursuing a direct bus connection between Marietta and Mount Joy. Potential routes and stops should be included in active transportation considerations.

Covered Walkway to Train Station

Curbside Management and Freight Considerations

On-street parking is widely utilized in Mount Joy Borough in both the central business district and the residential areas. A parking study was conducted by the Borough and Michael Baker International in the vicinity of the train station in 2019, which found that on street parking utilization in the central business district and surrounding residential streets varied between 13% and 83% at various times of the day. As identified in the parking study, there are a number of parking lots which could be leveraged for use near the business district if elimination of on street parking was pursued to provide room for bicycle facilities or sidewalk widening. There are many alleys within the grid system which could also be utilized as parallel facilities, and many of the residences have access to their properties from the alley side. The commercial areas of the central business also have alleys, and curbside freight activities could be directed to the alleys; or the alleys could be utilized as a parallel bicycle facility, with parking and freight deliveries remaining curbside.

The Donegal Region Comprehensive Plan recommended establishment of designated truck routes in and around the Borough. Potential designated truck routes should be considered in selection of appropriate adjacent and crossing pedestrian and bicycle facilities.

Truck on Main Street

Image Source: Google Maps, Street View

Corridor Improvements

Corridor focused improvements provide connectivity and can close critical gaps or extend the reach of the active transportation network.

Corridor based improvements include strategies such as:

- Shoulder width enhancements
- Bike Lanes
- On-street Separated/Buffered Bikeways
- Sidewalks
- Curb Extensions
- Elimination of Curbside Parking on One or Both Sides of Streets (to provide room for other modal features such as bike lanes or roadway narrowing and widened sidewalks)

Curb Extensions on Main Street

Image Source: Google Maps, Street View

Graphic/Image

Marked Shoulders on Main Street

Nodal/Intersection Improvements

Arterial/arterial and arterial/collector street intersections, as well as intersections formed with crossings or terminals of the Emerald Necklace, are likely to have the highest levels of multi-modal friction and conflicting movements. A number of these intersections were cited as concerning in the public survey results and could be prioritized for active transportation improvements. Intersections such as:

1. Marietta Avenue (PA 772) and Main Street (PA 230)
2. Marietta Avenue (PA 772) and New Haven Street
3. Manheim Street (PA 772) and Main Street (PA 230)
4. Columbia Avenue and South Barbara Street
5. Marietta Avenue and School Lane
6. Manheim Street (PA 772) and Old Market Street
7. Wood Street and Musser Road (SR 4017)

Intersection based improvements include strategies such as:

- High Visibility Crosswalks
- Sidewalk Improvements (with ADA Ramp Improvements) and Lane Configurations that anticipate future active transportation applications
- Provision of Pedestrian Refuge Area
- Signal Timing and Phasing Upgrades which Account for or Prioritize Pedestrian and Bicycle Movements
- Provide Pedestrian and Bicycle Signing and Pavement Markings
- RRFB Installation at Uncontrolled Pedestrian Crossings

Marked/Signed Crosswalk on Manheim Street


Signalized Intersection at Main St. & Manheim/New Haven St.

Image Source: Google Maps, Street View

Figure 14: Intersections for Active Transportation Improvements

Shared-Use Trail Improvements

Shared Use Trail improvements include strategies such as:

- Signing and Pavement Markings to Clearly Identify Intended Users (Pedestrians and Bicyclists)
- Signing for Access to and Continuity of Path
- ADA Compliant Street Crossings and Street Termini
- Raised Medians and Traffic Calming Measures at Mid-Block Crossings
- Advance Yield Markings and/or RRFBs at Uncontrolled Crossings

R9-6
(MUTCD)

R10-26
(MUTCD)

R9-7
(MUTCD)

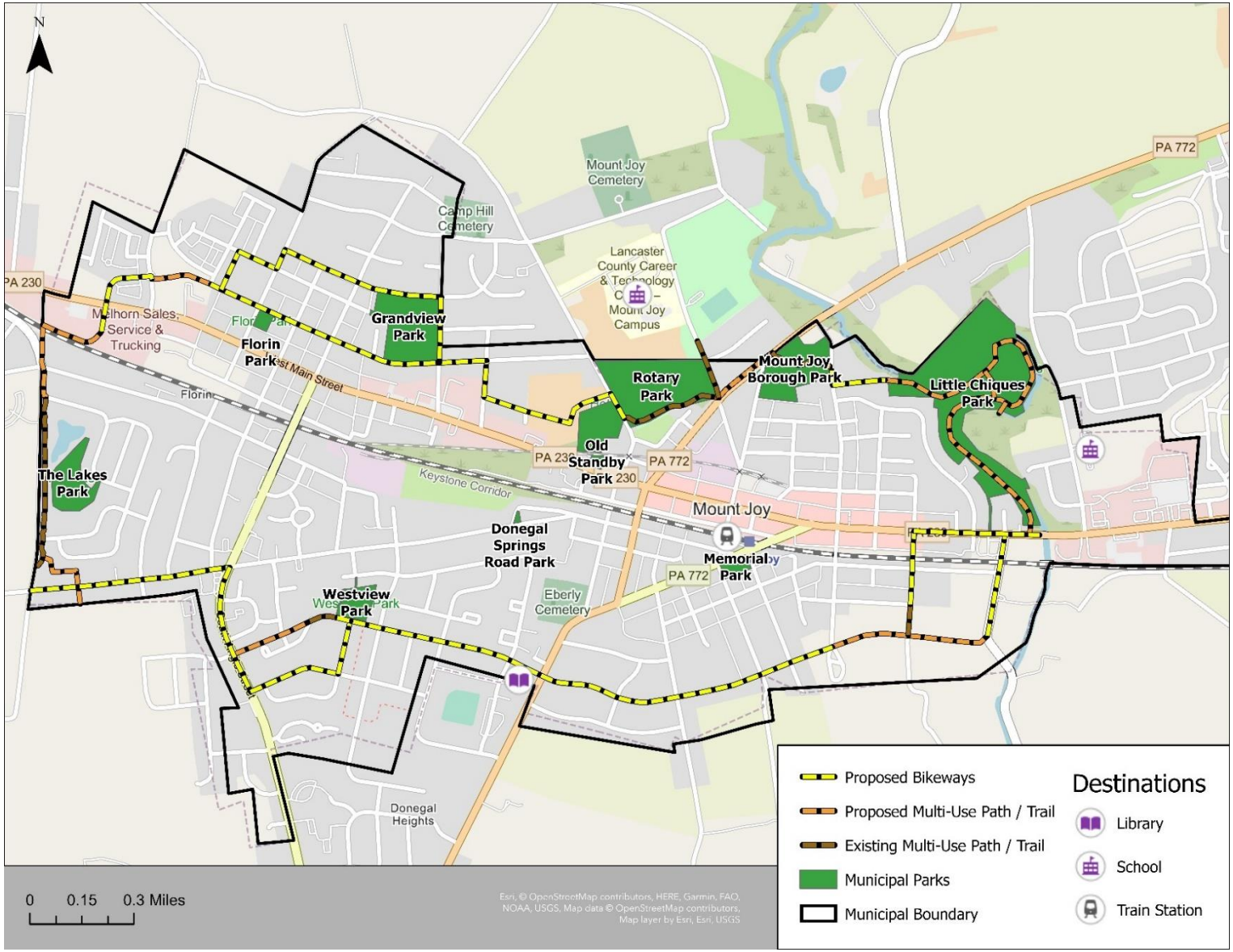
W11-15
W11-15P
(MUTCD)

