Section 4

HIGHWAY ELEMENT

4.0 Introduction

The plan development process involved building and testing alternate street plans until an acceptable plan evolved for adoption. This process basically followed three steps:

1. Alternate Plan Development or Modification;
2. Assignment of Year 2035 Traffic; and
3. Alternate Plan Evaluation Based on Future Traffic Assignment.

This procedure was repeated for each alternate considered. The selected plan includes expansion of arterial and collector systems, upgrading some existing arterial highways to expressways, and constructing new freeways and expressways.

4.1 The Adopted Highway Plan

The Huntsville Long-Range Highway Plan is shown on **Map 4.1,** and at **Table 4.1** and **Table 4.2.** The maps are further divided into quadrants. **Maps 4.1A, 4.1B, 4.1C,** and **4.1D** provide a closer snapshot of proposed road projects. All roads, interchanges, and maintenance & operations projects that are indicated on the map in red are visionary projects. This means that no funding has been identified for the projects. All roads, interchanges, and maintenance & operations projects that are indicated on the map in blue are classified as financially constrained projects, and funding has been identified for these projects. More information concerning the financial status of the projects can be found in **Section 10**.

All projects have accommodations for bicycle and pedestrian facilities, except where noted in **Table 4.1.** Certain locations cannot accommodate pedestrians and/or bicycles because the corridor is a limited access or controlled access roadway, such as I-565, Memphis to Atlanta Highway, Southern Bypass, Research Park Boulevard, and the Weatherly Road Extension to the Southern Bypass. Some corridors identified for improvement, such as Memorial Parkway/U.S. 231, U.S. 72 East, and U.S. 72 West are U.S. routes and carry high volumes of traffic. The cost of constructing the *appropriate* bicycle and pedestrian facilities for these corridors is cost prohibitive at the present time. Most maintenance and operations projects do not include bike and pedestrian facilities due to the nature of the projects (i.e., new signalization, geometric improvements, etc.). All City of Huntsville capacity projects will include right of way, curbs, gutters, and sidewalks in accordance with the city's subdivision regulations. Refer to **Section 7** for additional information and policies concerning the accommodation of bicyclists and pedestrians in regard to the long range transportation plan.

Map 4.1

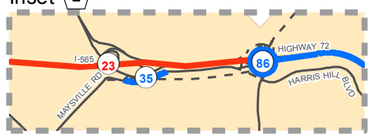
Year 2035 Transportation Plan Corridor Improvement Projects

HATS

Huntsville Area Transportation Study

Inset 1

Inset 2



Maintenance & Operation Projects
- Financially Constrained
- Visionary

Capacity Projects
- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
A	Four Mile Post Rd @ Whitesburg Dr	Signal & major geometric improvements to Four Mile Post Rd approach
B	Enterprise Way @ University Dr*	Reduce island width or eliminate to construct additional north bound approach lane to University Dr.
C	Caldwell Ln @ Hwy 431	Construction of west to north right turn lane and acceleration lane on Hwy 431
D	Old Madison Pike @ Research Park Blvd*	Construct joint use pedestrian & bicycle bridge and sidewalk approaches across Research Park Blvd
E	Explorer Dr @ Pegasus Rd	New traffic signal installation
F	Enterprise Way: Moore Farm to University Dr*	Add signal, left turn restrictions island at shopping center exits, a sidewalk, plus 3rd left turn lane to University Dr
G	County Line Rd @ Hwy 72	Upgrade displays, phasing and timings, and geometric improvements
H	Church St Bridge @ Big Spring Park	Construct bridge to improve pedestrian access to Big Spring Park and reduce vehicular & pedestrian conflicts
I	US 231 from Hobbs Rd to Weatherly Rd	Access management and intersection improvements
J	I-565 near Zierdt Rd	Add interchange

