

Final Report

McClellan Traffic Study

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Calhoun Area Metropolitan Planning Organization

McClellan Development Authority

City of Anniston

July 16, 2020



McClellan Traffic Study

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INTRODUCTION

This updated McClellan Traffic Study was initiated by the City of Anniston to address existing issues with the transportation network serving McClellan and to identify and begin planning for improvements to serve anticipated development. The study has been funded by the Calhoun Area Metropolitan Planning Organization with matching funds from the Calhoun County Economic Development Council and the McClellan Development Authority.

This report evaluates existing conditions, forecasts likely future development based on available land at McClellan, and relies on a small area traffic model to forecast future traffic and development recommendations for improvements to the transportation network.

EXISTING CONDITIONS

Current development at McClellan includes residential areas, military and federal agency compounds, light industrial uses, medical offices and clinics, and recreational uses.

Residential development is confined to the western side of McClellan and is bordered by Summeral Gate Road and Baltzell Gate Road. Former officers housing is a single family neighborhood at Buckner Circle, while mixed housing is located near State Route 21 on either side of Shipley Road. A private school and a large church are located in the Shipley Road residential area as well. Census estimates from the 2018 ACS show 688 residents in the McClellan area (Census Tract 7, Block Group 3) in 202 households.

Military and federal agency land uses include a large National Guard training center in the northern part of McClellan, with FEMA and Homeland Security facilities adjacent to the National Guard area as well as east of Bain's Gap Road in the center of the property. A private contractor occupies a large area along Halifax Avenue in the southwestern part of the former military base.

Light industrial uses are located north of Berman Road and extend to the north along the west side of Iron Mountain Road.

Medical offices and clinics are located in the former Post Exchange (PX), and a veterinary hospital is planned in that area as well.

Recreational uses include a golf course, which lies on both sides of western Baltzell Gate Road; an active recreation complex with ball fields and an aquatic and fitness center along Summeral Gate Road at the center of McClellan; and an expanding recreational trails network south of the active recreation area that includes hiking, mountain biking, and equestrian trails.

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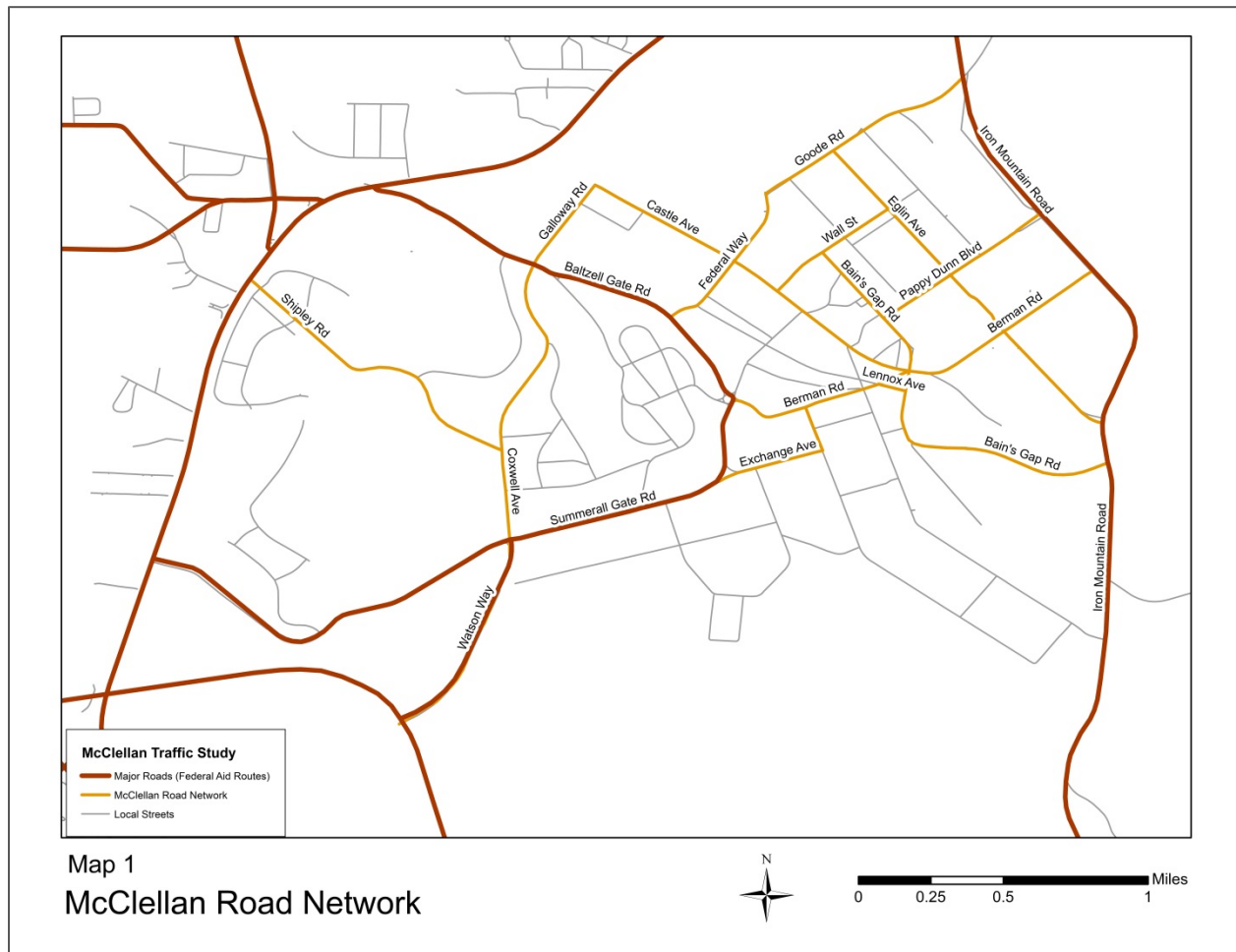
McClellan has an extensive network of two lane roads. Baltzell Gate Road and Summerall Gate Road are federal aid eligible roads and are in a good state of repair. A half-mile segment of Summerall Gate Road is four lanes east of SR 21.

A future extension of the Chief Ladiga Trail lies west of SR 21 and is connected to the boundary of McClellan by an existing spur trail.

FUTURE LAND USE AND DEVELOPMENT ASSUMPTIONS

The primary tool developed for the McClellan Traffic Study is a model of the major road network that estimates traffic flows in future years based on estimates of development that will occur on the former Army base. The model is built as an Excel workbook, with features that allow for easy adjustment of development assumptions, which then automatically update the prediction of traffic flow on the road network.

Based on discussions with City and MDA staff, and on field observations of traffic patterns and traffic volumes, the primary road network for McClellan has been defined as shown in Map 1; these roads provide essential traffic circulation and site access in the study area.



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Future development has been estimated based on input from City and MDA staff, combined with an analysis of the acreage available for development. Traffic Analysis Zones have been defined for the entire study area, and are typically comprised of large blocks defined by the major road network. Map 2 illustrates the TAZ geography for the study.

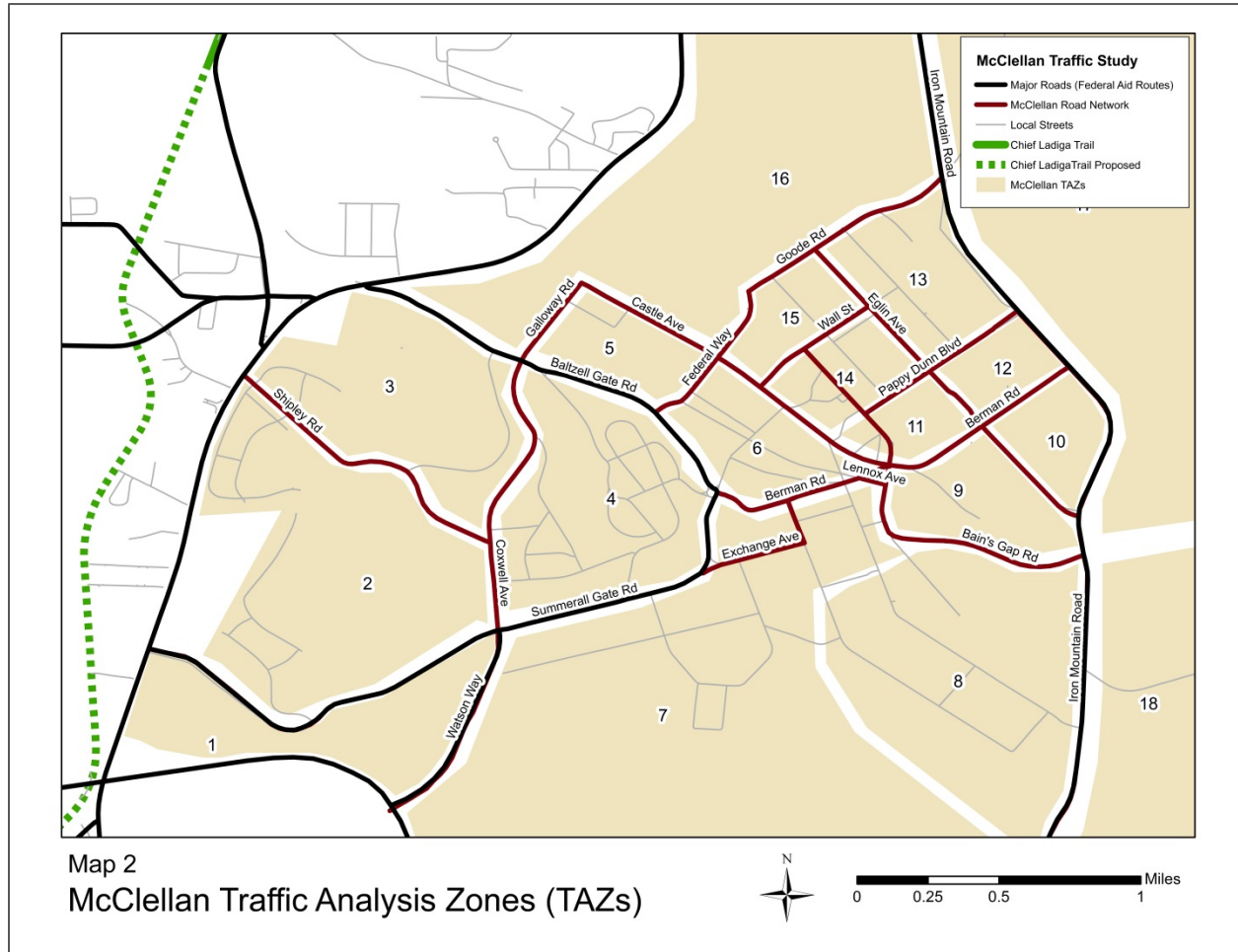


Table 1 lists all of the development sites identified based on review of prior plans for the area and discussions with City and MDA staff. The sites are listed in order of the TAZ they are contained. Where different types of development are assumed to occur with a TAZ, each type of development is listed as a separate site. Institute of Transportation Engineers (ITE) trip generation rates are used to calculate the number of trips that will be generated by each site when it is developed as assumed in Table 1, based on the square feet of commercial or industrial development, and on dwelling units for residential development.

Existing development has not been inventoried for the model. The existing development is reflected in the current traffic volumes on the road network. The city is counting traffic on the road network to supplement ALDOT traffic count data; this process has been complicated by the corona virus pandemic and its' influence on travel. Traffic counts for most of the roads in the network are relatively low, and most traffic counts have been estimated based on field observations and short duration manual traffic counts.

