# CITY OF HAGERSTOWN

# Livable Street Design Guidelines

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# Table of Contents

Introduction ..... **3**

*What are Complete & Livable Streets* ..... *3*

Guidelines Development ..... **5**

*Example Guidelines* ..... *5*

*Street Typologies & Character Zones - Development* ..... *5*

*Map Atlas* ..... *7*

*Project Prioritization* ..... *8*

Public Realm Elements ..... **9**

Street Typologies ..... **14**

Character Zones ..... **18**

Guidelines ..... **22**

Supplemental Material ..... **30**

*A: Identified Streets* ..... *31*

*B: Street Cross Section Illustrations* ..... *33*

*C: Table of Pedestrian & Bicycle Crashes by Street* ..... *38*

*D: Livable Streets Checklist* ..... *40*

*E: Map Atlas* ..... *41*

## Introduction

The adoption of a formal livable and complete streets policy is a progressively important step that many jurisdictions are taking to develop or retrofit their transportation network to safely accommodate all modes of travel. Formal guidelines on livable and complete streets can also set in motion the transformation of streets and neighborhoods into more livable and vibrant communities. However, often there are challenges in implementing this type of policy without a more customized set of design guidelines that can be applied programmatically to a variety of street types, each with a unique set of needs. The City of Hagerstown *Livable Street Design Guidelines* aims to provide the City with a livable and complete streets policy that is tailored to its specific transportation needs and land use characteristics. It outlines provisions for each mode of travel for a variety of streets and neighborhoods. The City may use the guidelines to develop livable streets uniformly throughout the City through rehabilitation or new construction projects.

The guidelines define the complete streets movement as well as briefly outline its development process including the public realms of a roadway and the context sensitive street typologies and character zones. A customized design template is presented to address provisions for each mode of travel (vehicles, pedestrians, bicycles, and transit) for each street typology within the City.

### *What are Complete & Livable Streets?*

Complete Streets are designed to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Traditionally, road design has catered towards vehicles leaving other modes of transportation feeling unwelcomed and unsafe. Lack of sidewalks make roads uninviting to pedestrians, high speeds create safety concerns for bicyclists, and transit stops with little walking connectivity to a destination render riding a bus ineffective. To transform automobile oriented streets to walking and biking routes, complete streets divide the public right of way up among all users providing for adequate sidewalks with pedestrian amenities such as benches and trees, designated space for bicycle lanes, and incorporating amenities for transit users including shelters at bus stops and recommended service standards.

The National Complete Streets Coalition lists the following areas that complete streets benefit[1]:

- Children
- People with disabilities
- Older adults
- Health
- Public transportation
- Climate change
- Economic revitalization
- Gas prices
- Safety
- Lower transportation costs
- Create livable communities
- Equity

[1] http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/factsheets

*Complete Streets Example – Charlotte, North Carolina – From www.smartgrowthamerica.org/complete-streets*

Complete streets also lead to making streets and surrounding neighborhoods *livable*. On livable streets, community members feel just as comfortable to walk or to bike as they do to drive. By attracting more people to walk or bike, communities become more active, vibrant, and healthy.

*Livable Streets Example*

Complete and livable streets guidelines are designed to meet the needs and wants of various street users by finding the proper balance between the street's function and its appearance, given the character of its location.

## Development

### *Example Guidelines*

In developing the livable streets guidelines for the City of Hagerstown, a variety of published livable and complete streets guidelines for cities around the U.S. were researched for their content and organization. The following guidelines served as the primary reference documents for the development of the Hagerstown's guidelines. The complete streets guidance for larger cities such as Philadelphia and Chicago were reviewed along with the guidelines of cities more comparable to Hagerstown such as Roanoke and Charlotte.

- City of Roanoke, Virginia - *Street Design Guidelines* – 2007
- City of Philadelphia, Pennsylvania - *Complete Streets Design Handbook*
- Charlotte, North Carolina - *Urban Street Design Guidelines* - 2007
- Chicago, Illinois - *Complete Streets Chicago* - 2013

### *Street Typologies & Character Zones - Development*

Based on the published complete streets guidelines above, six road typologies and seven character zones were developed for Hagerstown. They are applicable and appropriate to the existing and varying roads and land uses/neighborhoods within the City. Further definitions and examples are in the *Guidelines* section.

| Street Typology | Character Zone |
|---|---|
| Auto-Oriented Commercial/Industrial Spoke | Residential – Suburban |
| Ring Road | Residential – Traditional |
| Walkable Commercial Main Street | Commercial Center |
| Residential Connector | Downtown |
| Urban Neighborhood Street | Industrial |
| Neighborhood Street | Institution or Campus |
| - | Parks |

**Table 1 – List of the City's Street Typologies and Character Zones**

Sabra, Wang collaborated with the City to apply the street typologies and character zones to the road network and land area within the City limits. Figure 1 and 2 shows the road network with the assigned street typology and the characterized neighborhoods, respectively. (Please note that only roads classified as minor arterial or higher were included in the guidelines development.) The majority of the roads are classified as auto-oriented, ring road, or residential connector. Over 50 percent of the land area is classified as suburban residential. The downtown character zone is solely applied to the traditional and historic downtown area of Hagerstown while the remaining character zones are found throughout the City.