Miles
0 2.5 5

HUNTSVILLE The Star of Alabama Geographic Information Systems

	ROADWAY	FROM	TO
1	Ardmore Hwy-AL 53	Research Park Blvd	Jeff Rd
2	Ardmore Hwy-AL 53	Jeff Rd	North of Harvest Rd
3	Ardmore Hwy-AL 53	North of Harvest Rd	Tennessee State Line
4	Balch Rd	Browns Ferry Rd	Gooch Ln
5	Balch Rd	Capshaw Rd	Gooch Ln
6	Balch Rd Extension	Browns Ferry Rd	Madison Blvd
7	Beadle Ln	Swancott Rd	Zierdt Rd
8	Blake Bottom Rd	Jeff Rd	Research Park Blvd
9	Brock Rd	U.S. 72 East	Ryland Pike
10	Browns Ferry Rd	Mooresville Rd	County Line Rd
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd
12	Church St	Monroe St	Oakwood Ave
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431
14	Eastern Bypass (PH 2)	Quarter Ln	U.S. 72 East
15	Eastview Dr	Slaughter Rd	Hughes Rd
16	Eastview Dr Extension	Hughes Rd	Sullivan St
17	Greenbrier Rd/Powell Rd Ext	North of I-565	U.S. 72 West
18	Hobbs Island Rd	U.S. 231	U.S. 431
19	Homer Nance Rd	Jordan Rd	Winchester Rd
20	Hughes Rd	Old Madison Pike	U.S. 72 West
21	Hughes Rd Extension	U.S 72 West	Wall Triana Hwy
22	I 565	Interstate 65	Wall Triana Hwy
23	I 565	Oakwood Ave	High Mtn Road
24	I-565 Interchange*	County Line Rd	
25	I-565 Interchange*	Greenbrier Rd	
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd
27	Jeff Rd (Ph 2)	Capshaw Rd	Douglass Rd
28	Jeff Rd (Ph 3)	Douglass Rd	AL 53
29	Johns Road	Plummer Road	University Dr
30	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East
31	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd
32	King Drake Rd - 431 Connector	King Drake Rd	US 431
33	Martin Rd	Zierdt Rd	Laracy Dr.
34	Martin Rd	Zierdt Road	Rideout Rd
35	Maysville Rd Connector	Maysville Rd	Epworth Dr
36	Memorial Pkwy Interchange*	N. of Whitesburg-S. of Golf Rd	
37	Memorial Pkwy Interchange	Mastin Lake Rd	
38	Memorial Pkwy Interchange	Winchester Rd	
39	Memorial Pkwy Interchange	Meridianville Bottom Rd	
40	Memorial Pkwy Interchange	Patterson Ln	
41	Memorial Pkwy Interchange	Walker Ln	
42	Memorial Pkwy Interchange*	Mtn. Gap Rd/Hobbs Rd	
43	Memorial Pkwy Interchange	Green Cove Rd	
44	Memorial Pkwy Interchange	Hobbs Island Rd	
45	Memphis to Atlanta Highway	I-65	I-565
46	Memphis to Atlanta Highway	Southern Bypass	Marshall County Limits
47	Meridian St	Winchester Rd	Memorial Pkwy
48	Meridian St (PH 1)	Oakwood Ave	Pratt Ave
49	Mill Road	County Line Rd	Hughes Rd
50	Moontown Rd	Ryland Pike	U.S. 72 East
51	Moores Mill Rd	Winchester Rd	Northern Bypass