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Table 1 Trip Generation

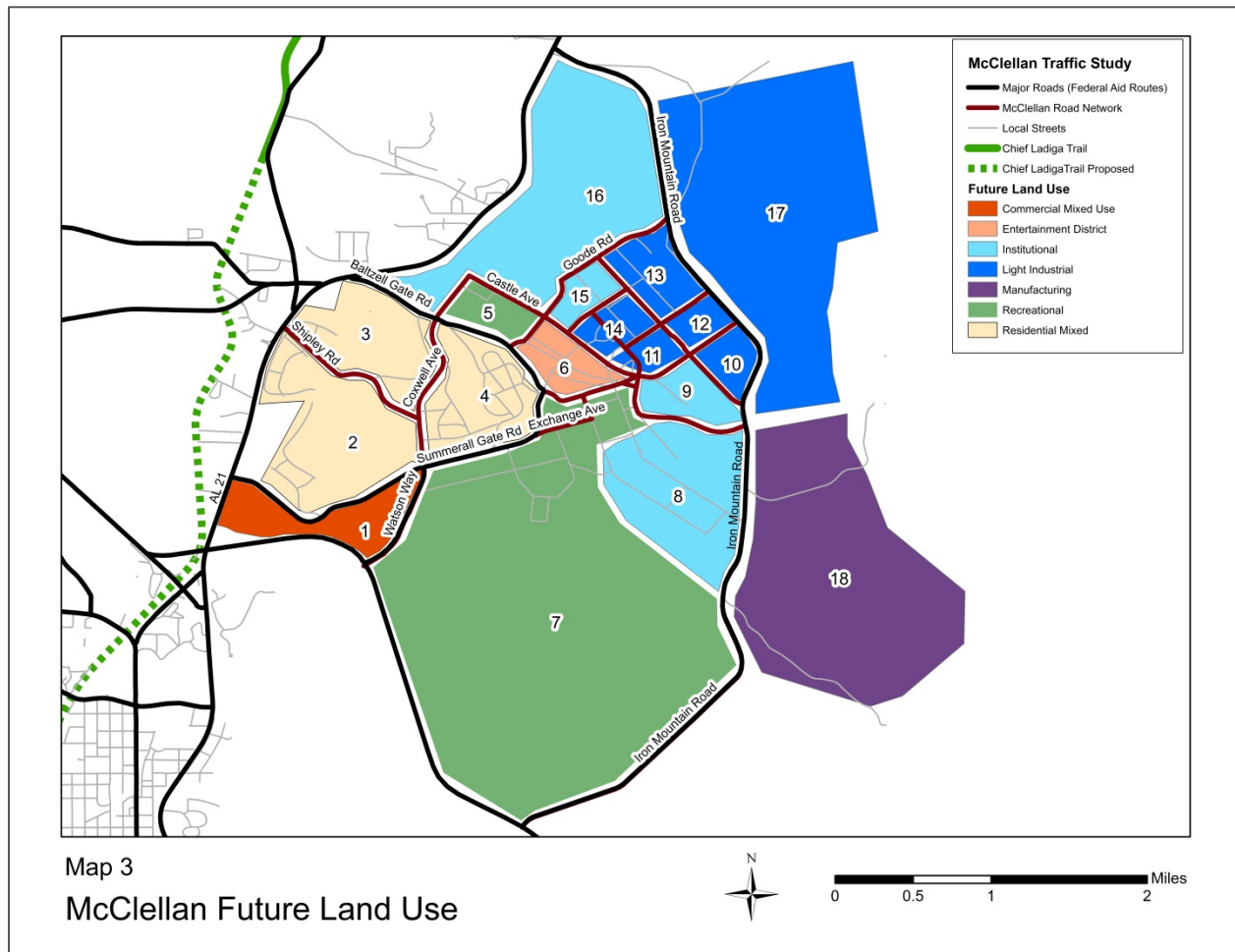
TAZ	Site Description	ITE Land Use Type	Acres	Units	Sq. Ft.	Trips/Day
1	Summerall Commerc'l	Shopping Center	31.3		-	-
1	Summerall Hotel	Business Hotel	2.0	130		523
1	Summerall Residential	Attached SF Res	61.4	491		4,116
2	Shiple Road South	Detached SF Res	185.0	555		5,239
2	Shiple Road South	Attached SF Res	52.0	416		3,486
2	Shiple Road South	Multifamily Res	13.3	160		1,168
3	Shiple Road North	Detached SF Res	104.7	314		2,965
3	Shiple Road North	Attached SF Res	29.0	232		1,944
3	Shiple Road North	Multifamily Res	20.2	242		1,774
4	Buckner Circle	Detached SF Res	2.0	6		57
4	Vacant apartments	Assisted Living	-	125		383
5	Golf Clubhouse	Restaurant	1.0		3,485	391
6	Entertainment District	High turn restaurant	5.3		18,469	2,072
6	Entertainment District	Fast Casual restaurant	5.3		18,469	5,821
6	Ent Dist Retail	Shopping Center	38.0		165,528	6,249
6	Entertainment District	Public Park per acre	17.6		-	39
6	Ent Dist Music Venue	Movie theater (#scrns)	-	2		440
7	Hiking, Equest. Trails	Park per trail user	-	250		238
7	Veterinary Hospital	Veterinary Hospital	1.0		-	190
7	Town Center Area	Shopping Center	14.0		121,968	4,604
7	Town Center Area	General Office	15.0		98,010	955
7	Town Center Area	Medical Office	8.5		55,539	1,933
8	Halifax Ave/Dorms	Private Contractor	91.0			62
8	Halifax Ave.	Private Contractor	191.0			63
9	Homeland Sec.	Military Base	62.0			125
9	Homeland Sec	Existing	36.0		-	-
10	Berman Industrial	Light Industrial	47.4		412,949	2,048
10	Spec Building, vacant	Light Industrial	9.2		62,000	308
11	Pappy Dunn SW	Light Industrial	30.0		209,088	1,037
12	Pappy Dunn SE	Light Industrial	26.0		226,512	1,123
12	Int'l Auto Components	Existing Manufrg	20.0		270,072	-
13	Pappy Dunn NE	Light Industrial	47.9		417,043	2,069
14	Pappy Dunn NW	Light Industrial	52.2		454,331	2,253
15	Castle Ave MDA Site	R&D Center	15.5		101,342	1,141
15	Wall St Homeland Sec.	Existing	43.0		-	-
16	National Guard	Military Base	407.0		1,772,892	4,433
16	National Guard	Existing	-		-	-
17	Iron Mountain North	Recreation Area	200.0			400
17	Iron Mountain North	Unspecified uses	-			250
18	Iron Mountain South	Unspecified uses	-			500
Total		All Uses	1,884.7	2,923	4,407,698	60,398

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Estimates of development capacity for each site are based on the acreage of the site, taken from tax parcel records on the Calhoun County GIS site. A floor area ratio is then applied to the acreage to estimate the development capacity of the site.

One challenge is to estimate the amount of development that may occur on sites controlled by the U.S. Department of Homeland Security and the military. These sites – if they are assumed to develop at the intensity typically observed in business parks and industrial parks, and if the trip generation rates per square foot of development are comparable to those for industrial land uses – could generate very high traffic volumes. Based on input from MDA and City staff, low trip generation estimates (not ITE trip rates) have been used for these sites.

Map 3 is a generalized land use map illustrating the primary land use that is assumed for the study area. Assumptions about the type of new development that will occur within each TAZ are guided by this map.



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Table 2 summarizes development assumptions and trips generated in each TAZ for each of the three scenarios tested using the traffic model to date. This traffic generated within each of the 18 TAZ is routed through the road network to the nine “external stations” at the perimeter of the study area where traffic enters and exits the McClellan property. For example, the intersection of Baltzell Gate Road and Alabama Highway 21 is one external station; the intersection of Pappy Dunn Road and Iron Mountain Road is another external station.

Table 2
Summary of Development Assumptions and Daily Trips by TAZ

TAZ	Percent Built Out by Scenario			Daily Trips		
	2032	2045	Build Out	2032	2045	Build Out
1	90%	90%	100%	4,175	4,175	4,639
2	10%	100%	100%	989	9,894	9,894
3	0%	60%	100%	-	4,010	6,684
4	100%	60%	100%	439	263	439
5	30%	60%	100%	235	469	782
6	50%	100%	100%	7,310	14,620	14,620
7	30%	100%	100%	2,376	7,920	7,920
8	50%	100%	100%	63	125	125
9	50%	60%	100%	63	75	125
10	50%	60%	100%	1,178	1,413	2,356
11	30%	60%	100%	311	622	1,037
12	30%	60%	100%	337	674	1,123
13	30%	60%	100%	621	1,241	2,069
14	30%	60%	100%	676	1,352	2,253
15	30%	60%	100%	342	685	1,141
16	30%	60%	100%	1,330	2,660	4,433
17	50%	60%	100%	325	390	650
18	0%	30%	100%	-	150	500
Total				20,651	50,504	60,398

The three development scenarios summarize in Table 2 have been tested with the traffic model. The first one is a “build out” scenario that assumes all of the available development sites listed in Table 1 will be fully developed by 2060. The second scenario assumes partial buildout occurs by 2045, and the third scenario estimates development that will occur by 2032. Traffic results are summarized the next section of the report.

The traffic model is structured to allow easy adjustment of the analysis year, and to allow adjustment of assumptions about the percentage that each TAZ will be built out for that year in Table 2.

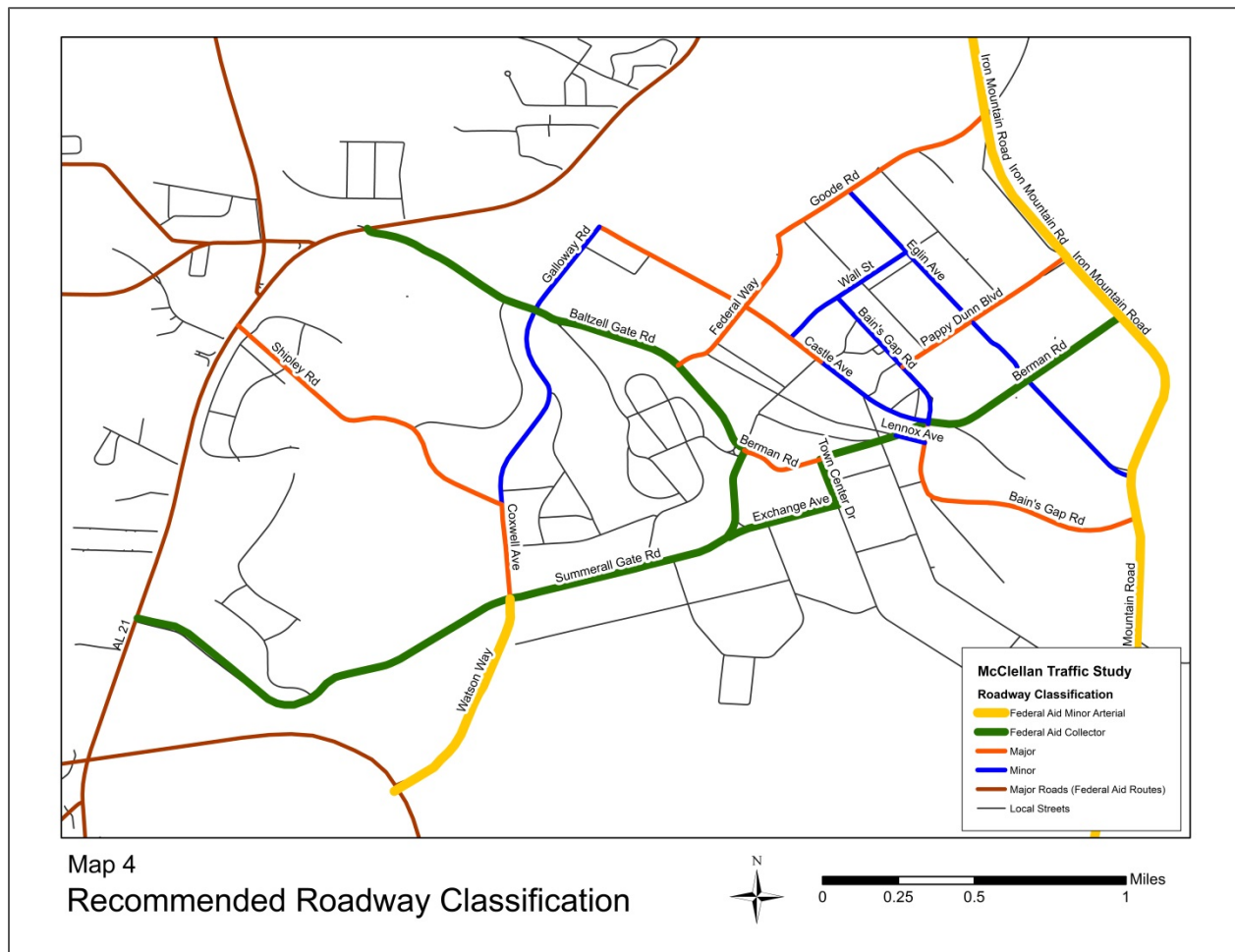
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RECOMMENDED ROAD NETWORK AND IMPROVEMENTS

McClellan Road Network

Map 4 presents the recommended major and minor road network of existing roads that should be preserved and maintained for McClellan. This network is designed to provide adequate traffic capacity and circulation for development of the McClellan property with some improvements and expansions as described below.