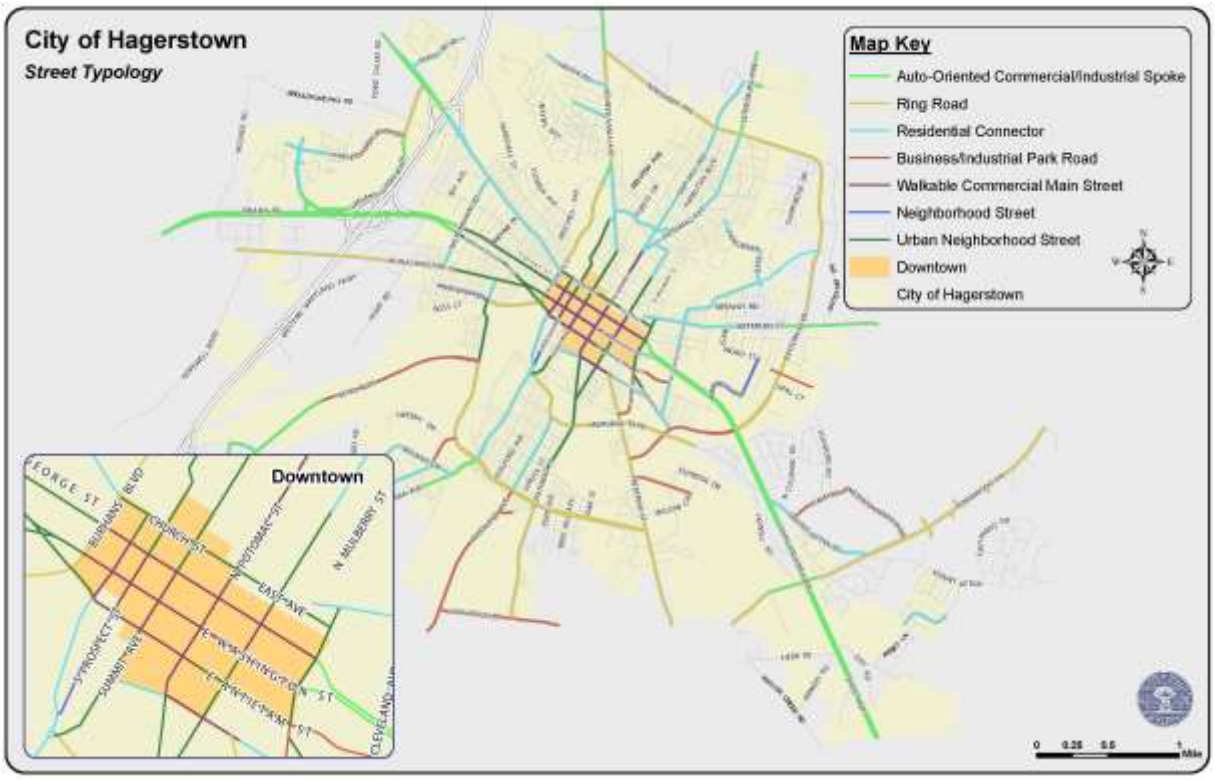



**Figure 1 - Map of Street Typology**

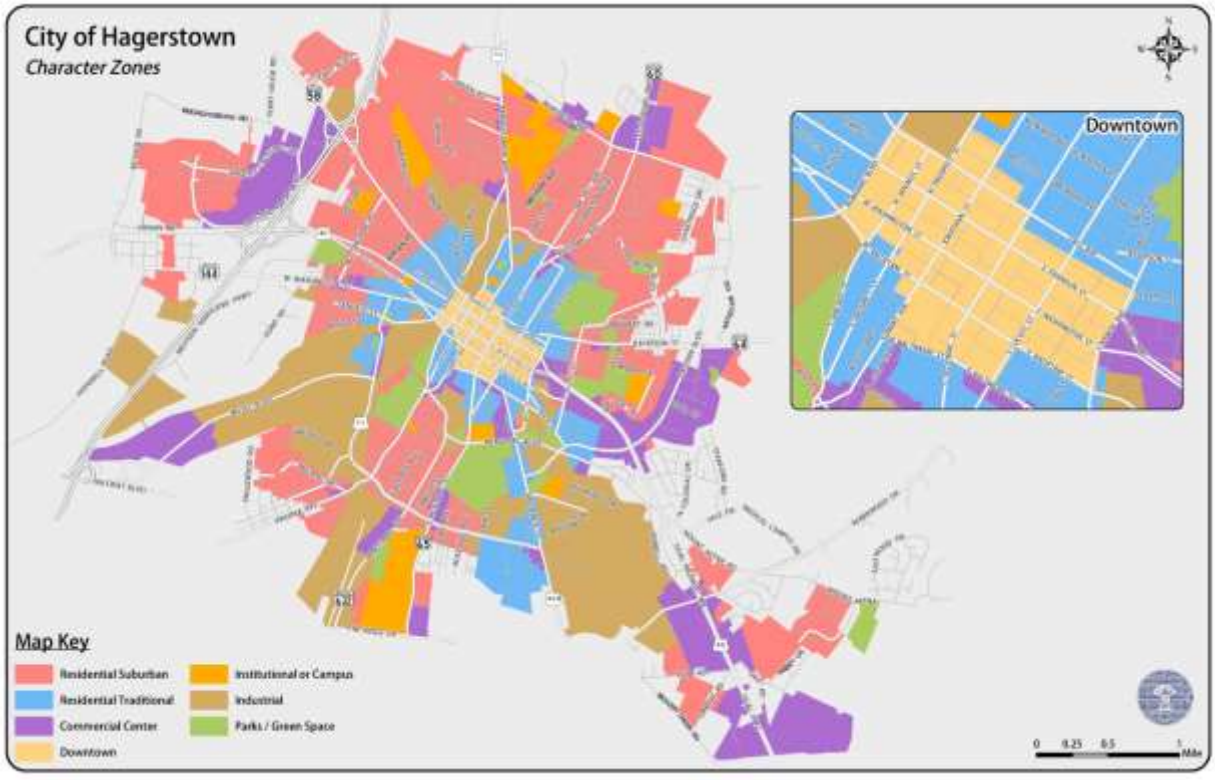



**Figure 2 - Map of Character Zones**

## *Map Atlas*

A series of maps were created to document the existing conditions in the City of Hagerstown and to assist in the development of the livable streets guidelines. Each map is briefly described below and all maps can be found in supplement E.

1. *Basemap:* Shows the existing street network and highlights parks and schools
2. *Roadway Functional Class:* Symbolizes the City's road network by functional class: 1) alley, ramp, & private, 2) local, 3) minor collector, 4) major collector, 5) arterial, and 6) highway
3. *Bicycle Network:* Highlights the existing bicycle network within the City including existing and proposed bike lanes, shared lanes, and multi-use paths
4. *Sidewalk Network:* Highlights roadway sections that do not have a sidewalk to demonstrate missing links in the pedestrian network
5. *Transit Network:* Shows Washington County commuter bus routes
6. *Transit Ridership:* Shows the ridership by bus route based on October 2014 data
7. *Annual Average Daily Traffic:* Symbolizes the roadway network by annual average daily traffic volumes
8. *Bicycle and Pedestrian Crashes:* Shows the locations of bicycle and pedestrian related crashes between 2009 and 2013
9. *Existing Zoning/Land-Use:* Shows the City's existing land use: business-office park, commercial retail, industrial, mixed-use, residential, schools, parks, and water
10. *Street Typology:* Shows the City's roadway network symbolized by its assigned street typology
11. *Character Zones:* Shows the assigned character zones for the City
12. *Suburban Residential Character Zone with Street Typology:* Highlights the suburban residential character zones with the street typology overlaid
13. *Traditional Residential Character Zone with Street Typology:* Highlights the traditional residential character zones with the street typology overlaid
14. *Downtown Character Zone with Street Typology:* Highlights the downtown character zone with the street typology overlaid
15. *Commercial Center Character Zone with Street Typology:* Highlights the commercial center character zones with the street typology overlaid
16. *Industrial Character Zone with Street Typology:* Highlights the industrial character zones with the street typology overlaid
17. *Institutional/Campus Character Zone with Street Typology:* Highlights the institutional/campus character zones with the street typology overlaid
18. *Parks Character Zone with Street Typology:* Highlights the parks character zones with the street typology overlaid

## *Project Prioritization*

The location and density of pedestrian and bicycle related crashes can be used to prioritize streets that could benefit from the implementation of the livable streets guidelines. Streets that safely accommodate all users can reduce conflicts between modes. The top ten streets with the highest combined total of bicycle and pedestrian crashes based on data between 2009 and 2013 are shown in Table 2. Bicycle and pedestrian crashes were also mapped and Figure 3 highlights areas where bicycle or pedestrian crashes are frequent. Each point on the map represents the number of crashes that occurred at or near that intersection. Although some crashes may not be intersection related, a complete review of each pedestrian crash report was not performed for this analysis. (See supplement C for a table of the number of pedestrian and bicycle crashes by street for the streets within the City.)

| | MAJOR STREET NAME | **TOTAL NUMBER OF PED/BIKE CRASHES** | *NUMBER OF PEDESTRIAN CRASHES* | *NUMBER OF BICYCLE CRASHES* |
|---|---|---|---|---|
| 1 | WASHINGTON ST | **23** | *14* | *9* |
| 2 | DUAL HWY | **20** | *17* | *3* |
| 3 | POTOMAC ST | **13** | *10* | *3* |
| 4 | FRANKLIN ST | **11** | *9* | *2* |
| 5 | BURHANS BLVD | **9** | *4* | *5* |
| 6 | LOCUST ST | **9** | *5* | *4* |
| 7 | GARLAND GROH BLVD | **8** | *8* | *0* |
| 8 | ANTIETAM ST | **6** | *3* | *3* |
| 9 | BALTIMORE ST | **6** | *5* | *1* |
| 10 | POTOMAC AVE | **6** | *5* | *1* |

**Table 2 – Top Ten Streets for Bicycle and Pedestrian Crashes**

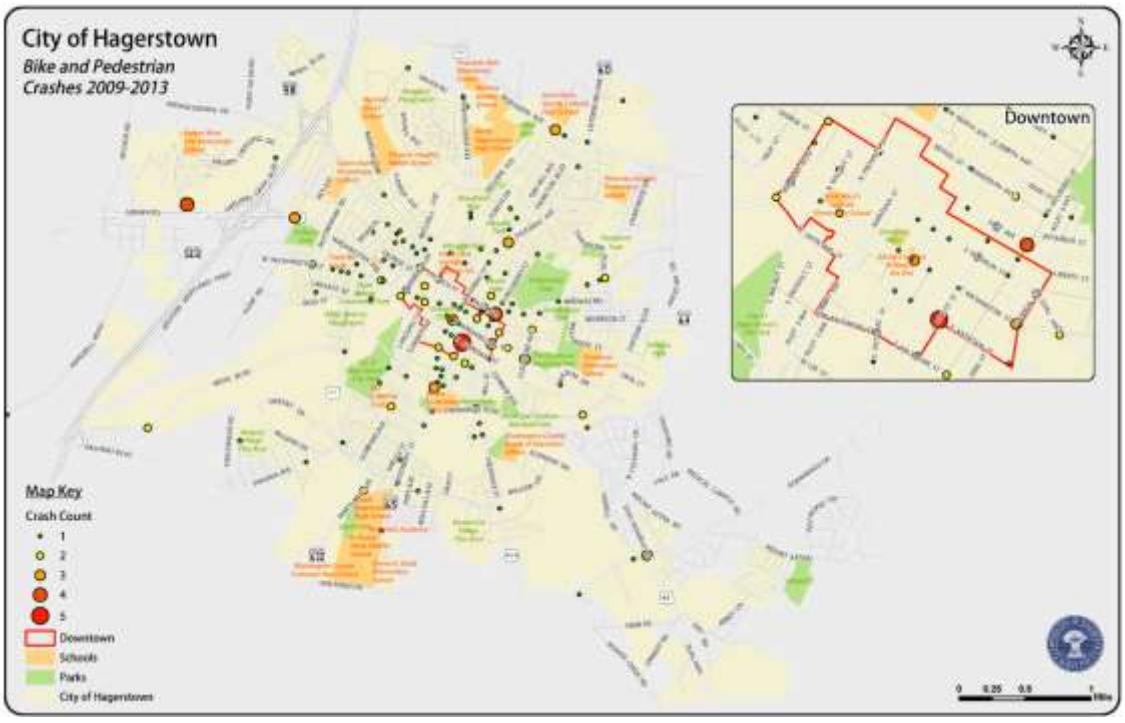



**Figure 3 - Map of Bicycle and Pedestrian Related Crash Locations (source: City of Hagerstown Police Dept.)**

## Public Realms

To help accommodate all street users and to foster a sense of place, complete streets divide the roadway into a series of public realms or zones. Each zone accommodates a different street user or amenities for each street user.

The following eight realms/zones were identified to best fit the overall vision of Hagerstown.

- Building Zone
- Sidewalk Zone
- Furniture Zone
- Buffer/Green Zone
- Parking Zone
- Bicycle Zone
- Motor Vehicle Zone
- Median Zone

This section describes each zone and highlights elements that may be included in each zone. The zones can incorporate streetscaping, street furniture, and green features including trees, landscaping, and a defined travel way for each user. Not all zones are applicable to every roadway type, but a street will be more 'complete' the more zones it incorporates.

## Building Zone

Area outside of the street right of way where public or private property is located or may be planned in the future.

