2021
Bentonville Master Street Plan
Volume 1

Acknowledgements

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PREPARED BY

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Alliance Transportation Group

10/28/2021
Garver Project No.: 19T21630

Contents

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MASTER STREET PLAN

Introduction

The City of Bentonville maintains a Master Street Plan, last updated in 2008, which constitutes the official policy on the future location and function of all roadway systems. This report serves to guide the conclusions of the Master Street Plan through analysis of the roadway network.

Master Street Plan Summary

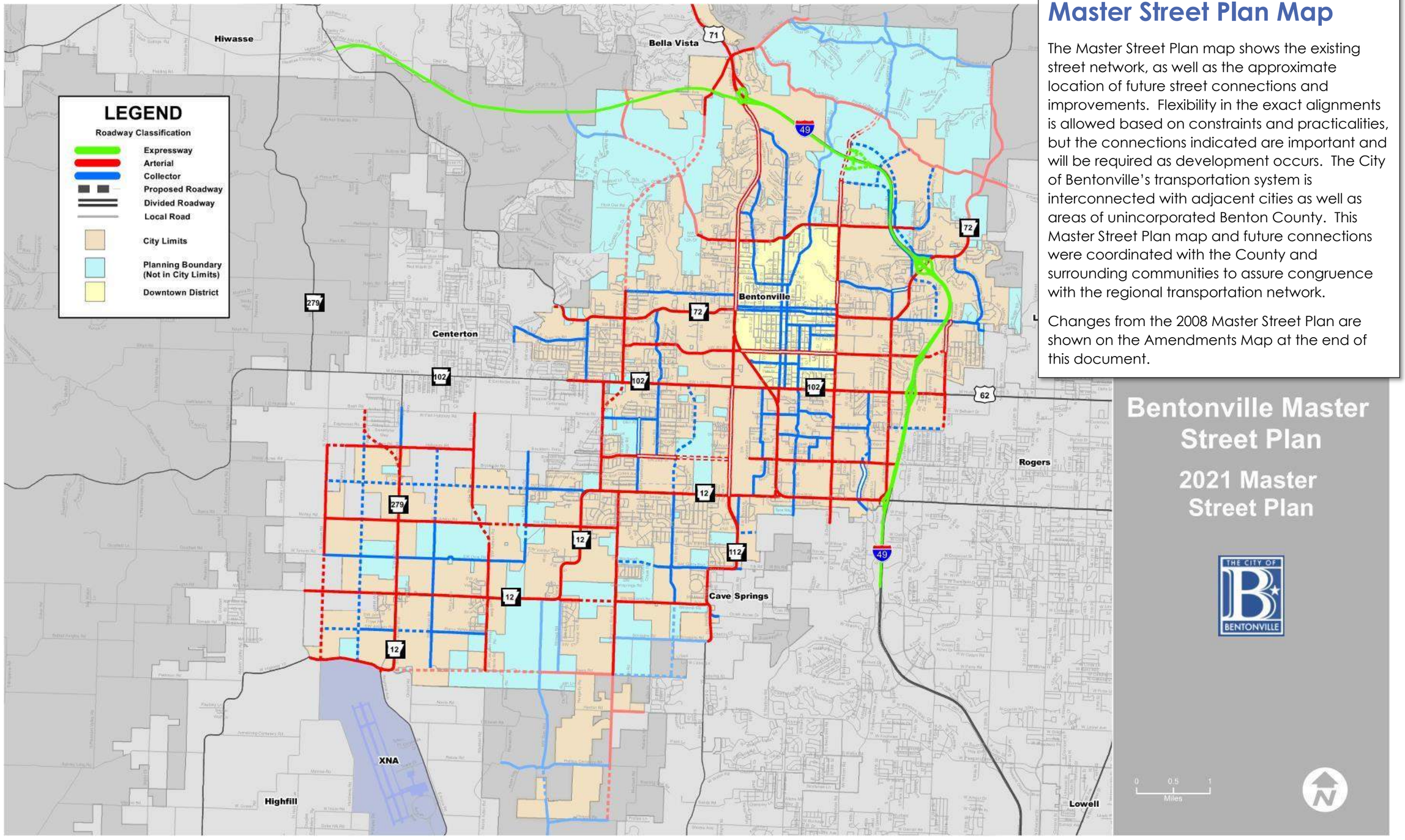
Transportation is a key element of a City's infrastructure. The primary planning document that facilitates the City's transportation planning is the Master Street Plan.

The City has an existing network of City and State roadways. With growth and time, changes are needed to assure the roadway system is efficient, strong, and connected to increase economic opportunities within the city. The Master Street Plan accomplishes that by identifying key areas needed for future arterial and collector extensions and other roadway improvements. These improvements will help to relieve congestion and plan for efficient growth and improvement of the City's roadway system over time. The Master Street Plan also classifies all roadway types, provides Typical Sections for each type of street classification, and provides guidance on multi-modal transportation elements such as public transit and active transportation.

Master Street Plan Map

The Master Street Plan map shows the existing street network, as well as the approximate location of future street connections and improvements. Flexibility in the exact alignments is allowed based on constraints and practicalities, but the connections indicated are important and will be required as development occurs. The City of Bentonville's transportation system is interconnected with adjacent cities as well as areas of unincorporated Benton County. This Master Street Plan map and future connections were coordinated with the County and surrounding communities to assure congruence with the regional transportation network.

Changes from the 2008 Master Street Plan are shown on the Amendments Map at the end of this document.



TYPICAL STREET SECTIONS

Photo By: Garver

Typical Street Sections

The street classification system is a hierarchical break down of how roadways function now, and how they are planned to function in the future. This Master Street Plan provides for four types of functional classifications: Expressways, arterials, collectors, and local streets. A street functional classification system should represent a well-planned network operating like a circulatory system.

Expressway- Expressways provide for high-speed travel in a controlled access environment. Most expressways are state or federally managed roadway systems spanning several jurisdictions. Interstate 49 is currently the sole expressway within the City.

Arterial – Arterials provide for increased mobility by moving high volumes of through-traffic by connecting and supporting expressways. Arterials are typically designed around permitting unimpeded traffic flow and are not primarily designed to provide high property access. Drive spacing requirements and access limitations are common to arterial streets. Residential frontage is discouraged. SW 14th Street and Walton Boulevard are examples of arterial roads.

Collector - Collector streets connect neighborhoods with the arterial roadway system. Collectors differ from arterials in that they provide more of a citywide circulation function, do not require as extensive access control, and penetrate residential neighborhoods. Collector streets are designed to balance access to abutting property and provide sufficient traffic flow to permit greater mobility within the City. Examples of collector streets are SW Bright Road and NE John Deshields Boulevard.

Local - Local streets are intended to connect traffic to higher classification roadways such as collector streets. Local streets have low capacity and thus are not intended to carry high volumes of traffic or provide for through-traffic movements. Local streets are designed for low speeds and to provide access to adjoining land.

Alley- Alleys are intended to provide access to the rear or side of lots or buildings and not intended for through vehicular traffic. Alleys are characterized by a narrow right-of-way in residential areas with low speeds, low volumes of traffic, and high accessibility to adjoining land.

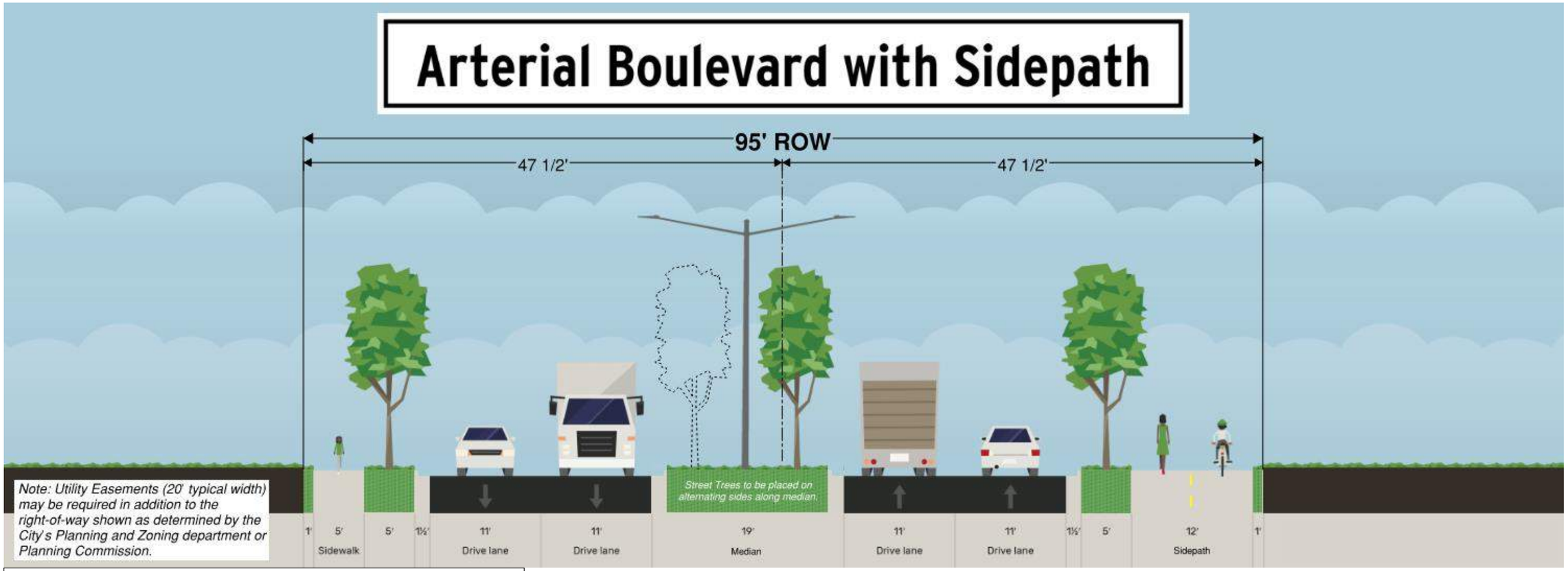
Each street classification described within the Master Street Plan has a corresponding cross section(s). Each of these cross sections, in conjunction with the Connecting Bentonville, Bike & Pedestrian Plan, shall govern the construction of street and bicycle/pedestrian facilities by the City as well as through the private development community. Moreover, these cross sections will work in concert with the City's standard street specifications that further dictate the remaining aspects of roadway design and construction. Street classifications contained in the Master Street Plan correspond to the street cross sections shown in this report. These cross sections prescribe and standardize how each new street should be constructed. Furthermore, the cross sections contained herein dictate the standards for how the existing street network should be improved.

Street Classification Summary Table

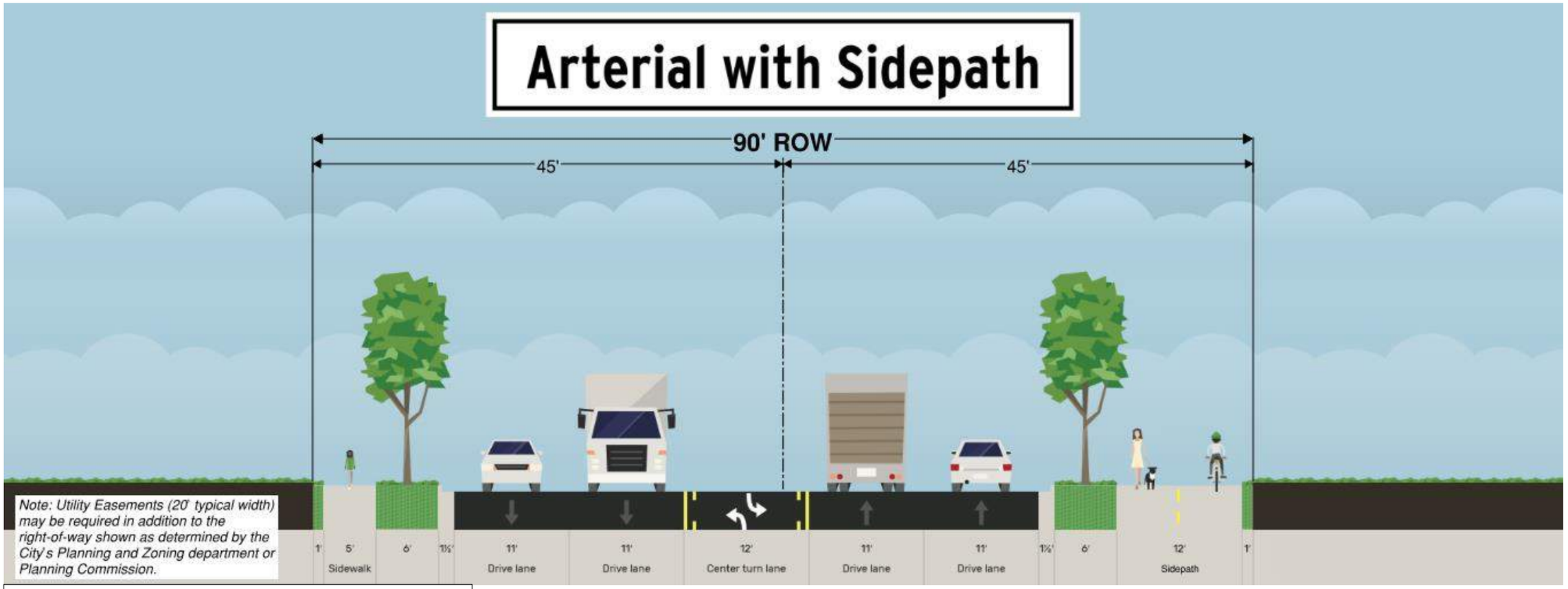
Design Element	Street Classification												
	Arterial Boulevard with Sidepath	Arterial with Sidepath	Arterial with 2-Way Separated Bike Lanes	Arterial with Sidewalks	Collector Boulevard with Bike Lanes	Collector with Sidepath	Collector with Bike Lanes	Local with Shared Use	Downtown Collector	Downtown Collector with Parking	Downtown Collector with Bike Lane	Downtown Local	Alley
Right of Way Width, Feet	95’	90’	95’	90’	75’	70’	70’	50’	65’	65’	65’	50’	20’
Number of Traffic Lanes	4 Travel	4 Travel & 1 Center Turn	4 Travel & 1 Center Turn	4 Travel & 1 Center Turn	2 Travel	2 Travel & 1 Center Turn	2 Travel & 1 Center Turn	2 Travel	2 Travel & 1 Center Turn	2 Travel & 2 Parking	2 Travel	2 Travel	2 Travel
Lane Width, Feet	11’	11’ Travel 12’ Turn	11’ Travel 12’ Turn	11’ Travel 12’ Turn	11’	11’ Travel 12’ Turn	11’ Travel 12’ Turn	14’	11’ Travel 12’ Turn	11’ Travel 9’ Parking[a]	11’	14’	8’
Pavement Width (Back-to-Back of Curb), Feet	25’ per side	59’	59’	59’	21’ per side	37’	51’	31’	37’	41’	41’	31’	16’ (no curb & gutter)
On-Street Bike Lane Width, Feet	n/a	n/a	n/a	n/a	7’ both sides**	n/a	7’ both sides**	n/a	n/a	n/a	9’#	n/a	n/a
Raised Median Width (Back to Back of Curb), Feet	16’	n/a	n/a	n/a	14’	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sidewalk/Sidepath Width, Feet	5’ Sidewalk & 12’ Sidepath	5’ Sidewalk & 12’ Sidepath	5’ Sidewalk both sides & 12’ SBL*	5’ Sidewalk both sides	5’ Sidewalk both sides	5’ Sidewalk & 12’ Sidepath	5’ Sidewalks both sides	5’ Sidewalk both sides	12’ Sidewalk both sides	12’ Sidewalk both sides	12’ Sidewalk both sides	8’ Sidewalk both sides	n/a
Greenspace Width, Feet	5’	6’	6’	10’	4’	7’	4’	4’	n/a	n/a	n/a	n/a	n/a
Average Daily Traffic Ranges (veh/day)	5,000 to 60,000	5,000 to 60,000	5,000 to 60,000	5,000 to 60,000	1,000 to 5,000	1,000 to 5,000	1,000 to 5,000	<1,000	1,000 to 5,000	1,000 to 5,000	1,000 to 5,000	<1,000	<100
Design Speed, MPH	45 min.[b]	45 min.[b]	45 min.[b]	45 min.[b]	35	35	35	25	30	30	30	25	15
[b]Desired Operating Speed, MPH	[b]	[b]	[b]	[b]	30 or less	30 or less	30 or less	20	25	25	25	20	10

* Separated Bike Lanes with 1’ separation between adjacent sidewalk. **Measured from inside edge of bike lane to edge of pavement.
[a]Measured from the face of curb [b]Requires individual design and analysis as approved by City Engineer

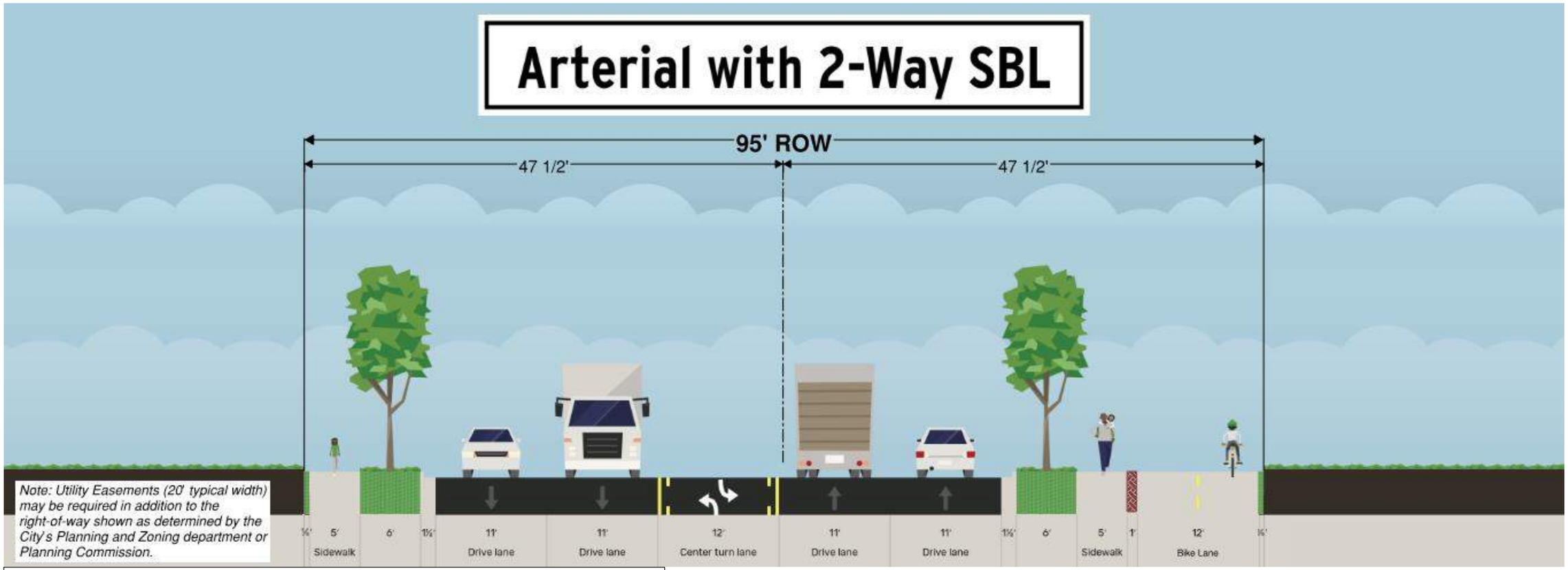
Typical Street Sections



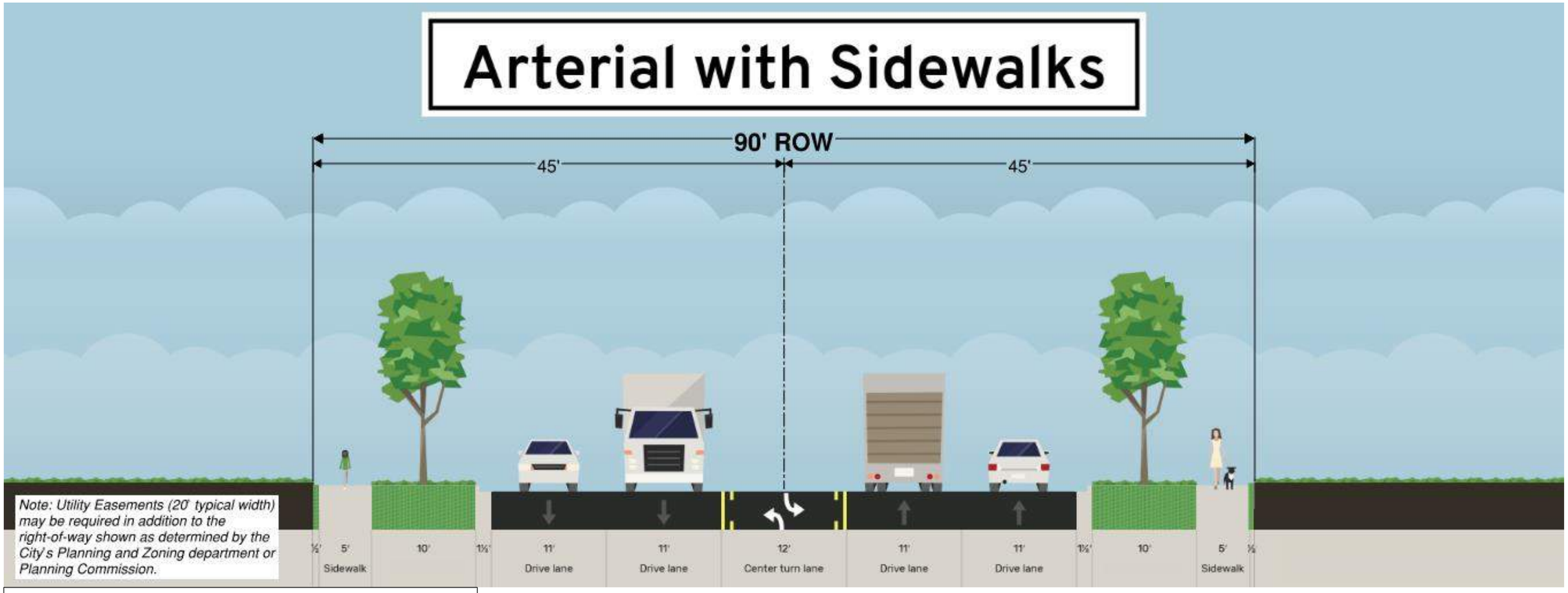
Typical Street Section 1-Arterial Blvd. with Sidepath



