LEGACY Leesburg

DRAFT

TRANSPORTATION IMPROVEMENT PLAN (02.05.2021)

OVERVIEW: MOVING AROUND TOWN

The Moving Around Town (Transportation) Guiding Principle for Legacy Leesburg States: *Provide a safe, reliable, and efficient transportation system that promotes and enhances mobility and connectivity between neighborhoods and destinations through a multi-modal network of complete and walkable streets, sidewalks, and trails for transit riders, pedestrians, and cyclists*. This statement holds true for many transportation projects, plans, and policies across the United States, but as Leesburg grows and matures as a community the implementation of this guiding principle also changes.

Transportation connects people with their jobs, schools, and Leesburg's economy (which, in turn, is a major beneficiary to people throughout Loudoun County and surrounding areas). However, transportation is often not connected to community objectives. For many years, officials, citizens, and businesses handed over the development of the transportation system to the engineering community. They did a tremendous job of their assignment: the current generation has enjoyed a higher level of mobility than any other before them. The tight grid system represented by Leesburg's charming downtown gave way to cul-de-sacs, isolated communities, and snout-houses (garage with an attached house) as automobile-driven design, lending institutions, ordinances, and cultural preferences collaborated to create a very different kind of development pattern and transportation systems to serve it (see Figure 1).

As Leesburg grew, its transportation network spread out to better serve auto-dominated land uses. Distances became too far to easily walk, separated by larger parking areas and networks that didn't favor walking, biking, or public transportation as much as the tight original grid pattern of streets. This led to further changes with longer distances between people and places they want to be. The graph at right shows how later stages of development impacted how fine-grained the street network is, and how it does or doesn't support non-auto trip-making.

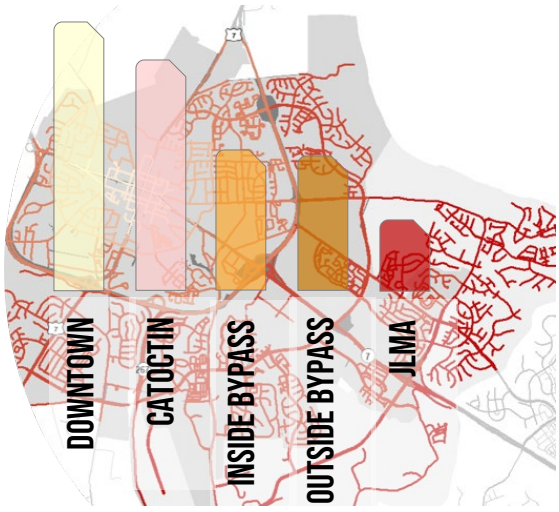


Figure 1. Intersection Density

Challenges to communities that took this path – and there were many - emerged that engineers and decisionmakers had few tools to predict before they happened or address successfully afterwards. Persons without access to a reliable care of their own; elderly that are increasingly a bigger part of society (and who expect to keep a high level of mobility going forward); youth that are often waiting to get their drivers' license; or places where traditional capacity-oriented fixes to the resulting congestion that over-reliance on the automobile has created have all suffered to some extent from these changes.

Another common problem is that many roads have turned into "stroads:" streets that no longer serve their original purpose as fast-moving roads and weren't designed to be good, walkable streets. In fact, almost every road performance problem that people tend to cite, whether neighborhood speeding, stop-and-go recurring congestion, or non-recurring delays created by crashes, are the result of a road that was designed to do one thing that is now doing something else (see Figure 2).

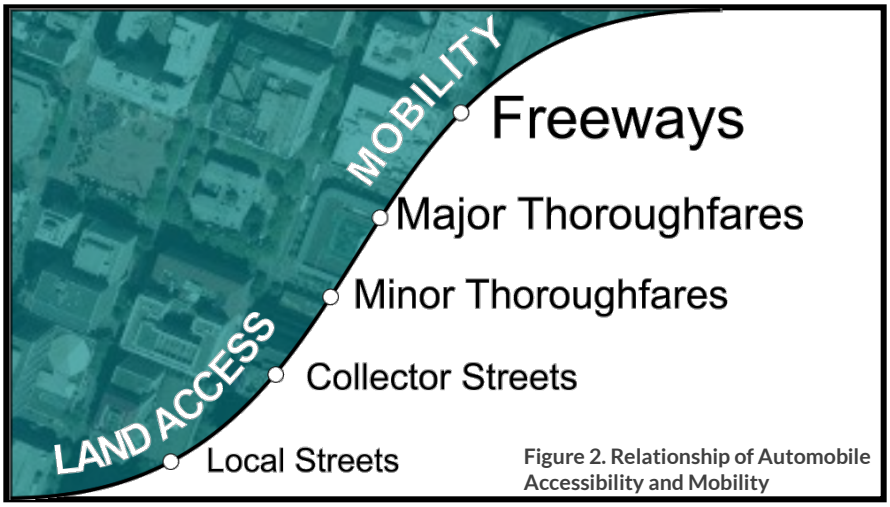


Figure 2. Relationship of Automobile Accessibility and Mobility

To meet these challenges Leesburg has identified transportation objectives that will implement the transportation goal statement. These goal statements follow.

Resiliency. Traffic congestion happens, but alternatives to private car travel can help create a more resilient and reliable transportation system. As urban areas mature, consistent and reliable transportation becomes just as important, if not more important, as travel times between places.

Safety. Not all congestion is weighted the same: unexpected delays caused by crashes or weather events are perceived as much more costly by travelers than recurring, peak-period congestion. Reducing crashes and crash severity is good for people and for auto mobility. Safety-first mindsets during project planning, design, and maintenance reduce delays in urban areas.

Efficiency. Moving traffic may mean adding roadway capacity, but increasingly the cost of those improvements is making technology-, program-, or service-oriented solutions more attractive. Advances in public transportation as well as intelligent signalization have made major impacts on air quality, mobility levels, and cost-effectiveness of limited transportation dollars.

A suite of strategies offers promise for Leesburg and its people to keep the promise of the Transportation Goal Statement. Some of these strategies are shown at right.

Transportation Strategies

Issue	Strategies
Safety	• VisionZero Policy • Roundabouts • Design Strategies • Maintenance • Lighting
Congestion	• Intelligent Signals • Car-Based Technology
Alternatives	• Complete Street Policies / Design • Lifestyle Trends • Building / City Design Strategies • Transit-Based Technology • Car-Sharing • Information-Based Solutions • Telecommuting

Conditions Today

Crashes

The Leesburg area, as the most populous municipality in Loudon County, is also typically the area with the most vehicular crashes. There is no temporal or characteristic pattern but Market Street, downtown (low-speed crashes), and Route 7 stand out as problem geographic areas for vehicular crashes.

Figure 3 shows major crash locations for a recent one-year period.