Graphic/Image

Trail Crossing Example

Image Source: The Pedestrian and Bicycle Information Center (PBIC), www.pedbikeimages.org / Danny McCullough

Figure 15: Shared-Use Trail and Bikeways Network



Transit Access-based improvements

Transit Access-based improvements include strategies such as:

- Delineated, safe crosswalks at nearby intersections for crossing between bus stop arrivals and departures
- Assessing bus stop locations for integration with active transportation strategies (locate bus stops at /near intersections where crossing can be made safe)
- Ensure multi-modal accessibility between bus route and train station
- Bus shelter, bench, and signage placement that does not interfere with pedestrian paths (encroach into sidewalk areas)
- Provision of bicycle parking at transit termini

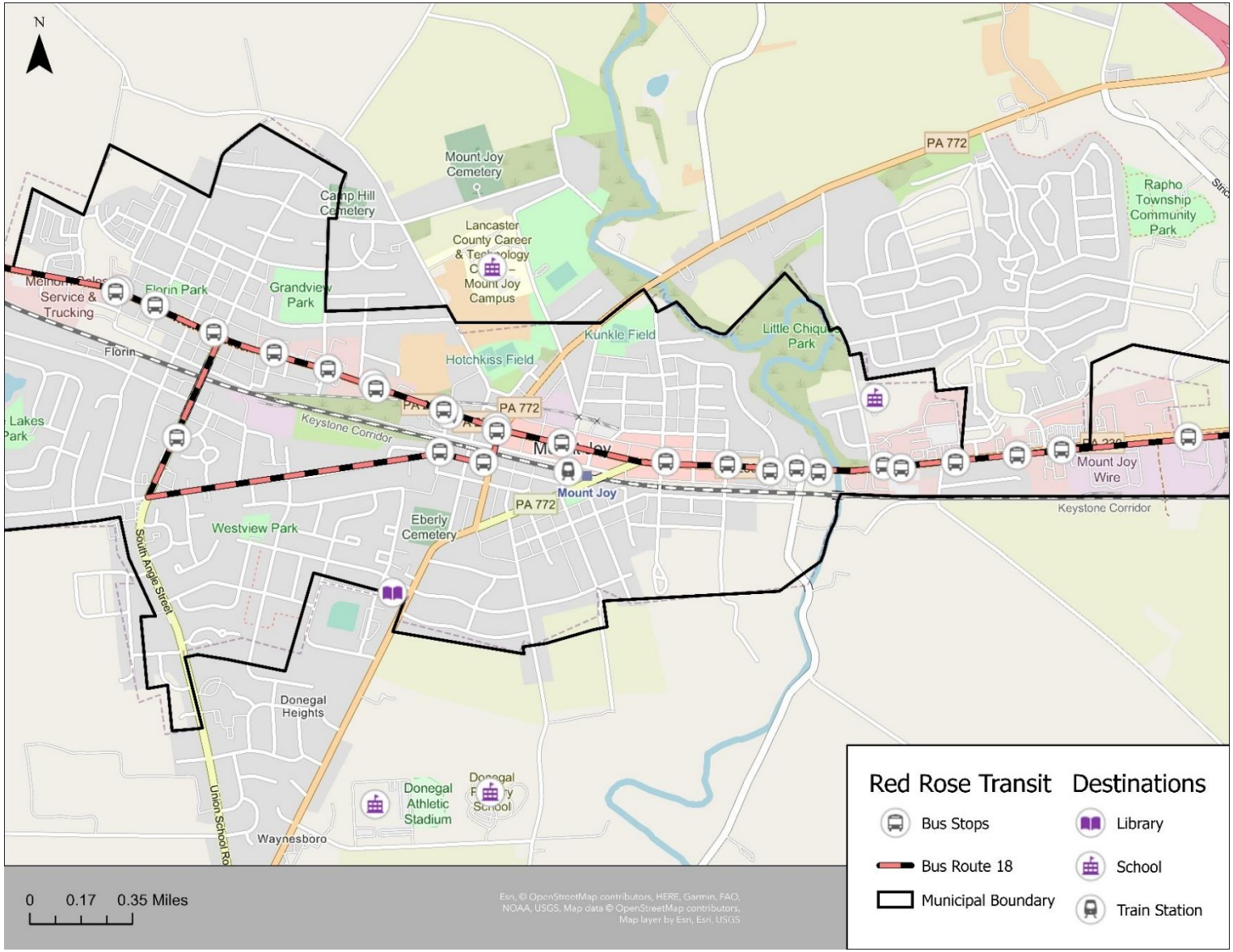
Graphic/Image

Graphic/Image

Bus Stop on Main Street

Image Source: Google Maps, Street View

Figure 16: Transit Network



Freight/Curbside Management Considerations

Freight/Curbside management improvements include strategies such as:

- Eliminating or relocating curbside parking (one or both sides of roadway)
- Utilizing parallel alleyways for active transportation routes and provide route finding (signing and pavement markings) for pedestrians and bicyclists
- Increasing lane width for higher truck percentage arterials and separating facilities (sidewalk, buffered bike lanes, widened shoulders, or shared-use path) for pedestrians and bicyclists.
- Revise corner turning radii. Utilize corner aprons as a form of curb extension to provide for truck turning radii yet delineate area for cars and pedestrians

Image Source: Mount Joy Parking Utilization Study

Image Source: Mount Joy Parking Utilization Study

Image Source: Mount Joy Parking Utilization Study

	Facility Name	Average Utilization (%) 12:00 – 2:00 P.M. 2018	12:00 – 2:00 P.M. 2026	4:30 – 6:30 P.M. 2018	4:30 – 6:30 P.M. 2026	9:00 – 10:00 P.M. 2018	9:00 – 10:00 P.M. 2026
1	Henry Street	18.8	100	13.0	46.8	30.4	16.8
	(1A) West of Weeping Alley	18.8	100	13.0	17.4	30.4	43.5
	(1B) East of Weeping Alley	0.0	100	0.0	64.1	0.0	0.0
2	Market Street	34.4	39.0	22.1	24.6	35.4	38.8
	(2A) North of Main Street (SR 230)	31.7	34.7	9.5	10.4	57.1	62.6
	(2B) South of Main Street (SR 230)	35.6	40.4	28.0	31.2	25.0	27.4
3	Main Street (SR 230)	51.8	56.7	42.7	46.8	44.7	49.0
	(3A) West of Marietta Ave (SR 772)	46.5	50.9	33.3	36.5	26.9	29.5
	(3B) East of Marietta Ave (SR 772)	58.6	64.2	65.7	60.2	67.9	74.4
4	Donegal Street	40.4	45.1	50.7	55.5	64.1	70.2
5	Delta Street	44.9	54.5	64.4	73.1	65.4	71.6
6	Marietta Avenue (SR 772)	16.7	18.3	37.5	41.1	46.2	50.6
	(6A) North of Donegal Street	16.7	18.3	39.6	43.4	41.7	45.7
	(6B) South of Donegal Street	16.7	18.3	35.7	39.1	50.0	54.8