Currently, only Baltzell Gate Road and Summerall Gate Road are included in the Federal Aid eligible road network within McClellan. Exchange Avenue, Town Center Drive, and Berman Road are recommended for designation as a federal aid eligible route to connect with Iron Mountain Road, which is a minor arterial in the Federal aid highway network. This designation would make this route eligible for Federal Highway Administration funding through the Calhoun Area Metropolitan Planning Organization (MPO) and ALDOT.



The local roads shown in Map 4 are not critical to traffic circulation on McClellan, and in the non-residential areas of McClellan these local roads could be abandoned to enable more

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flexible use of particular sites for development. The City of Anniston should use its' existing procedures for abandoning local roads where requests for abandonment are made.

The roads included in the McClellan Road Network should be considered for abandonment only if the following criteria are met:

- The road segment proposed for abandonment is removed from the McClellan Traffic Model, traffic reassigned to other roads, and the model results indicate that no traffic capacity problems are likely to result in the Build Out Scenario for future development;
- If model results indicate that traffic capacity problems are likely to result from removal of a McClellan Road Network major or minor road, funding for improvements to address those problems should be identified and secured prior to approval of road abandonment;
- No undue burden is created for other McClellan residents or businesses based on public comments;
- Removal of the road access will not significantly impact the development potential of other sites at McClellan.

Recommended Improvements

The extent of road improvements that will be needed at McClellan are largely dependent on how much new development is attracted to the "Entertainment District" (TAZ 6) immediately north of the traffic circle, and to a lesser degree development around Town Center Drive (TAZ 7). These uses will generate the most intense traffic at McClellan, and the build out assumptions for both TAZ 6 and TAZ 7 are aggressive, with over 287,000 square feet of retail development, about 40,000 square feet of restaurant development (likely 6 to 9 restaurants), and more than 150,000 square feet of general office and medical office development.

Intersection Modifications

Two significant issues with the current road network are the traffic circle with five points of access, and the intersection of Berman Road/Bain's Gap Road/Castle Avenue which is also a five point intersection.

The traffic circle has an "inscribed circle" diameter of approximately 175 feet. This relatively small diameter makes navigation of the circle a challenge for tractor trailer trucks. Traffic flow through the circle also is impacted by the five points of access. As traffic volumes increase, at least one of the points of access should be eliminated. The Jimmy Parks Blvd. access to the traffic circle may become congested and problematic as development of the entertainment district intensifies due to the high traffic volumes the

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entertainment district is estimated to generate at buildout. The number of parking spaces accessed by Jimmy Parks Blvd will determine whether the traffic circle will function well when the entertainment district is fully developed. An minor street connection, restoring Lennox Avenue through the area, is proposed below, and would provide improved access and circulation for the Entertainment District.

A full engineering assessment of the design and traffic capacity of the traffic circle is beyond the scope of this study, but as traffic volumes increase, the City and MDA should consider a detailed study of the traffic circle.

The engineering concerns at the Berman Road/Bain's Gap Road/Castle Ave. intersection are the five approaches, and the 45 degree angle of the eastbound Berman Road approach to the intersection. Army engineers in the 1940s handled this with the Lennox Avenue connection between Berman Road and Bain's Gap Road, which eliminates the need for 45 degree right turn from Berman to Bain's Gap and 45 degree left turns from Bain's Gap to Berman.

Currently, the engineering solution that has been implemented at the five-point intersection has closed Berman Road between Lennox Avenue and Bain's Gap Road, which addresses both the number of approaches and the 45 degree angle issue, but creates a "dog-leg" movement for traffic that previously had a straight-through movement on Berman Road.

Because Berman Road currently is the primary east-west connection through McClellan, and the primary access to the industrial sites from Highway 21, it is desirable to re-establish the through movement on Berman Road. This will likely require closing Castle Avenue as indicated by Map 5 and 5a. However, the network configuration shown in Maps 5 and 5a are illustrative only, and the necessary engineering analysis for a final recommended design for this intersection is beyond the scope of this report.

Map 5 illustrates the suggested modifications to the traffic circle and to the Berman Road/Bain's Gap Road/Castle Avenue intersection. The configuration suggested here is based on planning analysis of the traffic flows on the road network and would require further engineering evaluation to develop final design solutions for both the traffic circle and the Berman Road bridge and intersection.

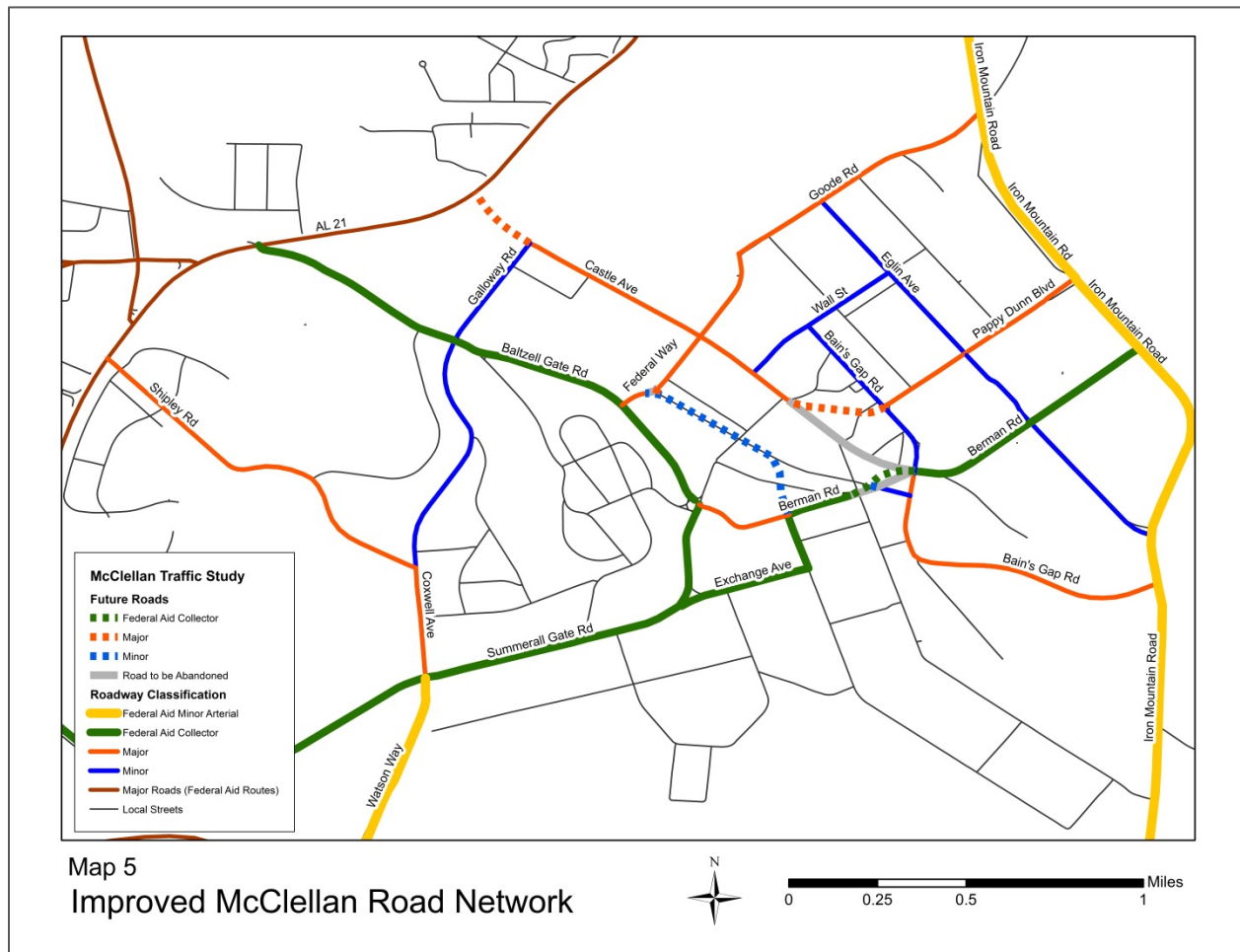
If Berman Road is designated as a federal aid eligible collector road by ALDOT and the Calhoun Area MPO, as recommended by this study, federal funding for an engineering study to redesign the five-way intersection could be applied for through the MPO.

New Road Connections

While McClellan has a generally well-connected network of roads, three new road connections would have significant traffic flow benefits as McClellan develops, as illustrated in Map 5:

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- 1) Lennox Avenue should become the primary access to the Entertainment District over the long term in order to avoid overloading the traffic circle. Lennox Avenue should be developed as a traffic-calmed, pedestrian-oriented street but would provide for deliveries and parking access. A new connection should align with Town Center Drive at Berman Road on the east side of the Entertainment District.
- 2) Pappy Dunn Blvd. should be extended and connected to Castle Avenue near Jimmy Parks Blvd., to provide a direct main route for industrial park traffic moving toward SR 21. Driveway access to the amphitheater area would be maintained from the new section or roadway. Specific amphitheater access would be coordinated with the lessee of the property.
- 3) To avoid overloading Baltzell Gate Road with traffic as McClellan builds out, Castle Avenue should be extended to SR 21 to provide an east-west direct route for trucks and industrial park traffic between SR 21 and Iron Mountain Road, removing truck traffic from Baltzell Gate Road and the traffic circle. An underpass or overpass for golf carts would be necessary for access to three holes north of the new road. The extension of Castle Avenue would intersect SR 21 about 2800 feet north of Baltzell Gate Road, sufficient separation to allow signalization of the intersection.

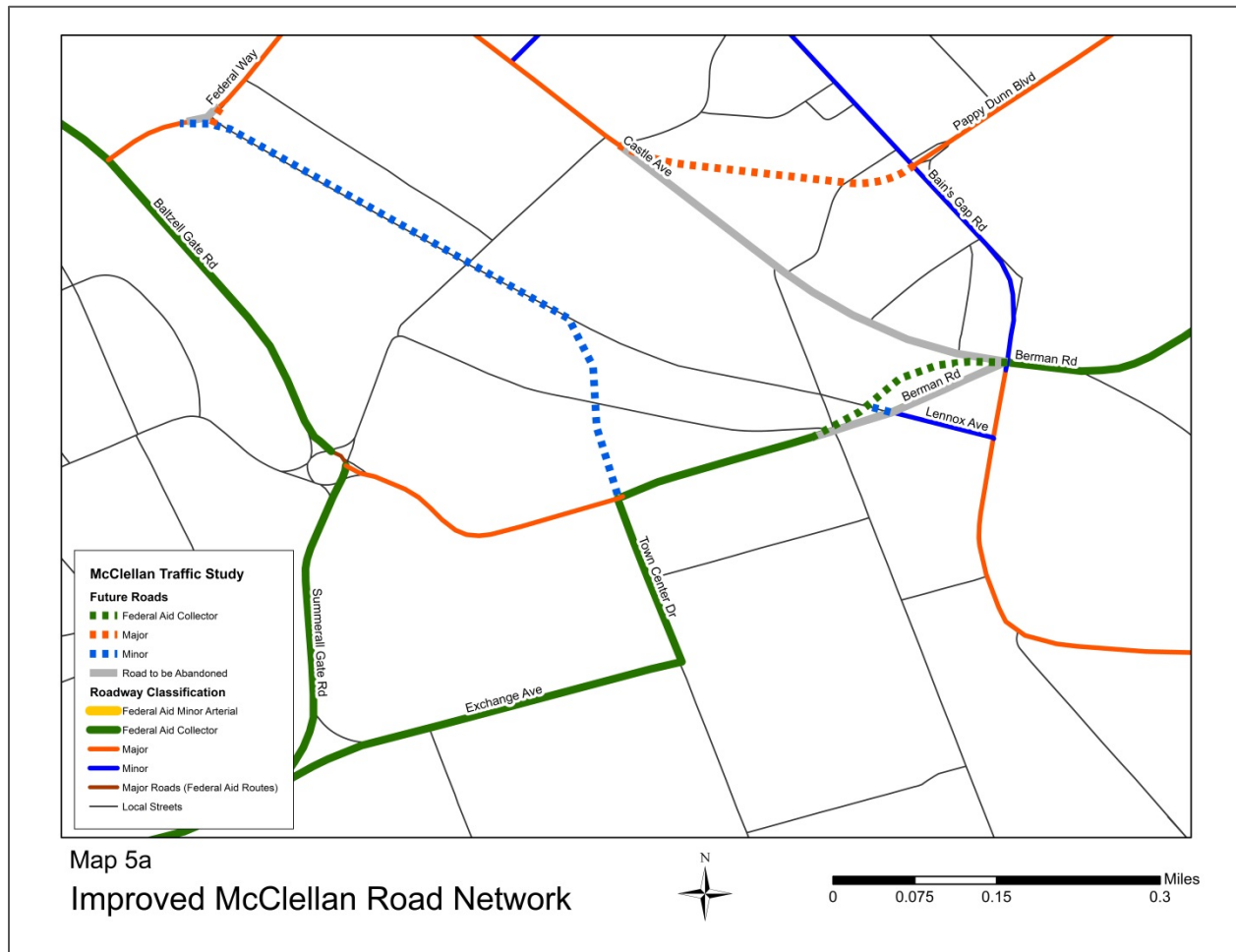


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None of these new road segments are essential or even necessary under current traffic conditions. However, all of them will improve operations as development intensifies at McClellan. The rights of way for each of these connections should be preserved as development occurs.