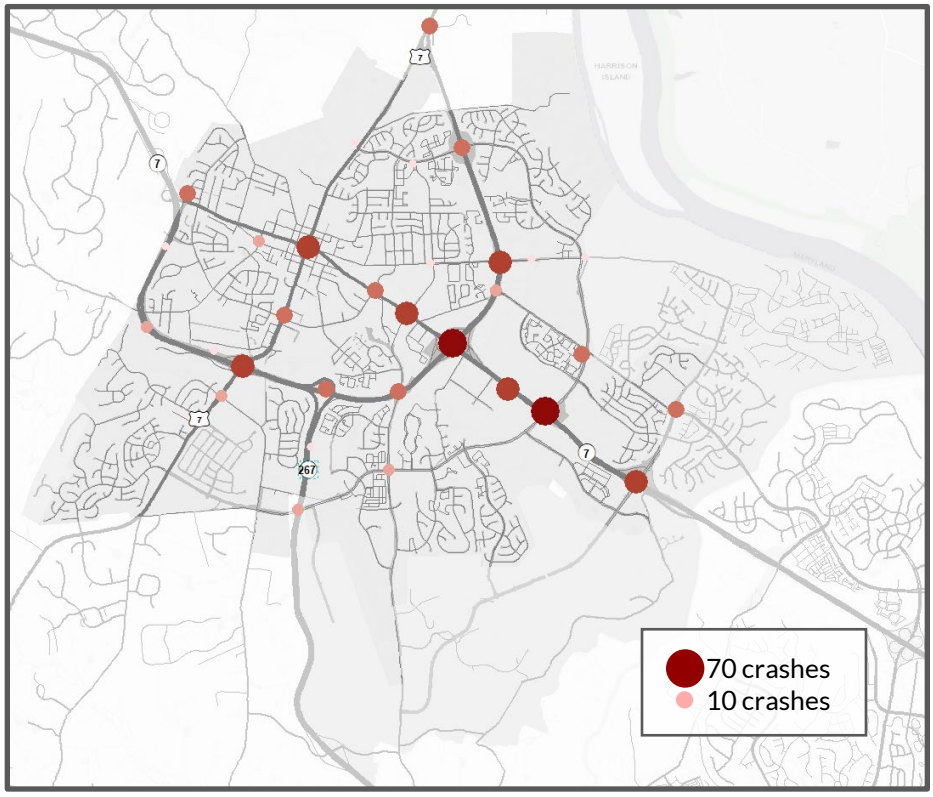


Figure 3. Crashes, 2018 (*source: VDOT, summarized by volume*)

Congestion

The current state of traffic congestion is represented by the two images (morning peak, top, and evening peak period, bottom) on the next page in Figure 4. Notable segments of roadway experiencing regular, recurring traffic congestion are:

- Route 7, particularly northbound evening from the intersection of the Leesburg Bypass;
- East Market Street, particularly east of Catoctin Circle Drive; and
- Dulles Greenway and The Leesburg Bypass interchange area.

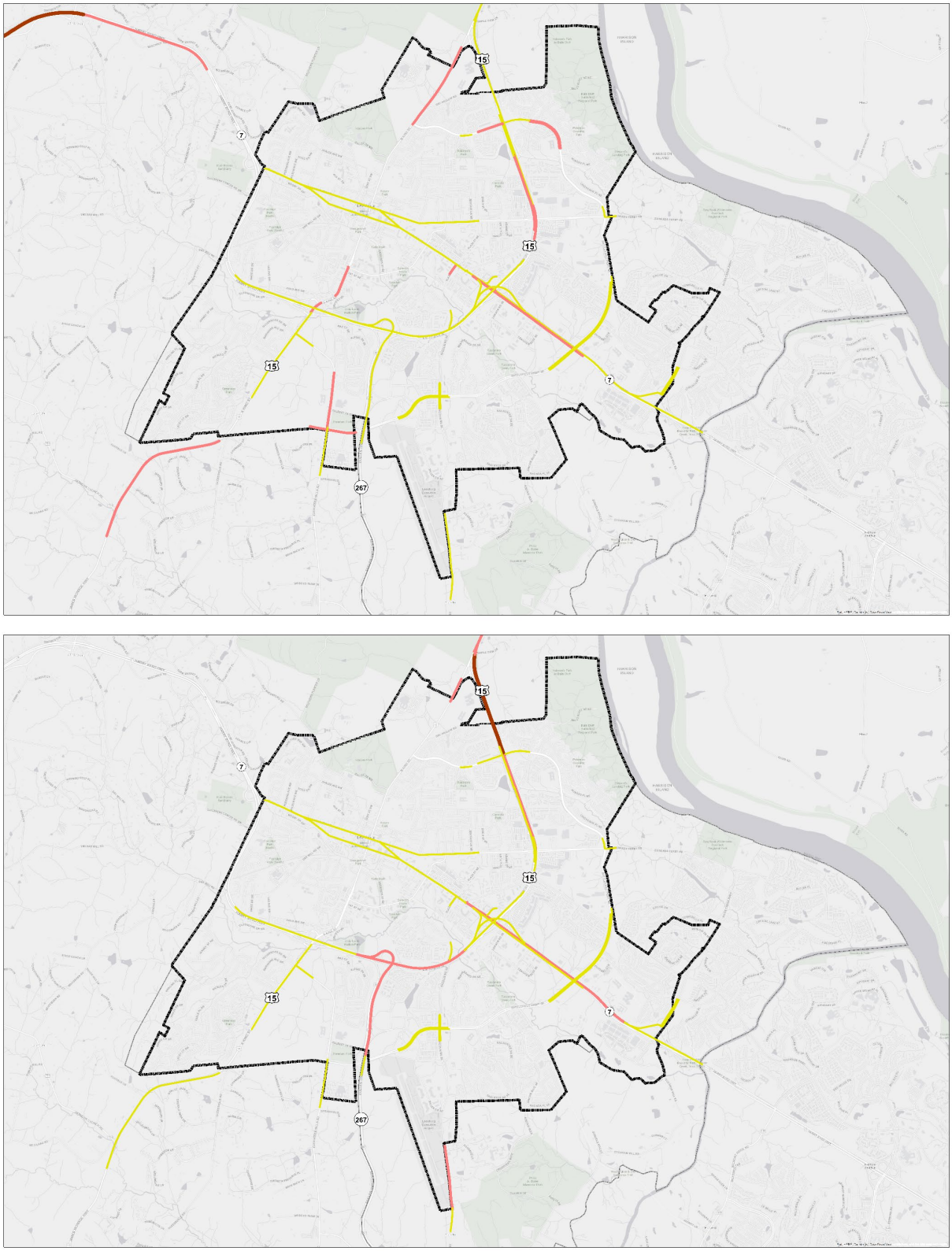


Figure 4. Congestion in Morning (top) and Evening Peak Periods (*source: Google Maps*)

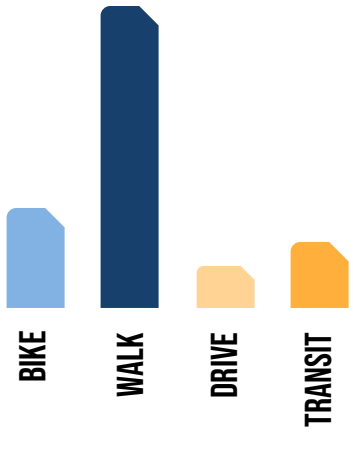
Programmed Projects

The Virginia Department of Transportation (VDOT) publishes a statewide transportation improvement program (STIP) every three years. The STIP presents a program of projects in Leesburg that are or will use state and federal funds over the next four years; locally administered projects are also indicated. Table 1 describes the current projects programmed by VDOT in the STIP at the time of this writing.

Street	Project Administrator	Route Number	Project Purpose
Belmont Ridge Rd	VDOT	659	Linked to UPC 8828 for PE only; construct to four lanes
Edwards Ferry / US 15	VDOT	US 15	Design of Edwards Ferry Road and Fort Evans Road connections with Leesburg Bypass.
Route 15 Bypass	VDOT	15	Determine how best to improve traffic operations and safety via preparation of an Interchange Justification Report (IJR) at the intersections along Rte. 15 Bypass with Edwards Ferry Road and Fort Evans Road.
Harry Byrd Highway	Locally	6007	Improve traffic flow in the area and to alleviate traffic delays at the intersection of Route 7 and Route 659 caused by turning movements, substandard geometry and roadway width on Route 659.
South King Street	Locally	15	Increase capacity and improve safety by widening the road. PE under UPC 17687; RoW under UPC 95614
East Market Street	VDOT	7	Improvement of traffic operations via replacement of the existing at-grade intersection with an interchange. Under construction currently.
Battlefield Pkwy	Leesburg		Battlefield Pkwy shared-use path across Route 15 Bypass
James Monroe Highway	Leesburg	15	Implement improvement recommendations from the Route 15 Congestion Report; widen Route 15 from two to four lanes

Table 1. VDOT Programmed Projects (source: Virginia State Transportation Improvement Program)

The proportion of people at the Community Ideas Exchange Workshop that expressed how they wanted to get to and from different places around Leesburg.