7	Barbara Street	54.2	59.4	56.3	61.7	62.5	68.5
8	High Street	46.0	50.4	67.9	74.4	83.3	91.3
9	Jacob Street	46.0	50.4	55.2	60.5	19.0	20.8
10	Northwest Parking Lot	31.1	34.1	13.3	14.6	14.2	15.6
11	D.C. Gohn Parking Lot	40.6	44.5	11.5	12.6	7.8	8.5
12	Trinity Lutheran Church Parking Lot	20.0	23.5	21.0	23.8	32.0	35.1
13	Train Station Parking Lot (Market & Marietta)	99.0	98.0	45.8	40.1	3.1	2.7

Source: Mount Joy Parking Utilization Study

Implementation

Implementation: Communication & Five E's

Implementation of the active transportation principles and approaches described in this Guidebook requires a combination of strategies across six categories: communication, enforcement, engineering, equity, education, and encouragement (described in more detail below). The rest of this chapter outlines how these six strategies can be applied within Mount Joy to implement active transportation.

Communication

Implementation of an active transportation plan will benefit from outreach and communication with community members and council members. Well informed supporters can be instrumental in the successful development of an active transportation network. Open communication will build community wide understanding and support for creating a bicycle and pedestrian friendly transportation network.

Enforcement

Many components of an active transportation system are predicated on basic assumptions regarding land use, parking, travel speed and modal use. Encouraging travelers to obey traffic laws (speed, parking, no motorized vehicles on shared use trails, etc.) through enforcement reinforces the viability of the network. Similarly, enforcing setbacks and standards in new developments facilitates implementation of active transportation facilities.

Engineering

Engineering and design elements should be included which support all users of the active transportation system. Designs should account for safety for all users and provide elements which develop the sense of place commensurate with the context of adjacent land uses.

Equity

Balancing transportation options, modes, and accessibility for all transportation network users across all parts of the Borough will contribute to a more equitable transportation system for people of all income levels, ages and abilities.

Education

Opportunities should be provided which educate citizens and transportation network users with the knowledge and skills needed to understand the active transportation facility and wayfinding through the system.

Encouragement

Development of a network of active transportation facilities can encourage public health through walking and biking, attract new commercial and retail businesses, enhance safety and improve overall quality of life.