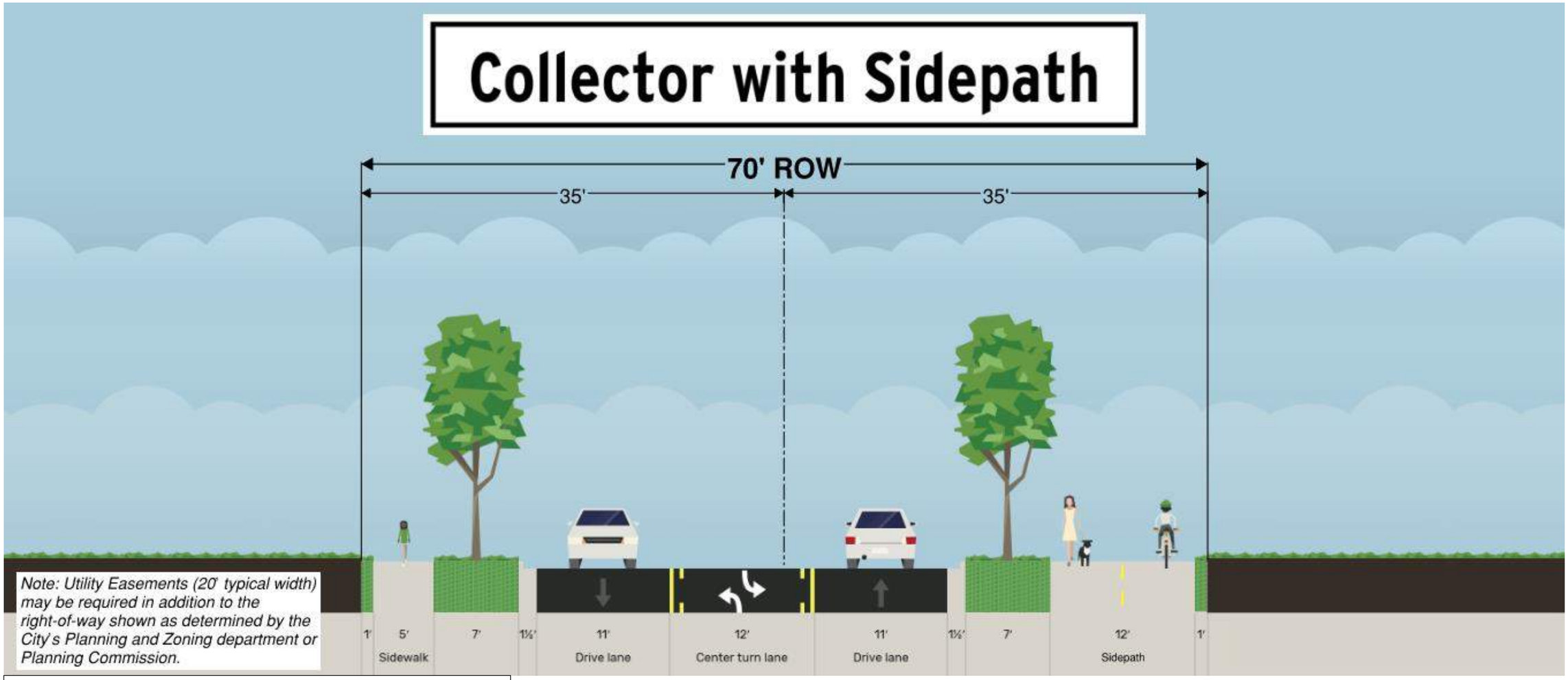
Typical Street Section 2-Arterial with Sidepath



Typical Street Section 3-Arterial with 2-way Separated Bike Lane

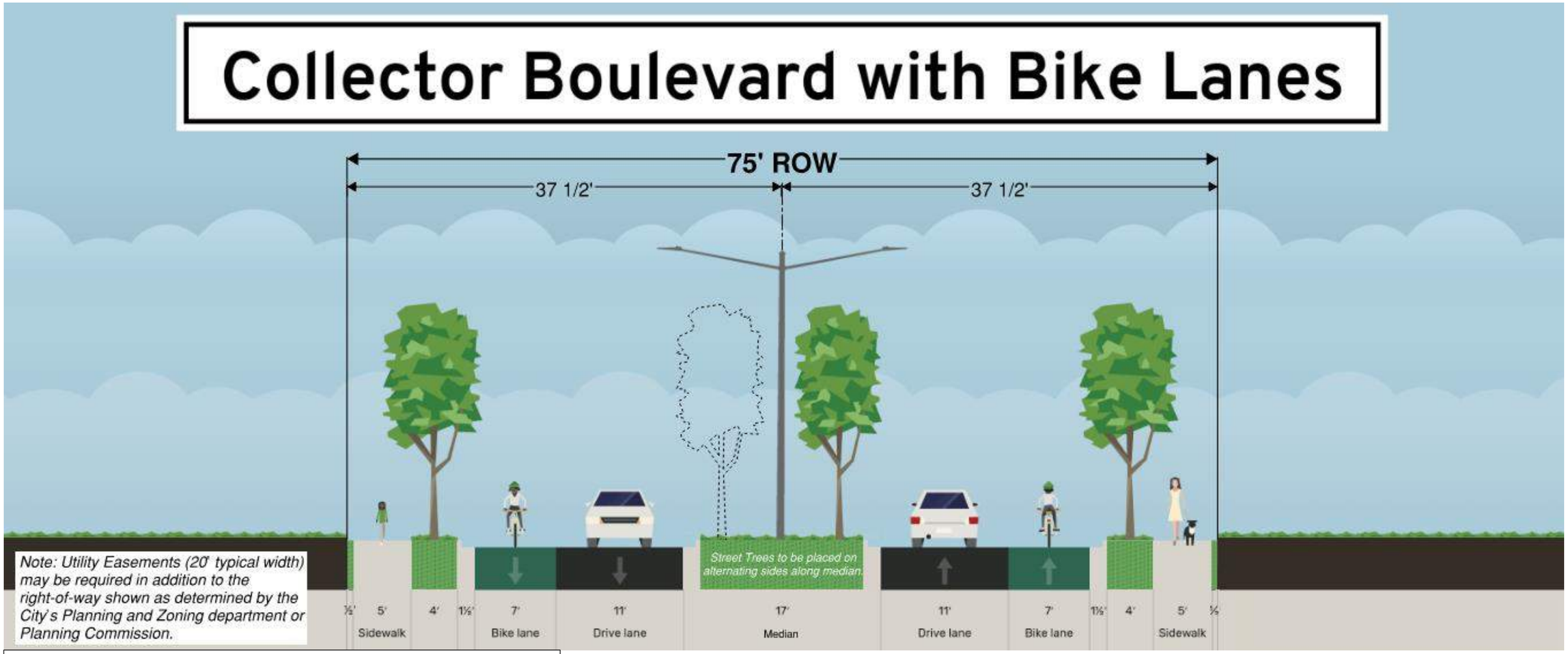


Typical Street Section 4-Arterial with Sidewalks

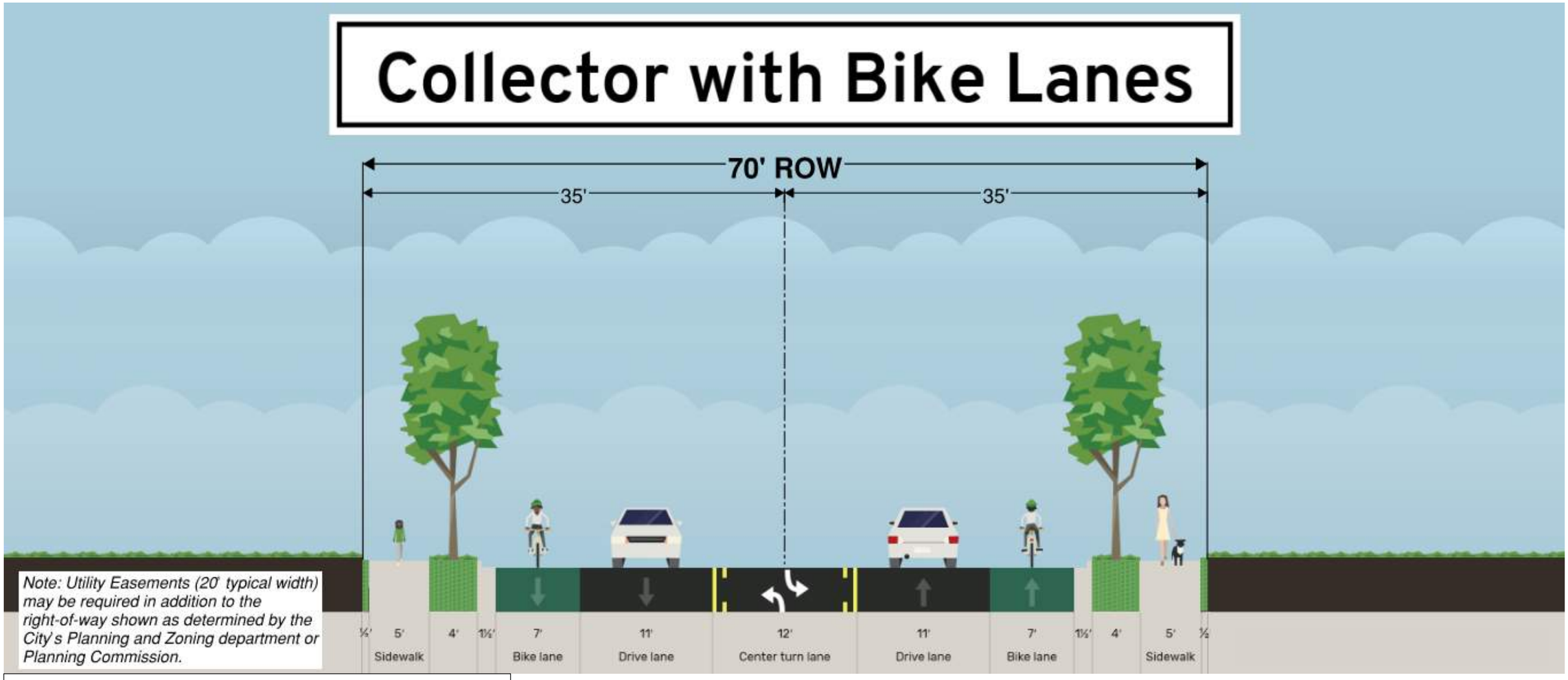


Typical Street Section 5-Collector with Sidepath

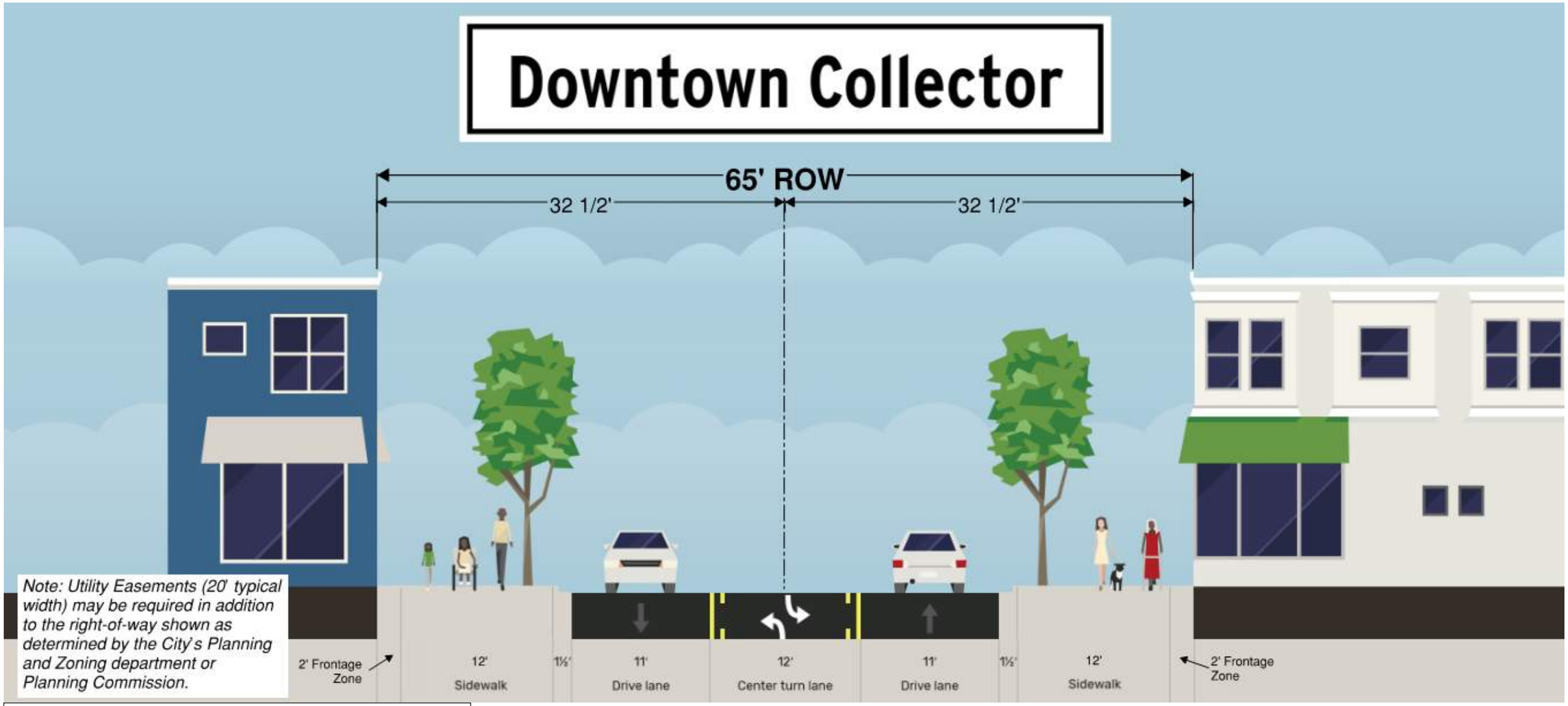
Collector Boulevard with Bike Lanes



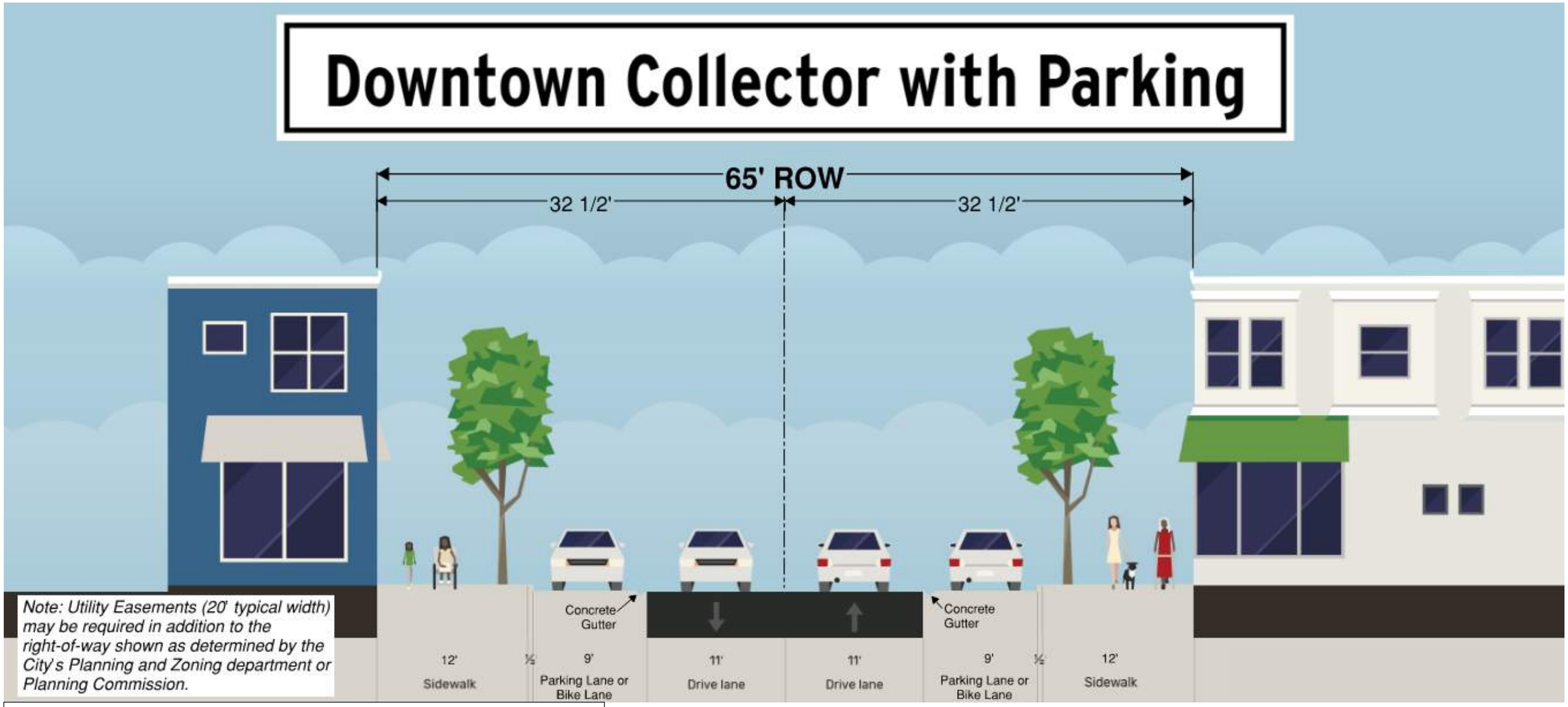
Typical Street Section 6-Collector Blvd. with Bike Lanes