52	Mt Lebannon	Grimwood Rd	Northern Bypass
53	Nance Rd	University Dr	Capshaw Rd
54	Northern Bypass (PH 2)	East of Pulaski Pike	U.S. 231
55	Northern Bypass (PH 3)	U.S. 231	Moores Mill Rd
56	Northern Bypass (PH 4)	Moores Mill Rd	Winchester Rd
57	Northern Bypass (PH 5)	Winchester Rd	U.S. 72 East
58	Oakwood Rd	Adventist Blvd	Research Park Blvd
59	Old 431 Hwy	Highway 431	Wilson Mann Rd
60	Old Big Cove Rd	Hwy 431	Sutton Rd
61	Old Big Cove Rd	South Green Mountain Rd	Highway 431
62	Old Hwy 20	Greenbrier Rd	County Line Rd
63	Old Madison Pike	Thornton Industrial Park	Slaughter Rd
64	Old Madison Pike	Hughes Rd	Slaughter Rd
65	Old Railroad Bed Rd (PH 1)	U.S. 72 West	Capshaw Rd
66	Old Railroad Bed Rd (PH 2)	Capshaw Rd	AL Hwy 53
67	Patton Rd	Aerobee Rd	Redstone Rd
68	Plummer Rd	Research Park Blvd	Indian Creek Rd
69	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension
70	Powell Rd	Powell Rd	Browns Ferry Rd
71	Research Park Blvd & Interchanges	I-565	Ardmore Hwy - AL 53
72	Ryland Pike	U.S. 72 East	Northern Bypass
73	Shelton Rd	Madison Blvd	1/4 mi N. of Madison Blvd
74	Shields Rd	Jordan Rd	Winchester Rd
75	Slaughter Road	Madison Blvd	U.S. 72 West
76	Southern Bypass (PH 1)	I-565	Martin Rd
77	Southern Bypass (PH 2)	Martin Rd	Weatherly Rd Extension
78	Southern Bypass (PH 3)	Weatherly Rd Extension	U.S. 231
79	Sullivan St	Royal Dr	Front St
80	Swancott Rd	I-565	County Line Rd
81	U.S. 72 East/ARC Corr V Interchange*	Moores Mill Rd & Shields Rd	
82	U.S. 72 East/ARC Corr V Interchange	Jordan Rd Extended	
83	U.S. 72 East/ARC Corr V Interchange	Moontown Rd	
84	U.S. 72 East/ARC Corr V Interchange	Brock Rd	
85	U.S. 72 East/ARC Corr V Interchange	Eastern Bypass	
86	U.S. 72 East/ARC Corr V Interchange	High Mountain Rd	
87	U.S. 72/University Dr*	Providence Main Blvd	County Line Rd
88	U.S. 72/University Dr	County Line Rd	Mooresville Rd
89	Wall Triana Hwy	Mill Rd	U.S. 72 West
90	Wall Triana Hwy	U.S. 72 West	Capshaw Rd
91	Wall Triana Hwy	Capshaw Rd	Yarborough Rd
92	Weatherly Rd Extension	Memorial Pkwy	Southern Bypass
93	Winchester Rd (PH 2)	Dominion Cir	Naugher Rd
94	Winchester Rd (PH 3)	Naugher Rd	Bell Factory Rd
95	Winchester Rd (PH 4)	Bell Factory Rd	State Line
96	Zierdt Rd (PH 1)*	Madison Blvd	South of Martin Rd
97	Zierdt Rd (PH 2)	South of Martin Rd	Beadle Ln
98	Zierdt Rd Extension	1/4 mi N. of Madison Blvd	Old Madison Pike
99	Zierdt Rd/Kellner Rd Corridor	Kellner Rd	Zierdt Rd