SUMMARY OF PROJECTS AND IMPACTS

The great majority of comments received during the public engagement process for the Town Plan Update referenced better walking conditions. Additional improvements to some areas of traffic congestion, cycling improvements, and transit connectivity / improvements were also cited. The project recommendations reflect the same emphasis on personal mobility, but also include a number of concepts for improving all modes of travel. It is worth noting that Leesburg and northern Virginia generally have traffic congestion because people want to be here, which is a sign of success although it can be bad for the individual (see text box at right for more examples of conditions that are generally good but can be individually bad). The project team heard repeatedly that traffic congestion in Leesburg is relatively light compared to where some people originated. People also talked about building on the great atmosphere and extending the walk- and bike-ability of the Town outside of downtown, and connecting places to downtown, commercial centers, and neighborhoods through improved walking connections.

Examples of Things that are Good Generally but Bad when Experienced Personally

Good for Us	Bad for Me
There are always hot dog buns, soymilk, and cereal in the store every time we go to the store.	I pay more when there is higher demand for stuff, from Uber rides to plane tickets to gasoline.
A healthy, dynamic place has lots of people and things moving around creating new opportunities.	Traffic is terrible, and I hate it. Why can't there be more travel options (so that other people can take them?)
Getting flu shots, vaccinations, and preventive health care makes populations healthier, more productive, and happier for longer.	Waiting at this doctor's office takes too much time – why can't I order flu shots on-line? I also wish she would cover her mouth when she coughs.
We can talk to anyone from our car!	When I'm walking or biking I wish drivers were just driving.

The project team and community engagement process, as well as a review of past, adopted plans, helped discover a number of projects that can improve the objectives of safety, connectivity, mobility, and a healthy slate of alternatives. These projects originate from a high-level assessment of the issues presented at public forums and some superficial technical assessments. Additional studies, including modeling, microsimulation, environmental screening, and community input will be required to bring many of these recommendations to reality, as well as an objective quantification of start-up costs, ongoing operations/maintenance costs, and rights-of-way requirements to produce an accurate cost estimate. All recommendations are conceptual unless otherwise noted and will require further investigation in both their planning and design to incorporate environmental impact minimization, permitting, community interests, and other requirements.

The Town of Leesburg is required by state statute and the policies of the Virginia Department of Transportation to consider multiple effects of any transportation project that may have a negative impact on traffic congestion for state-maintained roadways. Additionally, the Town (or any community inside VDOT's Northern District 8) on the impacts of access to or along likely emergency evacuation routes (which for the purposes of this plan are assumed to be the same as or similar to designated truck

routes). This section summarizes transportation project recommendations contained in the Town Plan along five dimensions (safety/security, connectivity/reliability, traffic congestion relief, slowing too-fast traffic, and improving aesthetics).

Table 2 and Figure 5 on the following pages summarize the project recommendations, with reference codes for the table as shown below.

map	PROJECT RECOMMENDATION	SS	CR	TC	ST	IA	SM	EE	COST ($000S)
1	Reconnect Fort Evans Road	●	●			●	II	II	$20,440
2	Battlefield to Bypass Roadway & Pedestrian Imps.	●	●	●		●	II	II	$1,030
3	Route 7 (East Market) To Bypass(es)		●			●	◠	◠	$5,348
4	Davis Avenue / Isaac Walton Park Area Improvements				●	●	II	II	$1,623
5	King Street / North Street Intersection Safety Improvements	●	●			●	II	II	$493
6	Oaklawn/Hope Pedestrian Improvements		●			●	II	II	$1,110
7	Harrison Street SE & Leesburg Bypass Pedestrian Improvements	●	●			●	II	II	$1,985
8	Sycolin Road SE Pedestrian Improvements (phase I and II)	●	●			●	II	II	$594
9	South King Street Pedestrian Improvements (Leesburg Bypass)	●	●			●	II	II	$854
10	Cool Spring Safe Routes to School Pedestrian Infrastructure Project	●	●		●	●	II	II	$2,101
11	Battlefield Parkway SE Pedestrian Improvements		●			●	II	II	$2,856
12	Market Street Redesign (Loudon Street to Plaza Street)	●			●	●	II	II	$5,906
13	Catoctin Circle Drive Redesign (E. Market Street to Crestwood)		●		●	●	II	II	$14,157
14	Harrison Street SE Cycling Improvements (W&OD to Gateway Dr)	●	●			●	II	II	$440
15	Harrison Street NE Cycling Imps. (North Street NE to W&OD)		●			●	II	II	$623
16	Leesburg Bypass SW Multiuse Path (S. King Street to W&OD Trail)		●			●	II	II	$3,689
17	South King Street Pedestrian Imps. (Leesburg Bypass to W&OD)	●	●		●	●	II	II	$693
18	New Location Roadway (Route 15 to Route 7 NW) (not mapped)		●	●			◠	◠	$119,891
19	Interchange at Leesburg Bypass and Battlefield Parkway		●	●			II	II	$91,124
20	Multiuse Path Connection between Sycolin Rd and W&OD Trail	●	●			●	II	II	$963
21	Leesburg Bypass NE Pedestrian Improvements	●	●			●	II	II	$3,230
22	Transit: Deploy Micro-Mobility in Leesburg (not mapped)		●				◠	◠	Variable
23	Transit: Improve Connections (various locations, some not mapped)		●				◠	◠	Variable
24	Express Route to Ashburn Station (not mapped)		●	●			◠	◠	$350

Table 2. Project Recommendation Summary Table

SS: Safety / Security
CR: Connectivity / Reliability
TC: Traffic Congestion Relief
ST: Slow Too-Fast Traffic
IA: Improve Aesthetics

SM: Impact to State-Maintained Road (◠Positive, II Neutral, ◡Negative)
EE: Impact to Evacuation Route (◠Positive, II Neutral, ◡Negative)