Typical Street Section 7-Collector with Bike Lanes

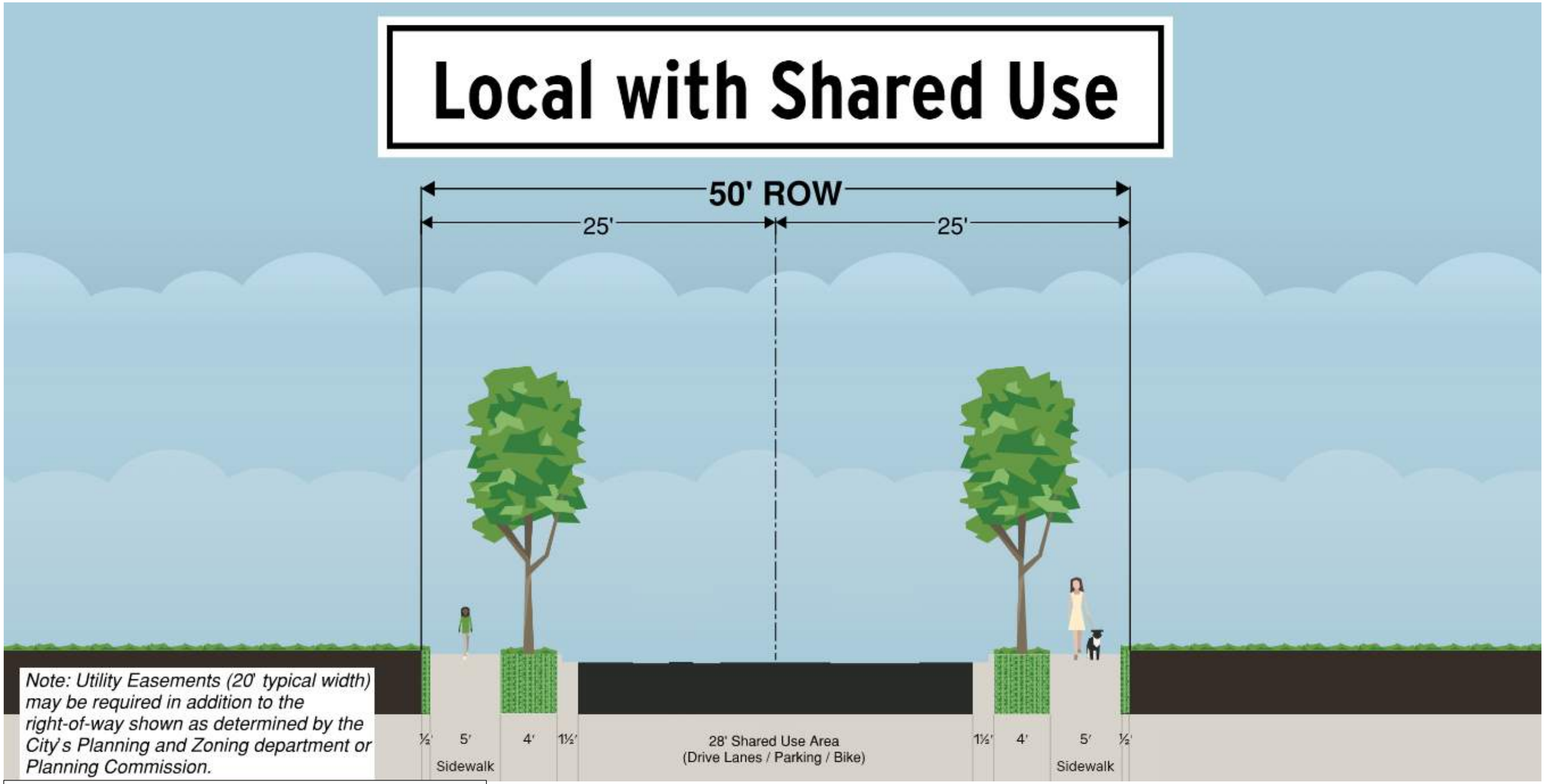


Typical Street Section 8-Downtown Collector



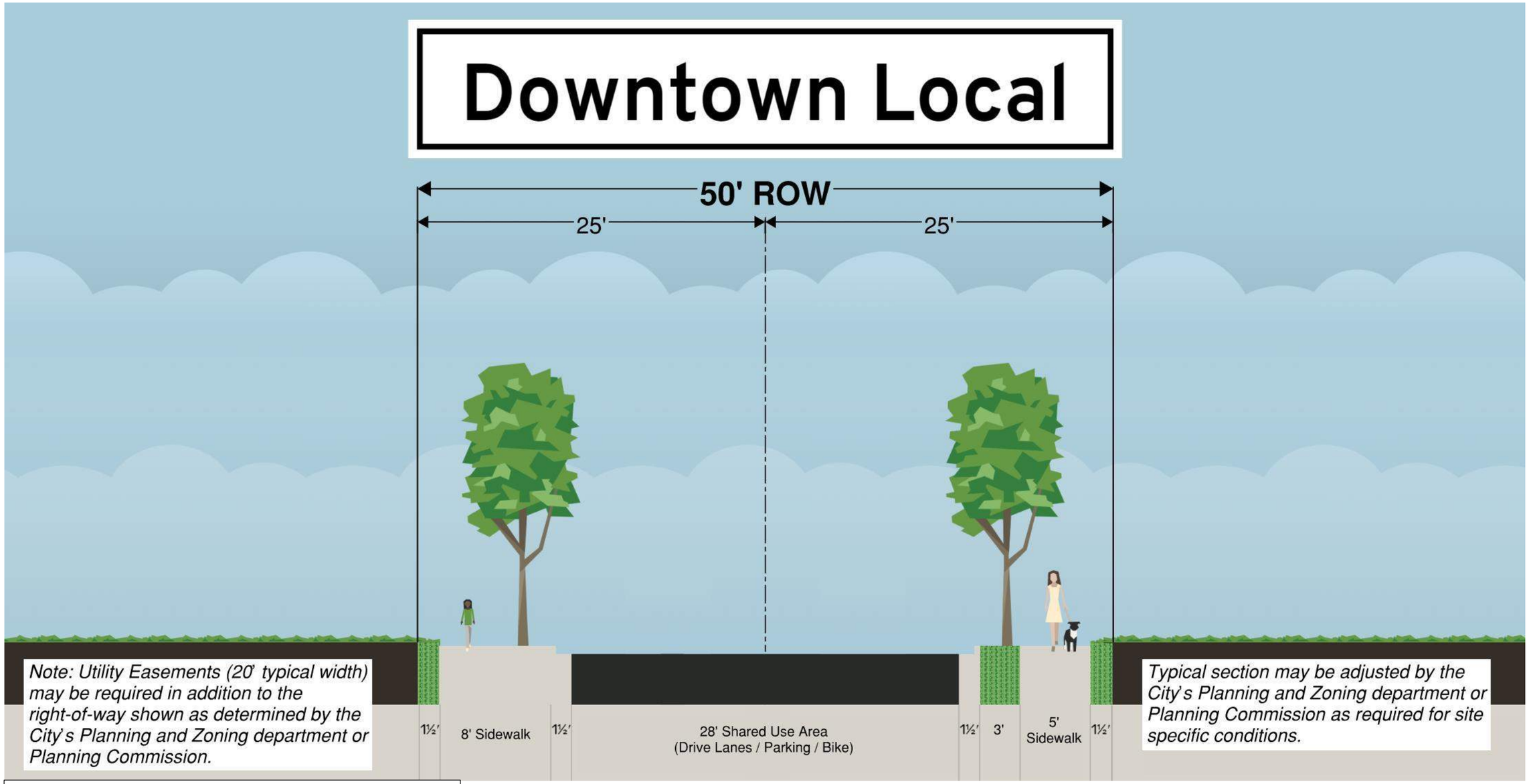
Typical Street Section 9-Downtown Collector with Parking

Local with Shared Use



Typical Street Section 10-Local with Shared Use

Downtown Local



Typical Street Section 11-Downtown Local

POTENTIAL TRANSPORTATION PROJECTS

Summary List of Potential Transportation Projects

A project scoring matrix was developed to rank potential capital improvement projects. Six scoring indicators were selected and weighted with varying degrees of significance as determined by the Steering Committee. For example, the indicators "Congestion Reduction" and "Safety" were weighted high with weights of four (4) while the "Construction Duration" indicator was weighted low with a weight of one (1). For each potential project, the raw score for each indicator was multiplied by the indicator weight and the weighted indicator scores were summed together to get a composite score. Potential projects were divided between arterial roadways, collector roadways, and intersections and then ranked within each category by their composite score. The top scoring projects from each category are shown on this page. The scoring matrices with all projects that were scored are shown on the following three pages for each project category. Potential projects that were known to be incorporated into ongoing or future projects by ARDOT or private developments were excluded from the scoring matrices.

Capital Improvement Projects - Top 10 Arterial Roadways

Project #	Roadway	Description	Composite Score	Rank
1	SW A Street	SW 8th to Walton Blvd.	37	1
2	SE Moberly Lane	SE 28th Street to SE Walton Blvd.	35	2
3	Water Tower Road	SE 6th Street to E. Battlefield Boulevard	33	3
4	SE Moberly Lane	SE 14th to SE 8th Street	30	4
5	J Street Interchange on I-49	NE J Street (where curves east) to Price Coffee Road	28	5
6	SW 28th Street	SW Featherston Road to SW I Street	28	5
7	Greenhouse Road	SW Regional Airport Blvd to SW 28th Street	28	5
8	Tiger Blvd. Overpass	McCollum Drive to NE Grammercy Road	28	5
9	Greenhouse Road	28th Street to Glen Road	27	9
10	Greenhouse Road	Glen Road to 14th Street at Elm Tree Intersection	26	10

Capital Improvement Projects - Top 10 Collector Roadways

Project #	Roadway	Description	Composite Score	Rank
1	O Street	SW 14th Street to SW 28th Street	26	1
2	SW Bright Road	SW Regional Airport Blvd to 28th Street	23	2
3	SW A Street	SW A Street - W. Central Avenue to 8th Street	23	2
4	McCollum Drive	End of McCollum Drive to NE J Street	22	4
5	SW Gator Blvd.	S Morningstar Road to SW Gator Blvd.	20	5
6	Red Bud	S. Walton Blvd. to SW A Street	20	5
7	Medical Center Pkwy	SE 28th Street to SE S Street	20	5
8	E. Battlefield Blvd.	E. Central Ave. to Water Tower Road	19	8
9	McCollum Drive	Ivy Circle to End of McCollum Drive	18	9
10	Town Vu Road	City Limits (~Gower Ct) to SW Tater Black Rd	16	10

Capital Improvement Projects - Top 13 Intersections

Project #	Intersection	Composite Score	Rank
1	SE Walton Blvd. and SE C Street	31	1
2	S Walton Blvd. and SE 28th Street	30	2
3	SE Walton Blvd. and SW Regional Airport Blvd. (Flyover)	30	2
4	SE Walton Blvd. and SE Medical Center Parkway	28	4
5	SW Regional Airport Blvd. and SW I Street	26	5
6	S. Walton Blvd. and Wal-Mart Entrance	26	5
7	SW Regional Airport Blvd. and S. Vaughn Road	26	5
8	SW 14th and S. Walton Blvd.	25	8
9	SW 14th Street and Been Rd./Turnbridge Drive	24	9
10	Walton Blvd. and Central Ave.	23	10
11	SE 28th St at SE J St	23	10
12	SE Walton Blvd. and SE J Street	22	12
13	SW I Street and SW 41st Street	22	12

Scoring Summary Table-Arterials

Capital Improvement Projects - Arterial									
Category		Congestion Reduction	Safety	Bike & Pedestrian	Economic Development Impact	Cost	Construction Duration		Composite Score
Weights		4	4	2	2	3	1		
Roadway	Description								
J Street Interchange on I-49	NE J Street (where curves east) to Price Coffee Road	3	1	3	3	0	0		28
SW 28th Street	SW Featherston Road to SW I Street	3	1	3	1	1	1		28
Water Tower Road	SE 6th Street to E. Battlefield Boulevard	3	0	2	3	3	2		33
Greenhouse Road	SW Regional Airport Blvd to SW 28th Street	3	0	2	0	3	3		28
Greenhouse Road	28th Street to Glen Road	3	0	2	0	3	2		27
Greenhouse Road	Glen Road to 14th Street at Elm Tree Intersection	3	0	2	1	2	2		26
SW I Street	S. Walton Blvd. To SW 14th Street	2	2	0	0	2	2		24
NE J Street	Tiger Blvd. to NE J Street (where curves east)	1	1	1	0	3	2		21
Tiger Blvd. Overpass	McCollum Drive to NE Grammercy Road	2	0	3	3	2	2		28
SW A Street	SW 8th to Walton Blvd.	3	2	3	0	3	2		37
SW Windmill Road	Nomad Road to S. Morningstar Road	1	0	2	2	2	2		20
Haxton Road	S. Morning Star Road to Mill Dam Road	1	0	1	2	0	1		11
SW Elm Tree Road	SW 14th Street to SW Coler Creek Ave.	3	0	1	0	3	2		25
SE Moberly Lane	SE 28th Street to SE Walton Blvd.	3	2	2	0	3	2		35
SE Moberly Lane	SE 28th Street to SE 14th Street	2	2	1	0	2	1		25
SE Moberly Lane	SE 14th to SE 8th Street	2	2	1	0	3	3		30
SE Moberly Lane	SE 8th Street to E. Central Ave.								0
S Morning Star Road	SW Regional Airport Blvd. to Windmill Road	3	0	2	2	0	1		21
S Morning Star Road	Windmill Road to Haxton Road	2	0	2	2	1	1		20
SW Windmill Road	S. Morningstar Road to HWY 112	0	3	2	2	1	1		24
NE J Street	E. Central Avenue to Tiger Blvd.	2	1	2	1	1	1		22

Improvements through private development or others

Scoring Summary Table-Collectors

Capital Improvement Projects - Collector									
Category		Congestion Reduction	Safety	Bike & Pedestrian	Economic Development Impact	Cost	Construction Duration		Composite Score
Weights		4	4	2	2	3	1		
Roadway	Description								
SW Bright Road	SW Regional Airport Blvd to 28th Street	1	0	3	2	2	3		23
O Street	W. Central Ave. to SW 8th Street	0	0	2	1	2	2		14
O Street	SW 14th Street to SW 28th Street	2	1	3	2	1	1		26
Rice Lane	NE 11th Street to NE J Street								0
Rice Lane	NE J Street to NE A Street								0
SW A Street	SW A Street - W. Central Avenue to 8th Street	0	2	2	0	3	2		23
SW Gator Blvd.	S Morningstar Road to SW Gator Blvd.	1	0	3	1	2	2		20
SW Tater Black Road	SW 2nd Street to SW 14th Street	0	0	1	0	2	2		10
Town Vu Road	City Limits (~Gower Ct) to SW Tater Black Rd	0	0	3	1	2	2		16
Red Bud	S. Walton Blvd. to SW A Street	1	0	2	0	3	3		20
E. Battlefield Blvd.	E. Central Ave. to Water Tower Road	0	0	3	3	2	1		19
McCollum Drive	E. Central Ave. to E. Battlefield Road								0
McCollum Drive	Ivy Circle to End of McCollum Drive	0	1	3	0	2	2		18
McCollum Drive	End of McCollum Drive to NE J Street	1	0	2	1	3	3		22
Medical Center Pkwy	SE 28th Street to SE S Street	1	0	2	0	3	3		20
Ford Springs Road	W. McNelly Road to Slaughter Pen Road	0	2	2	1	0	1		15

Improvements through private development or others

Scoring Summary Table-Intersections

Capital Improvement Projects - Intersections								
Category	Congestion Reduction	Safety	Bike & Pedestrian	Economic Development Impact	Cost	Construction Duration		Composite Score
Weights	4	4	2	2	3	1		
Intersection								
SW 14th and S. Walton Blvd.	3	3	0	0	0	1		25
Walton Blvd. and Central Ave.	2	3	1	0	0	1		23
SE Walton Blvd. and SE C Street	3	2	1	0	3	0		31
SE C Street and SE 28th Street	0	0	2	1	3	3		18
SW Regional Airport Blvd. and SW I Street	3	3	0	1	0	0		26
SE Walton Blvd. and SE Medical Center Parkway	3	3	0	0	1	1		28
SE 28th St at SE J St	3	2	1	0	0	1		23
SE J Street and SE 18th Street	0	0	0	0	0	0		0
SE 14th Street and SE J Street								0
SE Walton Blvd. and SE J Street	1	3	1	0	1	1		22
S. Walton Blvd. and Wal-Mart Entrance	1	2	1	0	3	3		26
SW I Street and SW 41st Street	0	0	3	2	3	3		22
SE 8th St at SE J St								0
SE J Street and E Central Avenue								0
E. Central Avenue and E Battlefield Blvd.								0
SE 14th Street and SE P Street								0
S Walton Blvd. and SE 28th Street	2	2	1	0	3	3		30
S Walton Blvd. and Red Bud	0	0	0	0	0	0		0
S Walton Blvd. and SE 18th Street	0	0	0	0	0	0		0
SW 14th Street and Been Rd./Turnbridge Drive	0	2	2	0	3	3		24
SW Regional Airport Blvd. and Greenhouse Road	0	1	0	1	3	3		18
SW Regional Airport Blvd. and S. Vaughn Road	3	0	1	2	2	2		26
E. Central Avenue and MLK JR Parkway								0
NW Elm Tree Road and NW 3rd Street	0	0	2	0	2	2		12
SW Gator Blvd. and SW H Street (HWY 112)								0
SW 14th Street and SW Elm Tree Road	0	0	2	1	3	2		17
SE 14th Street and SE C Street	0	0	0	0	0	0		0
SW Elm Street Road and SW 2nd Street	3	1	1	0	0	1		19
SW H Street (HWY 112) and Elk Rd								0
SE Walton Blvd. and SW Regional Airport Blvd. (Flyover)	3	3	2	1	0	0		30

Analysis shows no need for improvement
No data available to evaluate
Improvements through private development or others

Photo By: Garver

PROJECT SUMMARY SHEETS

Project Summary Sheets

Project summary sheets were developed for the top scoring potential capital improvement projects for arterial roadways, collector roadways, and intersections. The project summary sheets include a brief description of the project, a schematic exhibit, a project timeline, and estimated costs. The estimated costs include costs for design fees, right-of-way acquisition, utility relocation, and construction. The following project summary sheets are ordered by the project scoring results for each project category.

The following Project Summary Sheets are conceptual, and not considered final designs.

10.07.2021

SW A Street - SW 8th St. to Walton Blvd.

The project consists of improving approximately 0.70 miles of SW A Street between Walton Boulevard and SW 8th Street to a four-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. The project also includes intersection improvements where SW A Street intersects both SW 14th Street and Walton Boulevard. SW A Street is a vital north-south corridor into the heart of the downtown district, and the existing road along this section is a two-lane, open-shoulder roadway with minimal pedestrian facilities. This project will bring this section of SW A Street to current arterial street standards and provide the pedestrian/bicycle facilities that are much needed for this downtown entry corridor.

Project Exhibit

Arterial Project 1: SW A Street – SW 8th Street to Walton Blvd.

10.07.2021

SE Moberly Lane - SE 28th St. to SE Walton Blvd.

The project consists of improving SE Moberly Lane for approximately 0.52 miles between SE 28th Street and SE Walton Boulevard to a five-lane road with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. SE Moberly Lane serves as a north-south arterial roadway across most of the city, and this section is currently only a two-lane section with minimal pedestrian facilities along this commercial corridor. This project improves this section of the vital corridor to arterial street standards while also better accommodating the intersection improvements at SE Walton Boulevard and SE Moberly Lane that are occurring with the Walton/ Walnut Interchange project.

Project Exhibit

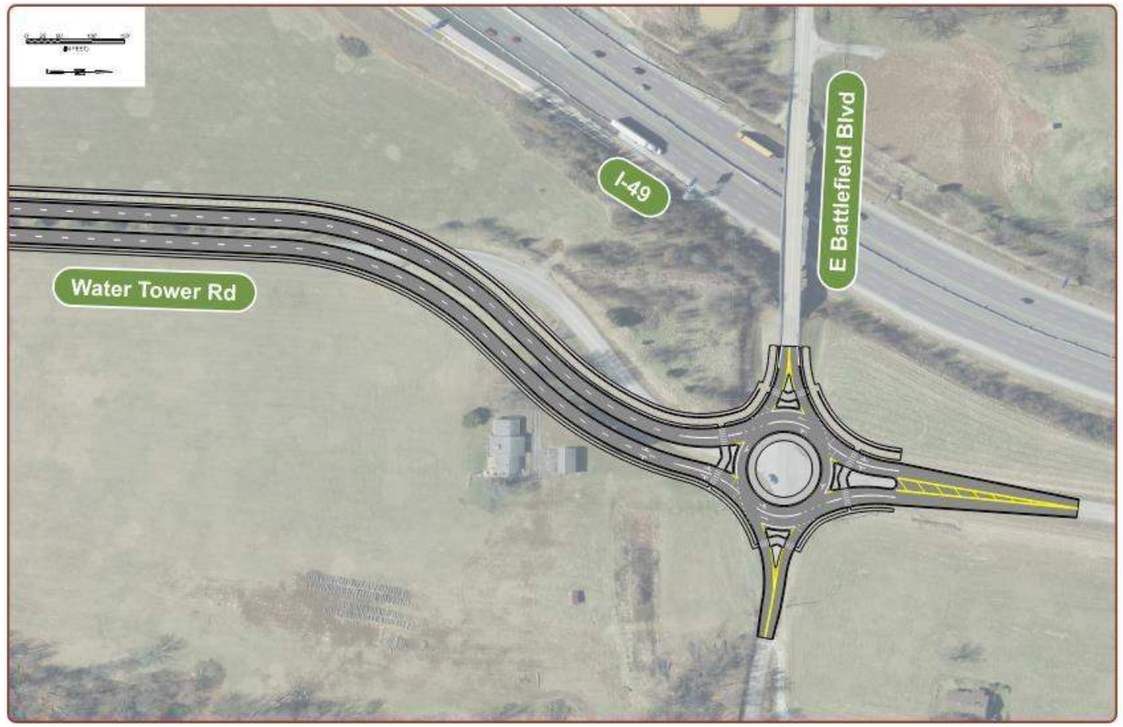
Arterial Project 2: SE Moberly Lane – SE 28th Street to SE Walton Blvd.