Since it is outside of the street right of way, the types of street elements in this area can vary widely. It includes architectural elements such as steps, bay windows, or planters and commercial activities such as sidewalk cafes that intrude into the sidewalk.

These elements can enhance the pedestrian environment, but also narrow the walking zone and limit accessibility.

## Sidewalk Zone

This area is reserved primarily for a paved sidewalk to carry pedestrians and provide access to transit and to adjacent land uses.

In urban and suburban areas, the expectation is to provide sidewalks on both sides of the street unless there are site-specific constraints that make this impossible.

Utilities that can obstruct a pedestrian's path should not be placed within the sidewalk zone.

## Furniture Zone

The area of the sidewalk between the clear unobstructed walking area and the curb.

It provides a buffer from traffic and provides a space for street furniture and other amenities. (e.g. benches, lighting).

Signs, benches, fire hydrants, street and pedestrian level light poles, and utility poles are also included in the furniture zone.

The elements found in this zone can enhance the pedestrian environment, but also narrow the walking zone and can limit pedestrian mobility and comfort. Accordingly, these elements typically overlap with the buffer/green zone in high pedestrian areas.

## Buffer/Green Zone

Generally a landscaped area between the street pavement (or curb) and the sidewalk.

Normally a minimum of four to six feet is provided to allow space for street trees.

Within a high-density urban area, the green zone may be hardscaped with trees in planters.

This zone presents an opportunity for bio-infiltration, bio-retention, and rain gardens.

This zone may also provide a space for **utilities** such as fire hydrants, storm drains, street and pedestrian level lighting poles, and utility pole, which may require additional right-of-way as necessary.

## Parking Zone

Typically an eight to ten foot wide section allowing for parallel parking adjacent to traffic flow.

Parallel parking should be limited to corridors with lower speed limits (35mph or lower).

It is a paved area.

The gutter can be included as part of this zone without increasing the width of the parking zone.

This zone can also be used as a bus pullout, or can serve as an extension of the green zone when providing bulb-outs to protect parking and improve pedestrian accommodations.

Other functions for this zone include: loading and unloading, taxi/passenger drop offs and school zones.

## Bicycle Zone

An area reserved for a designated bicycle right of way adjacent to the motor vehicle lane.

Width is typically four to six feet of pavement.

When placed adjacent to a parking zone, the bike lane should be five to six feet wide.

If separate bicycle lanes cannot be accommodated, shared lanes are allowed if the outside vehicular lanes are 14 feet or when travel speeds are 35 mph and below.

## Motor Vehicle Zone

Generally considered the paved travel way of a street.

They include travel lanes, turn lanes and tapers, channelized or striped pavement areas, and, in some circumstances, the gutter pans.

The recommendation for the lane width is 10 to 12 feet.

## Median Zone

Typically provides a landscaped buffer between traffic moving in opposing directions.

They can provide for a pedestrian refuge if they are at least six feet wide.

Most two-lane streets do not have a median.

It typically includes street trees and shrubbery. Hardscaping may be provided at narrow points and a specified crossing points to facilitate pedestrian use.

At crossing points, landscaping and limbs should be maintained to allow visibility for the pedestrian and motorist.

## Street Typologies

The street network within the City was classified based on six different street types depending on the primary purpose of the street. Roadway characteristics such as volume, speed, and number of lanes were used to classify each street as well as how a specific roadway connects different parts of the City.

Each street typology type is defined below and example streets within the City are shown to further illustrate each typology. Examples of each street typology's cross section are shown in supplement B.

### Auto-Oriented Commercial/Industrial Spokes

Auto-oriented commercial/ industrial spokes (spokes) are characterized by an auto-oriented development pattern with buildings set back from the street and parking lots lining the roadway in front of commercial buildings. They are multilane divided highways classified as major collectors or arterials. Spoke roadways do not provide a pedestrian friendly environment and are not likely to attract high levels of pedestrian activity other than at transit stops and individual activity centers; although segments of spoke roadways may have sidewalks lining one side. Many spoke roadways enter the City limits as spokes and transition into other roadway typology as land use patterns and density changes. A typical cross-section can be found in supplement B.

Dual Highway/US 40

## Ring Road

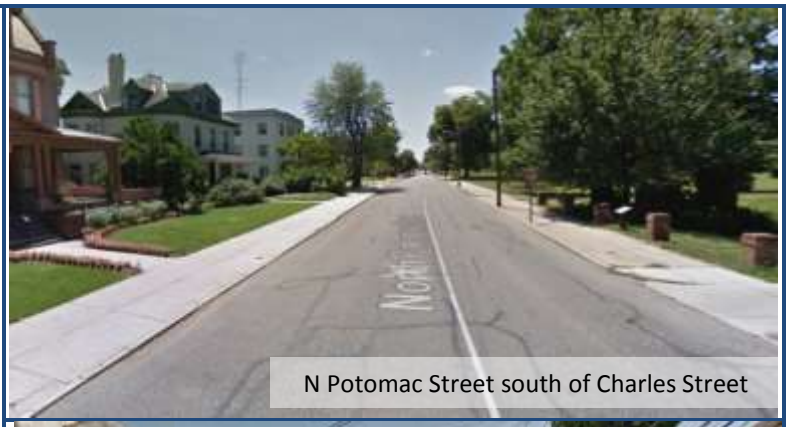
Ring roads are characterized by an auto-oriented development pattern with limited pedestrian and bicycle facilities. They are usually multilane divided or undivided roadways with some segments having sidewalks. These roadways generally carry comparable volumes to the auto-oriented commercial/industrial spokes and the business/industrial park roads; however, are used more as connectors around the City. A typical cross-section can be found in supplement B.

N Burhans Boulevard


N Eastern Boulevard

## Residential Connector

Residential connecters are commonly used as links between residential areas and other land uses or higher functional class roadways. Many roadways classified as residential connectors within the City connect suburban neighborhoods to the central, downtown area and many spur off of ring roads. Higher speeds and volume can be found on these roadways compared to neighborhood or urban neighborhood streets. Pedestrian facilities such as sidewalks are more prevalent along residential connectors than ring or spoke roads. These roads are typically two to three lanes, undivided. A typical cross-section can be found in supplement B.


N Potomac Street south of Charles Street


Salem Avenue east of McDowell Avenue

## Business/Industrial Park Road

Business/industrial park roads are characterized by a development pattern similar to that of a spoke, but these roadways generally carry lower volumes. Business or industrial complexes are primarily found along these roadways, and are commonly set back from the road edge, which attract a lower volume than commercial buildings. Sidewalks may be found along some segments and the lower volume in combination with wide shoulder may attract bicyclists. A typical cross-section can be found in supplement B.

Sweeney Drive

Wesel Boulevard

## Urban Neighborhood Street

Urban neighborhood streets are characterized by streets that are lined with dwellings that abut the roadway/sidewalk with a limited amount of residential driveways. These streets normally serve local vehicle and pedestrian traffic and often provide on-street parking. These streets are generally no more than two lanes and can be one-way. A typical cross-section can be found in supplement B.

S Locust Street south of E Antietam Street

S Mulberry Street south of E Antietam Street

## Walkable Commercial Main Street

Walkable commercial main streets (main streets) are characterized by highly pedestrian active corridors due to their pedestrian-friendly amenities such as wide sidewalks and marked or controlled crossings. Commercial, residential, and office land uses can be found on these roadways which create a bustling corridor but also, the parking and access needs of each user often compete for limited right-of-way with pedestrian and bicycle facility needs. These streets are generally no more than two lanes and can be one-way. A typical cross-section can be found in supplement B.

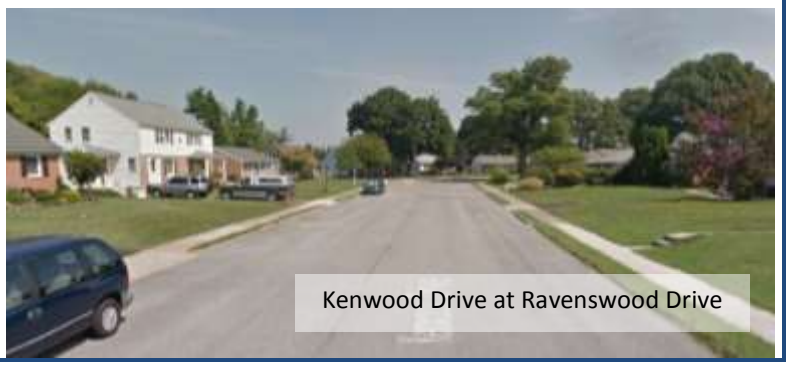

W Washington Street at Summit Avenue


N Potomac Street at E Franklin Street

## Neighborhood Street

Streets classified as neighborhood streets have been constructed more recently than urban neighborhood These streets are characterized by wide lane widths, dwellings situated on large lots that have driveways, and are set back from the sidewalk. These streets serve local traffic and generally provide sidewalks. A typical cross-section can be found in supplement B.