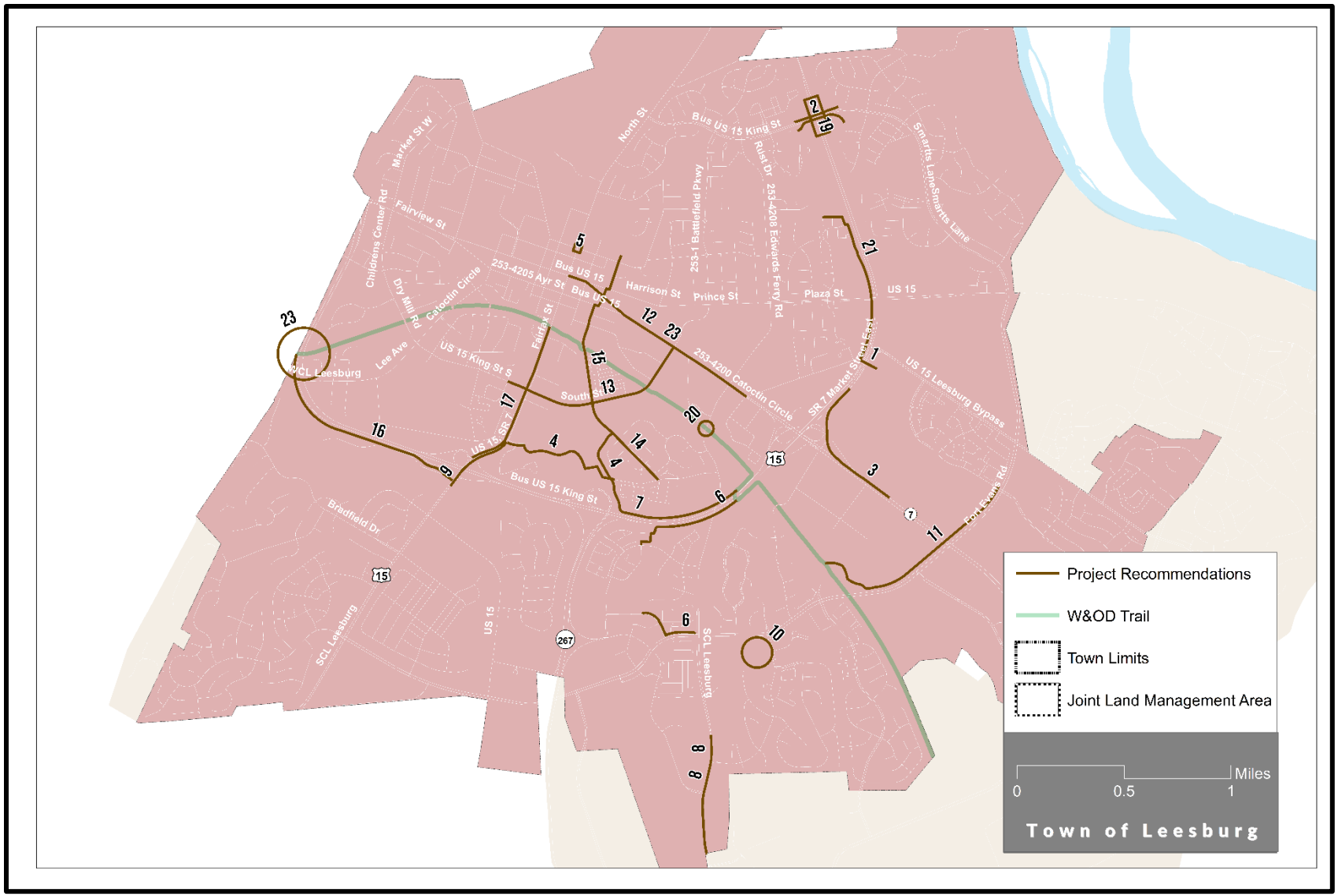


Figure 5. Project Recommendations Map

The project recommendations detailed in the paragraphs that follow are not shown in any particular order. They are presented with "keys" that quickly describe the major benefits of the proposal (see description at right).

1. Reconnect Fort Evans Road

Justification: Repeatedly, the project team heard the need to increase the "permeability" of the Bypass for traffic, including foot traffic. The connection would primarily serve traffic with local origins and destinations, but have important impacts for increasing reliability, congestion, and travel times on this and other, nearby roadways.

Description: The connection of Fort Evans Road the arterial to Fort Evans Road the minor arterial west of the Bypass can be done by routing through the Outlet shops (a low-speed, lower-volume connection) or by reconstructing the current interchange (higher-cost, higher-volume option). Regardless of the option chosen it (1) needs further study and design, and (2) has to incorporate walking and biking facilities. This project is different than the existing VDOT project 0015-253-306, which includes the interchange of US 15 / Edwards Ferry Road to the north, specifically in that it calls for the reconnection of Fort Evans Road across US 15 and then access to Market Street.

2. Battlefield to Bypass Pedestrian Improvements

Justification: Traffic conditions in this location are worsened by a four-lane roadway transitioning to two lanes on Route 15 going towards Maryland – a scenic byway with an important bridge over the Potomac River that is unlikely to be widened soon. As noted, getting people in cars and on foot through the barrier of the Bypass is important, as is improving safety at this moderately high-crash location. This project complements the north-side improvements programmed for construction in 2020 with a south-side trail and crossing, likely concurrent with the development of an interchange to replace the intersection (refer to recommendation #19).

Description: The intersection at this location is currently at-grade and serves 38,000 cars per day. The interchange recommendation (refer to recommendation #19) should also accommodate this south-side pedestrian improvement. VDOT, as of this writing is preparing to construct a pedestrian route on the north side of the existing intersection as well as make drainage improvements under the west approach (VDOT Project #U000-253-337).

3. Route 7 (East Market) to Bypass (es)

Justification: Backups occur in the westbound direction daily on Route 7 heading into Leesburg's heart, generally caused by insufficient capacity on the right-turning movements at the Bypass and Battlefield Parkway. Better signage has also been identified for wayfinding purposes.

Description: A second northbound ramp could be constructed to pull traffic off of Market Street faster; better approach signage starting earlier would be an immediate enhancement. Additional conceptual design and microsimulation of traffic flows would support this option, but there appears to be sufficient right-of-way currently to accommodate this capacity improvement although redesigning the wing wall on the structure for the flyover on the Bypass is likely required. The Battlefield Parkway right-turn could be improved in several ways involving a higher-speed movement not impeded by the signal or the addition of a second right-turn lane. While an interchange is possible here, the spacing would place three interchanges within 1.7 miles of each other, which isn't ideal.

4. Davis Avenue / Isaac Walton Park Area Improvements

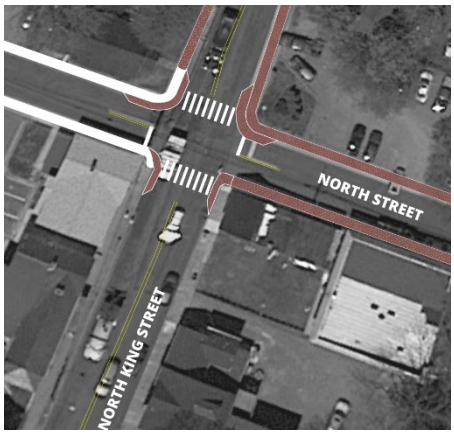
Justification: Improve connectivity in a more-recent-era street layout that traditionally did not prioritize connections. Parks and neighborhoods are nearby, with the potential to pull local traffic off of major arterials (Catoctin Circle and Leesburg Bypass) to provide a lower-traffic alternative.

Description: Private development is moving forward to connect Davis Avenue to Gateway Drive; it will have a minimum 8' (preferably 10') multi-use path (MUP) as well. The second project recommendation in this area is to create definitive outcome for the possible extension of the Dulles Greenway (a toll road) to Harrison Street. This connection may be hard to justify from a cost-feasibility standpoint and will introduce higher traffic volumes adjacent to existing and proposed residences (and potentially increase the viability of downtown as a through route for north-south traffic). Regardless, the right-of-way reserved in this area is valuable and could be used for a quality multi-purpose path (MUP), especially if the safe and separated-grade crossing of the Bypass can occur (refer to Recommendation #7).

5. Historic District Intersection Safety Improvements

Justification: The historic district and its tightly knit street system work together extremely well to produce the iconic heart of Leesburg. While the King / North street intersection was used as an example, other intersections have issues with small turning radii (and curb run-ups), narrow rights-of-way, and poor visibility.

Description: First and foremost, the intersections in the historic district contribute to the feel of the downtown. Additional traffic signals are not particularly recommended, although they will likely reduce angle collisions from turning movements that have poor sight lines now. A context-sensitive solution, and one that would improve walking, slow cars, and reinforce the desired local emphasis for downtown streets, would be the introduction of "bump outs" or pedestrian extensions. Extending the stop bar on the east leg also improves sight distances.