10.07.2021

Water Tower Road - SE 6th St. to E Battlefield Blvd.

The project consists of improving Water Tower Road for approximately 0.51 miles between SE 6th Street and Battlefield Boulevard. The proposed roadway will be a four-lane road with a raised center median and a roundabout at the intersection of Water Tower Road with Battlefield Boulevard. The project will include pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Water Tower Road serves as a north-south frontage road along I-49 that will connect to the 8th Street interchange and will provide access from I-49 to NWACC and residential neighborhoods. During the public input process, several public comments requested that Water Tower Road be improved. This project will bring Water Tower Road up to arterial street standards and improve the intersection with Battlefield Boulevard in order to meet the anticipated traffic demands.

Project Exhibit



Arterial Project 3: Water Tower Road – SE 6th Street to E Battlefield Blvd.

10.07.2021

SE Moberly Lane - SE 14th St. to SE 8th St.

The project consists of improving SE Moberly Lane between SE 14th Street and SE 8th Street to a five-lane road with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. This section of SE Moberly Lane is currently a three-lane road with a sidepath on the north side and no pedestrian facilities on the south side. This project will provide additional travel lanes and pedestrian/bicycle facilities to accommodate the high traffic volumes this corridor currently receives and is anticipated to receive in the future.

Project Exhibit

Arterial Project 4: SE Moberly Lane – SE 14th Street to SE 8th

10.07.2021

J Street Interchange - Tiger Blvd. to Interstate 49

The project consists of constructing a new interchange on I-49 and extending NE J Street northward from Tiger Boulevard across Interstate 49 for approximately 1.10 miles. This will require construction of two bridges, one across Shewmaker Creek and one across I-49. The proposed NE J Street will be four lanes with a raised center median and pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. This project will provide access from I-49 directly to NE J Street, which currently serves as a major north-south arterial street throughout the entire city. This will result in a more direct route from I-49 to major attractions such as Crystal Bridges Museum of American Art, Scott Family Amazeum, and the downtown district.

Project Exhibit

Arterial Project 5: J Street Interchange – Tiger Blvd. to Interstate

10.07.2021

SW 28th Street - SW Featherston Rd. to SW I St.

The project consists of improving approximately 1.28 miles of SW 28th Street between SW Featherston Road and SW I Street by widening existing portions and constructing new portions to provide four lanes with a raised center median. The project will include pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Several public comments were received during the public input process requesting improved connectivity of SW 28th Street to I Street. This project would provide this connectivity, completing the connection between Greenhouse Road and SW I Street for many residential neighborhoods and schools along this corridor. Additionally, this proposed connection would improve traffic on congested east-west corridors such as SW Regional Airport Boulevard and SW 14th Street.

Project Exhibit

Arterial Project 6: SW 28th Street – SW Featherston Road to SW I Street

10.07.2021

Greenhouse Road - SW Regional Airport Blvd. to SW 28th St.

The project consists of improving approximately 0.38 miles of Greenhouse Road between SW Regional Airport Boulevard and SW 28th Street to a five-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Greenhouse Road is a vital north-south corridor between SW Regional Airport Boulevard and SW 14th Street. The existing Greenhouse Road is a narrow two-lane road with minimal existing pedestrian facilities. Numerous public comments were received during the public input process requesting Greenhouse Road be improved. This project improves this section of Greenhouse Road to arterial street standards while also bringing much needed bicycle and pedestrian facilities to this vital corridor along the west side of the city.

Project Exhibit

Arterial Project 7: Greenhouse Road – SW Regional Airport Blvd. to SW 28th Street

10.07.2021

Tiger Boulevard Overpass - McCollum Dr. to NE Grammercy Rd.

The project consists of extending Tiger Boulevard approximately 0.61 miles from McCollum Drive eastward over I-49 via a bridge overpass to tie into NE Grammercy Road. The proposed Tiger Boulevard will be four lanes with a raised center median and pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Several public comments were received during the public input process requesting improved connectivity of Tiger Boulevard across I-49. This project would remove the barrier of I-49 and provide a continuous east-west arterial route for vehicles, pedestrians, and bicyclists across the entire width of the city, resulting in reduced traffic congestion for other east-west routes.

Project Exhibit

Arterial Project 8: Tiger Blvd. Overpass – McCollum Dr. to NE Grammercy Road

10.07.2021

Greenhouse Road - 28th St. to Glen Rd.

The project consists of improving approximately 0.61 miles of Greenhouse Road between SE 28th Street and Glen Road to a five-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Greenhouse Road is a vital north-south corridor between SW Regional Airport Boulevard and SW 14th Street. The existing Greenhouse Road is a narrow two-lane road with minimal existing pedestrian facilities. Numerous public comments were received during the public input process requesting Greenhouse Road be improved. This project improves this section of Greenhouse Road to arterial street standards while also bringing much needed bicycle and pedestrian facilities to this vital corridor along the west side of the city.

Project Exhibit

Arterial Project 9: Greenhouse Road – 28th Street to Glen Road

10.07.2021

Greenhouse Road - Glen Rd. to SW Elm Tree Rd.

This project consists of realigning approximately 0.59 miles of Greenhouse Road north of Glen Road to align with SW Elm Tree Road. The proposed section of Greenhouse Road would be five lanes with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Several public comments were received during the public input process requesting improved connectivity at SW Elm Tree Road with SW 14th Street. Additionally, public comments requested an improved signal at the current Greenhouse Road and SW 14th Street intersection. This project addresses both comments by aligning the two arterial roadways (SW Elm Tree Road and Greenhouse Road) to provide a continuous arterial corridor with a new signalized intersection at SW 14th Street.

Project Exhibit

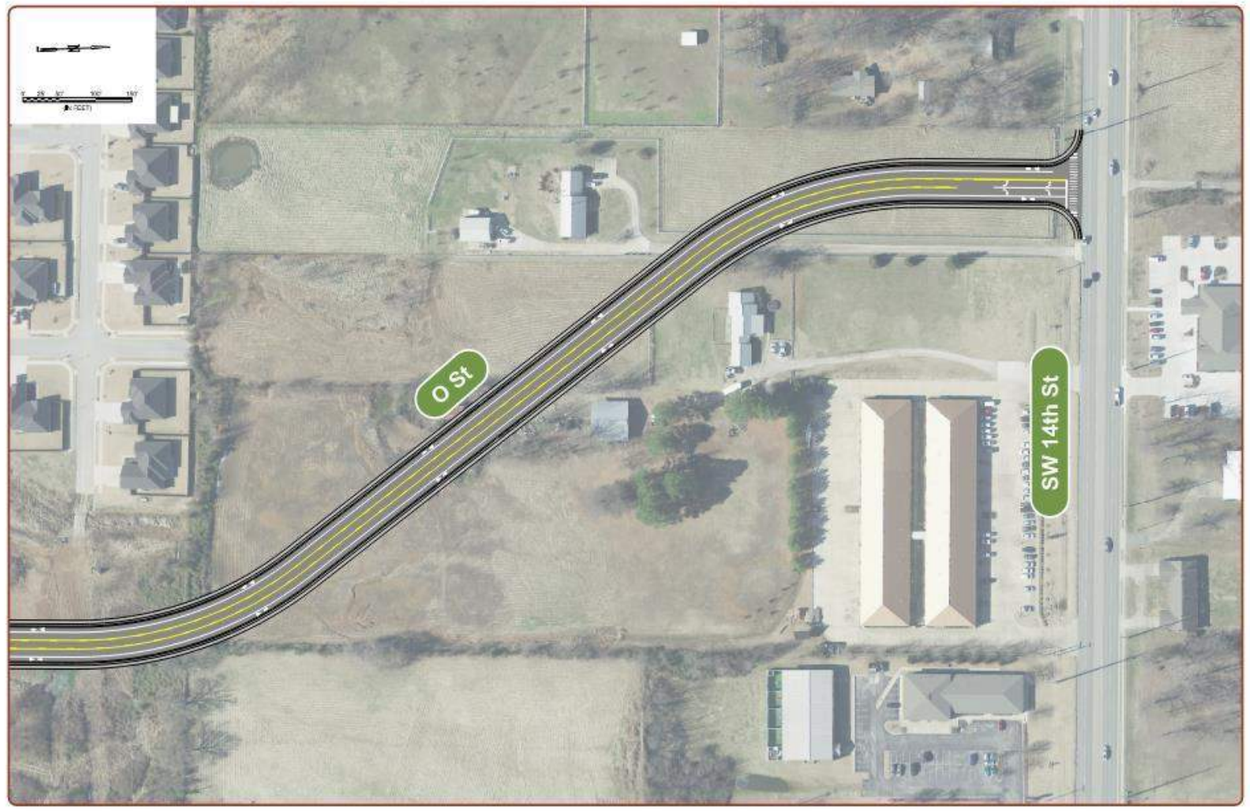
Arterial Project 10: Greenhouse Road – Glen Road to SW Elm Tree Road

10.07.2021

O Street - SW 28th St. to SW 14th St.

The project consists of constructing approximately 1.12 miles of O Street between SW 28th Street and SW 14th Street into a three-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. This project, in conjunction with the Bright Road project, will extend the existing Bright Road corridor northward from SW Regional Airport Boulevard, thus providing a continuous north-south corridor from SW Windmill Road to SW 14th Street. The O Street project will provide traffic congestion relief on the adjacent north-south corridors such as SW I Street and Greenhouse Road.

Project Exhibit



Collector Project 1: O Street – SW 28th Street to SW 14th Street

10.07.2021

SW Bright Road - SW Regional Airport Blvd. to 28th St.

The project consists of constructing approximately 0.55 miles of Bright Road between SW Regional Airport Boulevard and SW 28th Street into a three-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. The project will also include improvements to the existing traffic signal at the SW Regional Airport Boulevard and Bright Road intersection. This project would extend northward the existing Bright Road corridor and provide an important connection between two arterial roadways, SW Regional Airport Boulevard and SW 28th Street. This connection will result in an improvement to traffic congestion on the adjacent north-south corridors such as SW I Street and Greenhouse Road.

Project Exhibit

Collector Project 2: SW Bright Road – SW Regional Airport Blvd. to 28th Street

10.07.2021

SW A Street - W. Central Ave. to 8th St.

The project consists of improving approximately 0.57 miles of SW A Street between E Central Avenue and 8th Street into a two-lane roadway with on-street parking and pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. SW A Street is a vital north-south corridor into the heart of the downtown district. The existing roadway has gaps in the pedestrian/bicycle facilities in an area with a high volume of pedestrian and bicyclist traffic. Additionally, portions of the existing roadway have failing pavement, no curb and gutter, and disorganized on-street parking. This project will bring this section of roadway up to downtown collector standards by adding or improving pedestrian/bicycle facilities and providing a uniform roadway with organized on-street parking.

Project Exhibit

Collector Project 3: SW A Street – W. Central Ave. to 8th

10.07.2021

McCollum Drive - End of McCollum Dr. to NE J St.

The project consists of constructing approximately 0.84 miles of McCollum Drive into a three-lane roadway with pedestrian/bicycle facilities between the end of the existing McCollum Drive and NE J Street where it turns sharply east. This project will provide connectivity to NE J Street, thereby creating a continuous north-south frontage road along I-49 from E Central Avenue to the proposed J Street interchange. This project will also serve to remove local traffic from the interstate and provide much needed pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan along this corridor.

Project Exhibit

Collector Project 4: McCollum Drive – End of McCollum Drive to NE J Street

10.07.2021

SW Gator Boulevard - S Morningstar Rd. to SW Gator Blvd.

The project consists of constructing approximately 0.57 miles of SW Gator Boulevard between S Morningstar Road and the existing end of SW Gator Boulevard into a three-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Public comments were received during the public input process requesting connectivity of SW Gator Boulevard to S Morningstar Road. This project will complete the corridor by providing a continuous east-west connection from SW H Street (Highway. 112) to S Morningstar Road. This connection will provide much needed pedestrian facilities between residential neighborhoods and schools and will improve traffic congestion on adjacent east-west corridors such as SW Regional Airport Boulevard.

Project Exhibit

Collector Project 5: SW Gator Blvd. – Morningstar Road to SW Gator Blvd.

10.07.2021

Redbud Street - SW E St. to SW A St.

The project consists of improving approximately 0.28 miles of SW Redbud/SW 10th Street between SW E Street and SW A Street into a two-lane roadway with a raised center median and pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. During the public input process, several public comments requested improved connectivity between SW Redbud Street and SW 10th Street. This project provides that connectivity by constructing the roadway connection between the two roads, resulting in one collector roadway corridor from S Walton Boulevard to SE J Street for vehicles, bicyclists, and pedestrians.

Project Exhibit

Collector Project 6: Redbud Street – SW E Street to SW A Street

10.07.2021

Medical Center Parkway - SE 28th St. to SE S St.

The project consists of constructing approximately 0.29 miles of Medical Center Parkway from the existing pedestrian/bicycle facilities intersection with SE 28th Street to a connection with SE S Street using a three-lane roadway section with that are consistent with the City's Bicycle and Pedestrian Master Plan. This project will remove the offset intersections of SE S Street/SE 28th Street and Medical Center Parkway/SE 28th Street by aligning Medical Center Parkway and SE S Street. This will create a single intersection with SE 28th Street thereby creating a continuous north-south corridor from the Uptown District in Rogers to SW 14th Street near the new Walmart Home Office campus. The project would require signal improvements at the SE 28th Street intersection and a multi-barrel box culvert to accommodate drainage and a tunnel for the Razorback Greenway to pass under the road.

Project Exhibit

Collector Project 7: Medical Center Parkway – SE 28th Street to SE S Street

10.07.2021

E Battlefield Boulevard - E Central Ave. to Water Tower Rd.

The project consists of improving approximately 0.71 miles of E Battlefield Boulevard between E Central Avenue and Water Tower Road into a three-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. Numerous public comments were received during the public input process requesting intersection improvements at E Battlefield Boulevard and E Central Avenue. This project would improve the intersection geometry and potentially signalize the intersection if further analysis showed it would warrant a traffic signal. The existing E Battlefield Boulevard is a narrow two-lane road with open shoulders and minimal pedestrian facilities. This project would bring the roadway up to current collector roadway standards and provide much needed pedestrian facilities along this corridor. Additionally, the existing bridge across I-49 would be widened on both sides to provide pedestrian sidepaths on both sides of the bridge.

Project Exhibit

Collector Project 8: E Battlefield Blvd. – E Central Ave. to Water Tower Road

10.07.2021

McCollum Drive - Ivy Cr. to End of McCollum Dr.

The project consists of improving approximately 1.12 miles of McCollum Drive between Ivy Circle and the end of the existing McCollum Drive into a three-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. The existing McCollum Drive is a two-lane road with open shoulders and minimal pedestrian facilities. This project improves this section of McCollum Drive to collector street standards while also bringing much needed bicycle and pedestrian facilities to this corridor. McCollum Drive currently serves as a frontage road paralleling I-49 and will become an even more significant north-south corridor with the construction of the proposed Tiger Boulevard overpass and the J Street interchange.

Project Exhibit

Collector Project 9: McCollum Drive – Ivy Cr. To End of McCollum Drive

10.07.2021

Town Vu Road - City Limits (~Gower Ct.) to SW Tater Black Rd.

The project consists of improving approximately 0.74 miles of Town Vu Road between Gower Court and SW Tater Black Road into a three-lane roadway with pedestrian/bicycle facilities that are consistent with the City's Bicycle and Pedestrian Master Plan. The existing Town Vu Road is a narrow two-lane road with open shoulders and minimal pedestrian facilities. This project improves this section of Town Vu Road to collector street standards while also bringing much needed bicycle and pedestrian facilities to this corridor that provides access to Bentonville West High School.

Project Exhibit

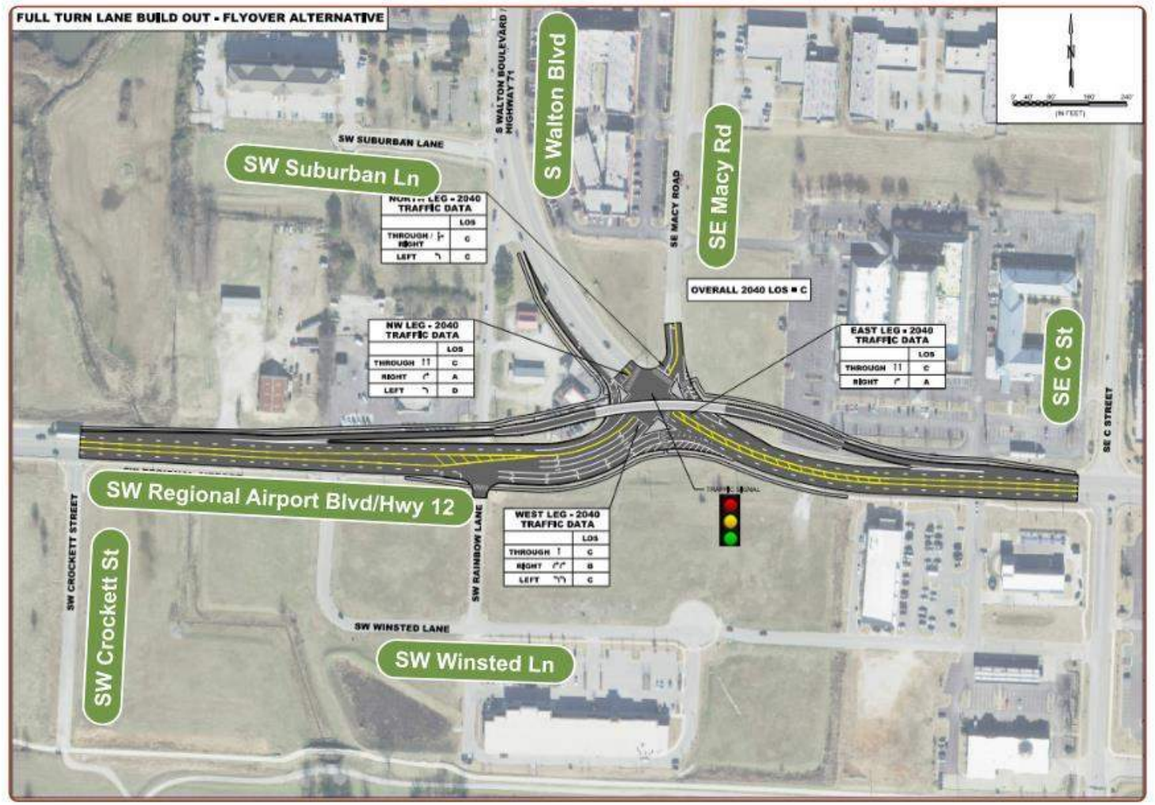
Collector Project 10: Town Vu Road – City Limits (Gower Ct.) to SW Tater Black Road

10.07.2021

Rainbow Curve Improvements

The existing intersection of Walton Boulevard and Highway 12, commonly known as Rainbow Curve, currently has an overall intersection LOS E, which will continue to deteriorate to an LOS F prior to the 2040 Design Year. The recommended improvements primarily consist of installing a flyover bridge to remove the westbound, left-turning traffic from the intersection. With the recommended improvements, an LOS C will be achieved for the projected 2040 traffic.

Project Exhibit



Intersection Project 1 & 3: Rainbow Curve Improvements

10.07.2021

S Walton Blvd. and SE 28th St. Intersection

The existing intersection of Walton Boulevard and SE 28th Street currently operates at an overall intersection LOS E, which will deteriorate to an LOS F by the 2040 design year. Crash rates on 28th Street are more than four times higher than the statewide average on the eastern leg, and queues over 1,000 feet are currently observed. Additional westbound lanes will help reduce queuing, a major contributor to rear-end collisions and risky behavior. Dual westbound left-turn lanes and a dedicated westbound right-turn lane are recommended. These improvements stand to reduce queues on the westbound leg by 50 percent, extending the service life of the signal and improving the overall safety of the intersection.