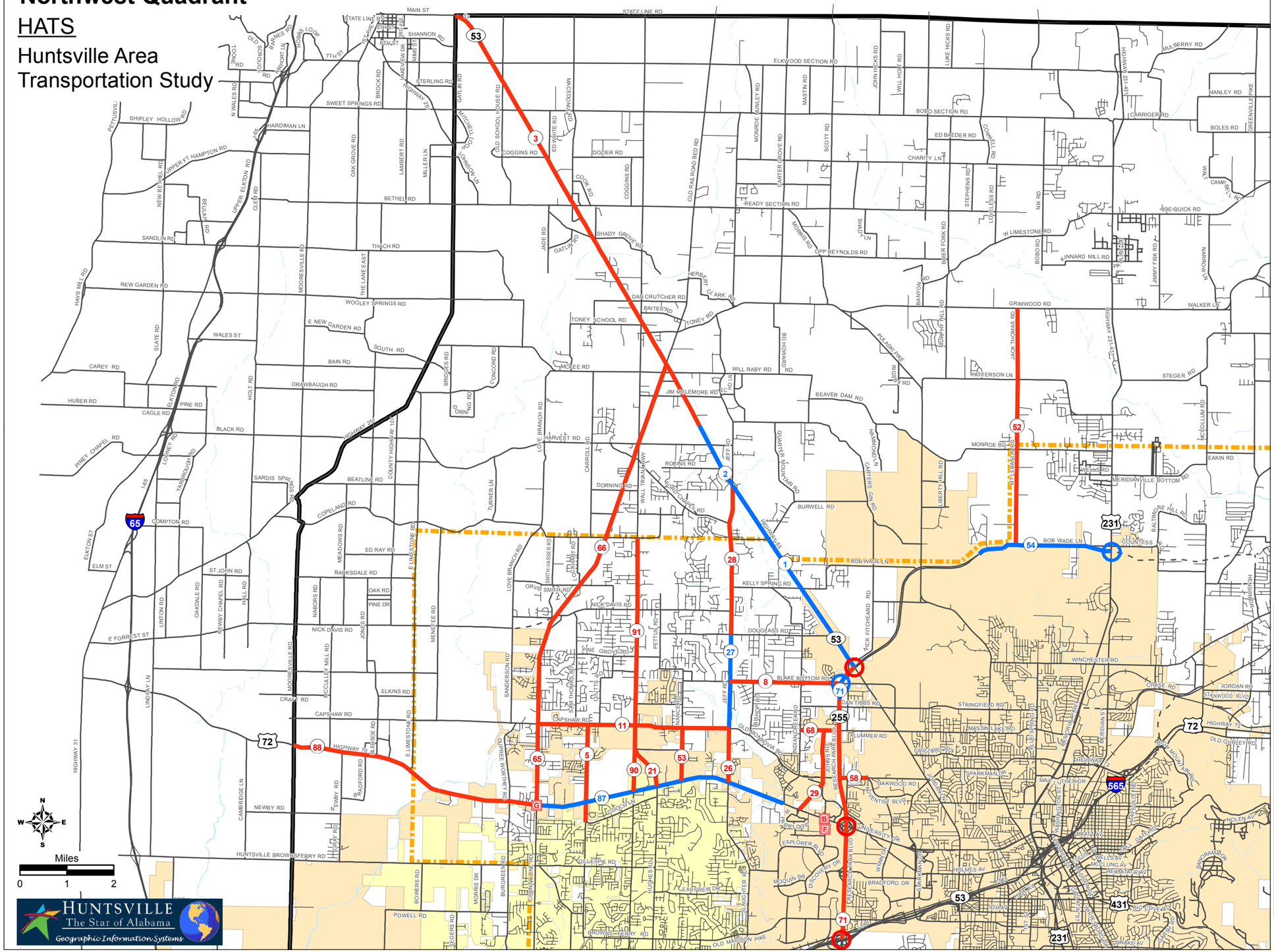
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1A