6. Oaklawn/Hope Pedestrian Improvements

Justification: Improving the connectivity through the newer parts of town close to Battlefield Parkway and the Leesburg Bypass includes not only improvements within Catoctin Circle or downtown, but also closer to the periphery of these major arterials.

Description: Widening the greenway from the intersection of Sycolin/Battlefield to and up Oaklawn Drive to a minimum of 8' wide can occur as the pavement begins to need replacement. The existing trails around the pond stop at Hope Parkway; connecting across Hope Parkway to a new location greenway (600') bounding the south side of the Leesburg Bypass will reach the west side multi-use path on Sycolin Road and its crossing of the Leesburg Bypass (approximately 1,200'). A switchback path can help move pedestrians and cyclists from the Leesburg Bypass grade up to the grade of Sycolin Road (approximately 25' in height) to make the Leesburg Bypass crossing on Sycolin Road.

7. Harrison Street SE and Leesburg Bypass (Central) Pedestrian Improvements

Justification: This project links with Project Recommendation #6 to facilitate movement through the barriers presented by the major arterials of the Leesburg Bypass and Catoctin Circle. These circumferential highways, according to comments received from numerous stakeholders, present serious obstacles to walking and biking trip-making into the core of downtown, schools, and commercial areas.

Description: A different recommendation (Program/Policy Recommendation #3) discusses a definitive study of the extension of Harrison Street SE to the Dulles Greenway, but regardless of whether or not a roadway is involved, the connection from Catoctin Circle to the Leesburg Bypass (2,400') and continuing on the north side of the Leesburg Bypass would complete a "gap" segment on the north side of the bypass (2,300'). This action would increase pedestrian connectivity around the barrier of the bypass, facilitating pedestrian and bicycle movements to Sycolin Road and the overpass and multiuse path that already exist over the Leesburg Bypass.

8. Sycolin Road SE Pedestrian Improvements

Justification: Connecting this future area of development with the rest of the pedestrian network in town can help bring new and old parts of the community together, reinforcing the walk- and bike-oriented tapestry well removed from the historic downtown.

Description: Finishing the short (1,100') segment of the east-side multiuse path to Tavistock Drive SE is facilitated by ample setbacks to existing parking areas and undeveloped lands. Improving pedestrian crossing conditions at Tavistock Drive/Sycolin is also recommended (pedestrian phase, crosswalks), as is the possible purchase of the northeast corner parcel from Virginia Power & Light (future park or neighborhood commercial, excluding the existing parking area). A second phase would continue the east side multiuse path from Tavistock Drive SE to north of Loudoun Center Place (2,100') and can be supported by private development actions. Bolen Park and its ballfields, the Leesburg Executive Airport, and Leesburg's nearest park-and-ride stop would be connected with this second phase of the Sycolin Road SE multiuse path.

9. South King Street Pedestrian Improvements (Leesburg Bypass)

Justification: An important crossing of the Leesburg Bypass on its west end, the underpass shared with South King Street satisfies the need to connect newer neighborhoods to the south (Linden Hill, Greenway Farm) inside Catoctin Circle and then to downtown less than a mile away – an easy bike ride when there are facilities to make the trip happen.

Description: The underpass of the Leesburg Bypass at South King Street is nicely equipped with a barrier-protected multi-use path on the west side. However, the east side can be readily improved as well, including a vertical barrier (fencing) to match that on the west side (Figure 6). Additionally, more lighting under the bridge would be a welcome security and safety improvement.

Figure 6. South King Street Underpass w/Leesburg Bypass Now (left) and Recommended (right)

10. Safe Routes to School Pedestrian Infrastructure Project

Justification: Schools in Leesburg are often fairly "walkable." People told us not to focus strictly on downtown or inside Catoctin Circle, but also to bring walkability to other areas that didn't benefit from historical grid patterns of narrow streets, so schools like Cool Springs Elementary make good pilot projects.

Description: Although this recommendation would potentially for any school in Leesburg, Cool Springs could make a good pilot project. Tavistock Drive is mostly a two-lane roadway and posted at 25mph throughout. The current design of 12-foot travel lanes and turning lanes even at minor intersections is indicative of a much higher design speed, in spite of the purely low- to moderate-density neighborhoods, schools, and civic uses nearby. This recommendation pairs with a safe routes to school policy/program recommendation (Policy & Program Recommendation #4) that would capitalize on existing walking trails and neighborhood-level proximity of the school to its neighbors, creating a more clearly defined walk-first context. Redesigning the intersections of Tavistock Drive with Battlefield Parkway, Somerset Park Drive, and MacAlister Drive to include (tree-) planted medians; painting/signing bicycle lanes throughout Tavistock Drive; constructing buffered pedestrian crossings; and installing a new, pedestrian-activated signal at MacAlister Drive are some recommendations that could be refined during a design exercise. The Safe Routes to School (SRTS) Infrastructure Grant Program with VDOT could be applied for in 2021 after a preliminary design and neighborhood involvement exercise has been completed to help fund the improvements.

12. Battlefield Parkway SE Pedestrian Improvements

Justification: The Battlefield Parkway takes advantage of its wide right-of-way by dedicating a portion of it to pedestrians, cyclists, and other active mode users. Filling in the remaining gap segments is beneficial to travel in the less-well-connected and newer areas of town that are near areas likely to grow faster.

Description: Connect the north-side multiuse path that exists now from W&OD Trail to the existing multiuse path on the west side of Potomac Station Drive (4,700'). This route also connects with the Russell Branch Parkway multiuse path; hence, improvements to the pedestrian crossing treatments at the Battlefield Parkway / Russell Branch Drive intersection should be constructed at the same time.

13. Market Street Redesign (Loudon Street to Plaza Street)

Justification: Depending on when land uses along a street first developed, the product can look very much like East Market Street: driveways leading to parking areas and generic retail. While reliable retail produces income for people and government functions alike, it doesn't have to present the face of strip retail that doesn't articulate the gateway that Market Street should be serving or creating experiential, interesting retail development necessary to survive in an increasingly challenging marketplace for shopping. Reducing crashes in this corridor from left-turn movements – and the delays created by those crashes – is another important objective.

Description: The right-of-way in Market Street allows for a planted center median like the one show in Figure 7. Openings allow for circulation to adjacent parcels, otherwise making connections off of Market Street and between parking areas create full access opportunities. This recommendation complements Project Recommendation #13, the redesign of Catoctin Circle Drive, and should include a beautification and traffic safety improvement to the Catoctin / Market intersection. All of this would also support an eventual redevelopment of the Leesburg Plaza retail center at the northeast corner of this intersection.

Figure 7. Market Street Redesign (to Catoctin Circle Dr.)

14. Catoctin Circle Redesign (E. Market Street to Crestwood Street SW)

Justification: Catoctin has presented one of the primary "mental barriers" between the old and new Leesburg. By redesigning the street to better fit the street's access-over-mobility purpose, facilitation of commercial redevelopment, walking, biking, and transit access; and reconnecting communities on both sides can be facilitated.

Description: Catoctin Circle is currently posted at a 25mph speed limit but is designed for a much higher speed; any redesign should support the physical signals for this lower speed limit given the safety benefits from reducing speeds. The redesign can and should include pedestrian "bump outs," pedestrian-scale lighting, streetscaping, and wider pedestrian and biking accommodations as well as some additional on-street parking (Figure 8). Improved crossing treatments at intersections with East Market Street (see Project Recommendation #12), minor street intersections, and the W&OD Trail crossing are also recommended to be undertaken during the improvement project.