Project Exhibit

Intersection Project 2: S Walton Blvd. and SE 28th Street Intersection

10.07.2021

SE Walton Blvd. and SE Medical Center Pkwy. Intersection

The existing intersection of Walton Boulevard and SE Medical Center Parkway already operates at an overall intersection LOS F. Queues extending over 2,000 feet currently exist and only stand to inhibit traffic flow further without action. To reduce queues on the north and south legs of the intersection, dual turn lanes onto Walton Boulevard are recommended. A dedicated northbound right-turn lane is also recommended. These improvements reduce delay at the intersection by more than 55 percent. Additionally, the southbound queue is reduced by more than 80 percent.

Project Exhibit

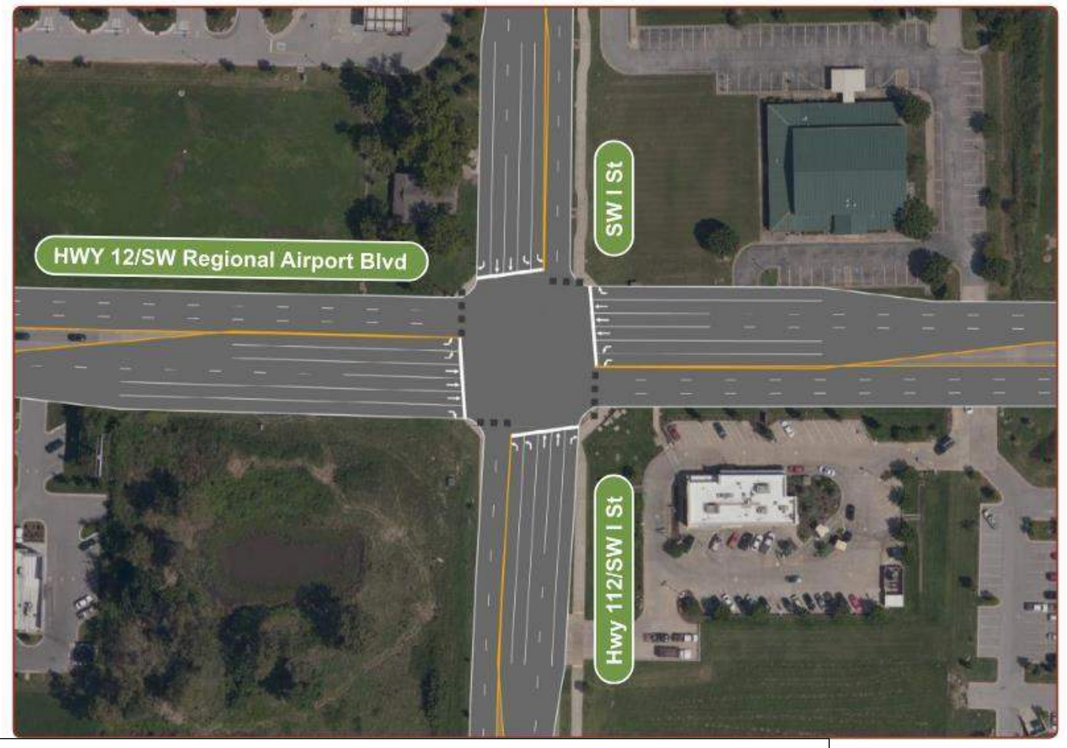
Intersection Project 4: SE Walton Blvd. and SE Medical Center Parkway Intersection

10.07.2021

SW Regional Airport Blvd. and SW I St. Intersection

The existing intersection of SW Regional Airport Boulevard and SW I Street already operates at an overall intersection LOS F. Queues currently extend past 1,500 feet, and crash rates are higher than the statewide average on the northern leg. Improvements are recommended on every leg of the intersection. It is recommended that dual lefts and dedicated right-turn bays be constructed on each approach. It is also recommended that a six-lane cross section along Highway 12/SW Regional Airport Boulevard begin west of the intersection with SW I Street and continue east to the intersection with Walton Boulevard. These improvements reduce delay at the intersection by 70 percent and reduce queues more than 75 percent.

Project Exhibit



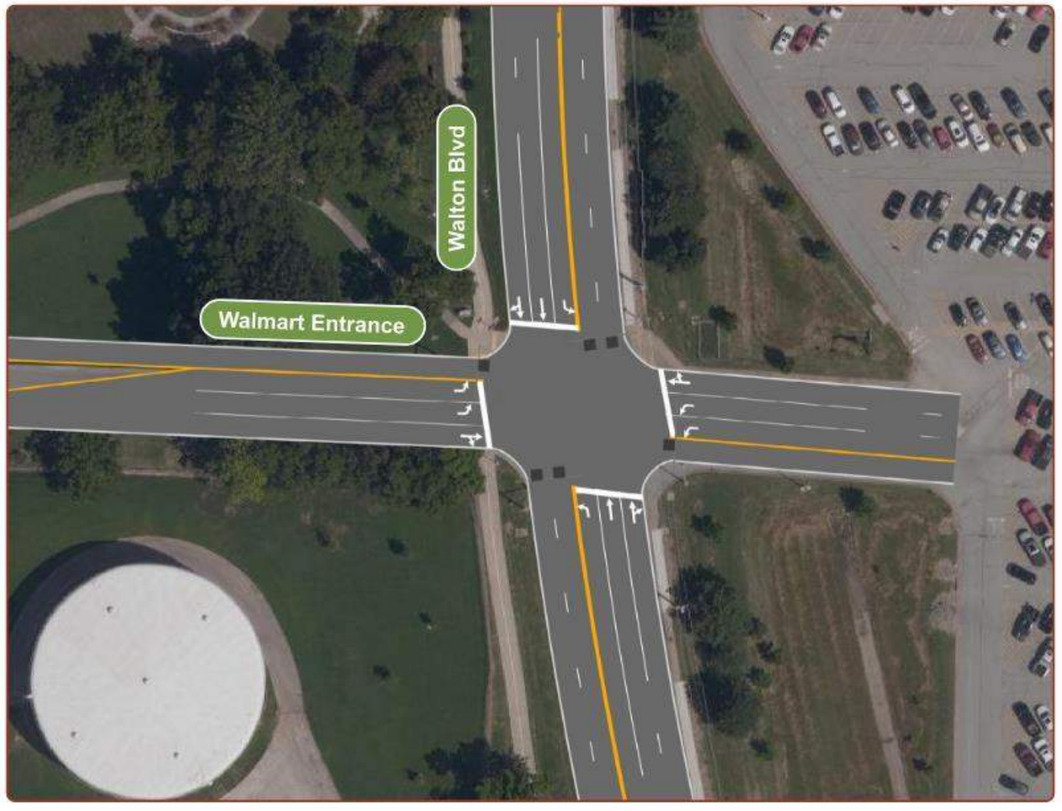
Intersection Project 5: SW Regional Airport Blvd. and SW I Street Intersection

10.07.2021

S Walton Blvd. and Walmart Entrance Intersection

The existing intersection of Walton Boulevard and Walmart Entrance already operates at an overall intersection LOS F. It ranks in the top 10 for both existing delay and queues, with queues extending beyond 2,000 feet. It is recommended that dual left-turn lanes be added on the eastbound and westbound approaches for vehicles turning onto Walton Boulevard. The added capacity is expected to improve traffic operations and safety at the intersection.

Project Exhibit



Intersection Project 6: S Walton Blvd. and Walmart Entrance Intersection

10.07.2021

SW Regional Airport Blvd. and S Vaughn Rd. Intersection

The existing intersection of SW Regional Airport Boulevard and S Vaughn Road received the 11th most traffic-related comments out of all locations in the city. The existing geometry does not meet current standards and traffic operations will only deteriorate with expected volume increases. With the Northwest Arkansas National Airport nearby and new developments in the area, changing the geometry of the intersection to improve safety and operations is a priority. The preferred intersection control type is a roundabout, which has proven effective at improving safety and traffic operations at similar intersections.

Project Exhibit

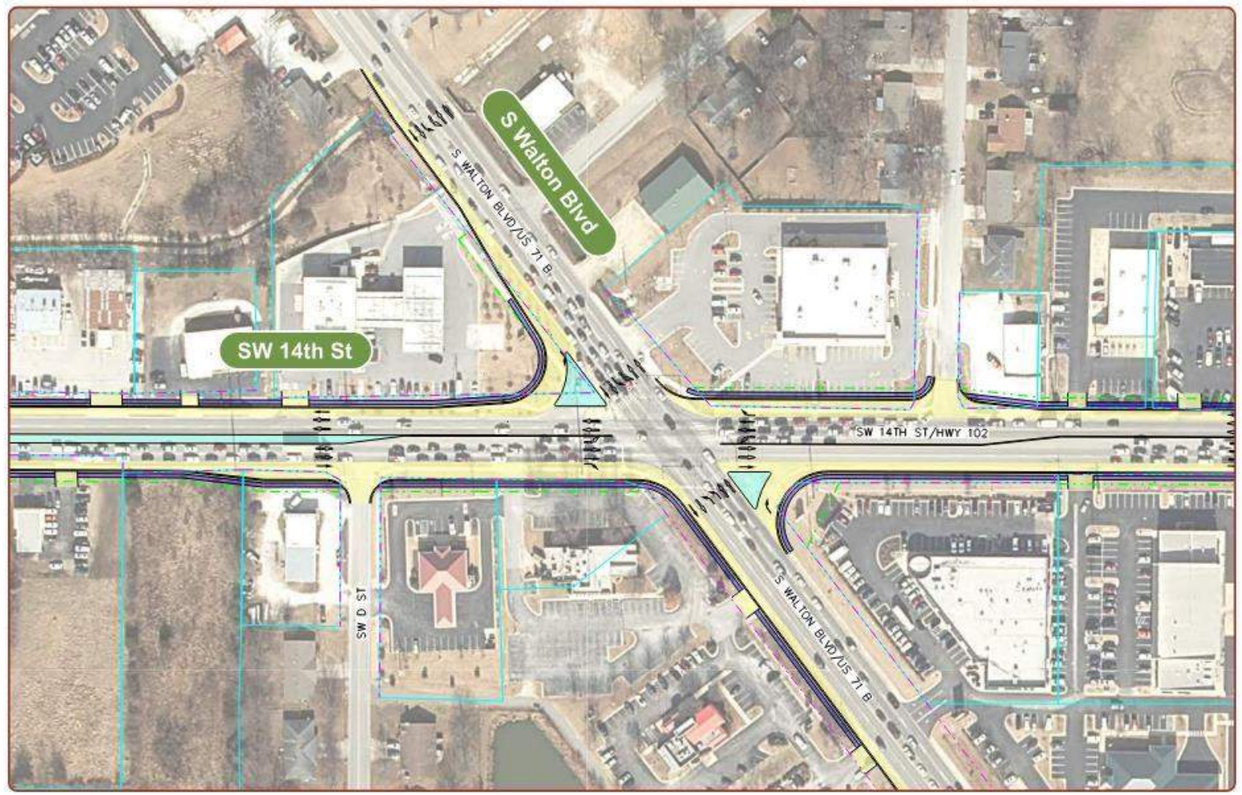
Intersection Project 7: SW Regional Airport Blvd. and S Vaughn Road Intersection

10.07.2021

SW 14th St. and S Walton Blvd. Intersection

The existing intersection of SW 14th Street and Walton Boulevard already operates at an overall intersection LOS F. As part of ARDOT's Highway 102 Study, improvements are taken from the publicly available preliminary designs. The improvements include an additional through lane along Highway 102 in each direction, dual northbound and southbound left-turn lanes, dedicated right-turn bays for southbound, eastbound, and westbound, and a channelized right-turn northbound.

Project Exhibit



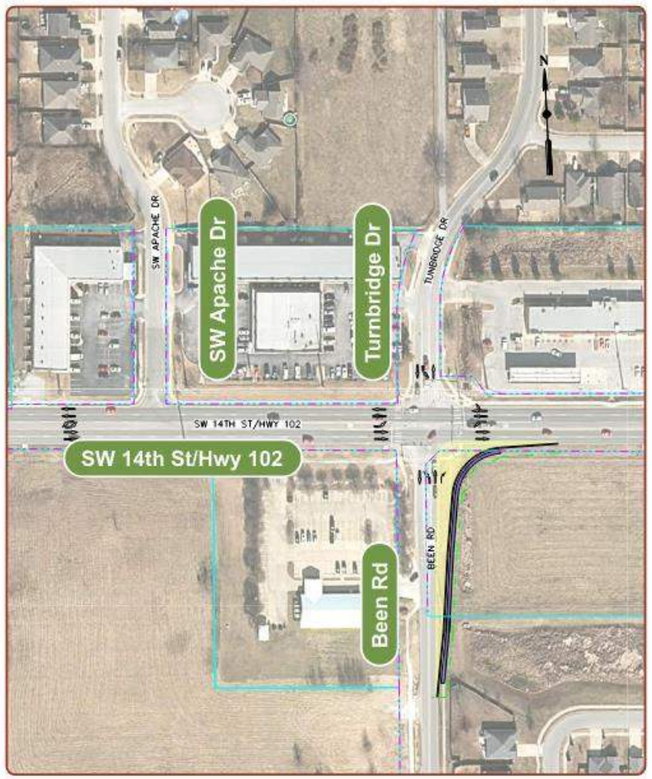
Intersection Project 8: SW 14th Street and S Walton Blvd. Intersection

10.07.2021

SW 14th St. and Been Rd./Turnbridge Dr. Intersection

The existing intersection of SW 14th Street and Been Road/Turnbridge Drive already operates at an overall intersection LOS F. As part of ARDOT's Highway 102 Study, improvements are taken from the publicly available preliminary designs. The improvements include a new dedicated northbound right-turn bay.

Project Exhibit



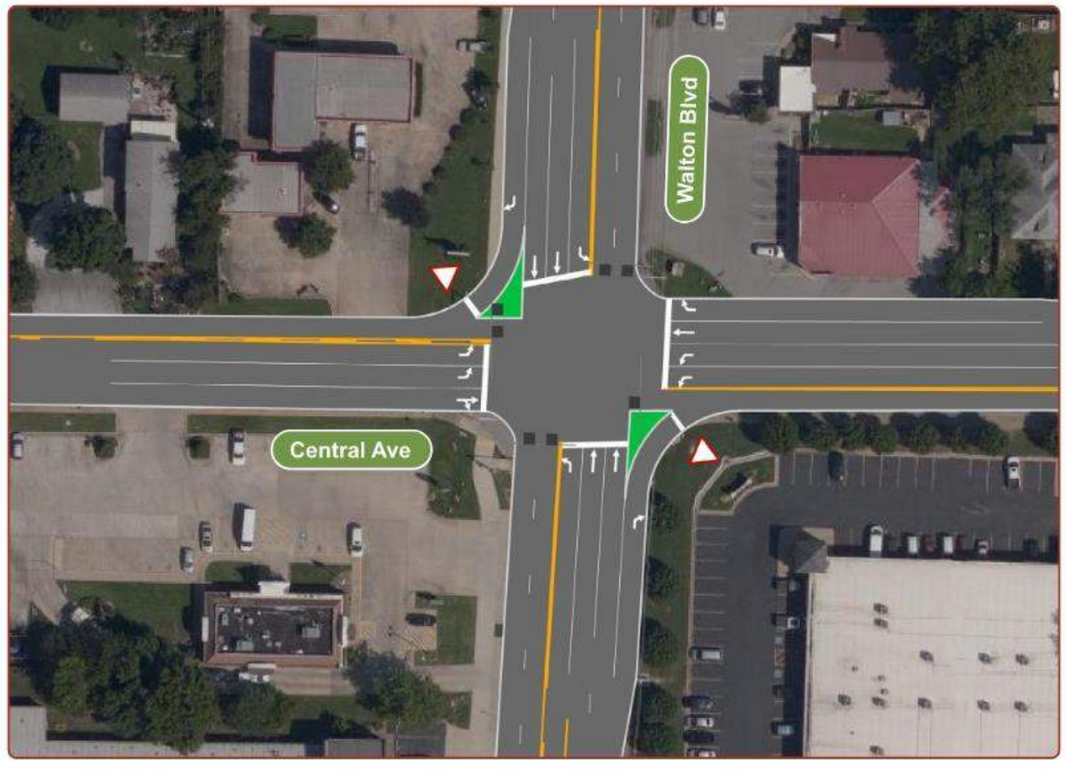
Intersection Project 9: SW 14 Street and Been Road/Turnbridge Drive Intersection

10.07.2021

Walton Blvd. and Central Ave. Intersection

The existing intersection of Walton Boulevard and Central Avenue already operates at an overall intersection LOS F. It currently ranks in the top 10 for existing delay, number of crashes, and existing queues, with queues extending past 2,000 feet. To improve operations and safety at the intersection, it is recommended to construct dual eastbound and westbound left turns, longer storage bays eastbound and westbound, and dedicated northbound and southbound right-turn bays. These improvements reduce delay by 50 percent, and reduce queues by more than 65 percent.

Project Exhibit



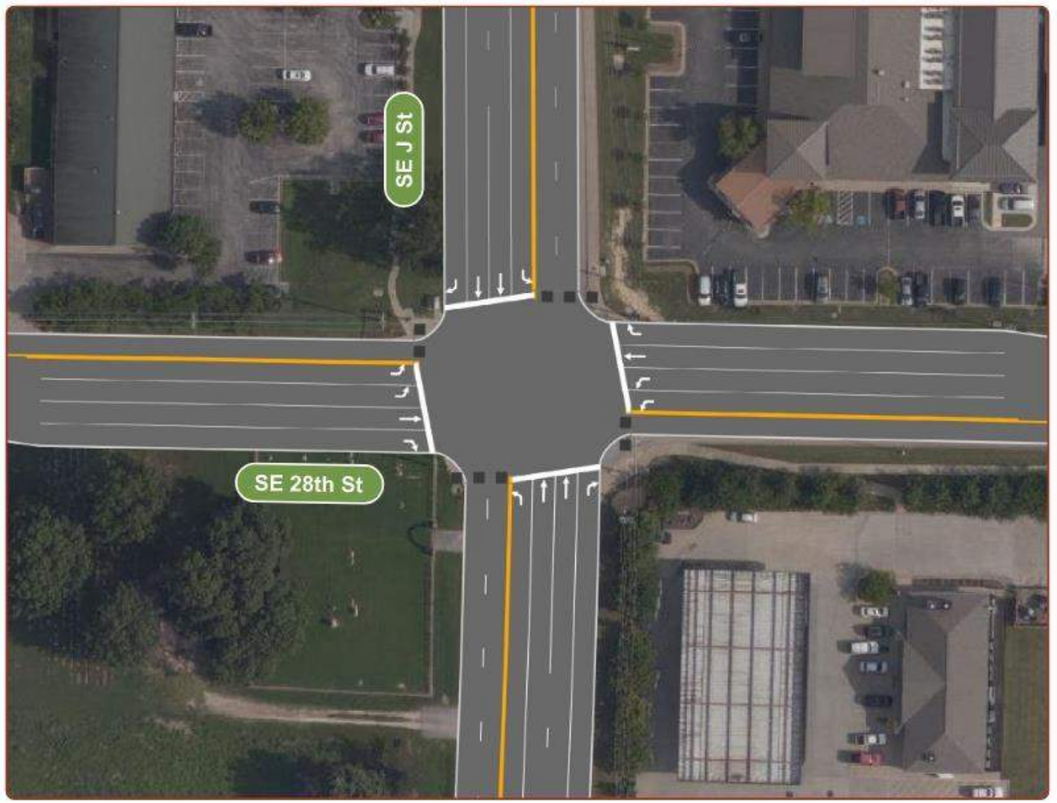
Intersection Project 10: Walton Blvd. and Central Ave. Intersection

10.07.2021

SE 28th St. and SE J St. Intersection

The existing intersection of SE 28th Street and SE J Street already operates at an overall intersection LOS F. The intersection ranks in the top 10 for existing delay, queues extend to nearly 2,000 feet, and it is one of only seven signalized intersections with a serious or fatal crash at the intersection. To improve operations and safety at the intersection, it is recommended that new dedicated right-turn bays be constructed in all four directions, as well as dual left-turn lanes along 28th Street for vehicles turning onto SE J Street. These improvements reduce both delay and queues by more than 60 percent.