Fallen Timbers Court at Capstone Drive


Kenwood Drive at Ravenswood Drive

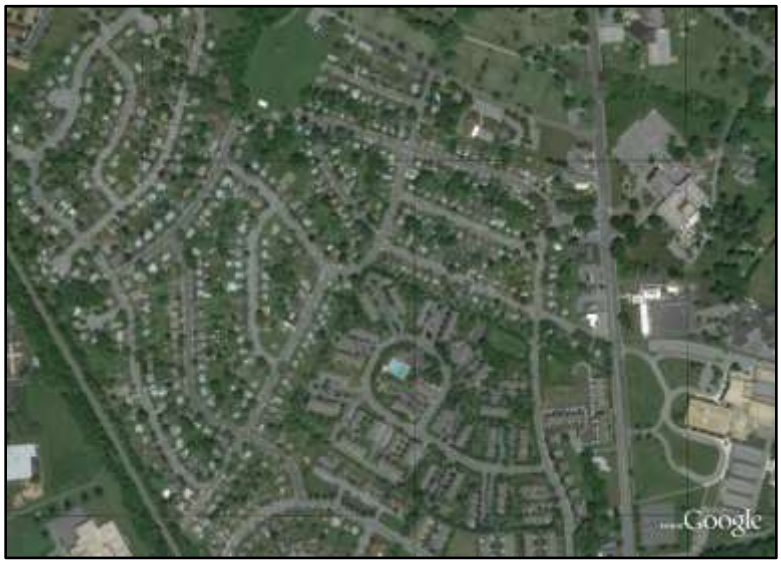
## Character Zones

Character zones were developed based on current land use patterns and zoning, to better reflect the relationship between the land uses and the streets that serve them. Defining typical characterizations of geographic areas provides a better perspective to how land developed over time by grouping land uses according to building style, development form, and land purpose. Seven different character zones were developed to best fit the development patterns of the City of Hagerstown. Current land use and the buildings' form and function within different neighborhoods are the primary factors in assigning a zone to each part of the City.

Each character zone is described below and illustrated with an aerial photo of that zone within Hagerstown. See the map atlas in supplement E for a map of each character zone with the assigned street typology network overlaid.

### Residential - Suburban

Residential suburban character zones are primarily characterized by low-density residential communities. Homes are single-family detached or duplex units set back from the road on large lots with driveways. Sidewalks with green buffer zones are frequently found within these communities. The primary road type within this zone is local roads with low volumes connecting to an arterial or minor collector. There is limited transit through these communities and the primary method of travel is personal vehicle.



## Residential – Traditional

Residential traditional character zones are primarily characterized by medium to high density residential communities. Homes are traditionally townhouses units that directly abut the sidewalks and the roadway. Units generally do not have driveways and residents park on the street or in lots that have access off of a side street or alley. The primary road types are local roads connecting to an arterial, minor collector, or major collector. These zones support multi-model travel including personal vehicle, walking, biking, or transit.


## Downtown

Downtown character zones are characterized by dense, multi-use mix areas centrally located within a city or town. Abutting wide sidewalks are multi-story buildings with commercial on the ground floor and offices or residences on the upper floors. Roadways usually accommodate on-street parking as well as transit stops and are usually classified as arterial, major collector, or minor collector, with some local/alley streets. These areas also have the most pedestrian facilities with marked and/or controlled crossings.

## Commercial Center

Commercial center character zones are primarily characterized by a concentration of commercial uses that draw from a large area. They may be stand-alone commercial buildings or part of a shopping center/strip mall with building heights that vary from one-story to high-rise mixed-use. Large surface lots located in front of buildings are frequently provided as personal vehicle is the main mode of travel. Usually, there is limited transit, bicycle, or pedestrian connectivity unless directly adjacent to a residential area.


## Industrial

Industrial character zones are primarily characterized by being utilized for manufacturing, wholesale, and industrial uses. They may be organized into a campus or industrial corridor and require accommodations for large trucks. Typical building height is one to four stories. Buildings may abut the sidewalk but entrances are oriented away from streets. Transit, pedestrian, or bicycle connectively is traditionally very limited.

## Institutional or Campus


Institutional or campus character zones are primarily characterized by large-scale development (greater than two acres) under unified control. Various buildings types typically face inward to an interior circulation network or common area rather than a city's roadway network. Transit usually services the perimeter of a campus and may provide stops within the campus. Pedestrian and bicycle connectivity varies; however, most campus areas are accessible primarily by personal vehicle. Campus are commonly located adjacent to an arterial or major collector.

## Parks


Parks character zones are primarily characterized as intentional open spaces such as parks, forest preserves, and bodies of water. These areas are not defined by their buildings (which are internal) but do have discernible edges. Vehicle access within the parks is generally limited while pedestrian and bicycle facilities are commonly through paved paths and sidewalks.

## Design Guidelines

The recommended guidelines for complete and livable streets within the City of Hagerstown are categorized by character zone. The three or four primary road typologies within each character zone were determined and specific vehicle, bicycle, pedestrian, and transit provisions are recommended based on each selected road typology.

A checklist table of the guidelines is provided in supplement D. This table shows the provisions recommended for each mode by each street typology for easy reference when reviewing street projects for incorporation of the guidelines. **The provisions marked with an asterisk indicate that that specific provision is recommend on roadways with speed limits greater than 35 MPH.**

*Lighting*

In addition to allocating roadway space for each and all street users, appropriate lighting levels should also be considered in the shaping of streets. General guidelines on appropriate lighting levels and where to prioritize installation of lighting for pedestrians and bicycles are provided in the table below. These guidelines are not tied to a specific character zone or street typology and are instead intended to be applied holistically.

| **Pedestrian & Bicycle Level Lighting** | | |
|---|---|---|
| Lighting geared towards pedestrians and bicycles increases pedestrian safety and comfort. Typically, pedestrian level lighting is at a lower height (around 18 feet or under) than street/vehicle level lighting. | | |
| **Lighting Levels for walkways/bikeways[1]** | AVERAGE | MINIMUM |
| | **2.0 foot-candles** | **1.0 foot-candles** |
| **General Guidelines for Applying Pedestrian Lighting** | • Where pedestrian volume per one hour of darkness is greater than 20<br>• Where the number of pedestrian related nighttime crashes is greater than 2 within the most recent five year period<br>• Within a ¼ mile of transit stops where sum of daily boardings is greater than 50<br>• Within ¼ mile of unique pedestrian generators<br>• At all marked mid-block crossings | |

[1] Recommended lighting levels is based on guidelines provided by the Illuminating Society of North American

| RESIDENTIAL SUBURBAN | | | |
|---|---|---|---|
| | Ring Road | Residential Connector | Neighborhood Street |
| VEHICLE PROVISION | • Min. 10' lanes<br>• Median or center turn lane<br>• Off-peak on-street parking | • Min. 10' lanes<br>• Full-time on-street parking | • Min. 10' lanes<br>• Full-time on-street parking |
| BICYCLING PROVISION | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is > 14', or<br>• Protected bicycle lane*<br>• Bicycle boxes at signals with crossing bike routes | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is >14', or<br>• Signed and striped 'bikes may use full lane'<br>• Partially colored bike lanes | • Signed and striped 'bikes may use full lane' |
| PEDESTRIAN PROVISION | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/ green zone on both sides<br>• Median pedestrian refuge at uncontrolled crossings | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides |
| TRANSIT PROVISION | • Fixed route service<br>• 30 minute peak period headways<br>• Stops located at 1/4 mile spacing | • Demand responsive service<br>• Stops located at 1/4 mile spacing | • None |
| EXAMPLES | W WILSON BLVD<br>*VIRGINIA AVE TO S POTOMAC ST* | SALEM AVE<br>POTOMAC AVE<br>SECURITY RD | MANOR DR |

| RESIDENTIAL TRADITIONAL | | | |
|---|---|---|---|
| | Ring Road | Walkable Commercial Main Street | Urban Neighborhood Street |
| VEHICLE PROVISION | • Min. 10' lanes<br>• Median or center turn lane<br>• Off-peak on-street parking | • Min. 10' lanes<br>• Full-time on-street parking | • Min. 10' lanes<br>• Full-time on-street parking |
| BICYCLING PROVISION | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is > 14', or<br>• Protected bicycle lane*<br>• Bicycle boxes at signals with crossing bike routes | • Signed and striped 'bikes may use full lane', or<br>• Protected bike lane* | • Signed and striped 'bikes may use full lane'<br>• Or designated marked bike lane on one-way streets where not wide enough for parking on both sides |
| PEDESTRIAN PROVISION | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/ green zone on both sides<br>• Median pedestrian refuge at uncontrolled crossings | • Min. 8' unobstructed sidewalks on both sides<br>• Min. 4' buffer/green and furniture zone on both sides<br>• Wider 10' to 14' crosswalks; textured<br>• Accessible pedestrian signals<br>• Advanced WALK timing | • Min. 5' sidewalk on both sides<br>• Min. 2' buffer/green zone on both sides |
| TRANSIT PROVISION | • Fixed route service<br>• 30 minute peak period headways<br>• Stops located at 1/4 mile spacing | • Fixed route service<br>• 30 minute peak period headways | • None |
| EXAMPLES | BURHANS BLVD<br>*ANTIETAM TO MECHANIC* | POTOMAC ST<br>*OAK HILL AVE TO CHURCH ST* | SUMMIT/ S POTOMAC ST<br>*BALTIMORE TO MEMORIAL BLVD* |