Land Use & Zoning Recommendations

Zoning and land-use policies can set the framework for implementing the active transportation plan when associated with development projects. Repurposing of land-use, new site development, and subdivisions by developers and property owners all present opportunities for affecting and molding the transportation system.

Typically, when building new roads or making improvements to existing properties, developers are required to comply with existing roadway standards. Including the active transportation facilities and context zone considerations in with the standards will facilitate implementation of the active transportation plan.

Pedestrian and bicycle provisions , with respect to right-of way needs, construction of sidewalks or multi-use paths as the case may be, and provision of appropriate street width to accommodate vehicles, bicycles and parking as determined by the existing land use and zoning codes gives guidance to the developer. It also provides a fair and equitable means for the Borough to require the developers to implement the active transportation plan.

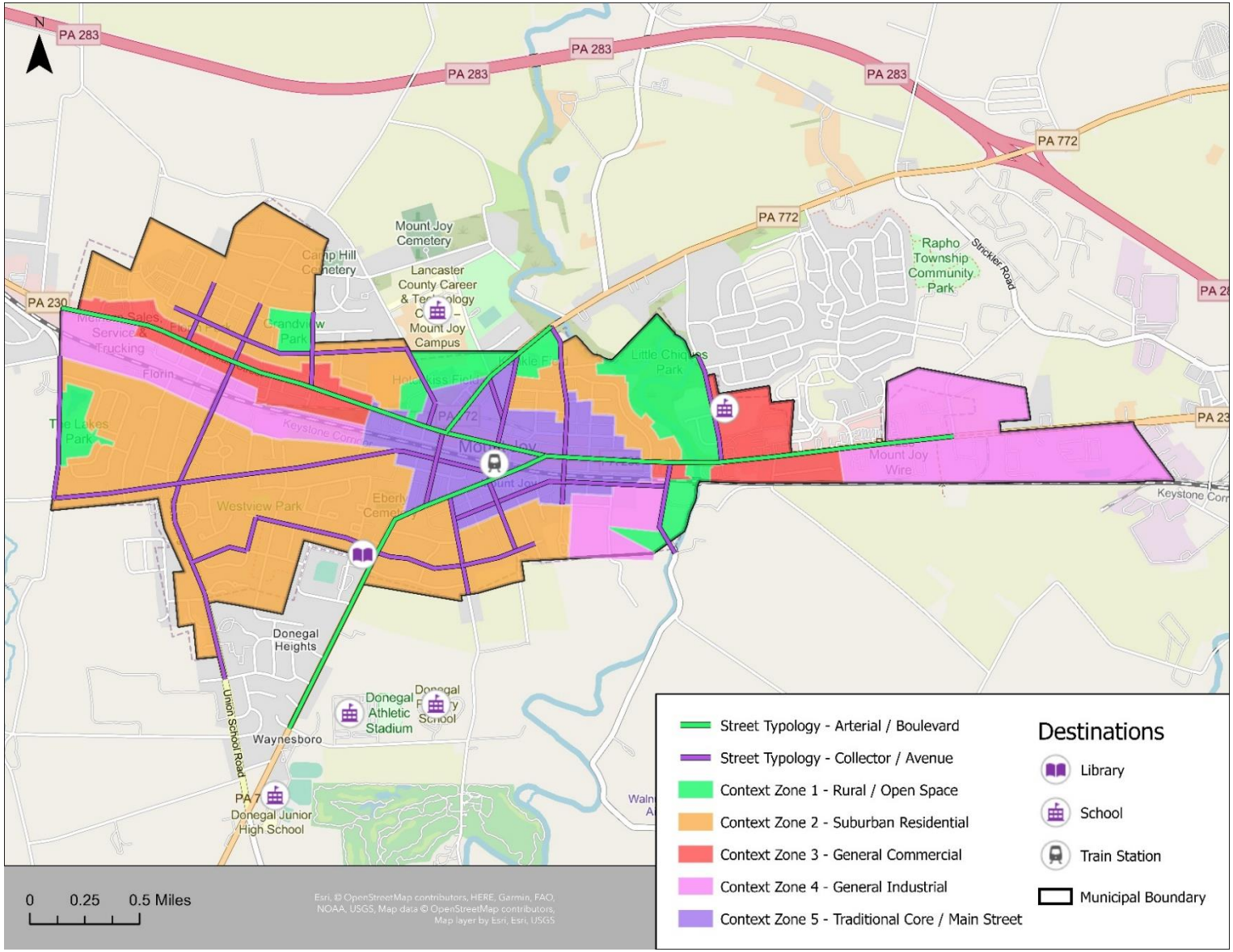
Encouraging mixed-used development, reducing building setbacks, driveway placement, on or off-street parking, etc. will contribute to creating the sense of place (context) and affect future implementation of active transportation facilities. Tools such as form-based coding and design overlays that support such predictable development outcomes better support walking and active transportation modes.