Lennox Avenue through the entertainment district is the most critical connection due to the high traffic volumes that a fully developed entertainment district will generate. Access to the Entertainment District can be provided at the traffic circle for an interim period.

These recommendations would maintain two bridges over Cane Creek, on Berman Road on Bain's Gap Road. Replacement of the Berman Road bridge is addressed below. Recommended connectivity improvements between Bain's Gap Road and Exchange Avenue would reduce traffic loadings on the Bain's Gap Road bridge. Map 5a provides a more detailed view of recommended connectivity improvements.

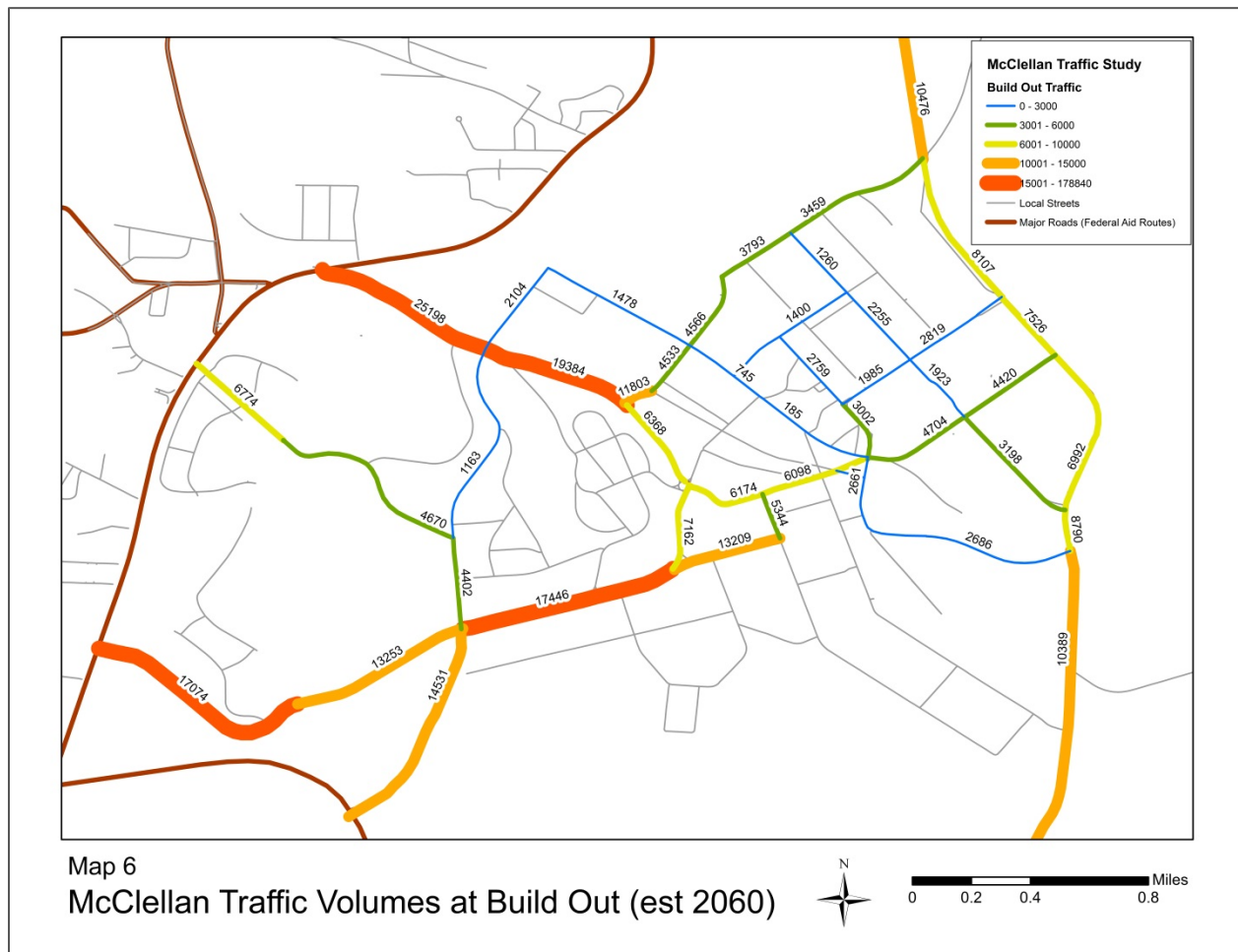


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Road Widening Needs

Needs for widening existing roads in McClellan are entirely dependent upon the intensity and pace of development. The traffic model analysis indicates the following roads will require expansion when McClellan is fully developed:

- 1) Baltzell Gate Road from SR 21 to Federal Way is projected to have 25,000 to 30,000 vehicles per day (vpd), which would require a four lane roadway with a median.
- 2) Federal Way between Baltzell Gate Road and Lennox Avenue will serve 15,000 vpd, and will need improvements to handle Entertainment District traffic.
- 3) Summeral Gate Road from SR 21 to Watson Way will have 14,000 to 18,000 vpd; intersection improvements between the existing four lane divided section and Watson Blvd may be adequate in this segment.
- 4) Summeral Gate Road from Watson Way to Exchange Drive is projected to serve 20,000 vpd and will need to be widened to four lanes with a median or median lane.

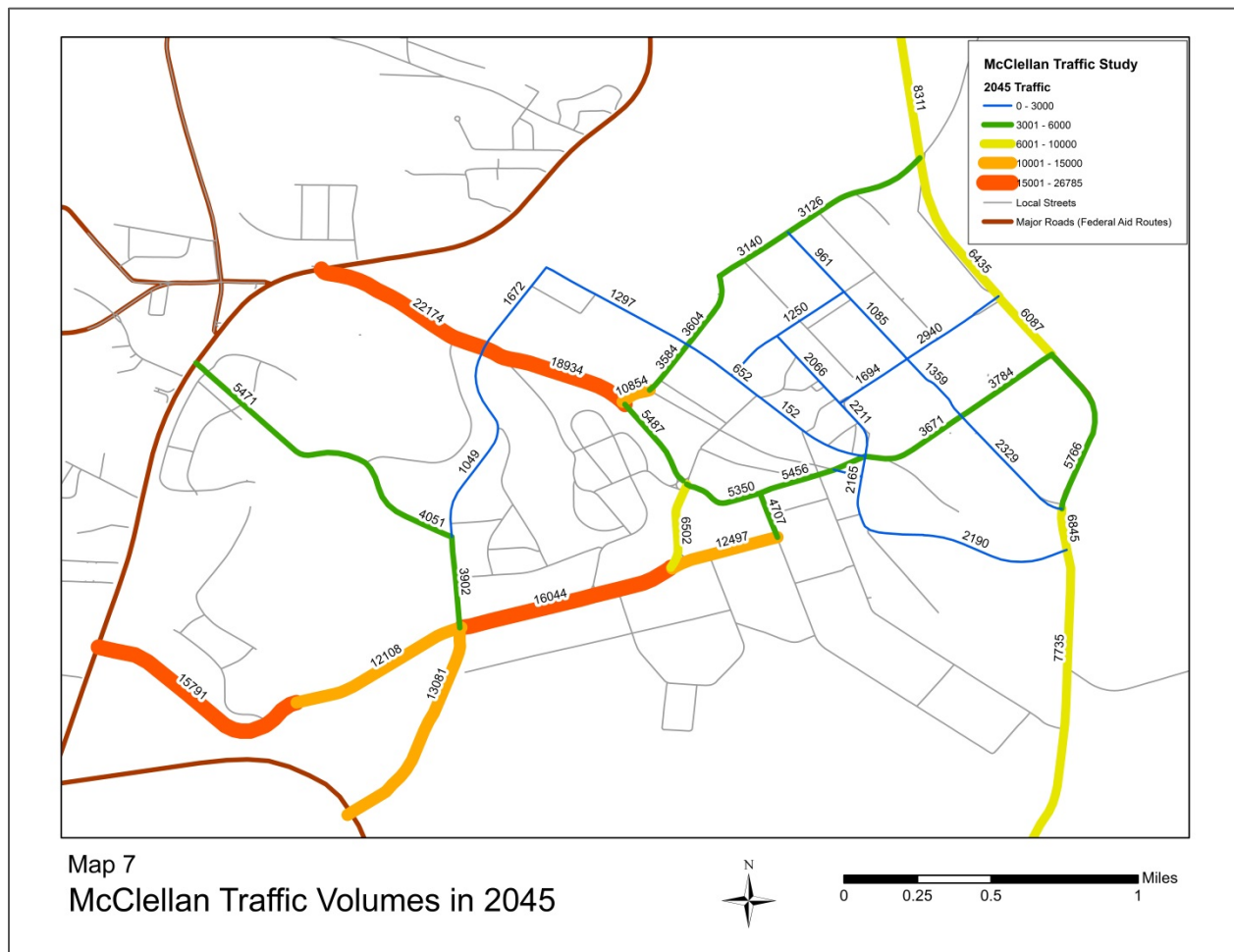


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- 5) Exchange Avenue is predicted to serve over 14,000 vpd and will need as a minimum left turn lanes added at Long Leaf Lodge, Justice Avenue, and any other new points of access.
- 6) Iron Mountain Road south of Bain's Gap Road will serve over 10,000 vpd and will be approaching capacity; left turn lanes will be needed for traffic flow and safety at many locations, and shoulder widening and improvements to horizontal alignment should be considered as traffic volumes increase.

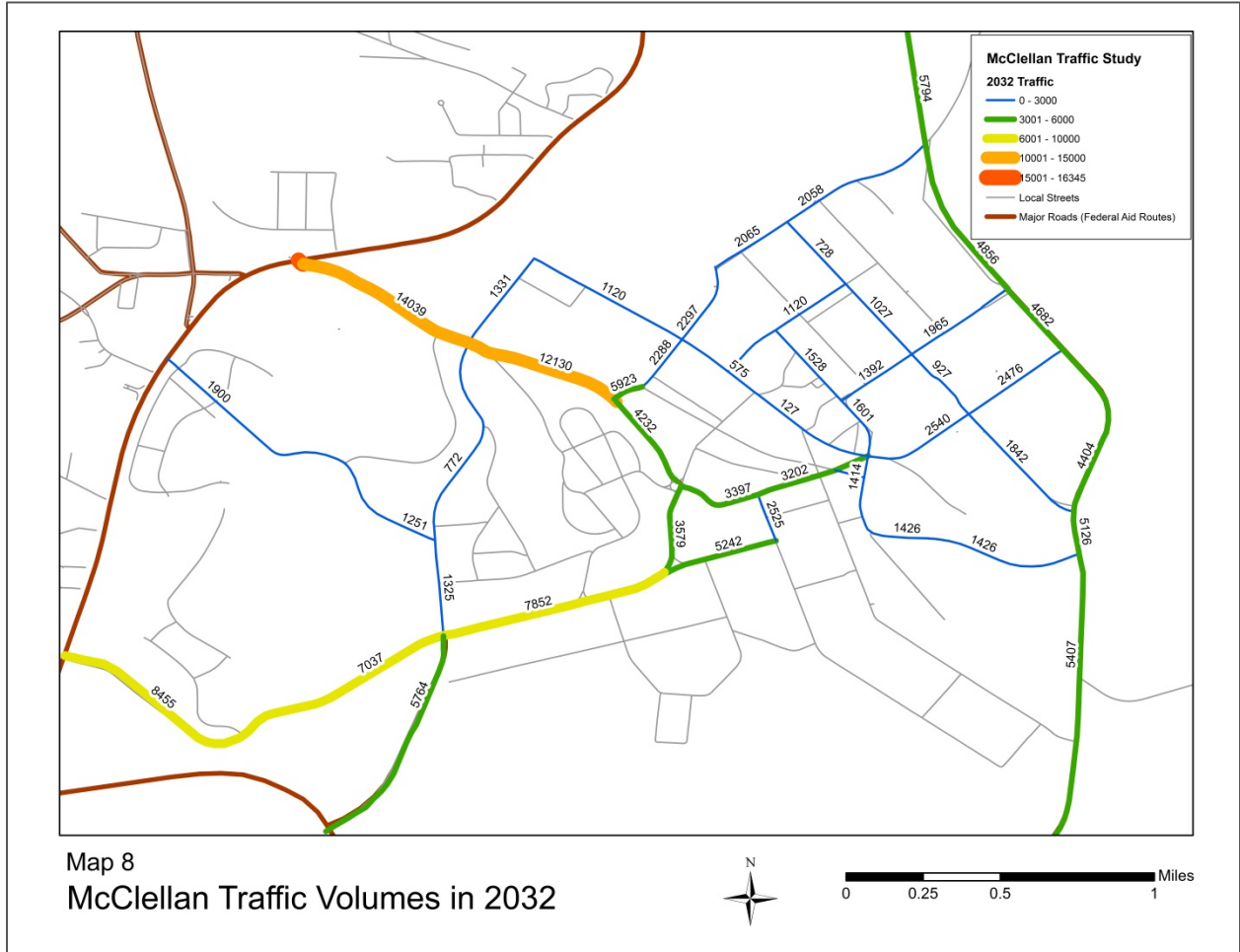
Map 6 illustrates traffic volumes projected to result from the Build Out scenario. Map 7 present the 2045 traffic projection from the traffic model. Map 8 illustrates the traffic forecast for the 2032 scenario.