Year 2035 Transportation Plan
Corridor Improvement Projects
Northwest Quadrant

HATS

Huntsville Area
Transportation Study



Visionary Maintenance & Operation Projects

Capacity Projects

- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Streets
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

VISIONARY MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
B	Enterprise Way @ University Dr*	Reduce island w idth or eliminate to construct additional north bound approach lane to University Dr.
F	Enterprise Way: Moore Farm to University Dr*	Add signal, left turn restrictions island at shopping center exits, a sidew alk, plus 3rd left turn lane to University Dr
G	County Line Rd @ Hw y 72	Upgrade displays, phasing and timings, and geometric improvements

CAPACITY PROJECTS

	ROADWAY	FROM	TO
1	Ardmore Hw y-AL 53	Research Park Blvd	Jeff Rd
2	Ardmore Hw y-AL 53	Jeff Rd	North of Harvest Rd
3	Ardmore Hw y-AL 53	North of Harvest Rd	Tennessee State Line
5	Balch Rd	Capshaw Rd	Gooch Ln
8	Blake Bottom Rd	Jeff Rd	Research Park Blvd
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd
21	Hughes Rd Extension	U.S 72 West	Wall Triana Hw y
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd
27	Jeff Rd (Ph 2)	Capshaw Rd	Douglass Rd
28	Jeff Rd (Ph 3)	Douglass Rd	AL 53
29	Johns Road	Plummer Road	University Dr
52	Mt Lebannon	Grimw ood Rd	Northern Bypass
53	Nance Rd	University Dr	Capshaw Rd
54	Northern Bypass (PH 2)	East of Pulaski Pike	U.S. 231
58	Oakw ood Rd	Adventist Blvd	Research Park Blvd
65	Old Railroad Bed Rd (PH 1)	U.S. 72 West	Capshaw Rd
66	Old Railroad Bed Rd (PH 2)	Capshaw Rd	AL Hw y 53
68	Plummer Rd	Research Park Blvd	Indian Creek Rd
71	Research Park Blvd & Interchanges	I-565	Ardmore Hw y - AL 53
87	U.S. 72/University Dr	County Line Rd	Mooresville Rd
88	U.S. 72/University Dr*	Providence Main Blvd	County Line Rd
90	Wall Triana Hw y	U.S. 72 West	Capshaw Rd
91	Wall Triana Hw y	Capshaw Rd	Yarborough Rd

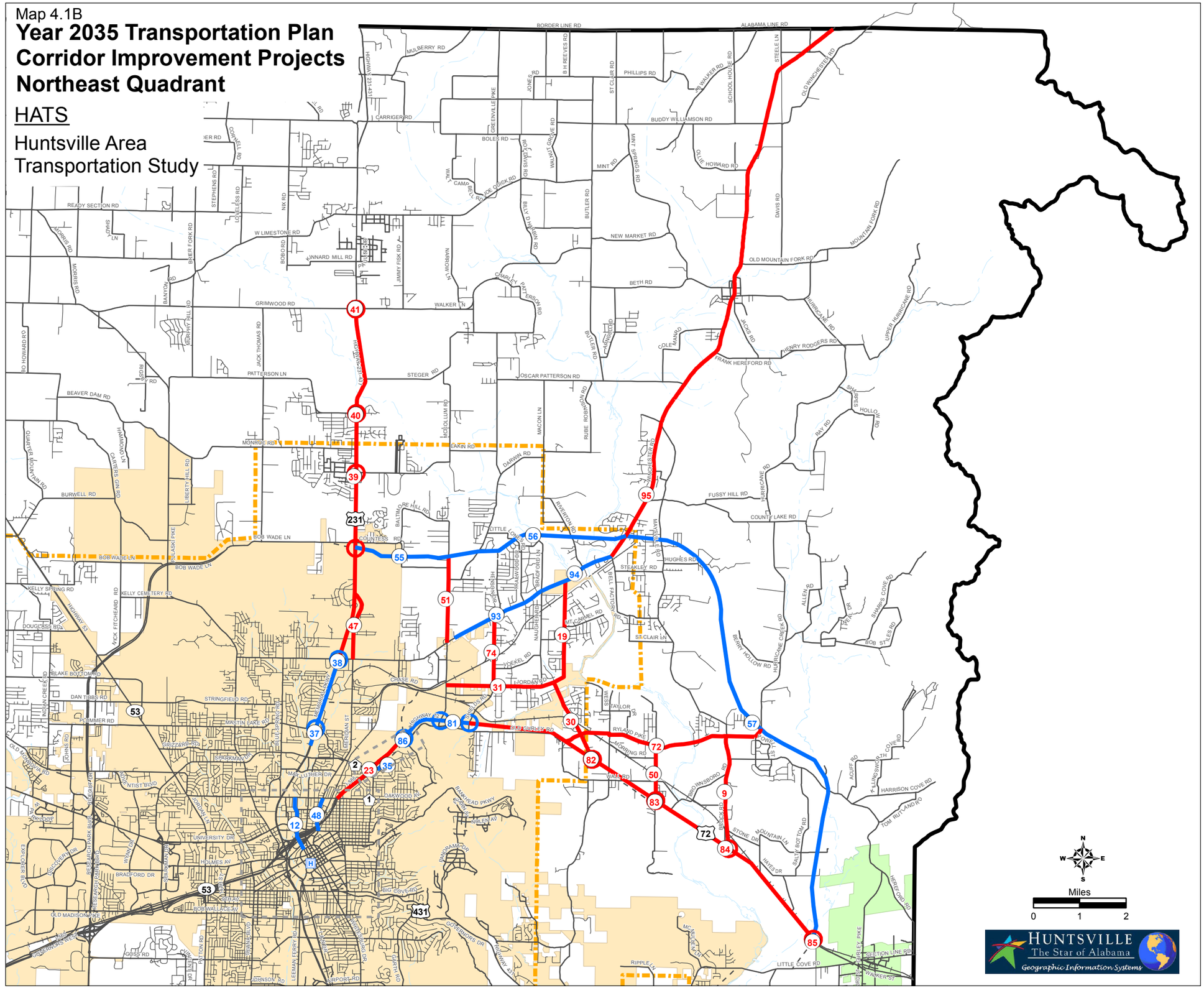
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1B