| DOWNTOWN | | |
|---|---|---|
| | Walkable Commercial Main Street | Urban Neighborhood Street |
| VEHICLE PROVISION | • Min. 10' lanes<br>• Full-time on-street parking | • Min. 10' lanes<br>• Full-time on-street parking |
| BICYCLING PROVISION | • Signed and striped 'bikes may use full lane', or<br>• Protected bicycle lane* | • Signed and striped 'bikes may use full lane' |
| PEDESTRIAN PROVISION | • Min. 8' unobstructed sidewalks on both sides<br>• Min. 4' buffer/green and furniture zone on both sides<br>• Wider 10' to 14' crosswalks; textured<br>• Accessible pedestrian signals<br>• Advanced WALK timing | • Min. 5' sidewalk on both sides<br>• Min. 2' buffer/green zone on both sides |
| TRANSIT PROVISION | • Fixed route service<br>• 30 minute peak period headways | • None |
| EXAMPLES | W Antietam St<br>N Potomac St | Church St |

| COMMERCIAL CENTER | | | | |
|---|---|---|---|---|
| | Auto-Oriented Commercial / Industrial Spoke | Ring Road | Residential Connector | Business / Industrial Park Road |
| VEHICLE PROVISION | • Min. 11' lanes<br>• Median with exclusive turn lanes | • Min. 10' lanes<br>• Median or center turn lane<br>• Off-peak on-street parking | • Min. 10' lanes<br>• Full-time on-street parking | • Min. 11' lanes<br>• Full-time on-street parking |
| BICYCLING PROVISION | • Bicyclists use shoulder, or<br>• 10' shared use path*, or<br>• Bicyclists use curb lane where lane width is > 15' | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is > 14', or<br>• Protected bicycle lane*<br>• Bicycle boxes at signals with crossing bike routes | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is >14', or<br>• Signed and striped 'bikes may use full lane' | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is >14', or<br>• Signed and striped 'bikes may use full lane' |
| PEDESTRIAN PROVISION | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides<br>• Accessible pedestrian signals | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/ green zone on both sides<br>• Median pedestrian refuge at uncontrolled crossings | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides | • Min. 5' sidewalk on both sides |
| TRANSIT PROVISION | • Fixed route service<br>• 30 minute peak period headways<br>• Stops located at 1/4 mile spacing<br>• Should provide shelters at each stop | • Fixed route service<br>• 30 minute peak period headways<br>• Stops located at 1/4 mile spacing | • Demand responsive service<br>• Stops located at 1/4 mile spacing | • Demand responsive service<br>• Stops located at 1/4 mile spacing |
| EXAMPLES | GARLAND GROH BLVD<br>WESEL BLVD | EASTERN BLVD | CLEVELAND AVE<br>*CANNON AVE TO SECURITY RD* | PROFESSIONAL DR<br>EASTERN BLVD S<br>*FREDERICK ST TO DUAL HWY* |

| INDUSTRIAL | | | |
|---|---|---|---|
| | Ring Road | Residential Connector | Business / Industrial Park Road |
| VEHICLE PROVISION | • Min. 10' lanes<br>• Median or center turn lane<br>• Off-peak on-street parking | • Min. 10' lanes<br>• Full-time on-street parking | • Min. 11' lanes<br>• Full-time on-street parking |
| BICYCLING PROVISION | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is > 14', or<br>• Protected bicycle lane*<br>• Bicycle boxes at signals with crossing bike routes | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is >14', or<br>• Signed and striped 'bikes may use full lane' | • Designated 5’ bicycle lane<br>• Bicyclists use curb lane where lane width is >14’, or<br>• Signed and striped 'bikes may use full lane' |
| PEDESTRIAN PROVISION | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/ green zone on both sides<br>• Median pedestrian refuge at uncontrolled crossings | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides | • Min. 5' sidewalk on both sides |
| TRANSIT PROVISION | • Fixed route service<br>• 30 minute peak period headways<br>• Stops located at 1/4 mile spacing | • Demand responsive service<br>• Stops located at 1/4 mile spacing | • Demand responsive service<br>• Stops located at 1/4 mile spacing |
| EXAMPLES | S & N BURHANS BLVD | | WESEL BLVD<br>COMMONWEALTH AVE<br>EASTERN BLVD S<br>*FREDERICK ST TO DUAL HWY* |

| INSTITUTIONAL OR CAMPUS | | | |
|---|---|---|---|
| | Ring Road | Residential Connector | Neighborhood Street |
| VEHICLE PROVISION | • Min. 10' lanes<br>• Median or center turn lane<br>• Off-peak on-street parking | • Min. 10' lanes<br>• Full-time on-street parking | • Min. 11' lanes<br>• Full-time on-street parking |
| BICYCLING PROVISION | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is > 14', or<br>• Protected bicycle lane*<br>• Bicycle boxes at signals with crossing bike routes | • Designated 5' bicycle lane, or<br>• Bicyclists use curb lane where lane width is >14', or<br>• Signed and striped 'bikes may use full lane' | • Signed and striped 'bikes may use full lane' |
| PEDESTRIAN PROVISION | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/ green zone on both sides<br>• Median pedestrian refuge at uncontrolled crossings | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides | • Min. 5' sidewalk on both sides<br>• Min. 3' buffer/green zone on both sides |
| TRANSIT PROVISION | • Fixed route service<br>• 30 minute peak period headways<br>• Stops located at 1/4 mile spacing | • Demand responsive service<br>• Stops located at 1/4 mile spacing | • None |
| EXAMPLES | NORTHERN AVE | | PANGBORN BLVD<br>*MANOR DR TO WESTWOOD ST* |

| PARKS | | | |
|---|---|---|---|
| | Residential Connector | Neighborhood Street | Urban Neighborhood Street |
| VEHICLE PROVISION | • None | • None | • None |
| BICYCLING PROVISION | • Min. 8' shared use path<br>• Min. 5' buffer/green and furniture zone | • Min. 8' shared use path<br>• Min. 5' buffer/green and furniture zone | • Min. 8' shared use path<br>• Min. 5' buffer/green and furniture zone |
| PEDESTRIAN PROVISION | • Min. 8' shared use path<br>• Min. 5' buffer/green and furniture zone | • Min. 8' shared use path<br>• Min. 5' buffer/green and furniture zone | • Min. 8' shared use path<br>• Min. 5' buffer/green and furniture zone |
| TRANSIT PROVISION | • None | • None | • None |
| EXAMPLES | S WALNUT ST<br>*W ANTIETAM ST TO KEY ST* | | |

**Supplemental Material**

**The following tables show the initial listing of streets selected by their street typology.**

### A. Auto Oriented Commercial/Industrial (Spokes)

| Street Name | Limits |
|---|---|
| Dual Highway/US 40 | Corporate Boundary to S Cleveland Ave |
| Jefferson Boulevard/ MD 64 | Atlantic Dr to Corporate Boundary |
| Massey Boulevard | Corporate Boundary to Heister St |
| Virginia Avenue/US 11 | Corporate Boundary to S Burhans Blvd |
| Leitersburg Pike (MD 60) | Corporate Boundary to Northern Ave |

### B. Ring Road

| Street Name | Limits |
|---|---|
| W Memorial Boulevard | S Prospect St to Corporate Boundary |
| N Burhans Boulevard | Lanvale St to Mitchell Ave |
| Northern Avenue | Pennsylvania Ave to Potomac Ave |
| Eastern Blvd N | Dual Hwy to Jefferson Street |
| E/W Wilson Boulevard | Frederick St to Virginia Ave |
| N/S Edgewood Drive | Corporate Boundary to Corporate Boundary |

### C. Business/Industrial Park Road

| Street Name | Limits |
|---|---|
| Wesel Blvd | S Burhans Blvd to Entrance to Noland Complex |
| Eastern Blvd S | Frederick St to Dual Hwy |
| Maryland Ave | W Wilson Blvd to Corporate Limits |
| Commonwealth Ave | Frederick St to Dead End |
| Hagers Crossing Dr | Garland Groh Blvd to Heiskell Ct |

### D. Walkable Commercial Main Street

| Street Name | Limits |
|---|---|
| E Franklin Street | Burhans Blvd to Cannon Ave |
| W Washington Street | Burhans Blvd to Cannon Ave |
| N Potomac Street | Wayside Ave to E Washington St |
| Locust Street (within downtown limits) | Within downtown limits |
| E Antietam Street | S Walnut St to Renaissance Way |

### E. Urban Neighborhood Street

| Street Name | Limits |
|---|---|
| East Avenue | N Potomac St to N Cannon Ave |
| N Locust Street | E Franklin St to McComas St |
| S Locust St | S Potomac St to E Washington St/Downtown Limits to Broadway |
| S Potomac St | Spruce St to Baltimore St |
| S Burhans Blvd | Lanvale St to Wesel Blvd |

### F. Neighborhood Street

| Street Name | Limits |
|---|---|
| Lanvale St | East Pl to S Burhans Blvd |
| S Prospect St | S Walnut St to W Antietam St |
| Manor Dr | Dual Hwy to Pangborn Blvd |
| Pangborn Blvd | Manor Dr to Westwood St |
| Cavalier Court | Nittany Lion Cir to Dead End |
| Cortland Drive | Hawkins Cir to Leitersburg Pike |

### G. Residential Connector

| Street Name | Limits |
|---|---|
| Jefferson Street | Atlantic Dr to N Mulberry St |
| Salem Avenue | Key Cir to N Burhans Blvd |
| N/S Cleveland Avenue | S Cannon Ave to Security Rd |
| Oak Hill Avenue | Meadow View Dr to Potomac Ave |
| Nottingham Road | Salem Ave to W Washington St |
| Potomac Avenue/MD 65 | Oak Hill Ave to Northern Ave |