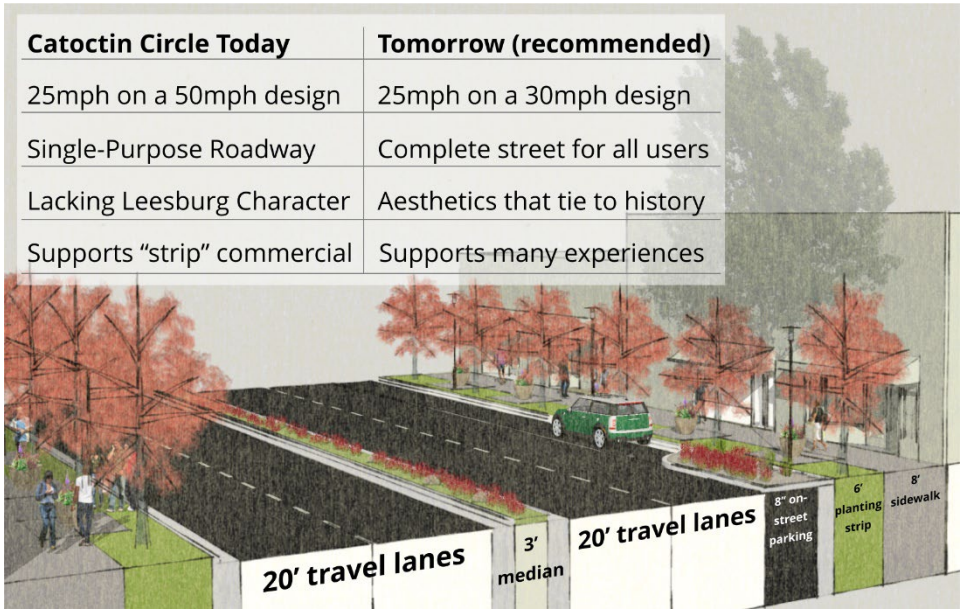


Figure 8. Catoctin Circle Proposed Cross-Section (typical)

14. Harrison Street SE Cycling Improvements (W&OD Trail to Gateway Drive)

Justification: The southern reach of Harrison Street connects (mostly) residential properties to Catoctin Circle and to existing and proposed walking and biking trails to the core of downtown (refer to Project Recommendation #15).

Description: The existing cross-section of Harrison Street SE can typically support bicycle lanes, being 35 feet wide for two lanes and parking (the two-foot gutterpan is also used for parking now, which adds another four feet to the total cross-section width). By removing parking just on one side, bicycle lanes can be marked and signed on both sides including additional width for the bike lane that is adjacent to parked cars to avoid "dooring" situations. The total length is approximately 3,900'. Part of the improvement should be redesigning the Catoctin Circle Drive intersection to conform with the earlier recommendation (Project Recommendation #13) .

15. Harrison Street NE Cycling Improvements (North Street NE to W&OD Trail)

Justification: An identified priority by local bicycling advocates, this trail was brought to the attention of the project team during and prior to the planning charrette. The trail would connect downtown, including the new parking garage, to county and local government offices and then to the W&OD Trail.

Description: A combination of on-street bicycle lanes and intersection crossing improvements can make this project work, even in the short term. The section between North Street NE and Edwards Ferry Road NE would consist of pavement markings (shared lane, or sharrow, markings); immediately to the south the crossing of Edwards Ferry Road NE to Loudoun Street SE would likely traverse parking areas, possibly including the plaza in the Loudoun County government complex. The next three blocks to the south (from Loudoun Street SE to Depot Street and the W&OD Trail) would ideally see the lightly used parking removed on one side of the street to accommodate bicycle lanes. The total length of the project is approximately 3,000'; see also Project Recommendation #14 for the continuation of the on-street bicycle project.

16. Leesburg Bypass SW Multiuse Path (South King Street to W&OD Trail)

Justification: A second project brought to the attention of the planning project team during focus group meetings is this proposed, off-road connection hugging the south side of the Leesburg Bypass (Harry Byrd Highway). The project fills a significant gap in the walking / biking network and connects neighborhoods to the southeast with the W&OD Trail to the northwest.

Description: The 1.04-mile length of the project would consist of 10-foot-wide asphalt and two-foot clear zone on either side (the width can be narrowed to 8' in short sections where the right-of-way is constrained. A short "stub" connection with the Tuscarora Creek apartments connects this development as well. Some challenges with sharing road right-of-way with VDOT as well as overhead utilities are expected.

17. South King Street Pedestrian Improvements (Leesburg Bypass to W&OD Trail)

Justification: This project addresses sidewalk gaps and design shortcomings between the Leesburg Bypass and the W&OD Trail (4,300'), resolving connectivity, safety, and (potentially) aesthetic needs in this busy corridor.

Description: Sidewalk exists along most of the length of this corridor (although not all of it), but completing two gaps in the sidewalk as well as improving intersection and driveway crossings are important upgrades in a busy, auto-centric corridor that is a gateway to the heart of town. The following set of improvements, which could be augmented by a more detailed study later, include:

- Complete two gaps in the sidewalk network (attaching to Project Recommendation #9) at the south end (700' total);
- Improve crossing safety and visibility at the westbound/northbound Bypass ramp, Food Lion driveways (eliminate high-speed entrance on northmost driveway), East First Street SE, Catoctin Circle, install flashing signal in advance of the W&OD Trail crossing; and
- A more extensive project would be the redesign of the 700' block from the residential section of South King Street to Catoctin Circle Drive to narrow the road from six lanes to four, extend brick surface sidewalk and pedestrian-scale lighting present to the north, and

widen the median to allow for tree-planted landscaping. Note: these elements are not included in the opinion of probable cost.

18. New Location Roadway (Route 15 to Route 7 NW)

Justification: The heaviest recurring congestion issues that have little chance to be resolved through traditional widening or capacity enhancements to existing roads is the Route 15 corridor leading north from the Leesburg Bypass. This new location roadway would tie the two major north arteries together, allowing for distribution of traffic on more than one road.

Description: A detailed alternatives study is required to determine the optimal and least-damaging route (between 2.5 and 3.5 miles in length) for any new roadway, and this recommendation would likely have to consider route options both to the north and south of historic Morvern Park. The latter route might feasibly tie to Route 9 on the west end, taking the route on a longer path. Serious consideration to the trade-offs of impacts to parks, historic sites, high school, residences, and proximity (or redesign) of existing interchanges at both ends is necessary.

19. Interchange at Leesburg Bypass and Battlefield Parkway

Justification: The other important option (refer to Project Recommendation #18) to moving people through the north end of Route 15 is to replace the intersection of Route (Leesburg Bypass) and Battlefield Parkway NE with a full interchange. This area was the first- or second-most-cited congestion problem in Leesburg, the other being East Market Street.

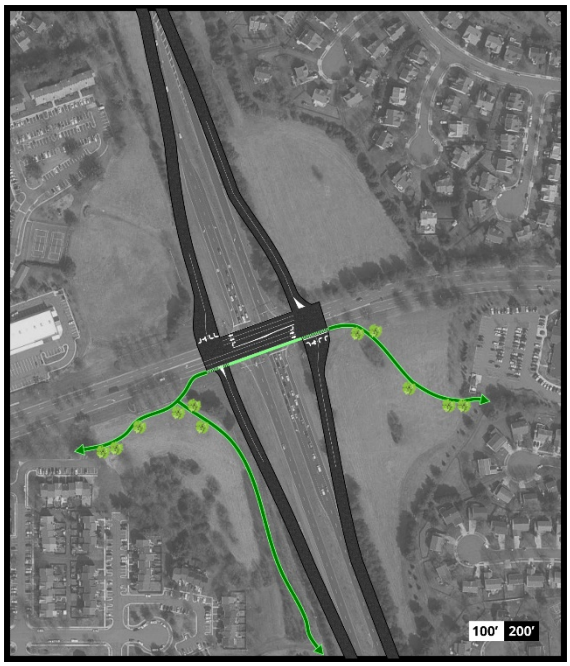


Figure 9. Rendering of Compressed Diamond Interchange

Description: The current intersection operates with every turning movement "at grade;" that is, whenever a car is turning other cars have to wait for it (after the car that is turning had to wait to turn). All of this turning creates a lot of delays. The location currently has unbuilt land that can accommodate several different interchange types without taking a single home, including a compressed diamond (Figure 9). With additional expense, heavy turning movements can be accommodated with more structures. It is important to accommodate pedestrian and bicycle movements at this location as well as tie into existing trail networks on both sides of the Leesburg Bypass. The Town has been actively pursuing funds for an Interchange Justification Report as of this writing, but no funds for design or construction have been identified.