Graphic/Image

Graphic/Image

Graphic/Image

Figure 17: Land-Use Context Network

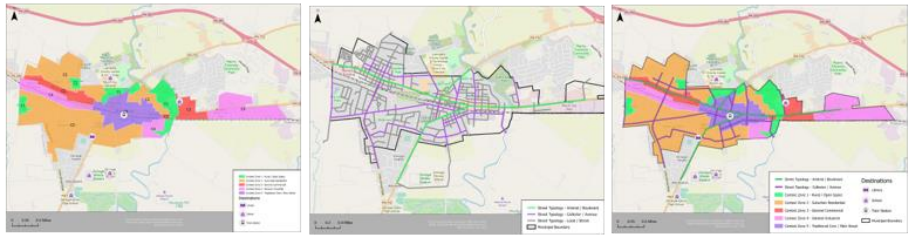


How to Use this Guidebook:

1 Identify the Road's Street Typology and the Land-Use Context

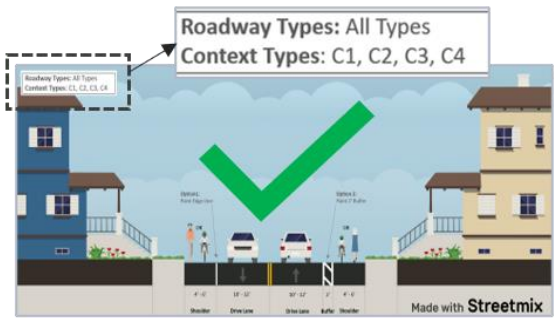
- By reviewing Figures 1 and 2 (land-use context map and street typologies map) or Figure 17 (combined map).
- *This information can also be identified by reviewing the Mount Joy Active Transportation Guide GIS website.*

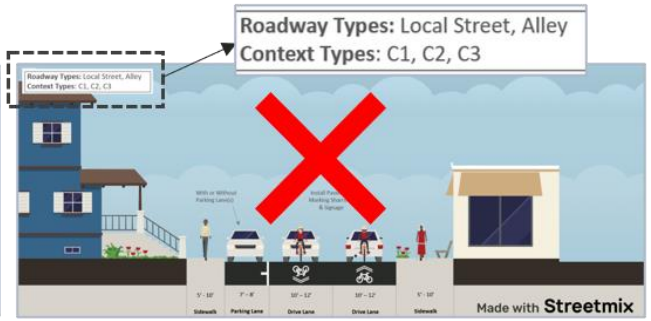
Example: "This road is a Collector/Avenue in a C2- Suburban Residential area."



2 Identify which Typical Sections are Applicable for the Street Typology and Land-Use Context of the Road

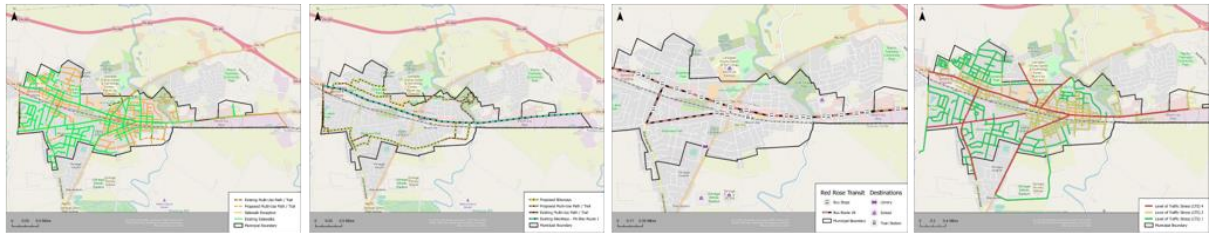
- By reviewing Table 1 and the associated Figures 3 thru 9 (the typical sections for different types of active transportation facilities).
- The typical sections convey the desired level of separation for active transportation modes.





3 Consider How this Road Fits into the Existing Transportation Network

- By reviewing Figures 10, 11, 12, and/or 13 (existing pedestrian, bicycle, transit, and Level of Traffic Stress (LTS) networks).
- *This information can also be identified by reviewing the Mount Joy Active Transportation Guide GIS website.*



4

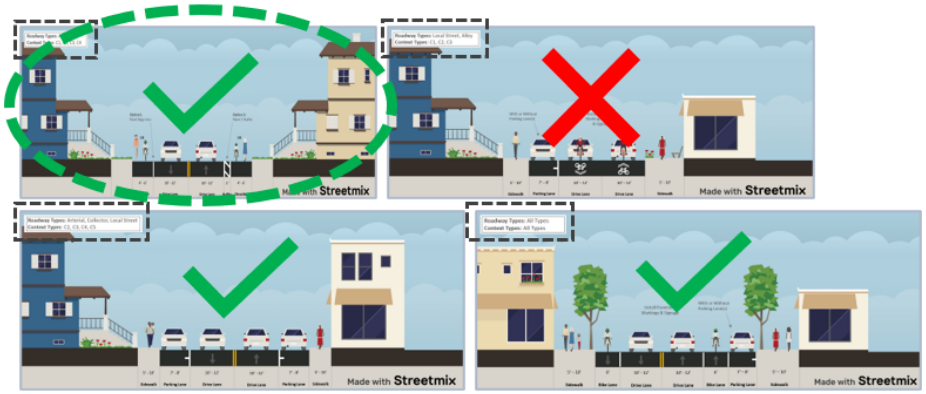
Consider the Multimodal Network's Major Needs

- By reviewing the "Multimodal Networks and Major Needs" section.
- *More specifically, by reviewing Figure 14 (intersections for active transportation improvements) and Figure 15 (shared-use trail and bikeways network)*

5

Identify which Typical Section should be Pursued for this Road

- Based on the findings from Step 1 through Step 4
- The selected typical section conveys the desired level of separation for active transportation modes.