Project Exhibit



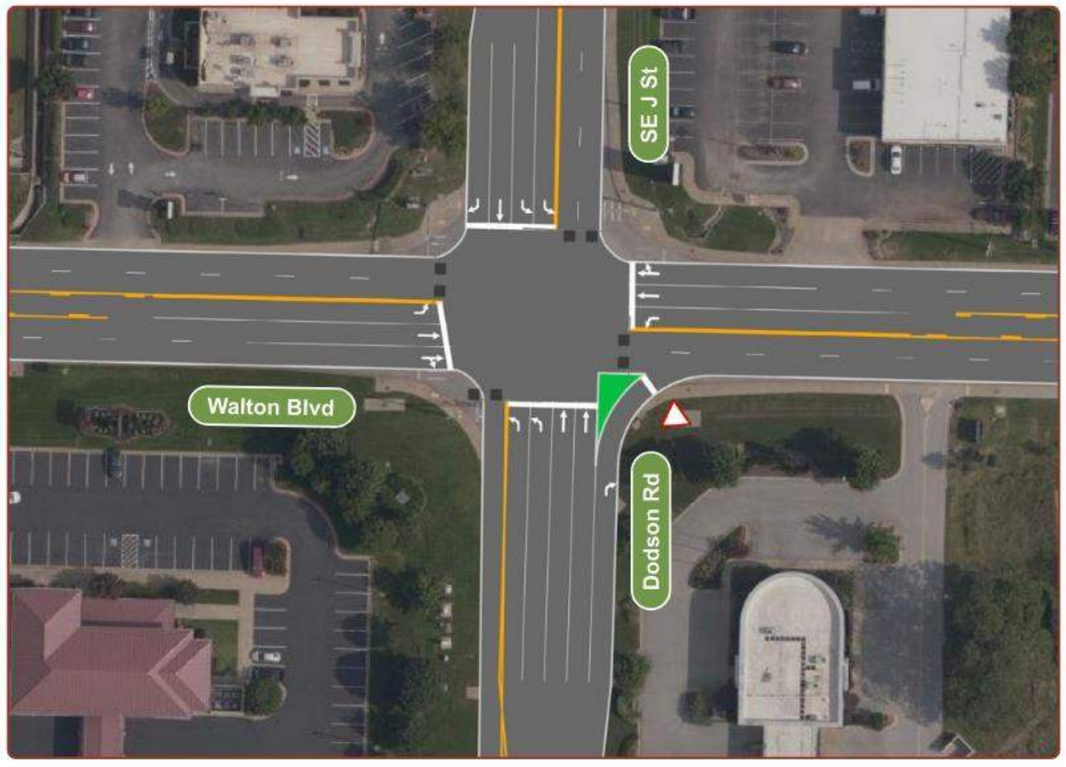
Intersection Project 11: SE 28th Street and SE J Street Intersection

10.07.2021

SE Walton Blvd. and SE J St. Intersection

The existing intersection of Walton Boulevard and SE J Street already operates at an overall intersection LOS F. Existing queues are the 5th worst in the city, extending beyond 2,000 feet. Additionally, the intersection is in the top 10 for number of crashes. To improve safety and operations at the intersection, it is recommended that dual left-turn lanes be added for northbound and southbound vehicles turning onto Walton Boulevard, and an additional through lane with a dedicated right-turn lane be constructed on the northbound approach. The added capacity is expected to reduce queues and delay by more than 50 percent.

Project Exhibit



Intersection Project 12: SE Walton Blvd. and SE J Street Intersection

10.07.2021

SW I St. and SW 41st St. Intersection

The existing intersection of SW I Street and SW 41st Street currently operates at an overall intersection LOS A, which will deteriorate to an LOS F by the 2040 design year. The intersection received the 10th most traffic-related comments of any location in the city. The main concerns are with bicycle and pedestrian safety and side street delay at the unsignalized location. With increasing volumes due to nearby community attractions and new residential development, additional intersection control is recommended. While adding a signal is one option, a roundabout is the preferred alternative for intersection control to improve safety and traffic operations.

Project Exhibit

Intersection Project 13: SW I Street and SW 41st Street Intersection

Photo By: Alison Nation

SUMMARY OF AMENDMENTS

Summary of Amendments to the 2008 Master Street Plan

Revised Master Street Plan Map (See MSP Amendment Map)

- Updated the map to incorporate roadways within the current city limits and planning boundary areas.
- Proposed roads from 2008 MSP that have since been completed were updated accordingly on the current map.
- Removed proposed roads from 2008 MSP that are no longer feasible to construct due to development, parks, terrain, or various other reasons.
- Added proposed roads to provide connectivity and maintain grid network.
- Adjusted road classifications where required to be consistent with the master street plans of adjacent jurisdictions.
- Identified a Downtown District on the map.
- Upgraded or downgraded road classifications per traffic analysis results.

Revised Master Street Plans Typical Sections

- Removed Residential Roadway Classification
- Added Alley Roadway Classification.
- Added Downtown Collector and Downtown Local Roadway classifications.
- Curb and gutter width is reduced from 2-ft. in the previous Master Street Plan to 1.5-ft for all sections.
- Four arterial sections are provided versus three arterial sections in previous Master Street Plan. A couple of the updated arterial sections increase the right-of-way width to 95-ft. from the 90-ft. that was previously provided for all arterial sections.
- Six collector sections are provided versus the three collector sections in previous Master Street Plan. The new collector sections provide various alternatives for on-street bike facilities, sidepaths, boulevards, and on-street parking. The previous Master Street Plan utilized 70-ft. of right-of-way for each collector sections. The new collector sections have varying right-of-way widths from 75-ft. to 65 ft.
- Two local sections are provided similar to the previous Master Street Plan. The back of curb to back of curb widths increased from 30-ft. in the previous Master Street Plans to 31-ft for all local sections. The right-of-way widths reduced from either 55-ft. or 52-ft. to 50-ft. for all local sections.
- Average Daily Traffic (ADT) ranges were updated for each typical section.
- Design Speeds for each typical section were updated. Additionally, a new parameter was added providing a desired operating speed for each typical section. The desired operating speeds were developed with consideration for the type of pedestrian or bicycle facility the typical section provides.

List of Proposed Projects

- The list of eighteen (18) projects for the ten-year improvement program provided in the previous Master Street Plan were updated with a list of thirty-two (32) priority projects. The thirty-two (32) projects are divided into arterial, collector, and intersection projects and ranked in order of priority as described previously in this report.

Local Transit Plan

- Alliance Transportation Group authored a Local Transit Plan consisting of four parts: Existing Conditions, Service Standards, Recommendations, and Transit Oriented Development. The Plan provides a detailed study of the current public transit system and recommendations for improved transit in the coming years. The plan provides for transit-related development guidance and needed standards for the continued growth of local transit infrastructure. Included in this volume is a summary of the Local Transit Plan.

Local Transit Plan and Multimodal Analysis and Recommendations (MSP Report Volume 2)

- In addition to the Local Transit Plan, Alliance Transportation Group performed a comprehensive multi-modal analysis and technical memorandum as part of this plan. The analysis covers availability of bicycle parking, a review of city codes regarding bicycle accommodation, multimodal integration and an analysis of specific areas for bicycle and pedestrian safety consideration throughout the City.

Stakeholder Engagement, Public Input, and Traffic Analysis (MSP Report Volume 3)

- The 2021 Master Street Plan process included extensive stakeholder engagement and public input. At the commencement of the project a Steering Committee of city and community stakeholders was formed to provide guidance and feedback throughout the process. The Steering Committee held three formal meetings in conjunction with various communications throughout the project along with multiple digital updates and communications with steering committee members throughout the process.
- Public input was gathered over a 13-month period via online surveys, a project website, multiple public input meetings, and online interactive map. Over 3,700 comments were received from public throughout the plan process.
- As part of the update process, updated traffic volumes from multiple sources were gathered. Several areas were evaluated, including turning movement counts, ADT, regional growth rates, and updated crash data from ARDOT. This data was analyzed for updated level of service, which was then used to determine areas of highest need.

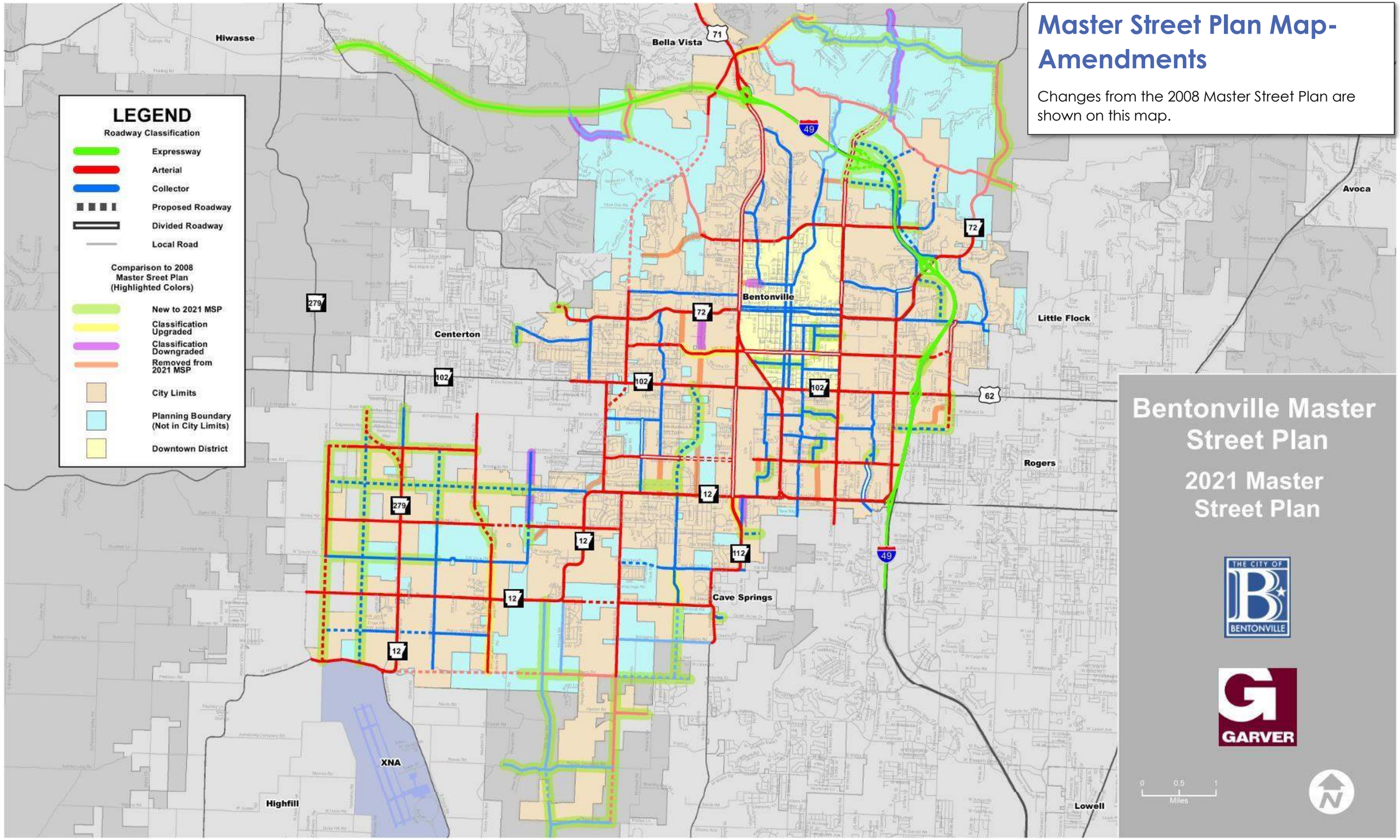
Minimum Standard Specifications for Street and Standard Drawings (MSP Report Volume 4)

- The City of Bentonville Minimum Standard Specifications for Streets was completely restructured and updated to include the following:
    - Construction plan submittal requirements that provide minimum standards for the submittal content and formatting for plans and design reports that are submitted to the City.
    - Traffic Impact Study requirements that provide acceptable standards and methodologies for the traffic impact study. This includes items such as allowable study parameters, determination of traffic volumes and associated project impacts, level of service (LOS) standards, and required mitigation measures.
    - Street design and technical criteria that provided minimum technical design standards for the layout of streets and general design elements for the various street classifications provided.
    - Intersection design criteria for various elements of intersections including roundabout intersections.
    - Pavement design methods and minimum pavement material properties and thicknesses for each street classification. Also, includes required information to be provided in the pavement design report.
    - Traffic control devices design criteria, signal plan requirements, and signing and striping standards.
    - Bicycle and pedestrian design standards and technical requirements.
    - Neighborhood traffic safety including traffic calming devices and methods.
    - Minimum street inspections and testing procedures for various materials included in street construction.
    - Acceptance and warranty procedures for project closeouts.
    - Record Drawings requirements and submittal procedures.

- Standard drawings were developed for the following items:
    - Sidewalks and various types of sidewalk ramps and configurations.
    - Erosion control devices
    - Residential and commercial driveways
    - Curb and gutter

Master Street Plan Map-Amendments

Changes from the 2008 Master Street Plan are shown on this map.



Bentonville Master Street Plan

2021 Master Street Plan

Photo By: Alison Nation

BENTONVILLE LOCAL TRANSIT PLAN

Prepared by Alliance Transportation Group (ATG)

Bentonville Local Transit Plan

The following report is a summary of the Local Transit Plan. The full Transit Plan with recommendations and appendices can be found in Volume 2 of the Bentonville Master Street Plan report.

Existing Conditions

Introduction

The City of Bentonville anchors the northern end of a rapidly growing region known as Northwest Arkansas (NWA). As the region grows and develops, the transportation system must also develop to provide service necessary for supporting local economic activity and mobility demands. Public transit acts as one mode option in the transportation system to move people safely and efficiently to accomplish their daily needs. Today, transit service in Bentonville is provided by Ozark Regional Transit (ORT), along with a taxi voucher program. ORT operates fixed route service Route 11, along with express Route 490 connecting the region along I-49. Complementary paratransit service is provided for qualified individuals by ORT within ¾ mile from Route 11. Demand response service is also operated for those who live outside of the ¾ mile from Route 11.

Market Analysis

Composite Transit Score

The following methodology describes how the project team identified transit-supportive areas within the City of Bentonville. The final product provides individual transit scores for each Transportation Analysis Zone (TAZ) within the city, that help the team understand which areas support or need transit. Final transit scores aggregated individual scores provided to demographic subgroups (e.g. disabled, poverty, minority populations) which represent areas needing new and/or improved public transportation. All data in the analysis came from the 2018 American Community Survey (ACS) database and the 2017 Longitudinal Employer-Household Dynamics (LEHD) data for employment. Analysis of each demographic subgroup used density per square mile to create a standardized scale for scoring in each block group. Block group scores were then transferred into study area TAZs through a geographic information system (GIS) analysis. The following subsections discuss key findings and methods used to generate final transit scores.

Findings

Figure 10 shows TAZs with high transit need, primarily between Tiger Boulevard to the north, and Walton Boulevard to the south. Walmart Headquarters resides in an area of need near the center of Bentonville, as does the mixture of commercial, industrial, and educational facilities just to the south east. The high score area in west Bentonville, north of 14th St. contains recent residential development, in addition to commercial facilities along the roadway. To the east, the high composite score contains NWACC along with residential areas to the north. Disbursed between these high scoring east and west areas, are middle scoring area's creating a "belt" of transit supportive land uses in the central part of Bentonville. The development of the new Walmart Headquarters will add to this supportive land use in the central city and create a key opportunity to serve a major regional employer.

Transit Potential

This measure helps define areas with existing markets primed for public transportation. Population, and employment densities represent areas with potential for immediate success (higher density areas), highlighting existing areas that have the potential to generate high ridership. People need to travel - in no specific order - between places they live, work, shop, and conduct any other recreational activities. Accordingly, population and employment densities provide a general picture of where these activities are happening in the City of Bentonville.

Transit Dependent Population

Transit dependent population represents community members with a high demand for public transportation services due to a lack of personal automobile access, or inability to operate a motor vehicle (i.e. too young or too old to drive). Transit demand was represented through the densities of youth population (18 years or younger), elderly population (65 years or older), and households with no personal automobiles.

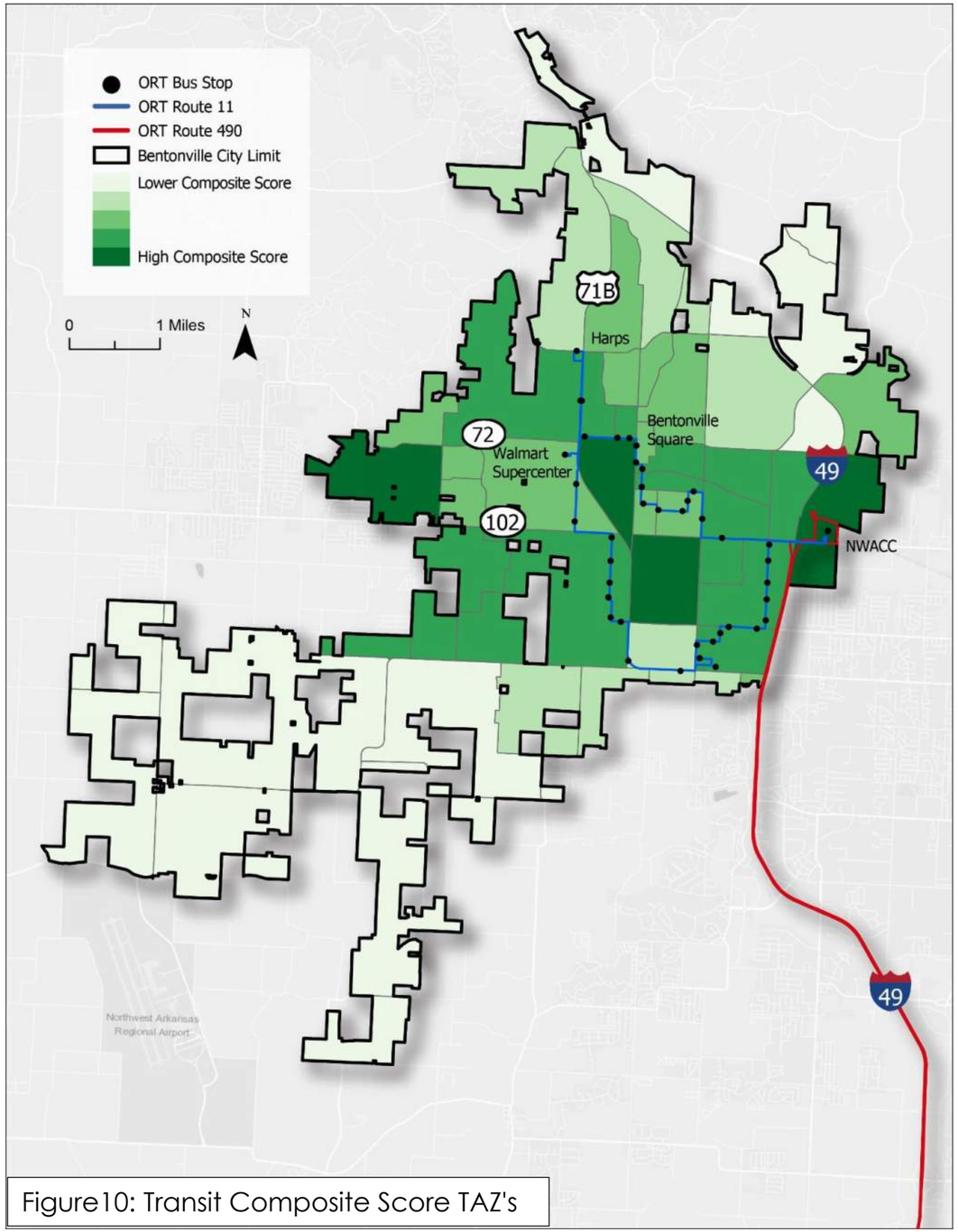


Figure10: Transit Composite Score TAZ's

Transit Need

Transit need represents the remaining citizen groups who may require special accommodations when it comes to transportation. This includes measuring population densities of those with limited English-speaking proficiency (LEP), people representing minority populations, people with disabilities, and those with low income/under the poverty line.

Methods

In order to generate final transit scores per block group, 9 demographic subgroups were first analyzed and scored separately. Each subgroup's density was calculated per square mile and set into bins based on natural breaks. Natural breaks were then smoothed to create finalized breaks used to allocate scores. Scores from 0 (lowest density) to 4 (highest density) were then assigned to each block group based on where they fell within the finalized breaks. Figure 11 presents the breaks and scores for each demographic subgroup. Using Figure 11 as an example, any block group containing a population density between 0 and 360 was given a score of 0, therefore displaying low population density and in turn a lack of existing transit market conditions within the block group.