Extension of Castle Avenue may reduce or eliminate the need for widening Baltzell Gate Road, but this has not yet been tested using the traffic model, pending direction from MDA and City staff regarding the likely long-term feasibility of reconfiguration or relocation of this section of the golf course.



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Aggressive assumptions about retail development and restaurant development are a major driver of all of the road widening needs listed here. These assumptions should be carefully reviewed and confirmed or adjusted before the plan is finalized.



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Table 3

Summary of Road Improvement Needs by Scenario

Project Type	Project Name	Scenario			
		Existing Need	2032	2045	Build Out
Intersection	Berman/Castle/Bain's Gap Reconfiguration	X	X	X	X
New Road	Lennox Ave. Improvement and Realignment		X	X	X
New Road	Pappy Dunn - Castle Connection			O	X
New Road	Castle Ave. Extension to SR 21			X*	X
Widening	Baltzell Gate, SR 21 to Federal Way			X*	X
Widening	Federal Way, Baltzell to Lennox		X	X	X
Widening	Summeral Gate, SR 21 to Watson Way			O	X
Widening	Summeral Gate, Watson Way to Exchange Ave.			X	X
Minor Improvements	Exchange Ave, Summeral Gate to Town Center			X	X
Minor Improvements	Iron Mountain Road, US 431 to Bain's Gap Rd.			O	X

O - Optional or Marginal Need

X - Essential

X* - Only one of these projects is essential

Table 3 summarizes the road widening needs for each of the scenarios that were tested with the traffic model, and indicates the priorities based on each of the three development levels or scenarios.

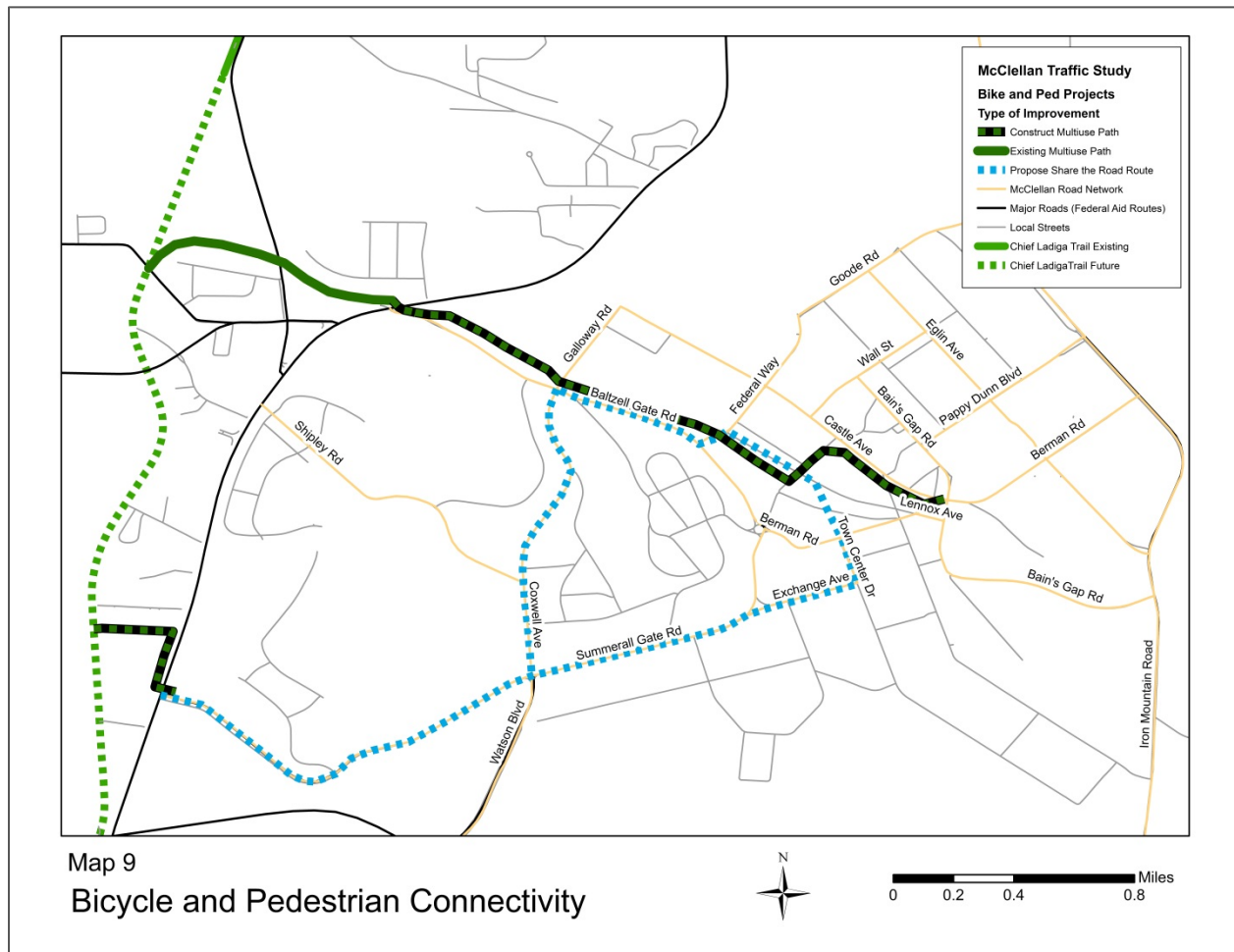
Priorities are not rank-ordered in Table 3, but are instead shown in four categories: existing needs; improvements needed to support the development levels projected for 2032, improvements needed to support the 2045 projected development, and improvements needed to support full build-out of the McClellan area. Projects shown as needs for the 2060 or build out development scenario should be preserved as options, but will not be necessary until and unless McClellan is fully developed at the intensity envisioned in this plan.

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Bicycle, Pedestrian and Recreational Improvements

A multi-use path is recommended along Baltzell Gate Road from SR 21 to the intersection of Berman Road and Bain's Gap Road, illustrated by Map 9. The path would extend through the entertainment district, crossing Cane Creek at the abandoned railroad bridge and on the Jimmy Parks Blvd. bridge. The segment of Castle Avenue that this report recommends to be abandoned would be converted for use as a bicycle pedestrian path from Jimmy Parks Blvd. to Bain's Gap Road. The path should continue to Iron Mountain Road, but further evaluation of possible alignments will be needed; one option would be to develop a side path along Berman Road.

Abandoning Castle Avenue would facilitate development of a passive park on the north side of Lennox Avenue on either side of Cane Creek, incorporating the wooded area east of Jimmy Parks Blvd and reaching northward to the amphitheater and eastward to Bain's Gap Road.



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COST ESTIMATES

Table 4 presents planning level cost estimates. These cost estimates are based on typical unit costs for the type of improvements proposed, and are not based on engineering studies of specific site conditions.

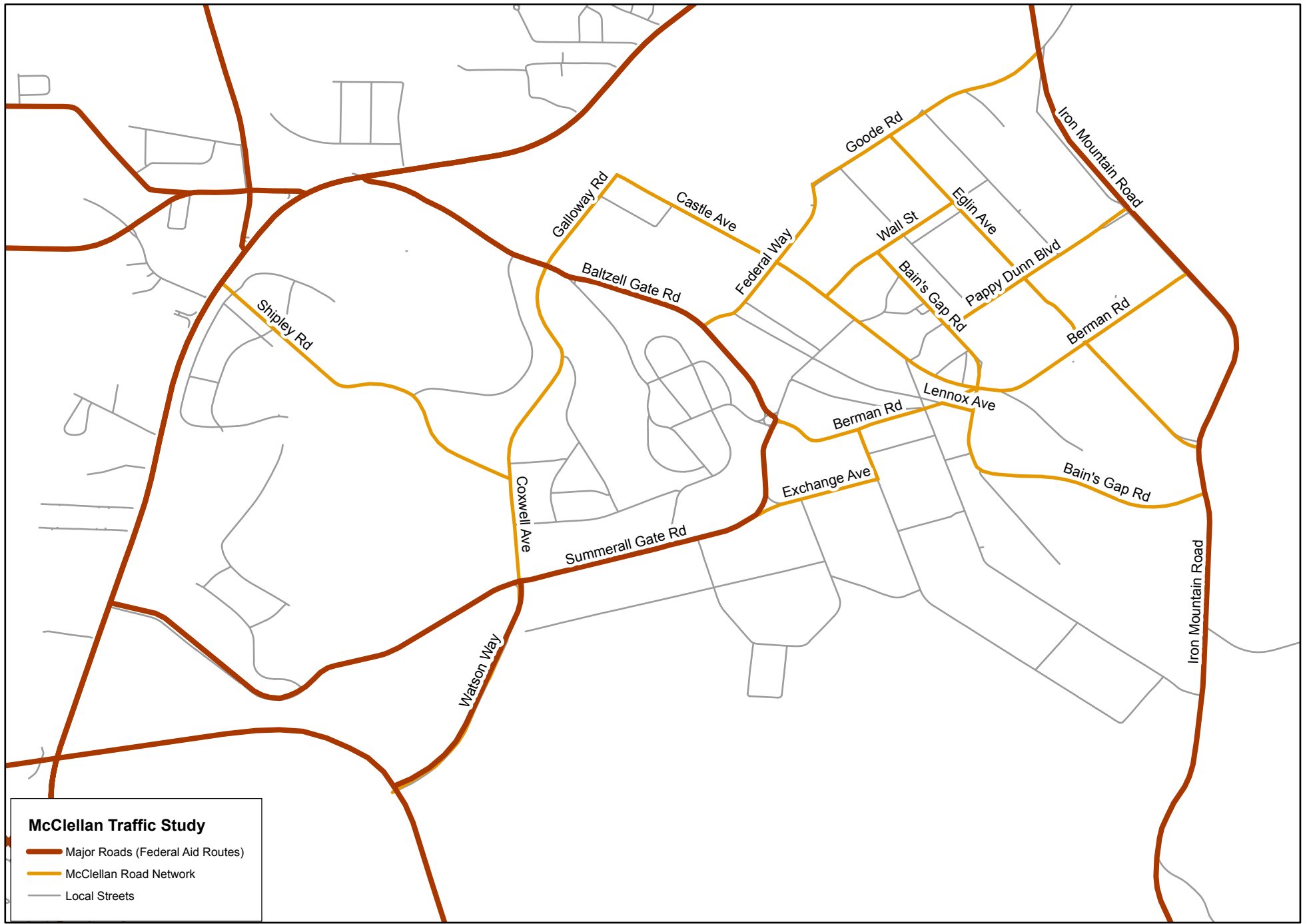
Table 4
Planning Level Cost Estimates

Project Type	Project Name	Project Length (feet)			Cost Estimate [1]
		New Road	Minor Improvement	Widen	
Intersection	Berman/Castle/Bain's Gap Redesign [2]	910	120	-	2,265,000
New Road	Lennox Ave. Improvement and Realignment	1,100	1,800	-	415,000
New Road	Pappy Dunn - Castle Connection	1,250	-	-	355,000
New Road	Castle Ave. Extension to SR 21	1,050	-	-	298,000
Widening	Baltzell Gate, SR 21 to Federal Way	-	-	5,200	6,894,000
Widening	Federal Way, Baltzell to Lennox [3]	-	-	600	1,295,000
Widening	Summeral Gate, SR 21 to Watson Way	-	-	4,400	5,833,000
Widening	Summeral Gate, Watson Way to Exchange	-	-	3,400	4,508,000
Minor Imp.	Exchange Ave, Summeral Gate to Town Ctr	-	1,400	-	80,000
Minor Imp.	Iron Mountain Rd, US 431 to Bain's Gap Rd	-	17,000	-	966,000
Total					22,909,000