6

Proceed with the Typical New Project Development Process

and/or

Consider Leveraging Other Project Opportunities

Typical New Project Development Process

Evaluation/Planning		Design		Installation
Determine Location & Facility Type	**Determine Scope & Limits of Project/ Obtain Funding**	**Design**	**Review & Approve Contract Documents**	**Installation/ Construction**
Active Transportation Committee develops and maintains a Borough Active Transportation Network Plan by evaluating network need based on network gaps and opportunities for network extensions. Active transportation facility types and typical sections applicable to each roadway segment can be assessed and determined for each gap and network extension included in the overall plan.	Utilizing the tools and resources in the Active Transportation Implementation Guidebook; the Active Transportation Committee, with the assistance of Borough Staff, can employ the Network Plan to prioritize projects and pursue funding. The scope and limits of each project will be determined to fit the parameters of the funding/ grant limitations. Scope of work should provide details to the designers that clearly communicates sufficient information for the design of the active transportation facility.	Contract out project design and bid document preparation. The contracted scope should clearly describe all components of the intended facility and peripheral attributes. Using this information, the designer should be able to develop a plan that includes specifics regarding lane widths, signing locations and type, pavement marking location and type, street furniture, plantings and any other architectural features being considered.	A mechanism should be in place such that plans are reviewed and approved by someone knowledgeable with the Active Transportation Implementation Guidebook and Active Transportation Committee project scope. This will ensure that the intentions of the Active Transportation Committee are met.	Active transportation facilities associated with designed projects are typically installed by contractors. Construction management and inspection needs should be considered in project scoping. *Note: After construction is complete, it may take time to build-up to regular use of the new active transp. facilities (as connectivity increases and network gaps are completed, use of the facilities will increase).*
Active Transportation Committee		Consultant engineers and/or planners	Funding partners may be included in reviews and approvals	Funding partners may be included in construction inspection and contract management

Mount Joy Borough staff are involved at many points throughout the new project development process.

Other local/regional stakeholders should also be engaged, as needed, during the new project development process.

Project Selection Criteria & Performance Measures

Project Selection Criteria

Identifying and prioritizing active transportation projects for funding is a fundamental step in building a network of continuous and connected multimodal facilities. The project ranking process should reflect overall program goals, integrating criteria, weights and scoring to ensure objectivity and a commitment to addressing critical disparities in safety, health, accessibility, economic benefits and equity within the community.

The Borough's desire to implement improved active transportation access to key destinations and regional trail systems was identified as a major goal throughout the process. A range of criteria can be built into the process but should not be overly complex or require extensive analysis and scoring in support of overall goals and objectives.
Below is a set of illustrative criteria designed reflect specific categories and address key Borough goals. The most important elements (for example, demonstrated safety improvement or access to a primary trail network) could be assigned a higher scores/weighting than secondary access to local businesses.

- *Safety (Project targets improvements to identified high crash/critical safety concern location— 30 points)*
- *Recreation (Provides direct access to major parks, or the Emerald Necklace— 30 points)*
- *Transit (Project facilitates safe and direct access to Train Station and fixed route bus stops—20 points)*
- *Community (Project provides direct access to schools, Town Hall, Library or Community Centers—10 points)*
- *Economic (Project supports direct access to local serving retail in the Main Street District—10 points)*

When determining project selection and priorities criteria must be balanced with specific needs, complexity, and available funding.

Performance Measures

Performance measures exist to track the extent to which active transportation and complete street policies and projects are demonstrating successful outcomes. Beyond conventional measures focused on capacity and mobility, measures should address broader categories like access, economy, environment, safety, and health, accounting for how implementation will impact the community in the long-term. These should also reflect the local context and reinforce safe, reliable, and affordable ways to reach important everyday destinations such as employers, schools, healthcare, and other daily needs.

Measuring the degree of success for Mount Joy should not be a burdensome process. Keeping in mind that it difficult to improve or address issues which do not get tracked, performance measures selected should be tied to overall program goals and objectives and with a level of complexity and data collection that does not exceed available staff and resources. Performance measures should also incorporate benchmarks over a specified time period, such as within 2-5 years.

Potential performance measures for Mount Joy include:

- *Reduction in number and severity of crashes for all modes*
- *Percentage of community that is within ½ mile of a low stress bike route*
- *Linear feet of pedestrian infrastructure/mileage of new bicycle infrastructure*
- *Number of newly installed curb ramps*
- *Number of new connections to regional trail networks*
- *Reduction in commercial vacancies in commercial districts*

Project Categories – Examples of Implementation Opportunities

Quick Hitters

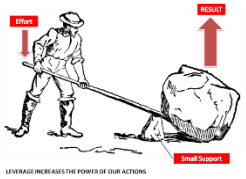
Installing Signing for "Yield Roadways"

Installing Signing and Pavement Markings for Bicycle Boulevards

Painting Edge Lines to Delineate Shoulder

Installing Signing for Shared Use Path

Removing On-Street Parking to Make Room for Bike Lane (Install Signs and Markings)



Leveraged

Adding Shoulder to a Roadway Project

Revising Lane Markings and Adding a Bike Lane to a Resurfacing Project

Resurfacing an Alley and Signing and Marking it as a Parallel Pedestrian and Bicycle Route (Yield Roadway)

Building ADA ramps and Sidewalk in conjunction with a Resurfacing Project

Adding Wider Sidewalk and Shoulders to a Bridge Reconstruction Project

Operational and Safety

Adding Pedestrian Heads, Phasing, and Crosswalks at a Signal

Installing an RRFB at an Uncontrolled Pedestrian Crossing

Adding a Buffered Bike Lane

Constructing a Shared Use Path Alongside an LTS 4 Arterial

Painting High Visibility Crosswalks

Long Term/Capital Projects

Completing Portions of the Emerald Necklace Shared Use Trail

Acquiring ROW and Widening Lanes and Shoulders

Constructing a Grade Separated Pedestrian Crossing Over the Amtrak Tracks

Constructing Separated Bike Lanes along Bike Lane Portions of Emerald Necklace

Opportunities for Leveraging – Every Maintenance or Transportation Infrastructure Project is an Opportunity

Transportation Infrastructure Projects – Externally Led

PennDOT construction and resurfacing projects present opportunities to implement new transportation features or change cross sectional elements on existing travel-ways. The Borough should communicate an interest in participation during project development (PennDOT Connects) and during the review process to advocate for implementing desired active transportation facilities along PennDOT corridors. Examples would include adding geometric changes such as shoulder widening and ADA ramp construction at intersections or signing and pavement marking for new lane configurations with bike lanes and bike routes.