## RING ROAD

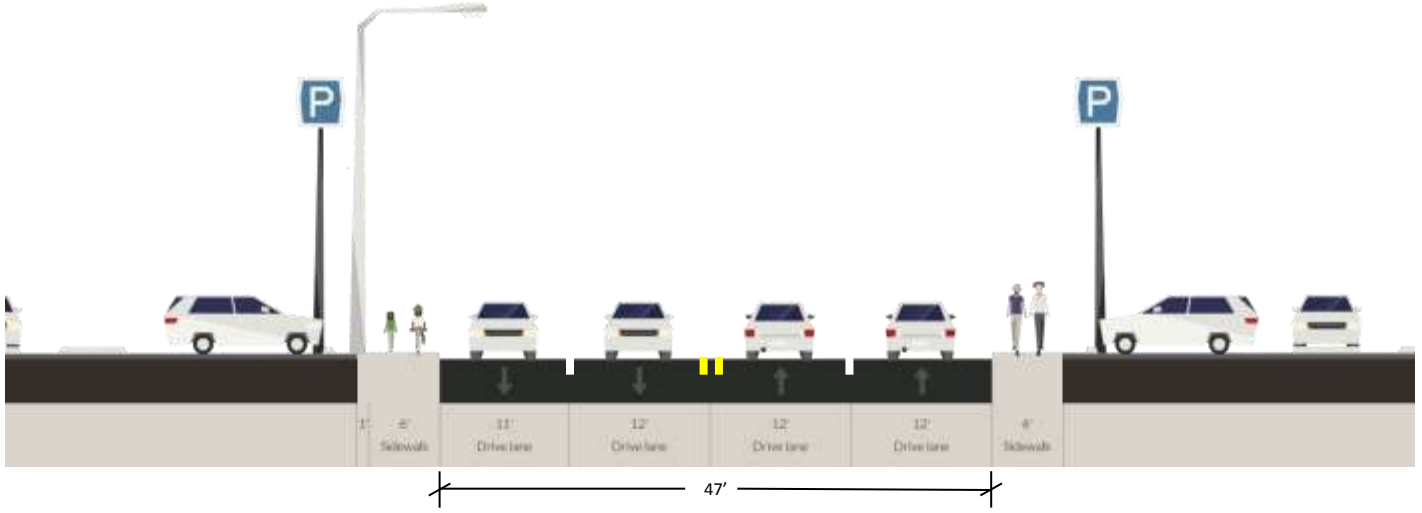



***Figure B1.*** *Burhans Boulevard between W Franklin Street at W Washington Street*

## AUTO ORIENTED COMMERCIAL/ INDUSTRIAL (SPOKES)

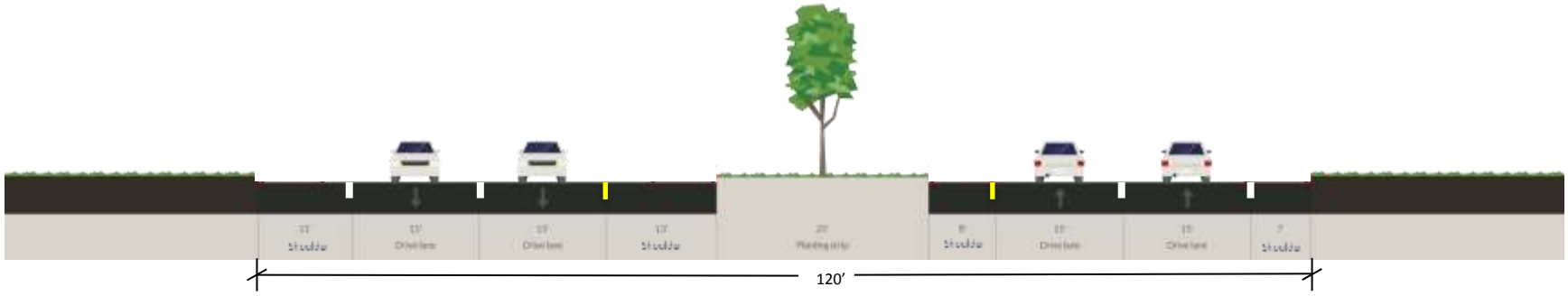



***Figure B2.*** *Dual Highway between Tracys Lane and Eastern Boulevard*

## RESIDENTIAL CONNECTOR

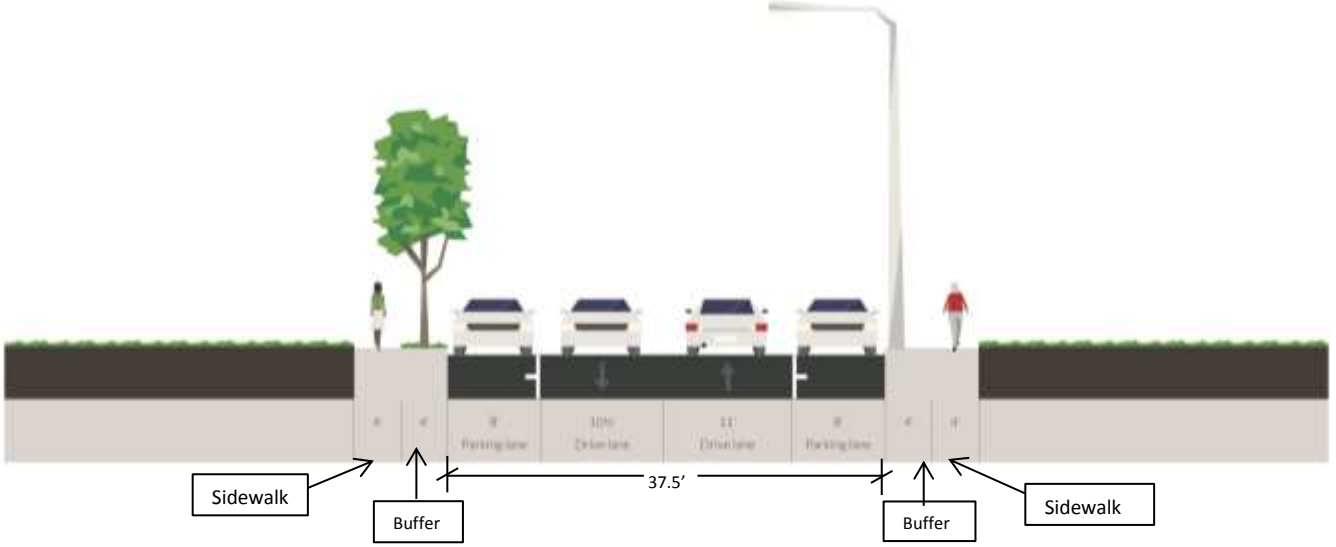



***Figure B3.*** *N Cleveland Avenue between E Washington Street and E Franklin Street*

## BUSINESS/ INDUSTRIAL PARK ROAD

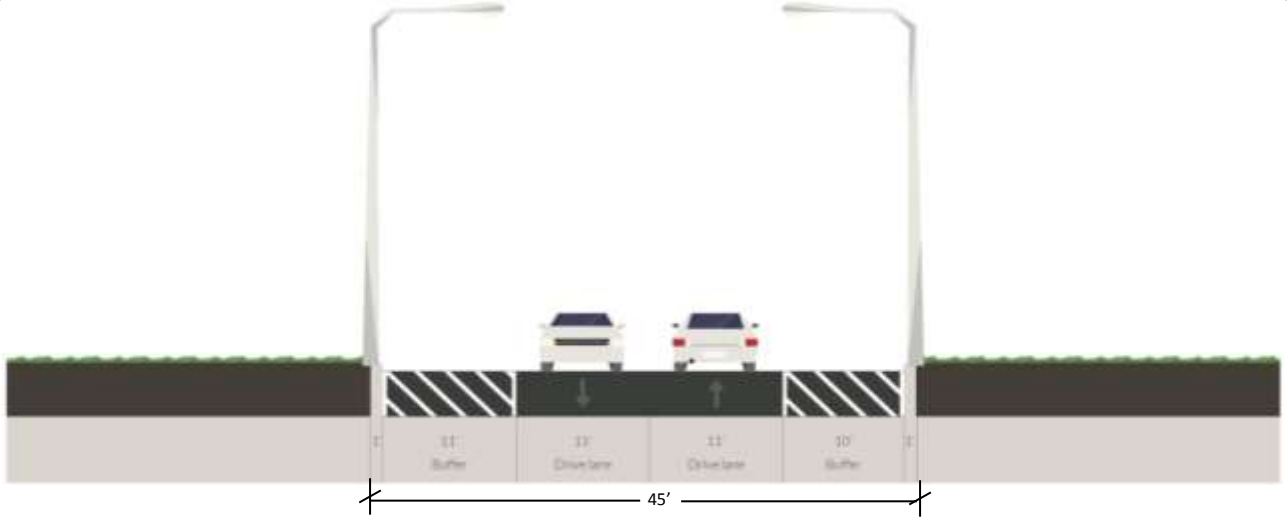



***Figure B4.*** *Wesel Boulevard west of Ridge Avenue*

## URBAN NEIGHBORHOOD STREET

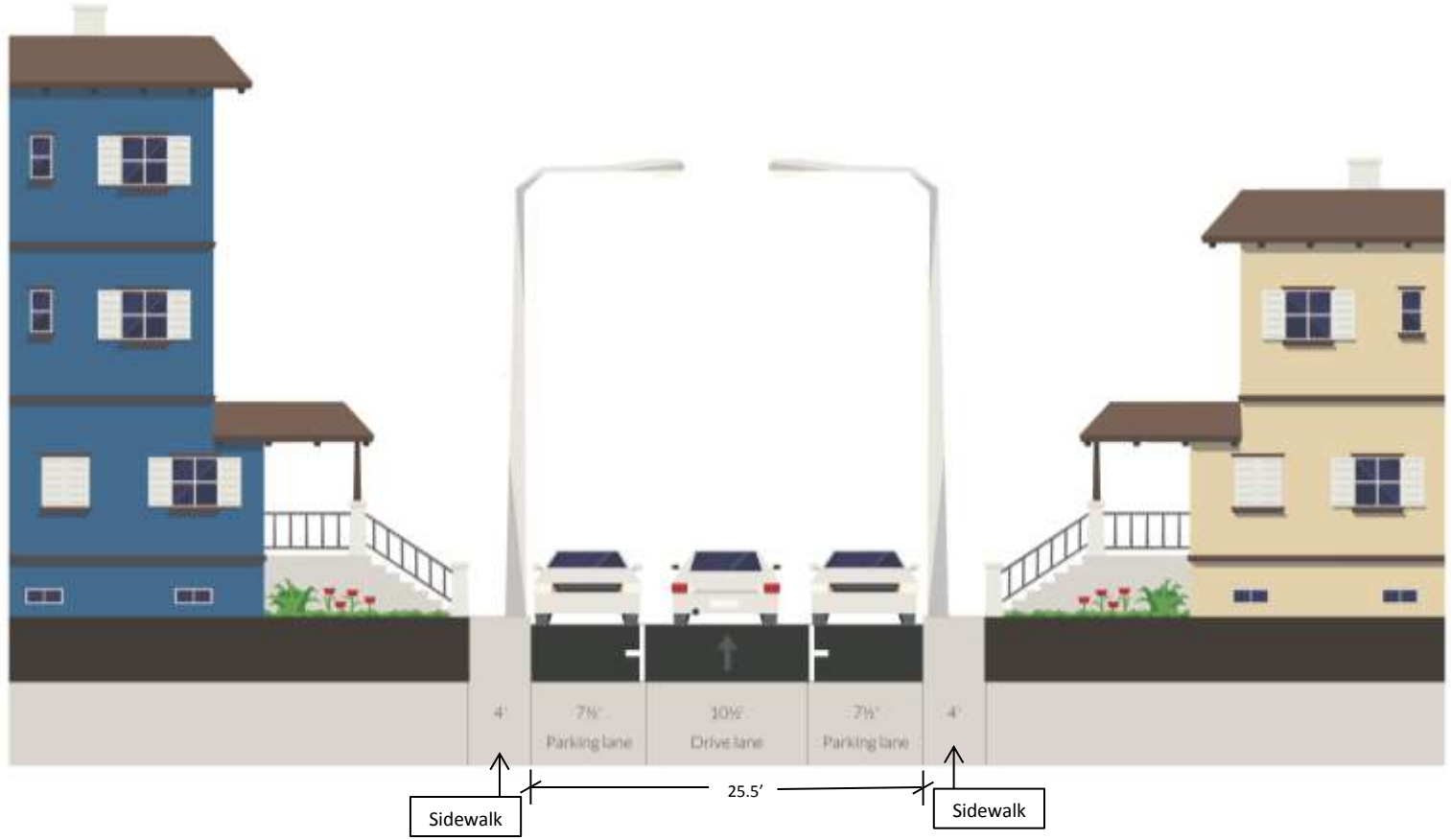



***Figure B5.*** *George Street between Wise Street and Winter Street*

## WALKABLE COMMERCIAL MAIN STREET

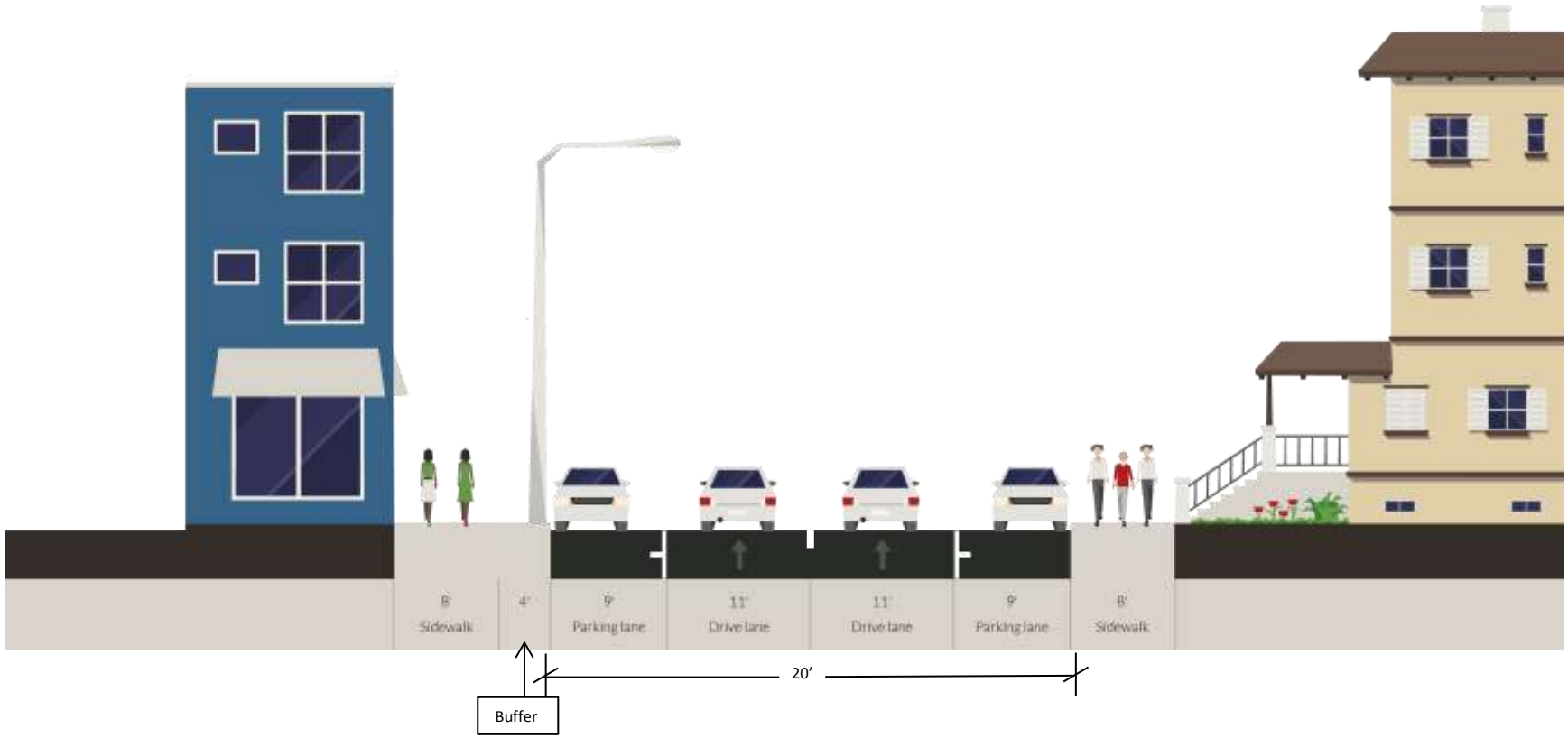



***Figure B6.*** *E Franklin Street between N Locust Street and N Mulberry Street*

## NEIGHBORHOOD STREET

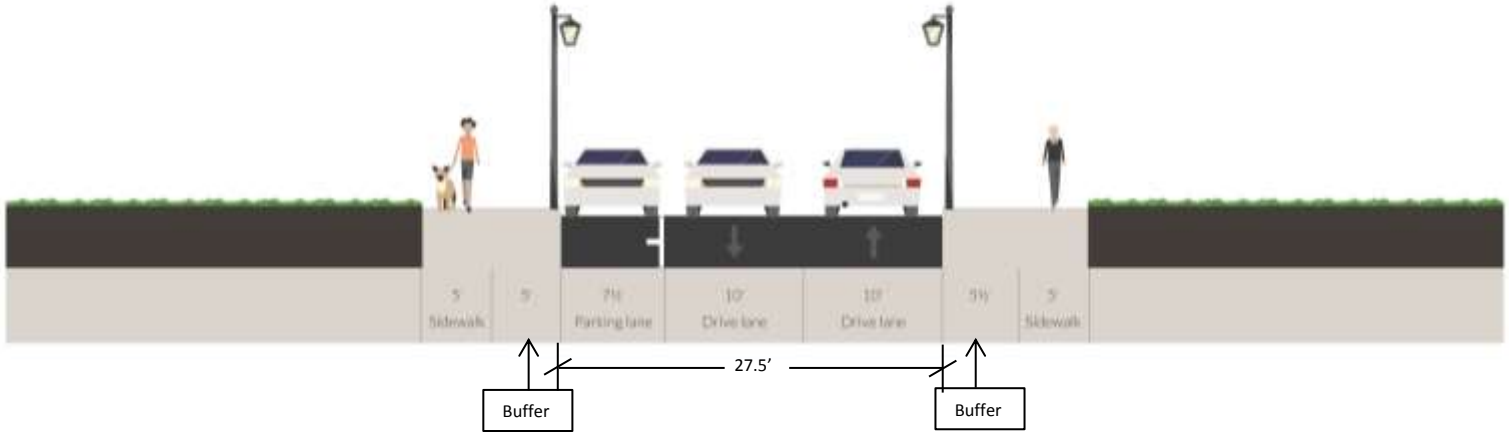



***Figure B7.*** *Fallen Timbers Circle east of Capstone Drive*

**Table of the number of pedestrian and bicycle crashes by street.**

| | MAJOR STREET NAME | TOTAL # OF PED/BIKE CRASHES ALONG ROADWAY | # PEDESTRIAN CRASHES | # BICYCLE CRASHES |
|---|---|---|---|---|
| 1 | WASHINGTON ST | 23 | 14 | 9 |
| 2 | DUAL HWY | 20 | 17 | 3 |
| 3 | POTOMAC ST | 13 | 10 | 3 |
| 4 | FRANKLIN ST | 11 | 9 | 2 |
| 5 | BURHANS BLVD | 9 | 4 | 5 |
| 6 | LOCUST ST | 9 | 5 | 4 |
| 7 | GARLAND GROH BLVD | 8 | 8 | 0 |
| 8 | ANTIETAM ST | 6 | 3 | 3 |
| 9 | BALTIMORE ST | 6 | 5 | 1 |
| 10 | POTOMAC AVE | 6 | 5 | 1 |
| 11 | EAST AVE | 5 | 2 | 3 |
| 12 | SECURITY RD | 5 | 2 | 3 |
| 13 | CHURCH ST | 4 | 4 | 0 |
| 14 | NORTHERN AVE | 4 | 3 | 1 |
| 15 | SALEM AVE | 4 | 1 | 3 |
| 16 | WILSON BLVD | 4 | 1 | 3 |
| 17 | CANNON AVE | 3 | 2 | 1 |
| 18 | FREDERICK ST | 3 | 3 | 0 |
| 19 | GUILFORD AVE | 3 | 1 | 2 |
| 20 | MULBERRY ST | 3 | 1 | 2 |
| 21 | PENNSYLVANIA AVE | 3 | 2 | 1 |
| 22 | VIRGINIA AVE | 3 | 2 | 1 |
| 23 | CLEVELAND AVE | 2 | 2 | 0 |
| 24 | EDGEWOOD DR | 2 | 1 | 1 |
| 25 | JEFFERSON ST | 2 | 2 | 0 |
| 26 | JONATHAN ST | 2 | 1 | 1 |
| 27 | MARSHALL ST | 2 | 1 | 1 |
| 28 | MARYLAND AVE | 2 | 1 | 1 |
| 29 | MEMORIAL BLVD | 2 | 0 | 2 |
| 30 | MITCHELL AVE | 2 | 1 | 1 |
| 31 | OAK HILL AVE | 2 | 2 | 0 |
| 32 | WASHINGTON AVE | 2 | 2 | 0 |
| 33 | WESEL BLVD | 2 | 2 | 0 |