20. Multiuse Path Connection from/to Sycolin Road with W&OD Trail

Justification: Identified by the public and cycling advocacy participants, this connection allows for easy and legal access between Sycolin / Plaza Road and the W&OD Trail. This connection to Sycolin Road's adjacent sidewalks and trails also means connections to the north and south, some of which are adjacent retail and other commercial destinations.

Description: There are a number of options available to make this connection on either side of Sycolin Road. One interesting alternative (Figure 10) is to upgrade the pavement on and make streetscaping improvements to Sycolin Road SE in front of Southern Electrical Services Company, then extending the pavement to a new pedestrian footbridge crossing of Tuscarora Creek before continuing up to meet the grade of Sycolin Road (new MUP distance is 280').

Figure 10. Existing W&OD Trail / Sycolin Road Overpass (left) and Rendering of Multiuse Path

21. Leesburg Bypass NE Pedestrian Improvements

Justification: The northeast section of the Leesburg Bypass forms one side of a "Bermuda Triangle" with poor accessibility across the Bypass, Edwards Ferry Road, and North King Street. Several commenters expressed a desire to move more safely and easily to work, shopping, and other destinations. It is worth noting that this triangular area represents a lower-than-average income population for Leesburg; is one of the few areas of this size that does not have a grocery store; and increasing pedestrian, bicycle, and transit mobility are important transportation concerns.

Description: The limits of this proposed multiuse path extend along the Leesburg Bypass approximately 1,250' from north of Edwards Ferry Road to Fort Evans Road (refer also to Project Recommendation #1) but may extend further north (additional 1,800') to reach an existing trail on the northwest side of the Shenandoah Square shopping center. A rare opportunity, the currently planned interchange at Edwards Ferry Road and the Leesburg Bypass needs to incorporate pedestrian and bicycle crossing provisions in both directions (across Edwards Ferry Road as well as across the Leesburg Bypass).

22. Transit: Deploy Micro-Mobility in Leesburg

Justification: The success of the Cartwheels golf cart-based personal transportation service (see textbox) has been informative and encouraging of other, similar efforts. Micro-Mobility works with the public sector to expand that type of mobility option, which can reach Leesburg's suburban residential and commercial centers. Creating "distributed" transit options in an era where a global pandemic is actively changing perceptions about congregating in large groups also makes sense.

Description: There are a lot of formulas for proceeding forward with additional or expanded micro-mobility initiatives. Typically, these options include bringing people to an existing "trunk" fixed-route transit service (e.g., Leesburg-to-Dulles Express Route); creating deviated fixed-route transit service (the bus deviates from its normal route up to one mile to do pick-ups); and direct services (the trip both begins and ends in a micro-mobility vehicle). Loudoun County Transit has expressed an interest in further developing MaaS options (source: email from Scott Gross, Loudoun County Transit, dated 2.25.2020) which might serve lower-density areas inside Leesburg better than some of the poorer-performing, fixed-route transit services in place now. Note that while some communities have enjoyed private scooter services as a complement to address first-mile/last-mile issues getting to/from regular transit routes, park-and-ride lots, or short trips, having a sound regulatory framework in place has proved to be important. Finally, Fairfax County has implemented a ride cost-reduction program for disabled residents in partnership with the Lyft company. Although originally explored for Loudoun County as well, funding and funding consistency necessary for long-term programming of services that people come to depend on were fatal obstacles to implementation (source: conversation with Lynn Reed, Loudoun Area Agency on Aging). This program could be reexamined, and perhaps even piloted within the denser and therefore more cost-effective Leesburg planning area.

23. Transit: Improve Connections

Justification: Several commenters expressed a desire to improve connections to Dulles Airport and directly into Washington, DC. As negotiating traffic congestion becomes more problematic, implementing solutions for longer commute trips will become increasingly important.

Description: Working with Loudoun County transit again, this recommendation may involve several shorter- and longer-term improvements. The Guaranteed Ride Home program is a great service for bus patrons and deserves recognition, as does the interactive local bus service map on the Loudoun Transit website.

- Modifying existing route 400 to include a new park-and-ride on the west side of Leesburg would be an important addition (perhaps in lieu of the previous bullet / recommendation).
- Loudoun Transit, like many larger transit companies, has implemented a real-time arrival information application. Extending this app to serve the local bus routes in Leesburg would be a great addition to the local service. (Also: the links from the stop points on the interactive map could link more directly to route information.)
- To make the current or future express routes more productive, they have to be time-competitive or even faster compared to a similar automobile trip. Implementing bus prioritization (which can be coupled with emergency vehicle signal prioritization), dedicated lanes, and smart routing technologies can help with making transit a more attractive option.
- Continuing to improve local bus service, including upgrades to stop amenities, is important to the riders that depend on these services. The Market Street route is performing better than some others; starting with improvements to this route is suggested.

24. Transit: Express Route to Ashburn Station (Metrorail)

Justification: In the realm of transit, no comment was cited more often than connecting Leesburg to Metrorail service. Although there are no firm plans to extend Metrorail service into Leesburg proper, park-and-ride locations and express services that minimize transfer ('dwell") times are highly desirable to commuters.

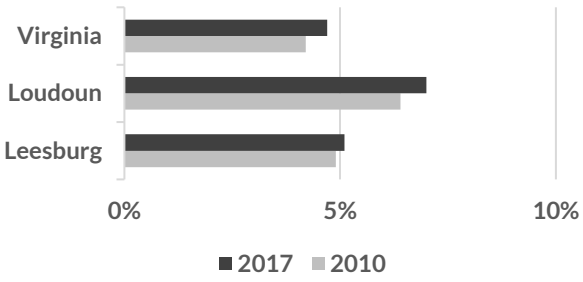
Description: Loudoun County Transit has stated that they intend (at the time of this plan's preparation) to create a new express service bus route between the County Government Center in downtown Leesburg to the new Ashburn Metrorail station (Sliver Line Extension, Phase II) after it is operational (source: email from Scott Gross, Loudoun County Transit, dated 2.25.2020). The Town needs to work with Loudoun County Transit to discuss service specifics, including the duration (times of day) of service hours in peak and off-peak on weekdays, and if there will be weekend service. The likely route might include 1-2 stops at existing park-and-ride locations, including Leesburg's park-and-ride facility, and total about 20-25 minutes in travel time.

POLICY & PROGRAM CONCEPTS

Many people will look to *Legacy Leesburg* to identify short- and long-term project recommendations or practices – particularly in the transportation element of the Plan. However, over the twenty-year life of the plan the degree of change that has and will continue to occur is likely to be the most deeply affected not by an individual project, but the ways in which infrastructure meshes with the codes, policies, practices, programs, and services of Leesburg. The following are how the project team – both staff and private consultants – have proposed to enhance and promote the objectives of the people of Leesburg.