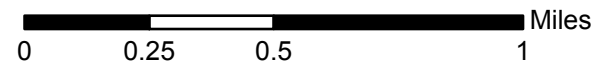
[1] Cost estimates assume \$1.5 million/mile for new 2 lane road, \$0.3 million/mile for minor improvement, \$7.0 million/mile for widening

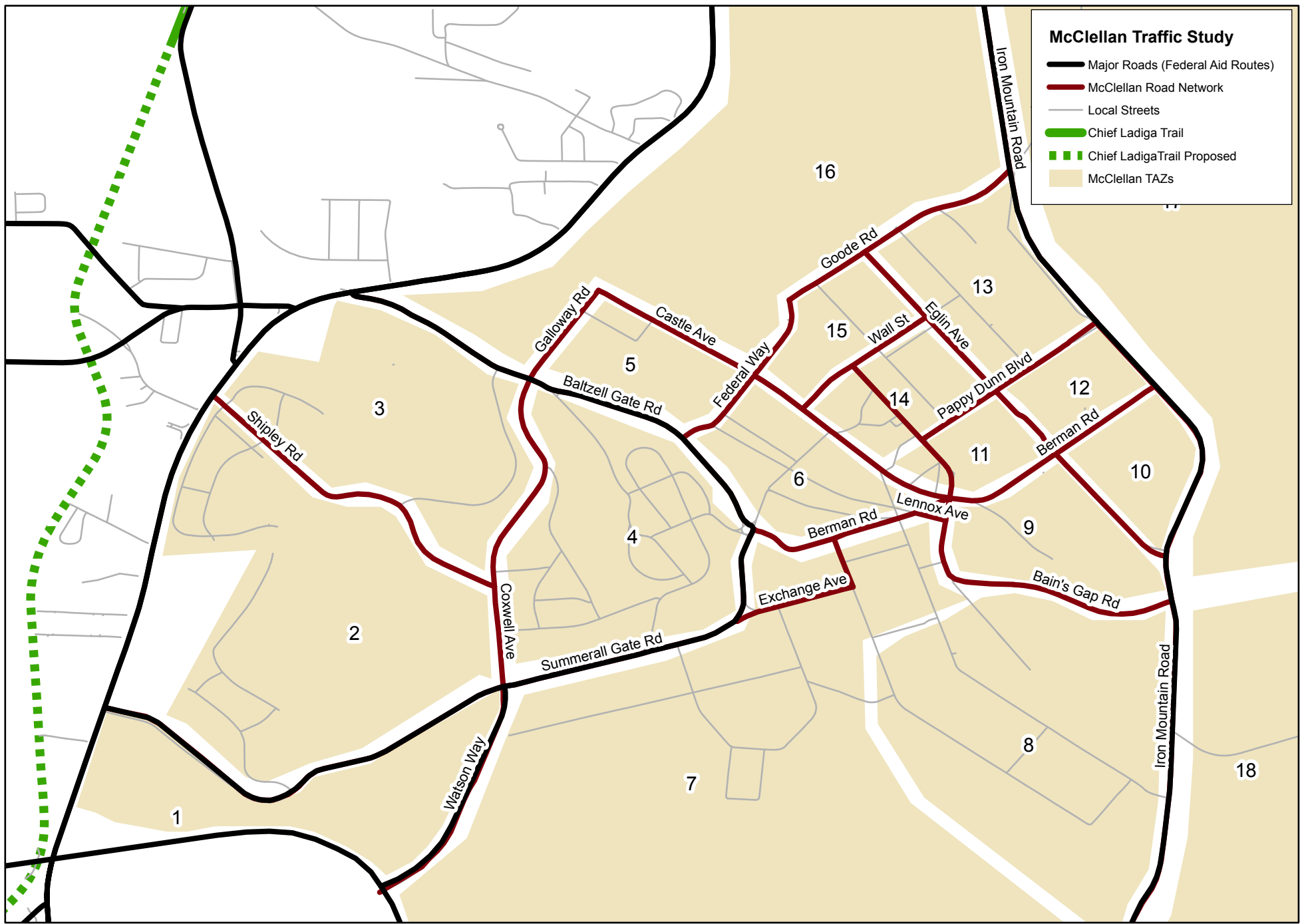
[2] Cost includes \$750,000 for improvements to intersection, \$500,000 for bridge/bottomless culvert replacement, and \$250,000 for engineering in addition to new road segment and improved segment of Lennox Ave.

[3] Cost includes \$500,000 for bridge/bottomless culvert replacement

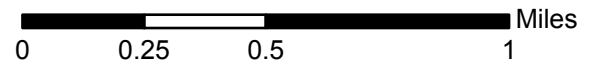


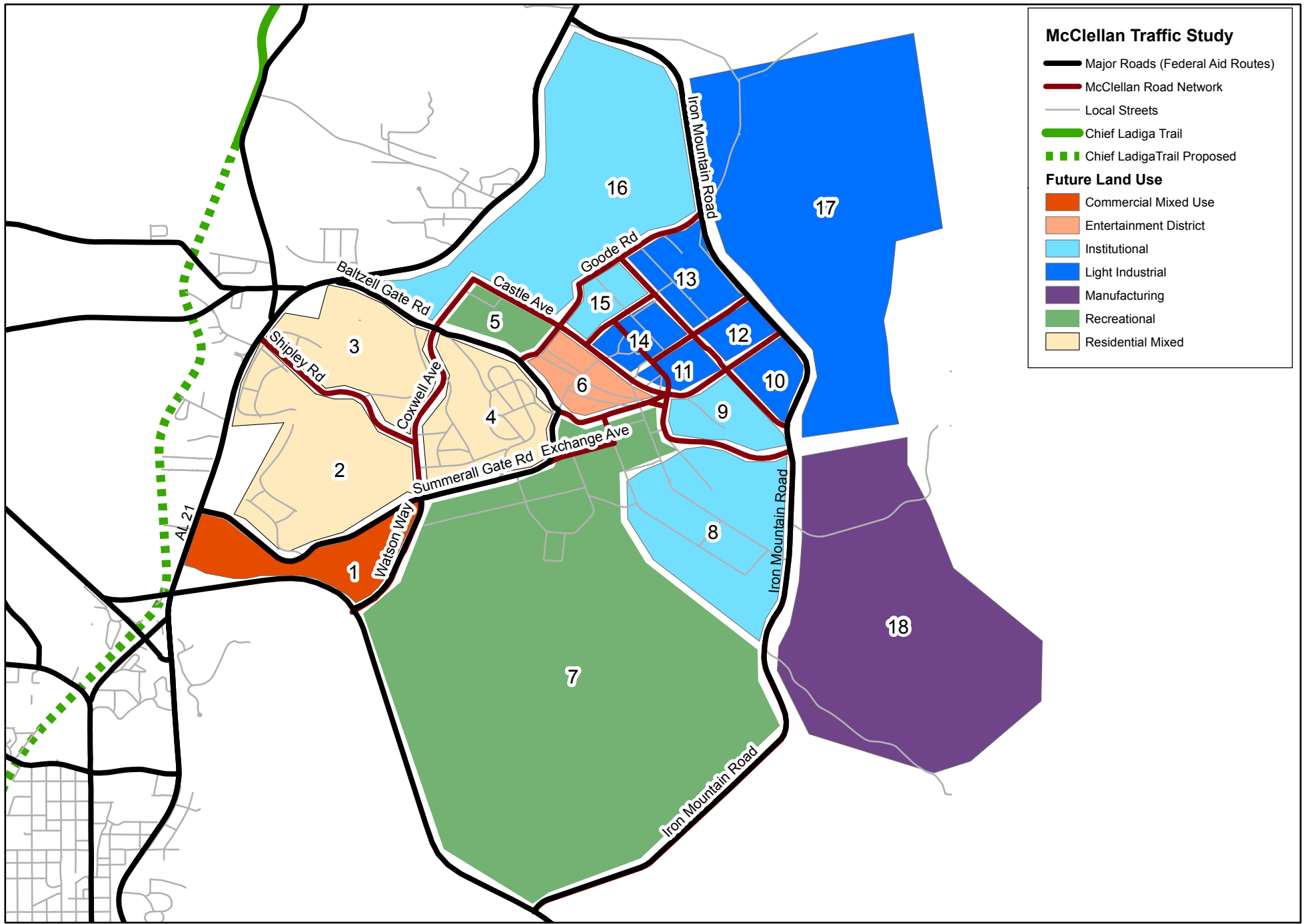
Map 1
McClellan Road Network





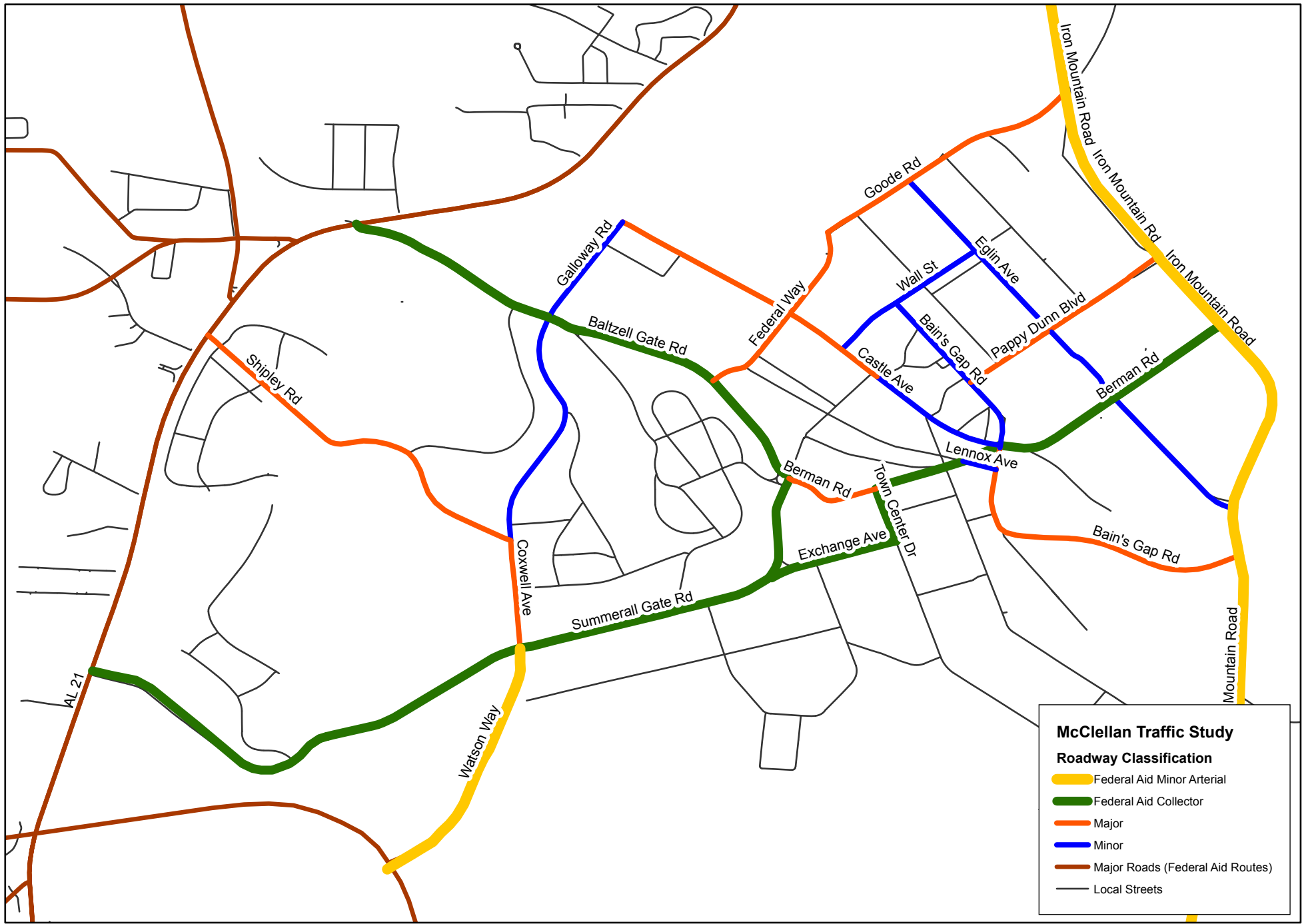
Map 2
McClellan Traffic Analysis Zones (TAZs)