Year 2035 Transportation Plan
Corridor Improvement Projects
Northeast Quadrant

HATS

Huntsville Area
Transportation Study



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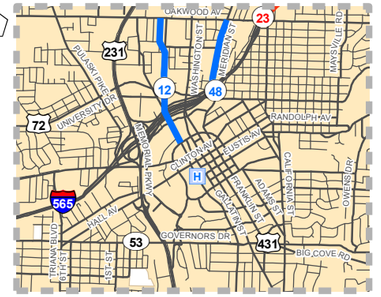

Inset 2

Financially Constrained Maintenance & Operation Projects

Capacity Projects

- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects
- Major Roads
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

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HUNTSVILLE
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CAPACITY PROJECTS			
	ROADWAY	FROM	TO
9	Brock Rd	U.S. 72 East	Ryland Pike
12	Church St	Monroe St	Oakwood Ave
19	Homer Nance Rd	Jordan Rd	Winchester Rd
23	I 565	Oakwood Ave	High Mtn Road
30	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East
31	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd
35	Maysville Rd Connector	Maysville Rd	Epworth Dr
37	Memorial Pkwy Interchange	Mastin Lake Rd	
38	Memorial Pkwy Interchange	Winchester Rd	
39	Memorial Pkwy Interchange	Meridianville Bottom Rd	
40	Memorial Pkwy Interchange	Patterson Ln	
41	Memorial Pkwy Interchange	Walker Ln	
47	Meridian St	Winchester Rd	Memorial Pkwy
48	Meridian St (PH 1)	Oakwood Ave	Pratt Ave
50	Moontown Rd	Ryland Pike	U.S. 72 East
51	Moores Mill Rd	Winchester Rd	Northern Bypass
55	Northern Bypass (PH 3)	U.S. 231	Moores Mill Rd
56	Northern Bypass (PH 4)	Moores Mill Rd	Winchester Rd
57	Northern Bypass (PH 5)	Winchester Rd	U.S. 72 East
72	Ryland Pike	U.S. 72 East	Northern Bypass
74	Shields Rd	Jordan Rd	Winchester Rd
81	U.S. 72 East/ARC Corr V Interchange*	Moores Mill Rd & Shields Rd	
82	U.S. 72 East/ARC Corr V Interchange	Jordan Rd Extended	
83	U.S. 72 East/ARC Corr V Interchange	Moontown Rd	
84	U.S. 72 East/ARC Corr V Interchange	Brock Rd	
85	U.S. 72 East/ARC Corr V Interchange	Eastern Bypass	
86	U.S. 72 East/ARC Corr V Interchange	High Mountain Rd	
93	Winchester Rd (PH 2)	Dominion Cir	Naugher Rd
94	Winchester Rd (PH 3)	Naugher Rd	Bell Factory Rd
95	Winchester Rd (PH 4)	Bell Factory Rd	State Line