1 | SUPPORTING THE TELECOMMUTERS

Transportation isn't only about cars and bikes and buses. People that work from home all week or part of the week are numerous in Leesburg and getting more so as time goes on, following trends well-established in Loudoun County and Virginia as a whole. Increasingly difficult traffic conditions are an ally to travel options. To make it happen, Leesburg can encourage co-working spaces or providing meeting and wi-fi hot spot "flex" space, great for filling up struggling retail spaces. Track public and private working places (e.g., coffee shops, libraries, and so on) to help advertise this important product to potential workers.



Adult Employees Working from Home
(source: US Census Five-Year Estimates, 2017)

2 | CRASH DIET

One place where being number one isn't good is having the highest number of crashes in Loudon County. Leesburg and the surrounding area have this distinction, but crashes aren't accidents and they are preventable with effort. Leesburg can join a growing number of cities by adopting a VisionZero (as in zero fatalities or crashes) policy: design projects put safety first when determining speeds, intersection crossing treatments, staff training, and planning / designing streets, multi-use paths (MUPs), sidewalks, school loading areas, and bus stops. A second beneficial policy is creating and adopting a Complete Street policy, which has also been accomplished by a large number of municipalities and states. The first resource is the National Complete Streets Coalition, which has a number of examples and showcases the benefits of adopting a Complete Street policy.

Crashes in 2018 *(source: VDOT crash database)*

3 | STUDY: HARRISON STREET EXTENSION

The proposed 2000' extension of Harrison Street SE to the Dulles Greenway from Catoctin Circle has been "on the books" for quite some time, with right-of-way preserved sufficient to make it happen in some cases. A small area or corridor study is recommended to resolve the issues surrounding this potential project including cost, feasibility (steep grades make the design challenging, as does the private status of the Dulles Greenway and interchange ramps), noise remediation, traffic benefits/impacts, and the potential to create a multiuse path in the right-of-way (see also project recommendation #7).

4 | SRTS PROGRAM FOR LEESBURG SCHOOLS

The Safe Routes to School (SRTS) Program is not just about safety, it is also about options and traffic. Much of the local traffic in Leesburg is associated with schools. The Town should work with the Loudoun County Public Schools (LCPS) to participate in this program so that it could potentially obtain grant funding from this VDOT program. Education, encouragement, and evaluation activities are partially funded by the SRTS program with grant amounts historically ranging from $5,000 to $65,000 (for multiple schools). Using a $1,000 mini-grant to help finance a walk/bike audit (which would support the final infrastructure recommendations) and conducting a walk / bike to school day are initial steps; a more aggressive version of this recommendation is to hire a SRTS Program Coordinator that would address all of the elementary and middle schools in Leesburg, developing programs with the most willing partner schools first. Loudoun County has an SRTS coordinator, so working first with the county is advisable before moving forward. Any such projects resulting from the program can have countless benefits including providing an alternative to cars, pulling cars of the street, reducing traffic, addressing safety issues and even providing new bicycle/pedestrian routes that do more than get students to school.

5 | STUDY: ONE-WAY PAIR DOWNTOWN

The possibility of converting Market and Loudoun streets from two-way to one-way operations has been discussed previously. Operationally, there is little to prevent this action from happening: there are good transition points at either end that already exist, and numerous "crossover" streets in-between. The benefits would be fewer conflict points and crashes (and less delay resulting from crashes), faster throughput of cars, and simplified operations, including at the only two signalized intersections with King Street. However, the town will need to understand what the priorities really are for downtown to determine if the expense is worthwhile, and just how much expense would be applied to the project. If wider sidewalks, streetscaping, multiuse paths, and other amenities are included then the price goes up quickly and the typical travel speeds likely go down from a simplified application of paint and signage. The recommendation therefore is to do a visualization-heavy study that clearly identifies priorities for these streets so that the correct recommendation – including the

possibility of doing nothing – is produced. Ideally, a temporary "pilot" application would be part of this overall study.

6 | PARKING TECHNOLOGY

As the second large parking deck is coming into existence as of this writing, Leesburg should consider creating an on-line and telephone application ("app") to facilitate finding parking spaces. There is already considerable "searching" behavior happening with drivers looking for spaces downtown so using technology to direct people to off-street (easy) and on-street (harder, but doable) available parking spaces will reduce congestion downtown and help out businesses.

7 | WALKABLE COMMUNITIES DESIGNATION

Being designated a walk-friendly community is well within Leesburg's reach, and singles out the town for its past and ongoing efforts to connect people and places by walking. Having such a designation is meaningful for attracting people that want to walk or bike more – and drive less. The following are the evaluation areas used in the Walk Friendly Communities application; note the overlap in some of the recommendations as well as what still remains to be completed to ensure a strong score (e.g., non-motorized count program).

COMMUNITY INFORMATION, DATA AND EVALUATION
- ✓ Pedestrian coordinator/dedicated staff
- ✓ Guiding policy statement or strategy (e.g. Vision Zero)
- ✓ Non-motorized count program
- ✓ Analysis of safety data

ENGINEERING AND DESIGN
- ✓ Sidewalk design and network coverage
- ✓ Comprehensive design guidance
- ✓ Formal traffic calming and speed management program

LAW ENFORCEMENT
- ✓ Dedicated traffic safety unit
- ✓ Targeted pedestrian safety enforcement operations
- ✓ Interdepartmental collaboration and cooperation

PLANNING AND POLICY
- ✓ Pedestrian plan with routine implementation tracking and review
- ✓ Targets for increased mode share and safety
- ✓ Complete streets policy

EDUCATION AND ENCOURAGEMENT
- ✓ Safe Routes to School programs
- ✓ Public education and safety campaigns
- ✓ Open Streets and other events

8 | INTERSECTION IMPROVEMENT PROGRAM

Complementing the project recommendation for North King / North streets is a program of intersection improvements in the historic downtown. Intersections are where people meet and talk, wait to cross a street, and interact with automobiles. The program would identify two intersections per year to address safety, lighting/security, pedestrian access, and aesthetics. Collaborations across the Public Art Commission, Residential Traffic Committee, and staff can establish guidelines and priorities.

WE HEARD YOU

In many ways, the Comprehensive Plan is the product of a blended perspective of external professionals, internal staff professionals, and the many people that we spoke with during the planning process. The following lets everyone know that we heard you talking. We present some of the most-common themes extracted from the people we worked with during the Legacy Leesburg Plan: thank you.

YOU SAID…	WE DID…
A lot of people are already working from home or commuting to an office just two days a week. I can see a lot of transportation and community benefits from strengthening this practice.	We completely agree. The number of work-from-home employees increased by 42% in Leesburg between 2010 and 2017, way faster than Loudoun County or the U.S.
The historic downtown is a major draw for everyone, but it feels disconnected from the rest of the town, especially beyond the Leesburg Bypass. It would be good to get across some of the major roads on foot or by bicycle more safely.	Several projects address reaching existing crossing locations of major arterials and propose two new crossings on the east side of the Leesburg Bypass.
Walking is a big deal in Leesburg. By far, the most responses to the question, "Where do you want to go, and how do you want to get there" was answered with walking in the answer.	The majority of the project recommendations, and several of the program / policy recommendations, positively affect the biking and walking networks in and around Leesburg.
Transit is an important transportation mode for a lot of people in Leesburg – but one of the most important public transit services requires a sizable drive to get there, and we would like to see that change.	The Plan recommends pursuing a number of transit options, including distributed transit ("mobility as a service") to accommodate the way more people are viewing public transportation. Other recommendations include a new park-and-ride facility closer to the center of town and a shuttle to get people to the nearest and new Ashburn Metrorail station.