Transportation Infrastructure Projects – Borough Led

Borough led transportation projects, from resurfacing to capital improvements funded through grants or direct budget should be evaluated to incorporate and account for active transportation facilities. Opportunities for completing gaps, changing lane configurations, adding bike lanes or delineating shoulders can be easily accomplished in conjunction with resurfacing projects. Resurfacing projects also allow intersection improvements to be pursued such as ADA ramps, sidewalks and crosswalks; all contributing to connectivity of pedestrian routes.

Demonstrations/Pilots

Demonstration projects provide a good opportunity to introduce new active transportation concepts and ideas to the general public. Bicycle boulevards (neighborhood bikeways) and yield roadways are low cost and easily implemented. A high-profile location like Park Avenue, which was frequently identified in the public survey (because it is the primary pedestrian access to Little Chiques Park), might offer an excellent location for a yield roadway pilot project.

Designation/delineation of Old Market St. as a bicycle boulevard, with the intention of developing a spur tie- in with the Emerald Necklace multi-use trail across Manheim St., is another potential demonstration project. Concurrent with this project the triangle of land within the public ROW at the intersection with Market Street in front of Bube's Brewery could be 'dressed up' to establish an intentional sense of place.

Typical Leveraged Project Development Process

Evaluation/Planning		Design		Installation
Evaluate Potential Leverage Opportunity	**Determine Scope & Limits of Project/ Obtain Funding**	**Design / Prepare Work Order**	**Review Leveraged Project / Approve Maintenance Work Order**	**Installation/ Construction**
Review all projects that involve infrastructure (such as bridge replacement, resurfacing, private development, traffic signal installation, traffic signal upgrade, etc.) to determine opportunities for including active transportation components. Projects should be evaluated early in the planning process to determine where they are located within the Mount Joy Active Transportation Network and whether they can be modified to address any gaps or plans for extension of the Active Transportation Network. PennDOT Connects** should be a mechanism for this type of review on any PennDOT projects planned within the Borough Limits.	Determine the active transportation facility type to add to the project. Confirm the type and location with the Active Transportation Committee Network Plan. If the Network Plan is not of sufficient detail, use the tools in the Active Transportation Implementation Guidebook to analyze the context zone, street typology and LTS; in conjunction with whether the proposed facility is a gap or an extension, to incorporate a right sized facility into the leveraged project.	Leverage the project to include design specifics for the active transportation facility. If the leveraged project is so small as to be being completed by municipal staff, revise the internal work order to clearly provide for all components of the intended facility. The plan should include specifics regarding pavement marking color, lane widths, and sign types and locations (as applicable).	A mechanism for Borough review and approval of plans and work orders associated with leveraged plans should be established on a project specific basis if no existing mechanism for such reviews is in place. Leveraged reviews of PennDOT projects can be established during the PennDOT Connects process. Local led maintenance projects that involve staff work orders should provide clear and detailed installation instructions to field workers. Local inspections of private developments should include compliance with any active transportation facility requirements as part of final approval of the project.	Minor projects may be installed by Borough maintenance forces. Larger leveraged projects will likely be installed by contractors. *Note: After construction is complete, it may take time to build-up to regular use of the new active transp. facilities (as connectivity increases and network gaps are completed, use of the facilities will increase).*
Borough Staff *(project review may be referred to the Active Transportation Committee)*		Project design consultants or work order supervisors *(as applicable)*	Reviews and approvals will include originating project partners	Construction inspection and contract mgmt. will include originating project partners

Mount Joy Borough staff are the primary stakeholders who are able to identify project leverage opportunities.
The Borough is also well positioned to effectively manage and execute the leveraging of those identified opportunities.
Effective leveraging may require nimble actions, quick response times, and extensive coordination with other agencies.

Other local/regional stakeholders should also be engaged, as needed, during the leveraged project development process.

** PennDOT Connects is a program initiated by PennDOT wherein PennDOT and its planning partners meet with local governments during the planning and scoping phase of all PennDOT projects. Details for each project are discussed prior to developing project scopes and cost estimates. During these discussions all mobility needs are considered with the intention of involving local communities at the beginning of the planning process to learn what elements may be important to include in the project to support a community's vision.

Partnerships & Funding

Partnerships:

Identifying the champions and partners within local organizations and the community who will support these projects can help to build the momentum to carry these efforts forward.

Traditional partners include:

- planning organizations,
- transit agencies,
- economic development groups,
- business associations,
- school leaders/parents,
- senior living facilities,
- parks and recreation organizations,
- active transportation advocacy groups,
- and more.

Furthermore, partners can provide additional insight and guidance into users' needs. For example, local bicycle advocacy groups like the Bicycle South Central Pennsylvania could serve as both a resource and a means for connecting Borough leaders with local residents who bicycle in and around Mount Joy.

Graphic/Image

Funding

"How will we pay for it?" will be a frequent and important question as these efforts move from vision to implementation. The simple answer is: *together*.