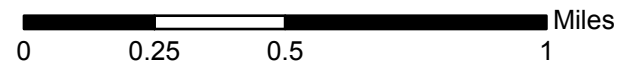


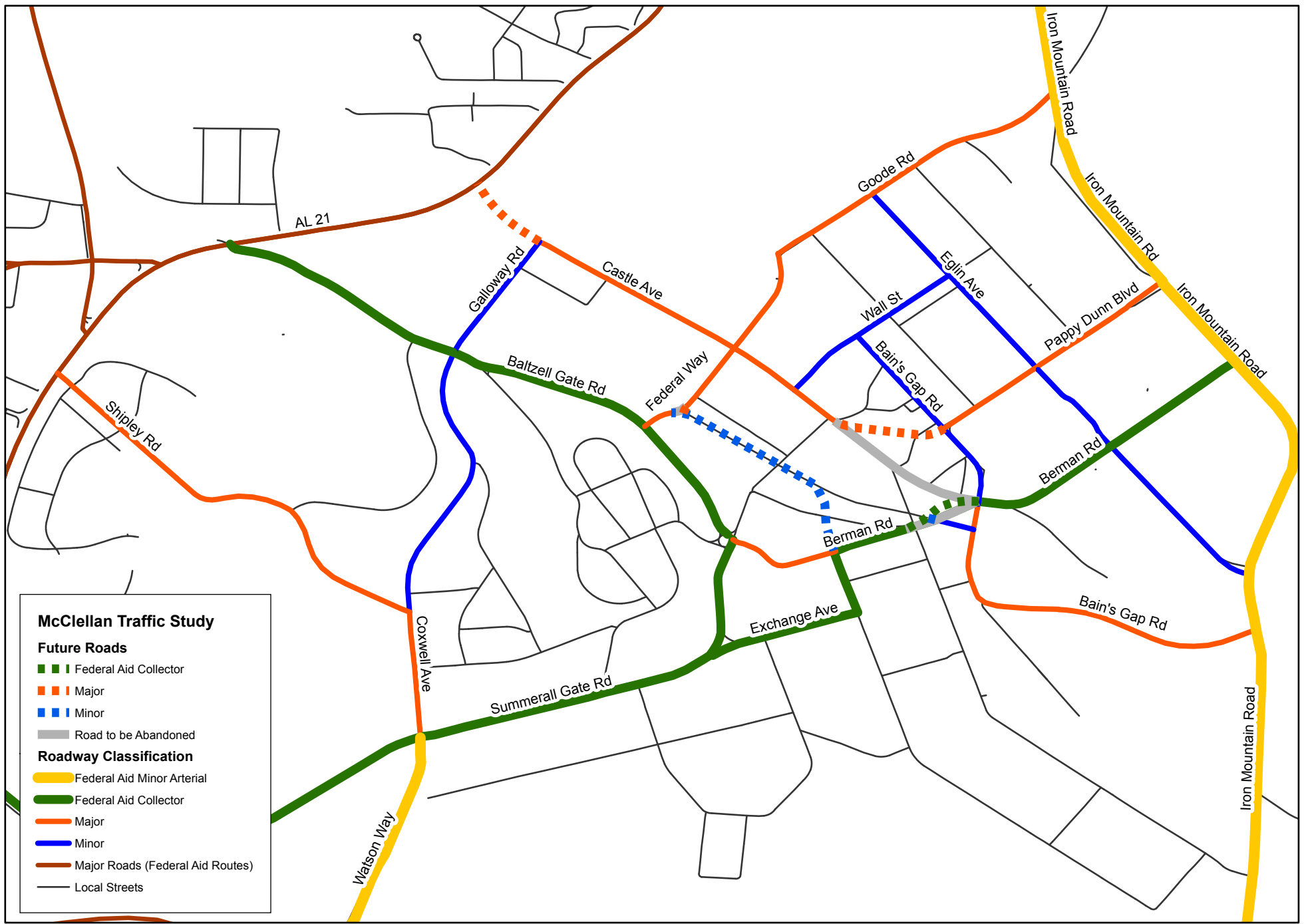
Map 3
McClellan Future Land Use



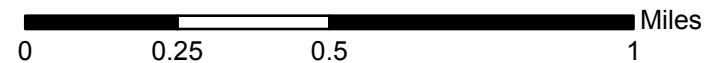


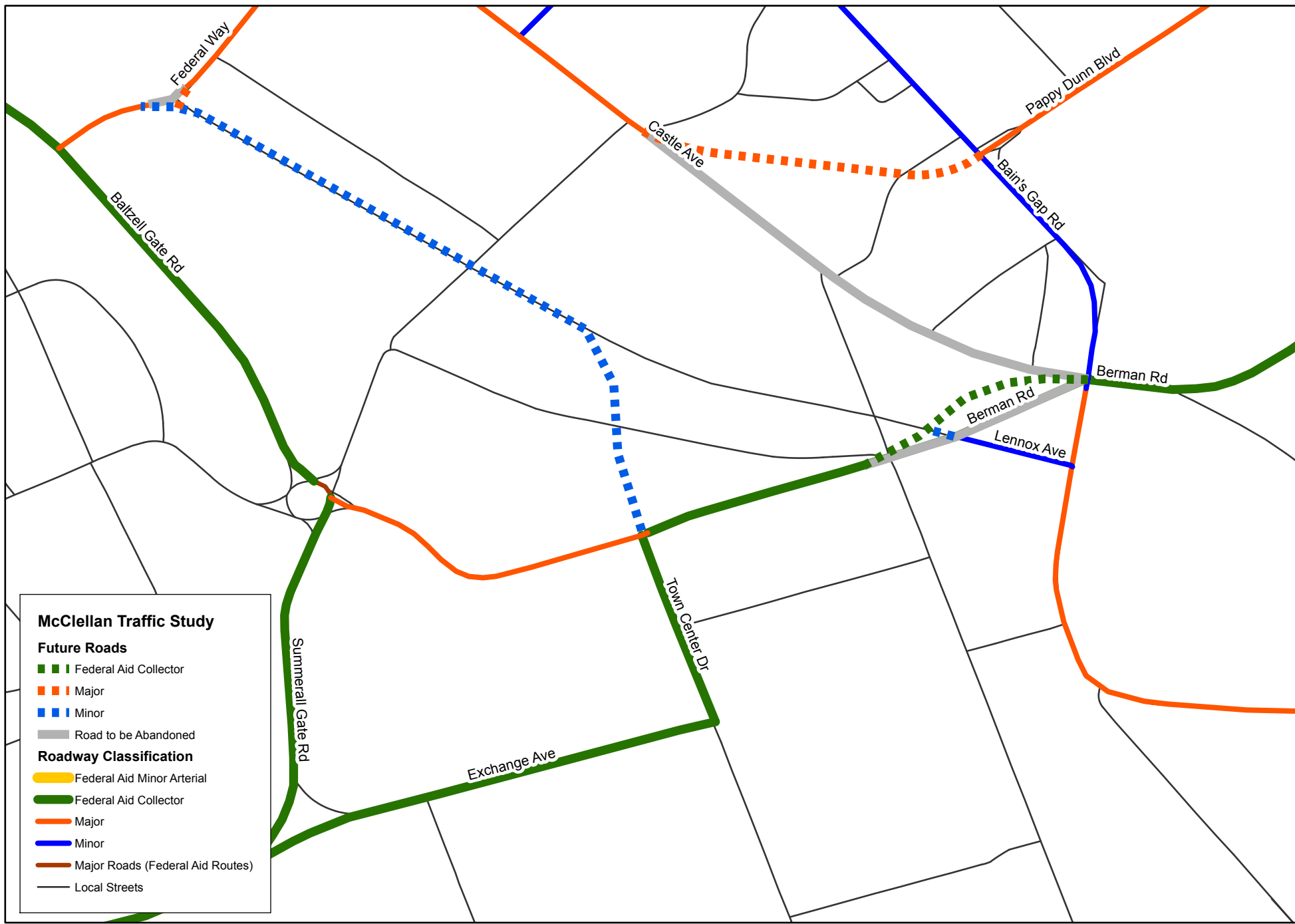
Map 4
 Recommended Roadway Classification