Scores

	0		1		2		3		4	
	Low	High	Low	High	Low	High	Low	High	Low	High
Pop	0	360	3(			1840	1841	3130	3131	5449.815144
Emp	0	380	3(			3310	3311	8460	8461	42465.185502
Elderly	0	80	8			330	331	550	551	985.453299
Youth	0	180	1(			690	691	990	991	2179.926058
LEP	0	50	51	160	161	320	321	610	611	1144.007017
Minority	0	80	81	260	261	550	551	1000	1001	1511.707517
Disabled	0	50	51	130	131	250	251	420	421	795.099477
Poverty	0	110	111	260	261	470	471	870	871	1484.321512
No Vehicle HH	0	0.017910	0.017920	0.054834	0.054835	0.102804	0.102805	0.156504	0.156505	0.380165

If a block group's population falls between 0 and 360, it receives a score of 0.

Figure 11: Composite Scoring

Sums of the individual subgroup scores created final transit scores for each block group. Therefore, higher scoring totals equate to block groups with high densities of demographic subgroups related to transit need.

For example, a block group with a final score of 36 would mean each demographic subgroup density fell within the highest density break (i.e. all 9 subgroups receiving a score of 4). This suggests there to be a substantial number of citizens with one or several traits that places them within the subgroup(s), helping the project team better identify where transit need exists in Bentonville.

While double counting inevitably occurs, it remains acceptable for this analysis as it is indicative of a block group containing a population with several of the characteristics critical for understanding the region's transit needs. This in turn allows for efficient, feasible alternatives that serves those in most need of mobility or the most willing to make a mode shift.

Travel Pattern Analysis

The NWARPC Transportation Demand Model (TDM) was used to determine which area's in Bentonville account for the highest trip production. A better understanding of trip patterns and where people travel to and from can help shape transit to provide the best service to its citizens. Trips are measured by the average number of trips taken by a person, regardless of mode, per day. Figure 12 shows distinctly that the TAZ with Walmart Headquarters receives a significant number of trips. The highest trip TAZ's are near the Bentonville Senior Center and Northwest Medical Center, as well as east of I-49 in the TAZ where NWACC is located. Other high trip TAZ's are on the west side of Bentonville, where newer residential developments are located. Overall, the trips analysis shows a clear pattern of travel to the downtown Bentonville area, which may be attributed to the social and economic factors present near the urban center of the City. It should be noted, with the expansion of the new Walmart campus, this could significantly change travel the patterns, and shift the demand of the transportation system.

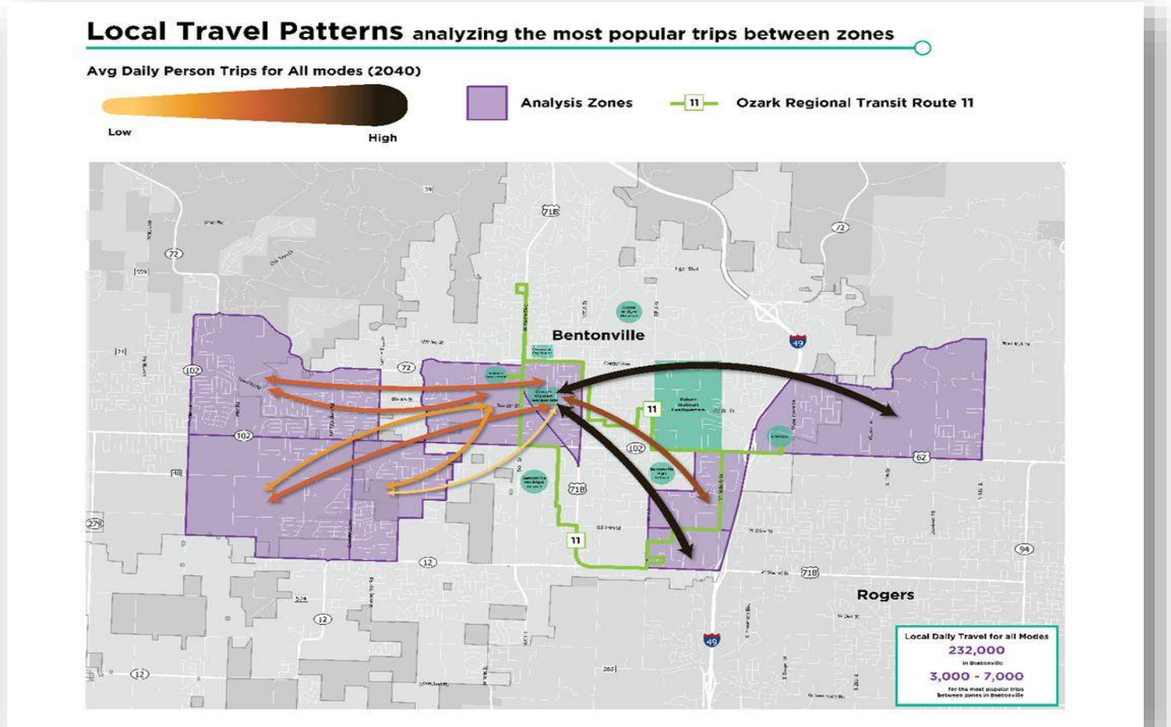


Figure 12: Local Travel Patterns

Public Engagement

All questions presented in Table 8 informed the project team about the perception of transit and shaped the recommendations of this Local Transit System Plan. One overarching take away was the large number of participants that unfamiliar with public transit options in Bentonville. Any recommendations or improvements to service, while valued by the riding public, will not stand on their own and generate new ridership. Bentonville must assess high priority to incorporating a strategic marketing campaign into its implementation actions as part of a multifaceted approach to communicating transit convenience and accessibility. Below, Figure 13 shows a selection of survey questions that were presented during a virtual public meeting.

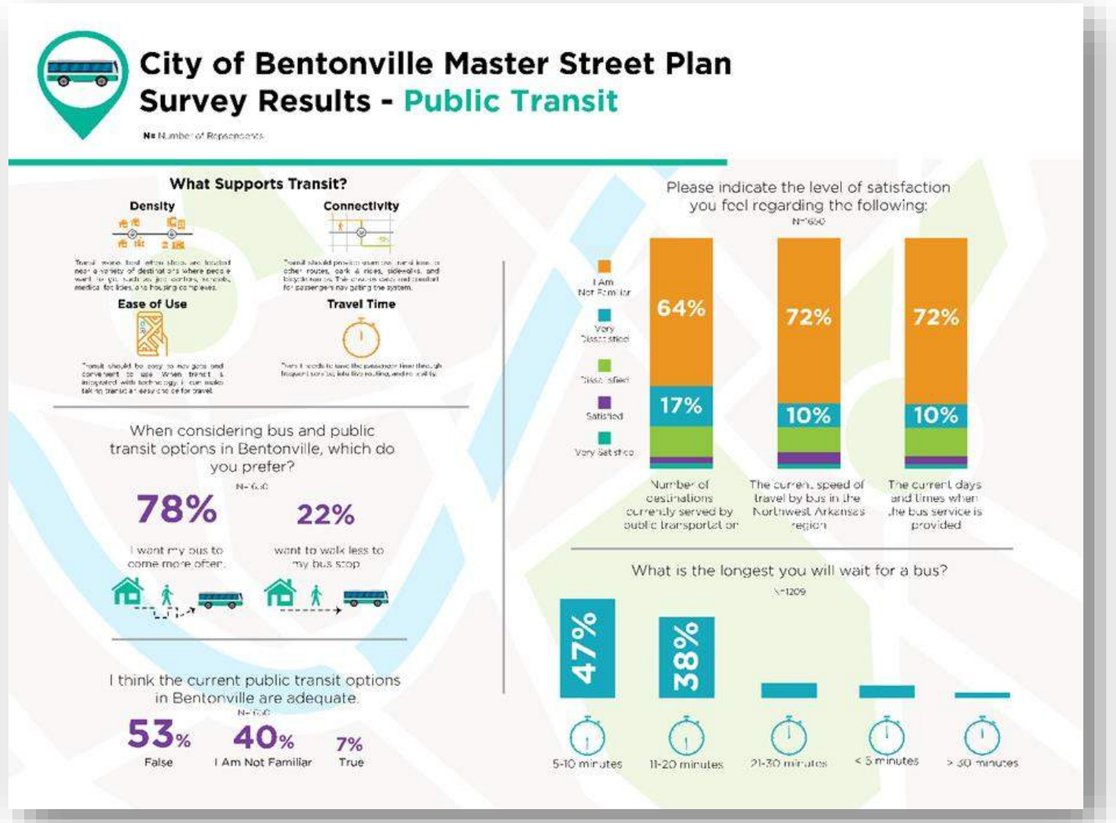


Figure 13: Public Survey Results

Multimodal Connectivity

All transit users begin their transit trip by traveling to a bus stop and end their trip traveling from the bus stop to their destination. Multimodal connectivity considers all the ways transit users travel to get to and from a transit stop. Ensuring these modes of travel, such as walking and biking, are safe and comfortable to and from bus stops is key to having a well-connected transit system. Bentonville's transit system should leverage the existing pedestrian and bicycle facilities and plan for future facilities around bus stops to best support the transit user's "first and last mile" connections. This ensures transit users can easily travel from their trip origin to the bus stop and from the bus stop to their destination.

Pedestrian Considerations

Sidewalks to and from transit stops are considered a minimum for encouraging multimodal connectivity for people walking or wheeling to transit stops. People are generally willing to walk about ¼ mile or ten minutes to their transit stop. This distance may increase if the walking environment is more pleasant and the transit stop contains more amenities. A connected and well-maintained sidewalk network is critical for transit riders that are mobility impaired and/or use mobility devices to travel.

The following are recommended pedestrian considerations that should be present within at least ¼ mile of the transit stop:

- Sidewalks,
- Safe crossings,
- Shaded walking paths,
- Street lighting, and
- Navigational support (i.e., maps, signage, clearly marked transit stops).

Figure 24 - Pedestrian Considerations

Highly visible crosswalks and pedestrian hybrid beacons can greatly increase the user's feelings of safety along the corridor as shown in Figure 24. High visibility crosswalks can be used at all corners of the intersection to eliminate unneeded crossing by people walking. Similarly, adding amenities such as shaded walking paths, benches, and a shelter at the stop can encourage users to engage with pedestrian facilities and increase their level of comfort. Please refer to the multimodal component of the Master Streets Plan for further pedestrian design guidance.

Bicycle Considerations

Similar to pedestrian considerations, bicycle facilities aim to increase the safety, comfort, and space designated for bicyclists as they make first and last mile connections to transit. Adding bicycle infrastructure that leads to transit stops can increase connectivity by providing users other mode options for traveling longer distances that are safe and convenient. As shown in Figure 25, infrastructure and amenities for people biking typically include:

- Safe and considerate bus/bike interactions,
- Safe and comfortable, bike infrastructure leading to transit stops,
- Bike share facilities integrated at key transit locations (mobility hubs, etc.),
- Transit vehicles equipped with bike carrying racks, and

Secure bike parking near transit stops.

Figure 25 - Bicycle Considerations

Key bicycle connectivity improvements include the addition of secure long-term and short-term bike racks at bus stops. Long-term bike parking is a secure place for people to leave their bike while they ride transit and is ideal for people who have a short last mile trip. Secure bike parking establishes clear and designated areas for bicyclists to store their bikes and relieves the user of having to bring the bike with them. In addition, all transit vehicles should provide a standard bike rack capable of holding three bicycles. This ensures transit riders that need to ride for their first and last mile connections can do so with ease by being able to bring their bike on the bus. Lastly, integrating a public bike share program with the transit system encourages users without bicycles and tourists to use the bicycle and transit infrastructure. More details about bicycle design guidance can be found in the multimodal component of the Master Streets Plan.

Accessibility

Accessibility is an integral component of connectivity and aims to provide user-friendly transit service to all people. Accessibility extends beyond physical accessibility and should include information accessibility and financial accessibility. Having clear and legible information both online and in print regarding stop locations, service times, and departures contribute greatly to transit accessibility and user experience. Financial accessibility refers to the cost of using the transit system and access to payment methods (i.e., bus passes, electronic bus passes, ticket vending stations). Optimizing routes and connecting users to major activity centers can reduce the need for multiple connections and overall trip costs. This form of accessibility also considers how and where users can pay for these trips. Maintaining ticket vending machines and recharge stations in areas with high demand is key to providing service to all customers. Similarly, providing various payment methods and programs allows users to choose an option that works best for their needs and budget. Physical accessibility has been outlined by the American with Disabilities Act (ADA).

Notable provisions highlighted in the 2006 Department of Transportation ADA Standards for Transportation Facilities include the location of accessible routes (206.3), detectable warnings on curb ramps (406.8), and bus boarding and alighting areas (810.2.2).

Recommendations

Introduction

A successful transit network is one that takes people where they want to go, when they want to go there. The Market Analysis revealed many opportunities for improvements in Bentonville's current transit system. When asking the public their thoughts on Bentonville's current transit service, most people feel that the service is in inadequate (53 percent of respondents) or they are simply not familiar with the service (40 percent of respondents). Bentonville's low transit ridership reflects the feedback from the public, however there is unmet transit potential in the community. The analysis suggests that the demand for transit is not being met and establishing a set of service delivery standards could help make riding transit easier and more intuitive.

A key takeaway from the analysis, greatly shaping the recommendations outlined below, is that Bentonville will be best supported by a transit network of multiple routes as opposed to one fixed route. A transit network can more effectively utilize resources and provide better service to the community. A transit service depending only on one route may spread the service too thin trying to meet multiple demands. Ultimately, this leads to long travel times and infrequent service; rendering transit unusable for those who might consider it and cumbersome for those that must use it. A transit network focuses on specific areas with high transit demand and is flexible to meet needs as the transit market develops in key areas. This allows for shorter travel times, more frequent buses, and reliable service. It also allows the City to be more strategic and adaptive with resources as the transit market develops and demand changes.

The following recommendations build from the analysis performed for the Market Analysis. The recommendations apply best transit practices grounded within the context of Bentonville to provide a transit service that supports the community's needs, encourages new transit riders, and continues to support Bentonville's prosperity.

Transit Network vs Circulator Route

The following recommendations are built around the conclusion that a transit network will be the most effective strategy for the future of transit in Bentonville.

While a service relying on one circulator route provides good physical coverage and access to opportunities, it can foster out-of-direction travel. The passenger must first travel away from their desired destination in order to eventually reach their end destination. This has compounding negative effects; not only does it increase travel time, but the perception of the inconvenient travel pattern can serve as an impediment to transit use. Figure 1 illustrates how a bi-directional route network can solve travel time issues that persist with a circulator route and makes the routes more desirable to use.

Although a circulator service may initially help provide physical coverage and access, the service is limited in its ability to respond to changing demand and other potential context changes. For instance, if a specific section of a circulator route starts to experience higher ridership, the circulator can only increase frequency for the entire route and not simply increase service on the section experiencing higher ridership. Whereas, if the area experiencing higher ridership was serviced by a bi-directional route network, the frequency can be increased along that section of the route (as illustrated in Figure 2). The bi-directional network allows service to be adaptive to transit demand and better allocate resources.

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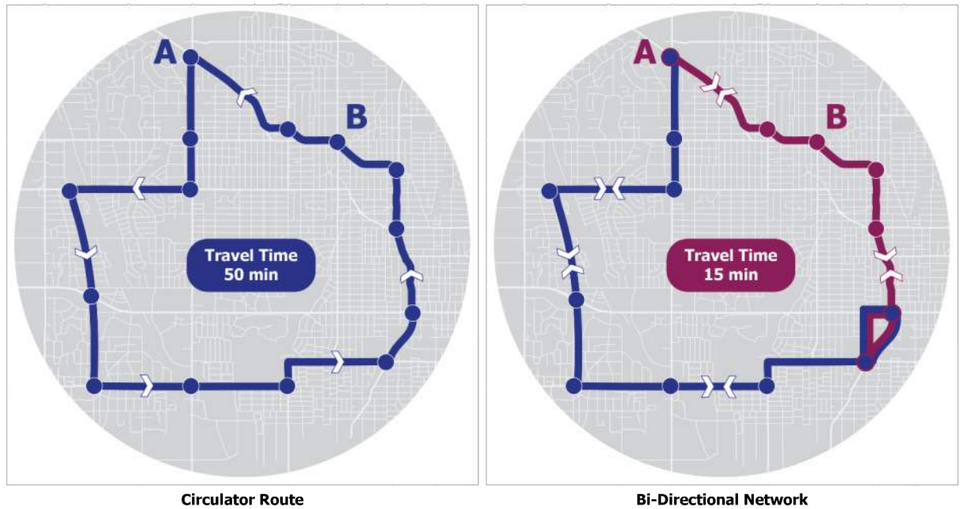
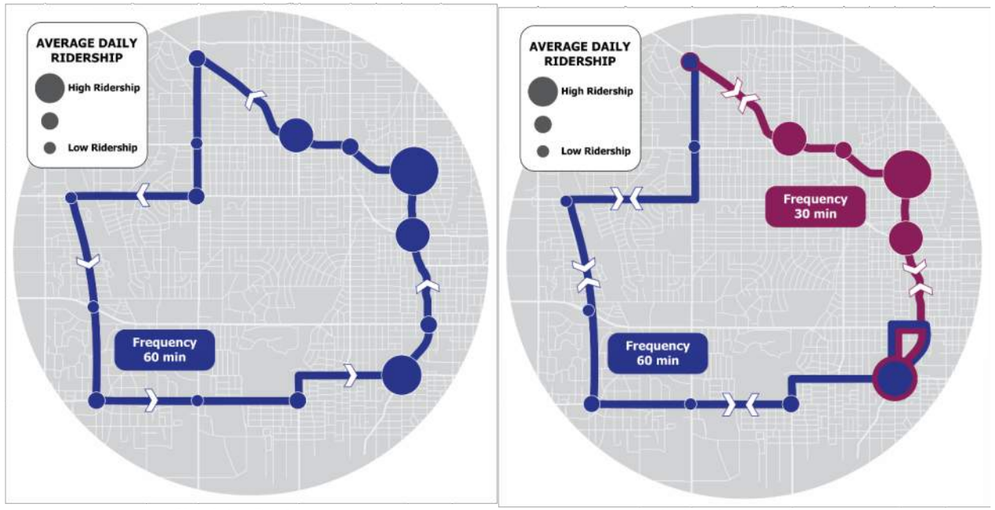


Figure 1 – Bi-Directional Network Travel Time Savings



Circulator Route

Bi-Directional Network

Figure 2- Bi-Directional Network Adaptability

Recommended Transit Network

A recommended transit network consisting of seven routes is the ultimate recommendation for the future of transit service in Bentonville. These routes were determined based on analysis of current and future conditions. The recommended network covers all areas of current and future transit need along with major population and employment centers. Additionally, these routes establish a connection to the regional transit network giving transit riders the ability to seamlessly travel outside of Bentonville.

This recommended transit network in tandem with the recommended Service Standards should be the ultimate goal guiding all future transit investments. However, the implementation of this network must be grounded in a realistic timeline and financial investment constraints. The approach below details the recommended incremental improvements, a route prioritization tool, and guiding principles to best determine future transit improvements that lead to building out the recommended network.