There are multiple methods and sources of funding available for these types of projects:

- state grants (ex: Dept. of Transportation, Dept. of Conservation & Natural Resources, Dept. of Community & Economic Development)
- regional grants (ex: Lancaster County Planning Commission)
- advocacy group grants (ex: Smart Growth America, Transp. for America, AmericaWalks, Safe Routes Partnership)
- developer fees/requirements

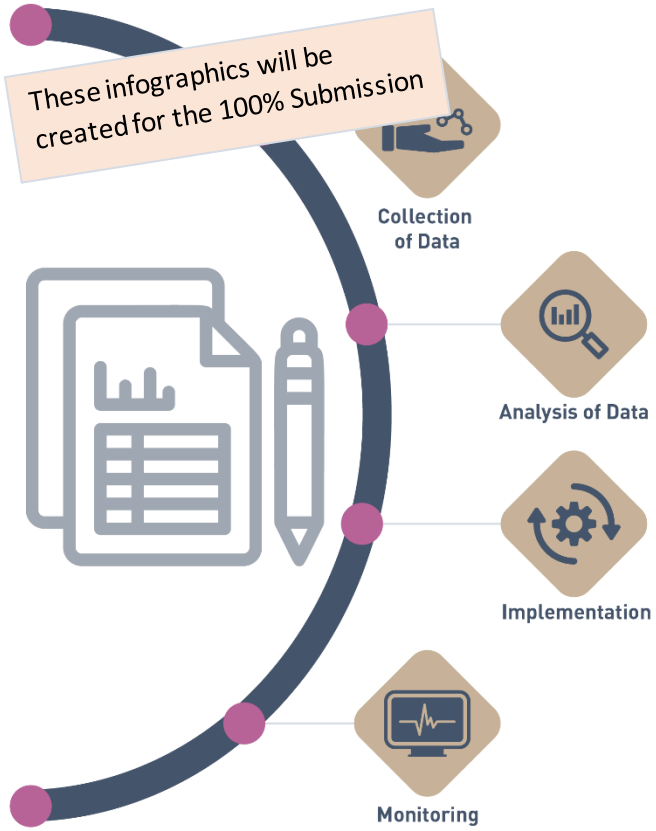
Determining the right combination of funding sources will be critical for the success of the projects.

Graphic/Image

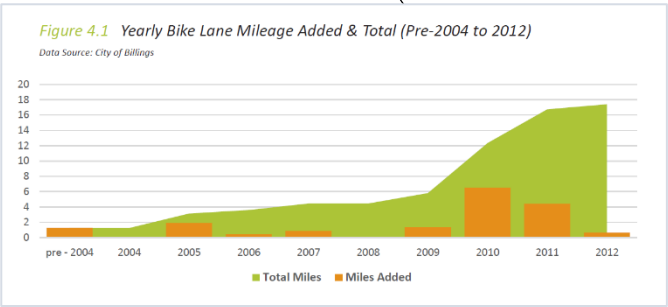
Graphic/Image

Monitoring/Benchmarking

Since any program or policy is only as effective as its implementation, the use of regular reporting will monitor the progress the Borough is making in its efforts to build a network of active transportation and complete streets. This will ensure greater accountability and build in a transparent framework that directly links project implementation to their support of the selected performance measures and community outcomes over a specified period of time. Combined with an emphasis on the "Five E's", tracking measurable local attributes can demonstrate how the active transportation policy and program are making a difference.



Example Benchmarking graphic for Billings MT, highlighting increased miles of bike lanes on an annual basis



Other Tools & Resources to Assist in Design and Delivery

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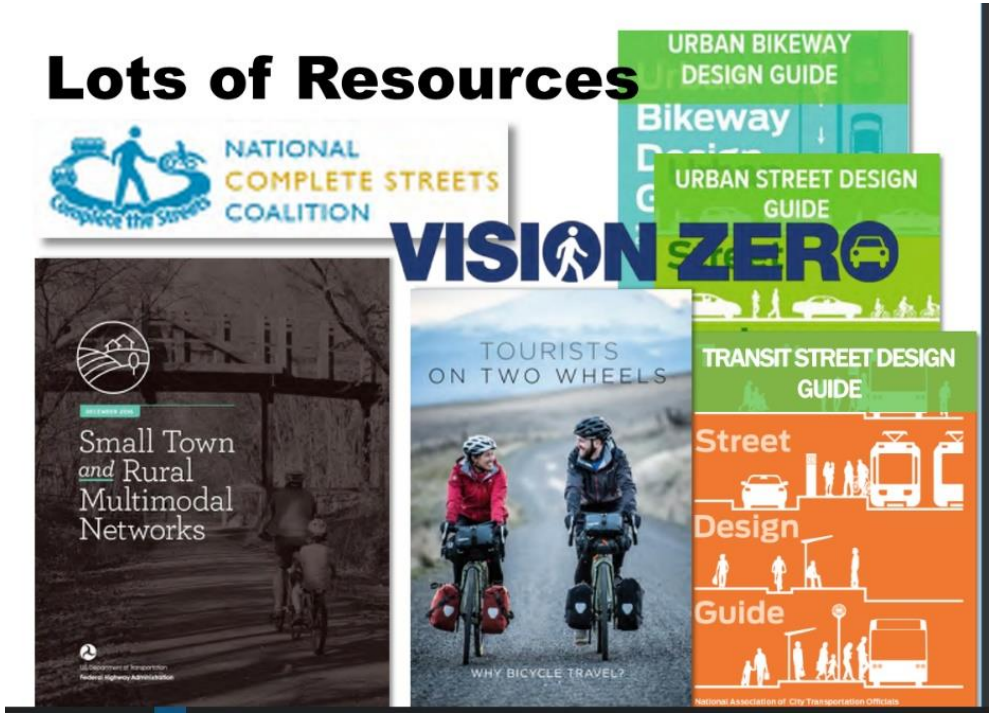

Appendices

A. Mount Joy Active Transportation Model Resolution & Ordinance

B. Summary of Survey Responses

C. Street Inventory Data Table

Appendix C will be created for the 100% Submission