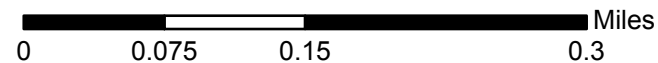


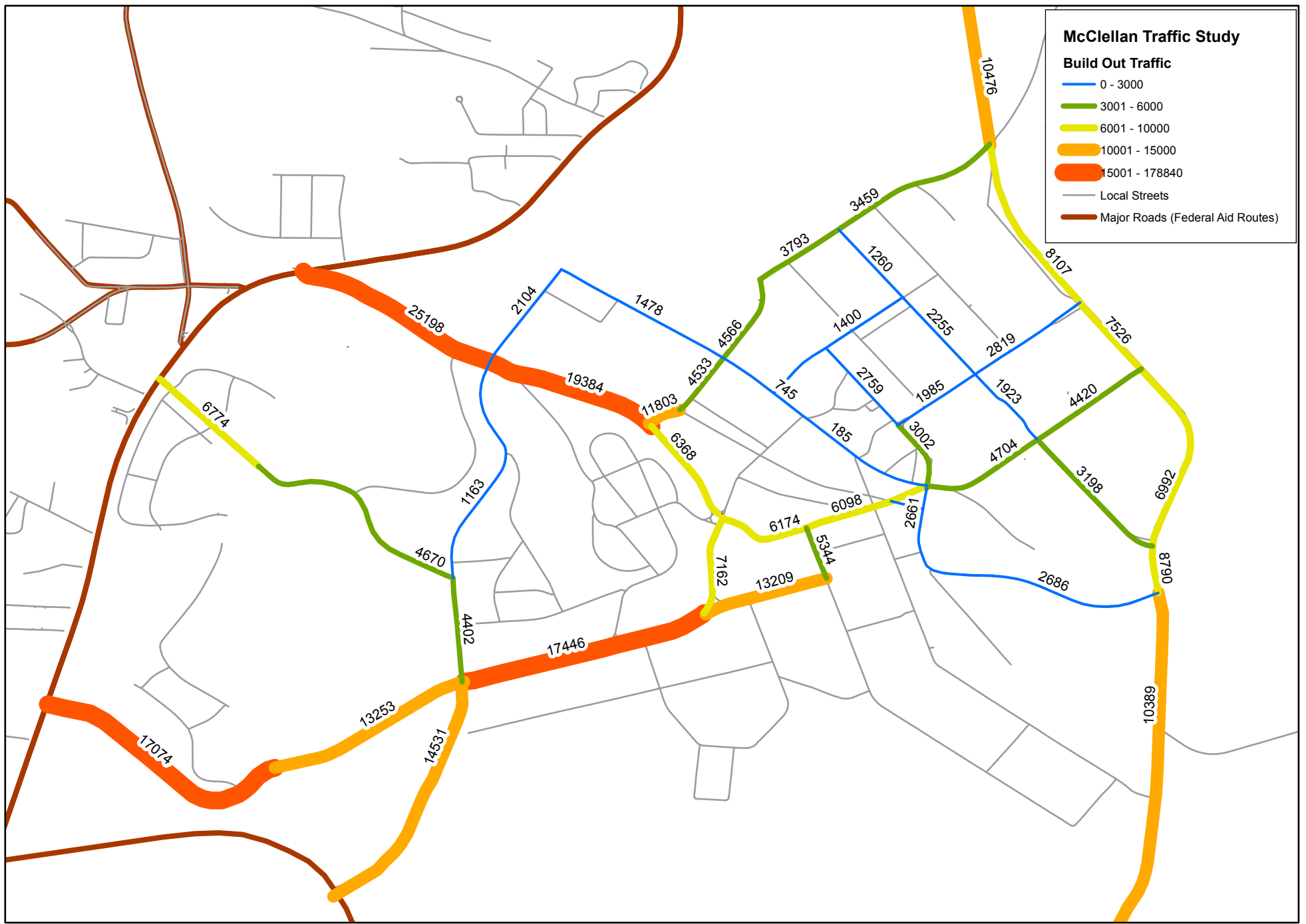
Map 5
Improved McClellan Road Network





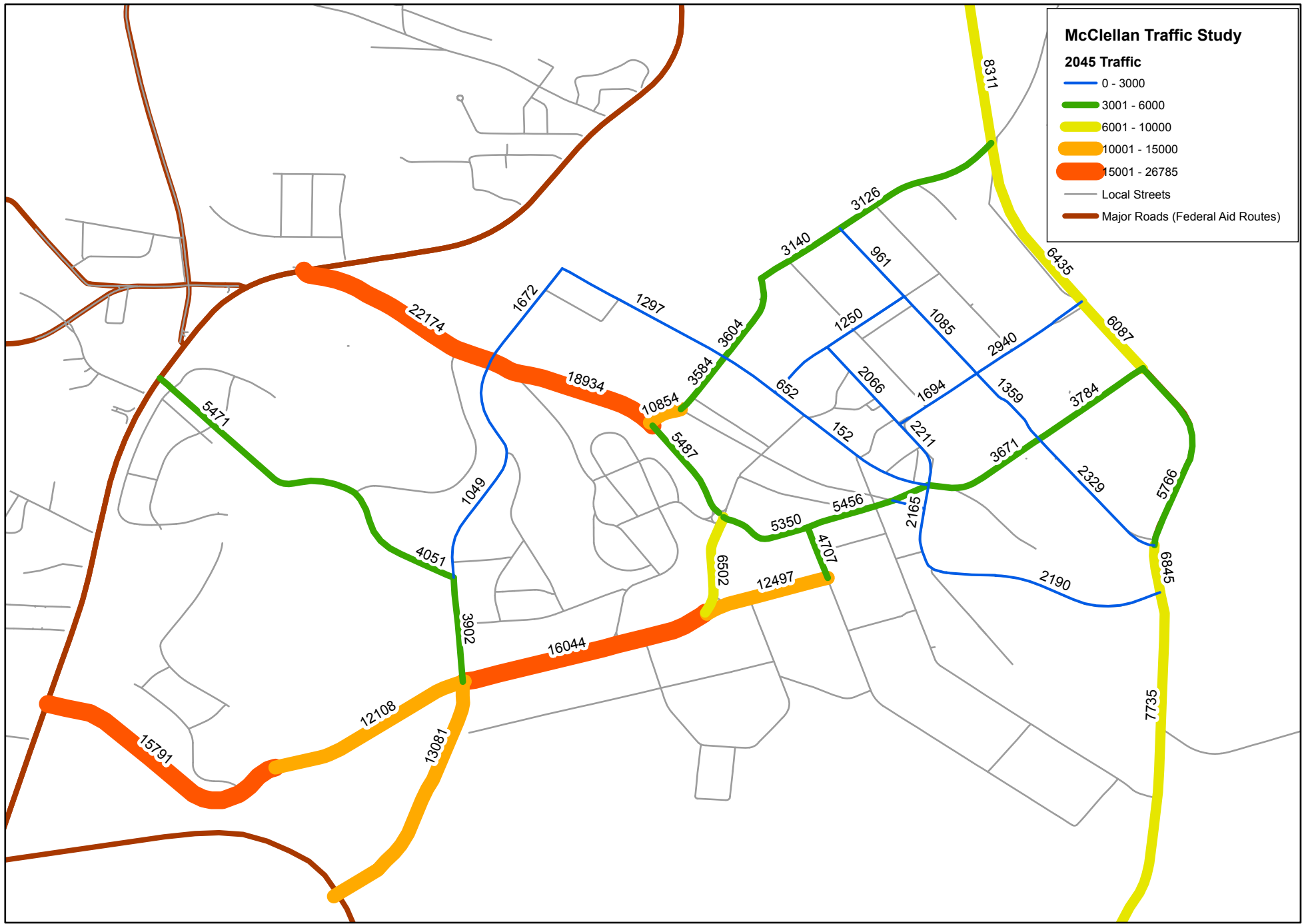
Map 5a
Improved McClellan Road Network



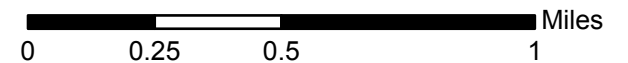


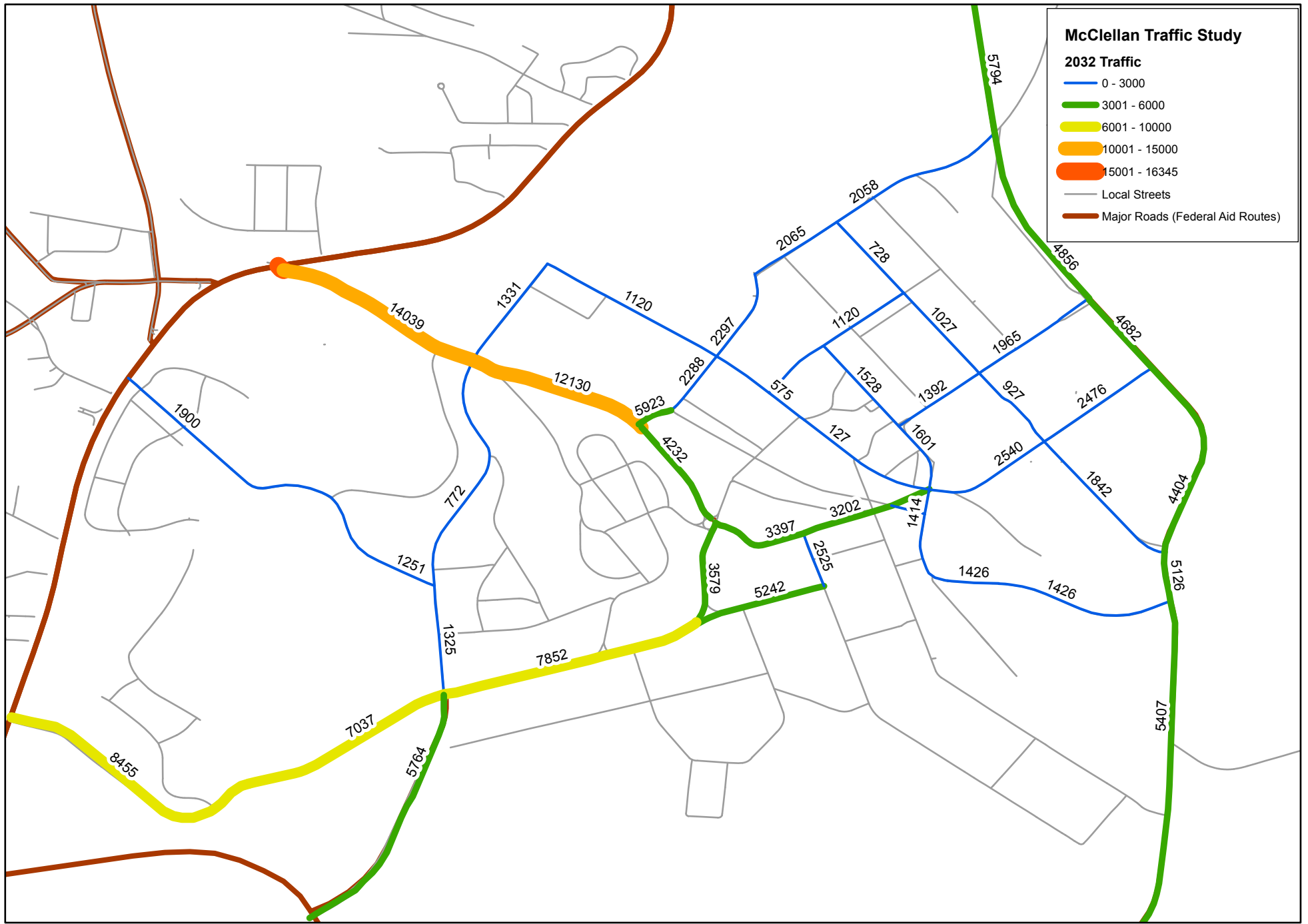
Map 6
McClellan Traffic Volumes at Build Out (est 2060)



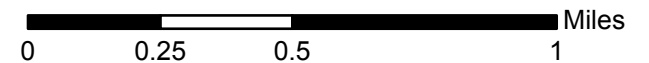


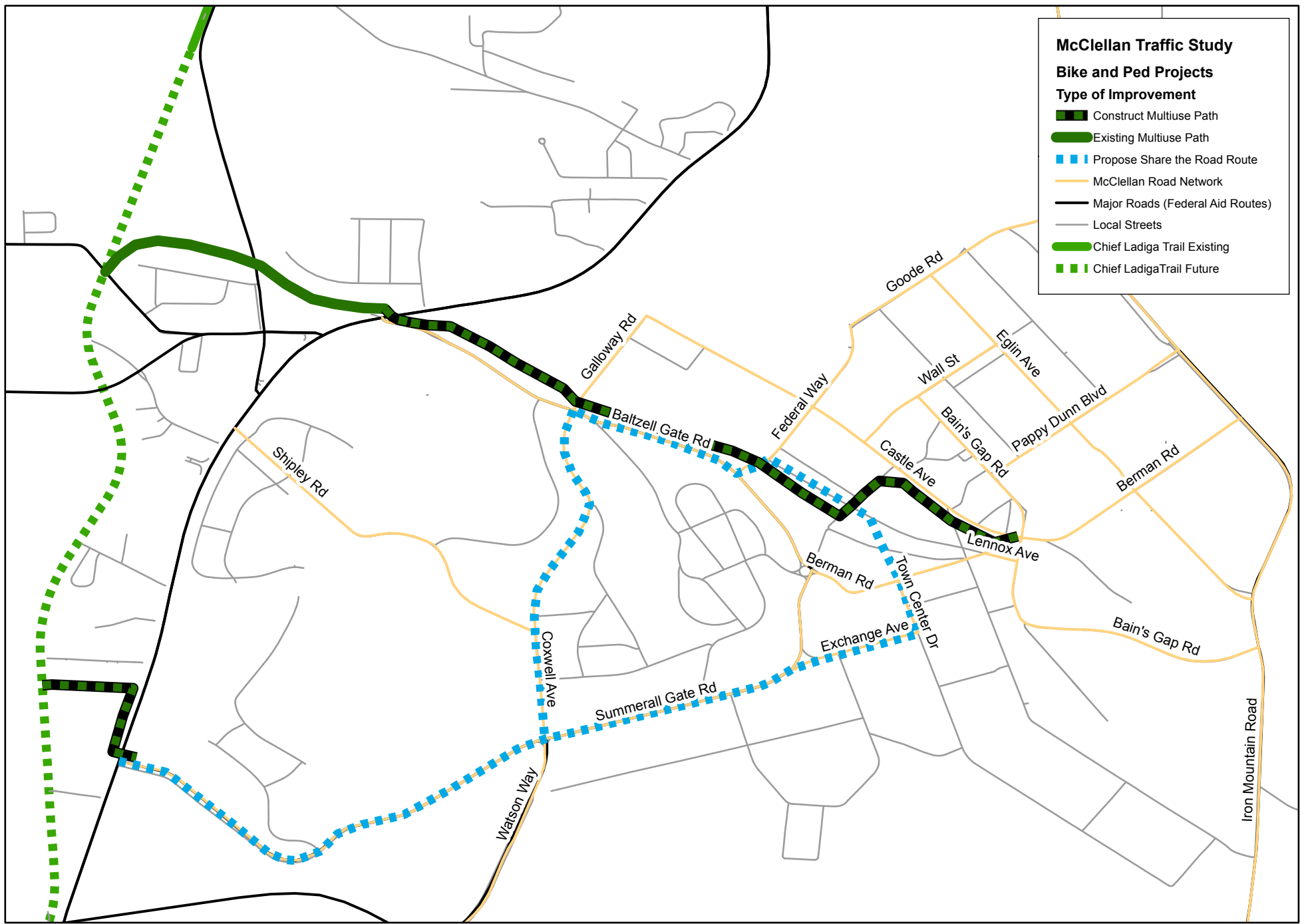
Map 7
 McClellan Traffic Volumes in 2045





Map 8
 McClellan Traffic Volumes in 2032





Map 9
Bicycle and Pedestrian Connectivity