| 34 | VALLEY RD | 1 | 1 | 0 |
| 35 | ALY 96 | 1 | 1 | 0 |

*Continued…*

| | MAJOR STREET NAME | TOTAL # OF PED/BIKE CRASHES ALONG ROADWAY | # PEDESTRIAN CRASHES | # BICYCLE CRASHES |
|---|---|---|---|---|
| 36 | BUENA VISTA AVE | 1 | 1 | 0 |
| 37 | CARROLLTON AVE | 1 | 1 | 0 |
| 38 | CHARLES ST | 1 | 1 | 0 |
| 39 | CORTLAND DR | 1 | 1 | 0 |
| 40 | GEORGE ST | 1 | 1 | 0 |
| 41 | HAVEN RD | 1 | 1 | 0 |
| 42 | HOPEWELL RD | 1 | 1 | 0 |
| 43 | KING ST | 1 | 1 | 0 |
| 44 | KINSLOW ST | 1 | 0 | 1 |
| 45 | LEE ST | 1 | 1 | 0 |
| 46 | LEITERSBURG PIKE | 1 | 1 | 0 |
| 47 | LINAGNORE AVE | 1 | 0 | 1 |
| 48 | MADISON AVE | 1 | 1 | 0 |
| 49 | MECHANIC ST | 1 | 0 | 1 |
| 50 | NOLAND DR | 1 | 1 | 0 |
| 51 | NORTH AVE | 1 | 1 | 0 |
| 52 | PARK LN | 1 | 0 | 1 |
| 53 | PROSPECT ST | 1 | 1 | 0 |
| 54 | RANDOLPH AVE | 1 | 0 | 1 |
| 55 | RAY ST | 1 | 0 | 1 |
| 56 | ST CLAIRE ST | 1 | 0 | 1 |
| 57 | SUMMER ST | 1 | 1 | 0 |
| 58 | TAYLOR AVE | 1 | 1 | 0 |
| 59 | TERPS BLVD | 1 | 1 | 0 |
| 60 | VISTA ST | 1 | 0 | 1 |
| 61 | WEST SIDE AVE | 1 | 1 | 0 |
| 62 | WINTER ST | 1 | 1 | 0 |
| | **GRAND TOTAL** | **206** | **140** | **66** |

| LIVABLE STREETS CHECKLIST[1]<br>CITY OF HAGERSTOWN | | STREET TYPES | Commercial/ Industrial Spoke | Ring Road | Residential Connector | Business/ Industrial Park Road | Urban Neighborhood Street | Walkable Commercial Main Street | Neighborhood Street |
|---|---|---|---|---|---|---|---|---|---|
| **GUIDELINES PROVISIONS** | | | | | | | | | |
| VEHICLE | Minimum 11' lane | | ■ | | | ■ | | | ■ |
| | Minimum 10' lane | | | ■ | ■ | | ■ | ■ | ■ |
| | Median or center turn lane | | | ■ | | | | | |
| | Median with exclusive turn lanes | | ■ | | | | | | |
| | Full-time on-street parking | | | | ■ | ■ | ■ | ■ | ■ |
| | Off-peak on-street parking | | | ■ | | | | | |
| BICYCLE | Protected bicycle lane | | | ■ | | | | ■ | |
| | Designated 5' bicycle lane | | | ■ | ■ | ■ | | | |
| | Bicyclists use curb lane where lane width is > 15' | | ■ | | | | | | |
| | Bicyclists use curb lane where lane width is > 14' | | | ■ | ■ | ■ | | | |
| | Bicyclists use shoulder | | ■ | | | | | | |
| | 10' shared use path | | ■ | | | | | | |
| | Signed and striped 'bikes may use full lane' | | | | ■ | ■ | ■ | ■ | ■ |
| | Bicycle boxes at signals with crossing bike routes | | | ■ | | | | | |
| | Minimum 8' shared use path | | | | ■ | | ■ | | ■ |