MAINTENANCE AND OPERATION PROJECTS		
	LOCATION	PROJECT DESCRIPTION
H	Church St Bridge @ Big Spring Park	Construct bridge to improve pedestrian access to Big Spring Park and reduce vehicular & pedestrian conflicts

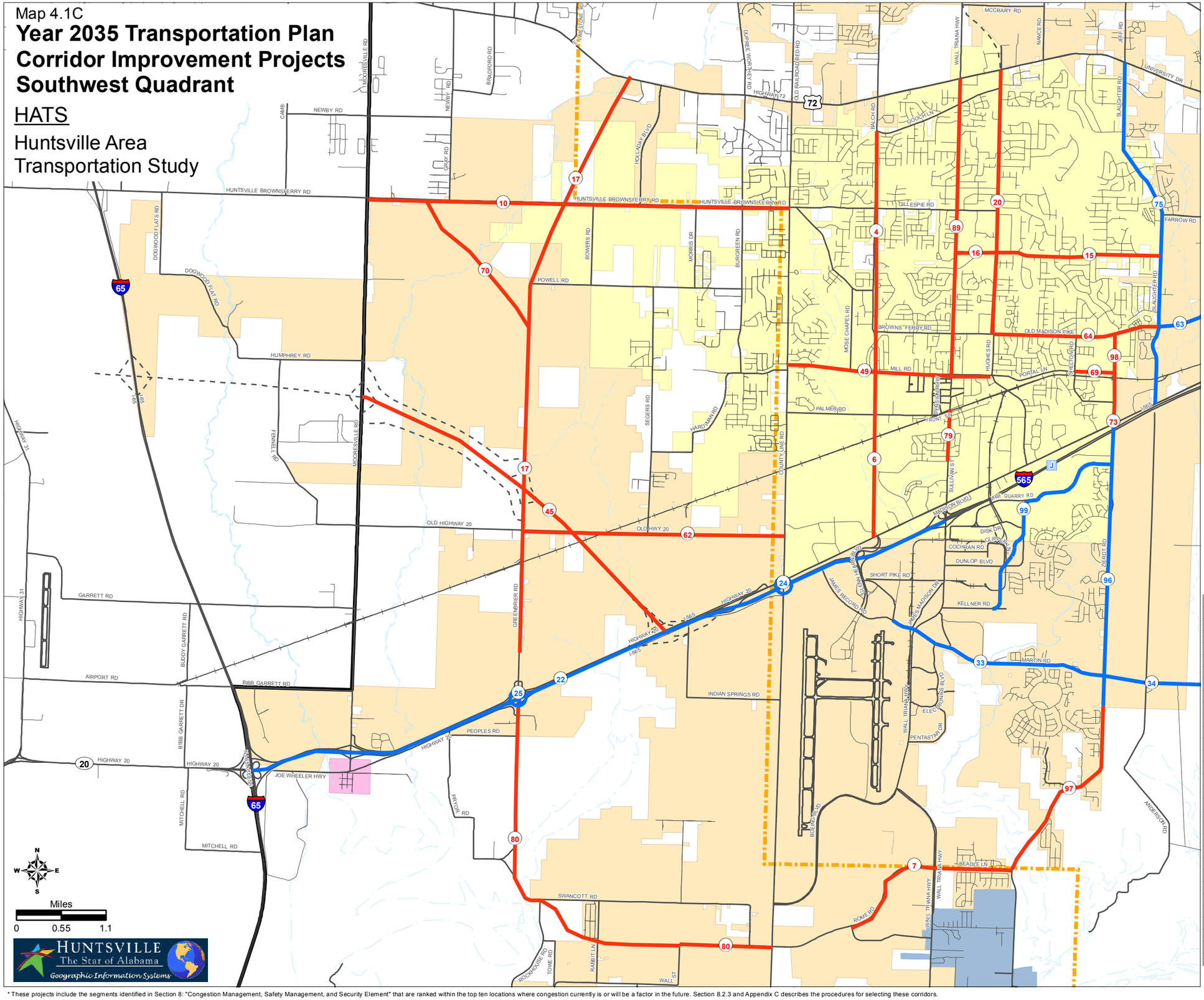
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1C