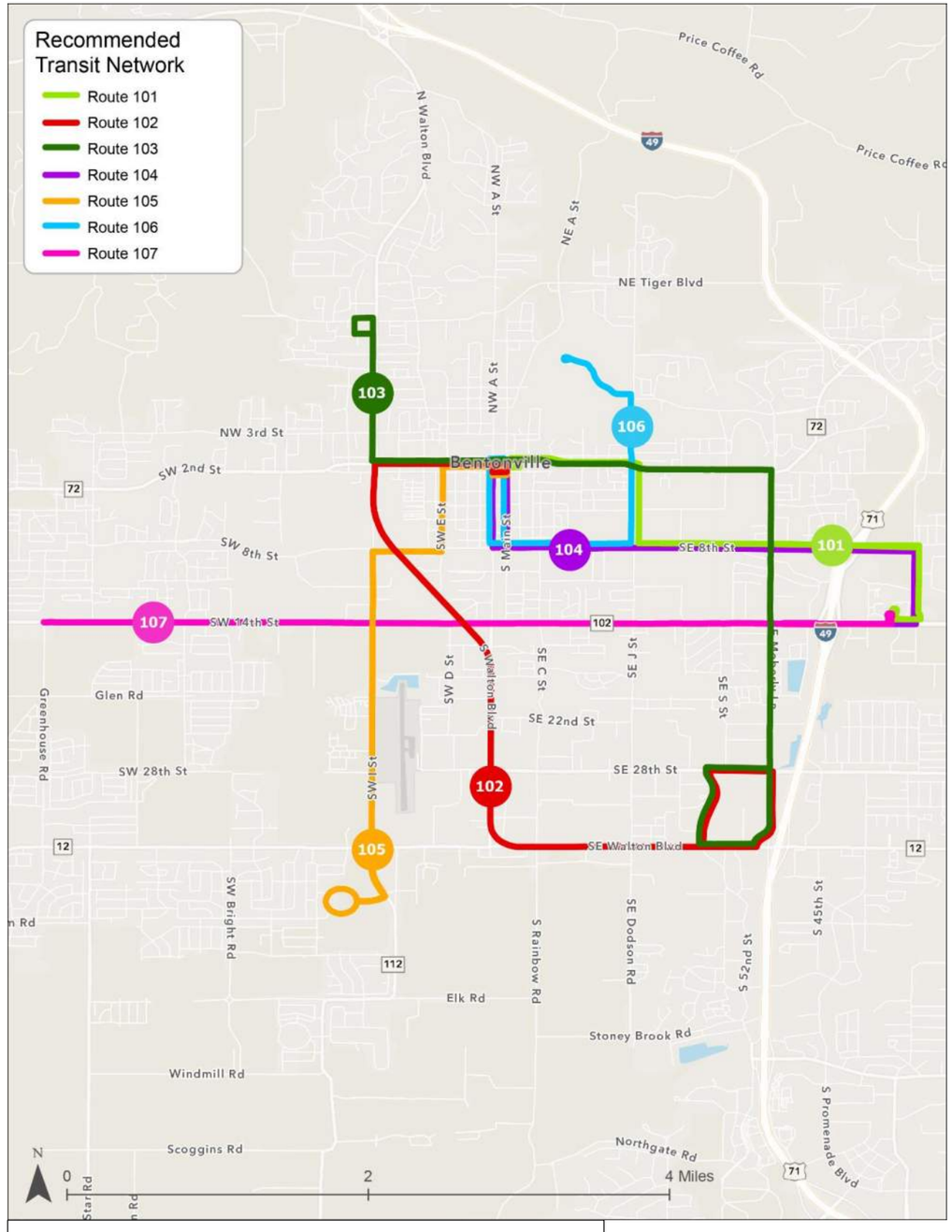


Figure 3 - Recommended Transit Network

Phased Implementation Plan

The recommended seven fixed-route transit system presented above is the ultimate long-term goal for transit in Bentonville. The recommended network fully covers areas of current transit need and future demand. However, the full-fledged network is ambitious and requires a phased implementation plan to foster a supportive transit market and allocate the necessary resources over time.

Phase II initiates the roll-out of the transit network recommendations. The three routes 102, 103, and 104 are the priority for implementation in this phase. Implementing the transit network, as opposed to continuing ORT Route 11, would best meet the City's transit needs, improve rider satisfaction, and allow the City to effectively apply resources where they would have the biggest impact. Phase III builds on the three-route core transit network by improving the frequency of service as soon as financially feasible.

Long-term recommendations include improving the existing system by expanding the span of service, improving frequency, and implementing additional routes using the prioritization tool as the transit market develops over time.

Lastly, alternative transit services are considered. If transit demand is not fully met by the fixed-route system, there are specific opportunities to supplement transit such as providing shuttle services for key destinations in Bentonville.

Phase I

Phase I offers immediate actions that improve upon the existing transit service in Bentonville. Phase I features include expanding service coverage by implementing an on-demand service zone and extending the existing span of service further into the evening.
For Phase I, it is recommended to maintain the ORT 11 route alignment the same as it is currently and upgrade bus stops along the route. Three bus stops have been identified for improvement.

The phased approach below describes incremental steps to take toward deliberately building Bentonville's transit network in a financially responsible way. The prioritization tool guides the phasing recommendations and is a tool for future transit decisions and resource allocation. Phase I recommends low-cost improvements that can be implemented in the short-term. For this phase, a realignment of ORT Route 11 was considered as a possibility. However, the realignment resulted only in minimal time savings, and some of existing bus stops would need to be eliminated. Given these results, any benefit from the minimal time savings was not enough to offset the negative consequences of removing existing bus stops. Instead of a realignment, this phase recommends improving existing bus stops and establishing an on-demand transit service zone.

The existing stops at the Walmart Supercenter on Walton Boulevard, the Touchstone Apartments on D Street, and the Bentonville Public Library were identified as potential stops for improvement due to their higher ridership. These stops are recommended to be improved to a Level II bus stop design which includes adding a bench at each stop. The upgraded amenities will provide riders an elevated experience while waiting for their bus.
The proposed on-demand service zone would provide on-demand service within the specified area by ORT. This service supplements the ORT 11 route by expanding the service area not within walking distance of ORT 11 and provides an additional on-demand bus in areas where ORT 11 currently serves. The on-demand service allows riders to schedule a bus trip within the zone by using the On-Demand Transit application on a smart phone, desktop computer, or by calling a direct number. This service overlaps with the existing taxi voucher program but provides a more user-friendly experience. Therefore, it is recommended to drop the taxi voucher program and reallocate those program funds towards the on-demand service.
ORT 11 currently runs during the week starting at 7:05 AM and ending at 4:05 PM with a frequency of 60 minutes. Extending service hours from 7:05 AM to 6:05 PM is recommended for this phase). The extended service hours in the evening better cover the time many working people would use transit for traveling home from work. The extended hours would therefore remove a potential barrier for people to choose transit as a travel mode to work and make the system easier to use for those that currently rely on transit to get to work. The same service hours for the on-demand service are recommended. The current service frequency for ORT 11 (60 minutes) will be maintained in Phase I.

Service Type	Span of Service	Frequency
Fixed Route	Monday – Friday 7:05AM – 6:05PM	60 Min
On-Demand	Monday – Friday 7:05AM – 6:05PM	N/A

Table 11 - Phase I Span of Service & Frequency

A high-level cost estimation for Phase I was calculated to provide a basis for the financial investment needed for Phase I implementation. Costs for the fixed route service (ORT 11) were estimated using the current service hourly rate ($75.50) multiplied by the annual service hours (2,805) which equals to total annual cost of $211,777.50. Costs for the on-demand service were estimated similarly to the fixed route service but include the addition of a one-time software fee ($25,000) and an annual connection fee ($6,000). The total cost for the first year of on-demand service is $242, 777.50. After the first year, the on-demand service is estimated to cost $217,777.50. Please note, these cost estimations do not include the cost savings from the taxi voucher program elimination, nor do they include new bus stop amenity costs.

Service Type	Service Days	Service Hours	Service Rate per Hour	Software Fee	Annual Fee	Frequency	Buses per Hour	First Year Cost	Total Annual Cost
Fixed Route	255	2,805	$75.5	N/A	N/A	60 min	1	$211,777.50	$211,777.50
On-Demand Service	255	2,805	$75.5	$25,000	$6,000	N/A	1	$242,777.50	$217,777.50
							Total Service Cost:	**$454,555.00**	**$429,555.00**

Table 12- Phase I Cost Estimation

Phase II

Phase II establishes the beginning features of the recommended transit network. The proposed fixed routes and upgraded bus stops will provide an almost entirely new and greatly enhanced transit experience (Figure 10).

Phase II recommends implementing three new fixed routes in Bentonville. Proposed routes 102, 103, and 104 are recommended based off the prioritization process. While the prioritization scores were very close for Route 104 and Route 107, Route 104 is recommended in this phase as it serves downtown and NWACC. NWACC is Bentonville's connection to the regional transit network. The three fixed routes provide transit service that replaces the service for ORT 11 and the on-demand service. Therefore, ORT 11 and the on-demand service are eliminated in Phase II. The proposed transit network better serves transit riders by streamlining service in key areas rather than spread thinly across the city as with ORT 11 and will greatly improve average travel times for riders.

Phase II incorporates many existing ORT 11 bus stops, but also requires many additional stops to serve Routes 102, 103, and 104. The recommended bus stops for Phase II have been categorized by Bus Stop Design Levels I, II, and III. Bus Stop Design Levels have been attributed to proposed bus stops based on existing ridership, potential ridership, and the Transit Oriented Development analysis. Bus stops should follow guidelines established in the Service Standards. Bus Stop Level III amenity upgrades are recommended for stops serving the NWA Medical Center, NWACC, and Downtown Bentonville as they have been identified as Mobility Hubs in the Transit Oriented

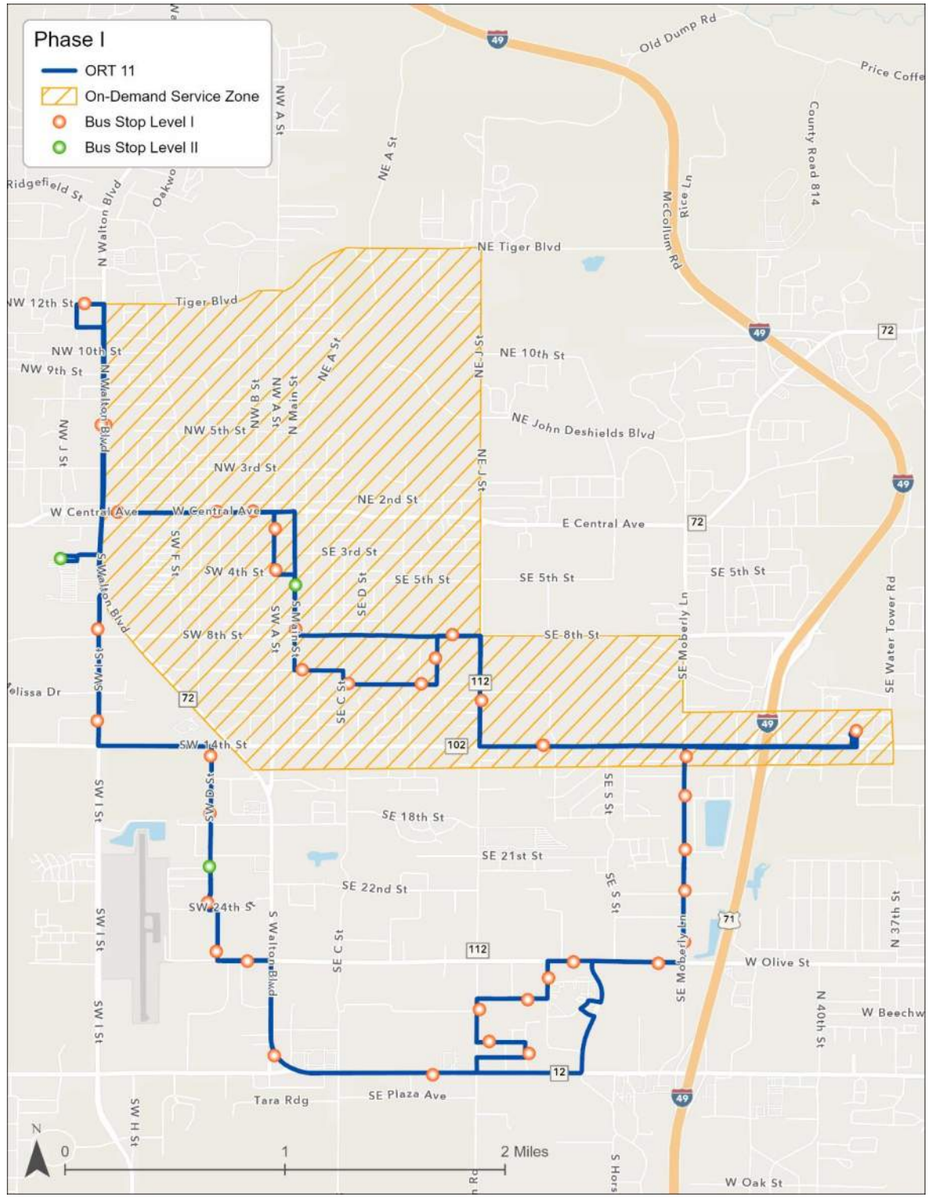


Figure 9 -Phase I

Development analysis. The bus stops recommended for Bus Stop Level II have been designated as such due to their existing and/or future ridership potential.
The span of service and frequency from Phase I is maintained for Phase II. However, Service in Phase II is recommended to run at a 60 min frequency across all three routes, Monday – Friday, 7:05 a.m. to 6:05 PM.
A high-level cost estimation for Phase II was calculated to provide a basis for the financial investment needed for Phase II implementation (Table 14). Costs for the fixed route service (ORT 11) were estimated using the current service hourly rate ($75.50) multiplied by the annual service hours (2,805) multiplied by the daily number of buses in service (3). This equals to a total annual cost of $635,332.50. Please note, these cost estimations do not include the cost savings from the on-demand and ORT 11 service elimination, nor do they include paratransit, bus acquisition and bus stop amenity costs.

Service Type	Span of Service	Frequency
102, 103, & 104 – Fixed Route	Monday – Friday 7:05AM – 6:05PM	60 Min

Table 13 - Phase II Span of Service & Frequency

Service Type	Service Days	Span of Service	Service Hours	Service Rate per Hour	Frequency	Buses per Hour	Total Annual Cost
Route 102	255	Monday – Friday 7:05AM – 6:05PM	2,805	$75.5	60 min	1	$211,777.50
Route 103	255	Monday – Friday 7:05AM – 6:05PM	2,805	$75.5	60 min	1	$211,777.50
Route 104	255	Monday – Friday 7:05AM – 6:05PM	2,805	$75.5	60 min	1	$211,777.50
						Total Annual Service Cost:	**$635,332.50**

Table 14 - Phase II Cost Estimation

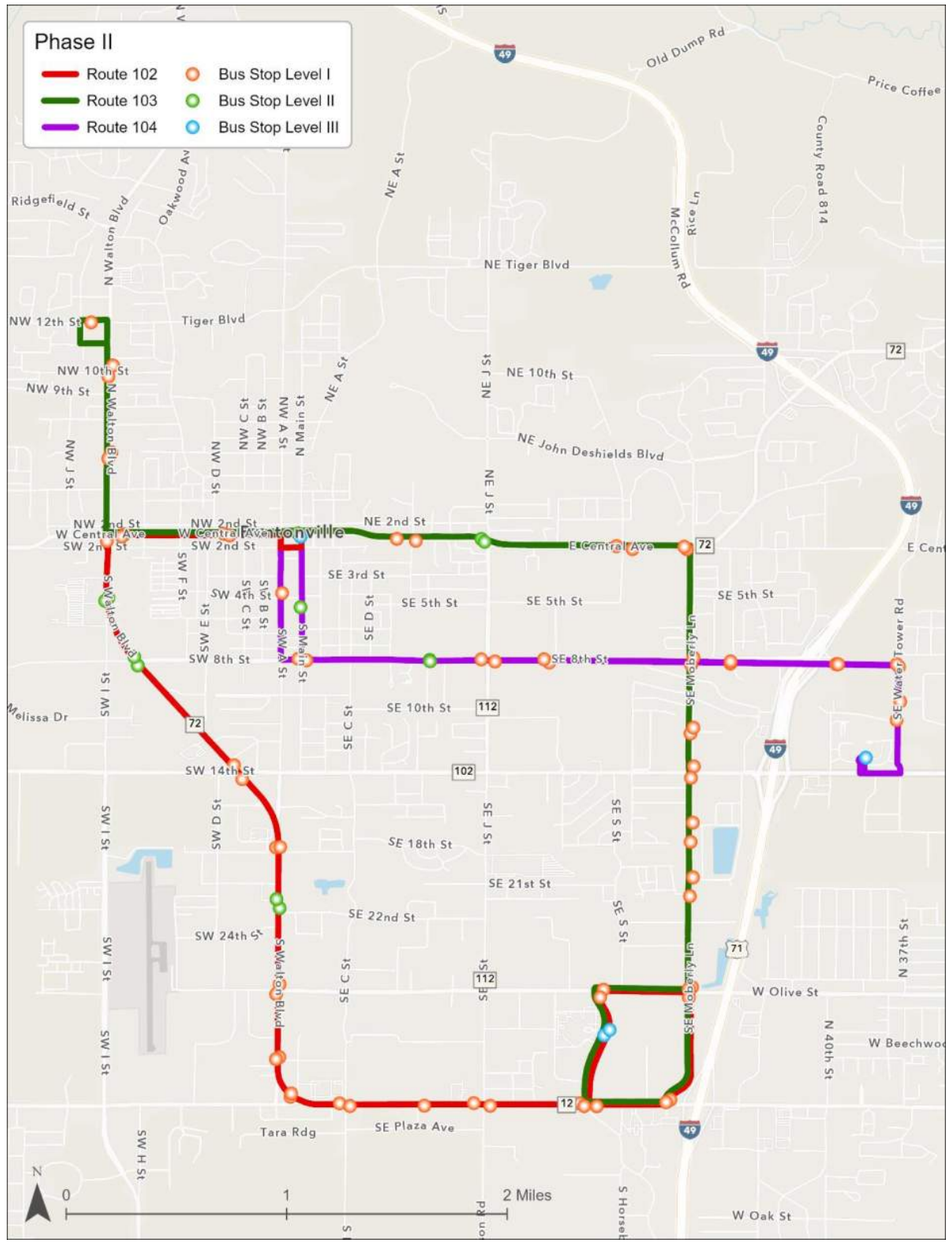


Figure 10 - Phase II

Phase III

Phase III recommendations improve upon on the three-route network implemented in Phase II. As transit demand builds across Routes 102,103, and 104, frequency should be improved accordingly.
This phase recommends improving frequency where demand is building and to do so whenever financially feasible. When the public was asked what is the longest time they would wait for a bus, 38 percent of respondents answered 11-20 minutes and almost half (48 percent) answered 5-10 minutes. Given that the public's willingness to wait for a bus caps at 20 minutes, a frequency of 30 minutes (at most) is highly recommended to be implemented as soon as feasibly possible across all three routes. Average daily ridership for each route should be diligently assessed and improved frequencies should be implemented first across the routes showing the highest demand. Given this phase provides no new route alignments, an image of the network has not been provided as it is the same as Phase II.
A high-level cost estimation for Phase III was calculated to provide a basis for the financial investment needed for Phase III implementation (Table 15). The cost estimation reflects a 30-minute frequency across all three routes. Costs for each fixed route were estimated using the current service hourly rate ($75.50) multiplied by the annual service hours (2,805) multiplied by the daily number of buses in service (2). This equals to a total annual cost service cost of $1,270,665.00. Please note, these cost estimations do not include paratransit or bus acquisition costs.

Service Type	Service Days	Span of Service	Service Hours	Service Rate per Hour	Frequency	Buses per Hour	Total Annual Cost
Route 102	255	Monday – Friday 7:05AM – 6:05PM	5,610	$75.5	30 minutes	2	$ 423,555.00
Route 103	255	Monday – Friday 7:05AM – 6:05PM	5,610	$75.5	30 minutes	2	$ 423,555.00
Route 104	255	Monday – Friday 7:05AM – 6:05PM	5,610	$75.5	30 minutes	2	$ 423,555.00
						Total Annual Service Cost:	**$ 1,270,665.00**

Table 15- Phase III Cost Estimation

Long-Term Actions

The benefit of a transit network is the ability to dynamically respond to the changing transit market. This allows the City to be more strategic with resources and the resources invested produce more impactful outcomes. As the transit market in Bentonville responds to the improvements made in Phase II and Phase III, long term improvements should move toward expanding service. Expanding service can be in the form of extending the span of service, increasing frequency, and implementing additional routes.
The long-term goal for transit in Bentonville is to implement the seven-route transit network that fully covers areas of transit need and demand (Figure 3). The prioritization tool should be used to help guide decisions and resources concerning new route implementation.
To ensure the system takes people where they want to go and when they want to arrive, expanding the span of service to run throughout the week (including weekends) and starting service earlier in the morning (6:00AM) and extending service later in the evening (10:00PM or later) should be a long-term action that the City works towards implementing. In the same vein, increasing frequency to under 30 minutes on higher demand routes will alleviate another barrier for potential transit riders.
It is also important to consider bus stop improvements to bring all stops up to the Service Standards recommended Bus Stop Design Levels according to their ridership. Average Daily Ridership for all stops should be evaluated on a consistent basis to determine bus stop amenities. Pedestrian access should be prioritized above all other improvements. This includes ensuring sidewalk connectivity within a ¼ mile of the bus stop. Additionally, Mobility Hubs identified in the Transit Oriented Development analysis should be prioritized for amenity upgrades as these areas are likely to be supporting the highest transit demand and are important intersections in the transit system.

Lastly, performance metrics identified in the Bentonville Service Standards should be set in the context of the transit system's performance and evaluated on a consistent basis. The performance metrics should be used as an additional guide for transit service decisions and resource allocation.