| PEDESTRIAN | Minimum 8' unobstructed sidewalks on both sides | | | | | | | ■ | |
| | Minimum 5' sidewalk on both sides | | ■ | ■ | ■ | ■ | ■ | | ■ |
| | Minimum 5' buffer/green and furniture zone | | | | ■ | | ■ | | ■ |
| | Minimum 4' buffer/green and furniture zone; both sides | | | | | | | ■ | |
| | Minimum 3' buffer/ green zone on both sides | | ■ | ■ | ■ | | | | ■ |
| | Minimum 2' buffer/green zone on both sides | | | | | | ■ | | |
| | Median pedestrian refuge at uncontrolled crossings | | | ■ | | | | | |
| | Wider 10' to 14' crosswalks; textured | | | | | | | ■ | |
| | Accessible pedestrian signals | | ■ | | | | | ■ | |
| | Advanced WALK timing | | | | | | | ■ | |
| TRANSIT | Fixed route service | | ■ | ■ | | | | ■ | |
| | Demand responsive service | | | | ■ | ■ | | | |
| | 30 minute peak period headways | | ■ | ■ | | | | ■ | |
| | Stops located at 1/4 mile spacing | | ■ | ■ | ■ | ■ | | | |
| | Should provide shelters at each stop | | ■ | | | | | | |

[1]Table modeled from Seattle Department of Transportation's *Complete Streets Checklist – Priority Elements Matrix* <http://www.seattle.gov/transportation/completestreets.htm>

**Table of contents of the map atlas.**


| Map | Map Title | Data Source |
|---|---|---|
| **1** | *Basemap* | City of Hagerstown |
| **2** | *Roadway Functional Class* | City of Hagerstown |
| **3** | *Bicycle Network* | City of Hagerstown |
| **4** | *Sidewalk Network – Missing Links* | City of Hagerstown |
| **5** | *Transit Network* | Washington County |
| **6** | *Transit Ridership* | City of Hagerstown |
| **7** | *Annual Average Daily Traffic* | SHA (I-TMS)/City of Hagerstown |
| **8** | *Bicycle and Pedestrian Crashes* | - |
| **9** | *Existing Zoning/Land-Use* | City of Hagerstown |
| **10** | *Street Typology* | SWA |
| **11** | *Character Zones* | SWA |
| **12** | *Suburban Residential Character Zone with Street Typology* | SWA |
| **13** | *Traditional  Residential Character Zone with Street Typology* | SWA |
| **14** | *Downtown Character Zone with Street Typology* | SWA |
| **15** | *Commercial Center Character Zone with Street Typology* | SWA |
| **16** | *Industrial Character Zone with Street Typology* | SWA |
| **17** | *Institutional/Campus Character Zone with Street Typology* | SWA |
| **18** | *Parks Character Zone with Street Typology* | SWA |