Year 2035 Transportation Plan
Corridor Improvement Projects
Southwest Quadrant

HATS

Huntsville Area
Transportation Study



Capacity Projects
- Financially Constrained Road Projects
- Visionary Road Projects
- Financially Constrained Interchange Projects
- Visionary Interchange Projects

Maintenance & Operation Projects
- Financially Constrained
- Visionary

- Major Roads
- Streets
- Proposed Roads
- Study Area
- Urban Area
- Huntsville City Limits
- Madison City Limits
- New Hope City Limits
- Owens Cross Roads Town Limits
- Triana Town Limits
- Mooresville Town Limits
- Gurley Town Limits

VISIONARY MAINTENANCE AND OPERATION PROJECTS

	LOCATION	PROJECT DESCRIPTION
D	Old Madison Pike @ Research Park Blvd*	Construct joint use pedestrian & bicycle bridge and sidew alk approaches across Research Park Blvd
E	Explorer Dr @ Pegasus Rd	New traffic signal installation
J	I-565 near Zierdt Rd	Add interchange

CAPACITY PROJECTS

	ROADWAY	FROM	TO
4	Balch Rd	Brow ns Ferry Rd	Gooch Ln
6	Balch Rd Extension	Brow ns Ferry Rd	Madison Blvd
7	Beadle Ln	Sw ancott Rd	Zierdt Rd
10	Brow ns Ferry Rd	Mooresville Rd	County Line Rd
15	Eastview Dr	Slaughter Rd	Hughes Rd
16	Eastview Dr Extension	Hughes Rd	Sullivan St
17	Greenbrier Rd/Pow ell Rd Ext	North of I-565	U.S. 72 West
20	Hughes Rd	Old Madison Pike	U.S. 72 West
22	I 565	Interstate 65	Wall Triana Hw y
24	I-565 Interchange*	County Line Rd	
25	I-565 Interchange*	Greenbrier Rd	
33	Martin Rd	Zierdt Rd	Laracy Dr.
34	Martin Rd	Zierdt Road	Rideout Rd
45	Memphis to Atlanta Highw ay	I-65	I-565
49	Mill Road	County Line Rd	Hughes Rd
62	Old Hw y 20	Greenbrier Rd	County Line Rd
63	Old Madison Pike	Thornton Industrial Park	Slaughter Rd
64	Old Madison Pike	Hughes Rd	Slaughter Rd
69	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension
70	Pow ell Rd	Pow ell Rd	Brow ns Ferry Rd
73	Shelton Rd	Madison Blvd	1/4 mi N. of Madison Blvd
75	Slaughter Road	Madison Blvd	U.S. 72 West
79	Sullivan St	Royal Dr	Front St
80	Sw ancott Rd	I-565	County Line Rd
89	Wall Triana Hw y	Mill Rd	U.S. 72 West
96	Zierdt Rd (PH 1)*	Madison Blvd	South of Martin Rd
97	Zierdt Rd (PH 2)	South of Martin Rd	Beadle Ln
98	Zierdt Rd Extension	1/4 mi N. of Madison Blvd	Old Madison Pike
99	Zierdt Rd/Kellner Rd Corridor	Kellner Rd	Zierdt Rd

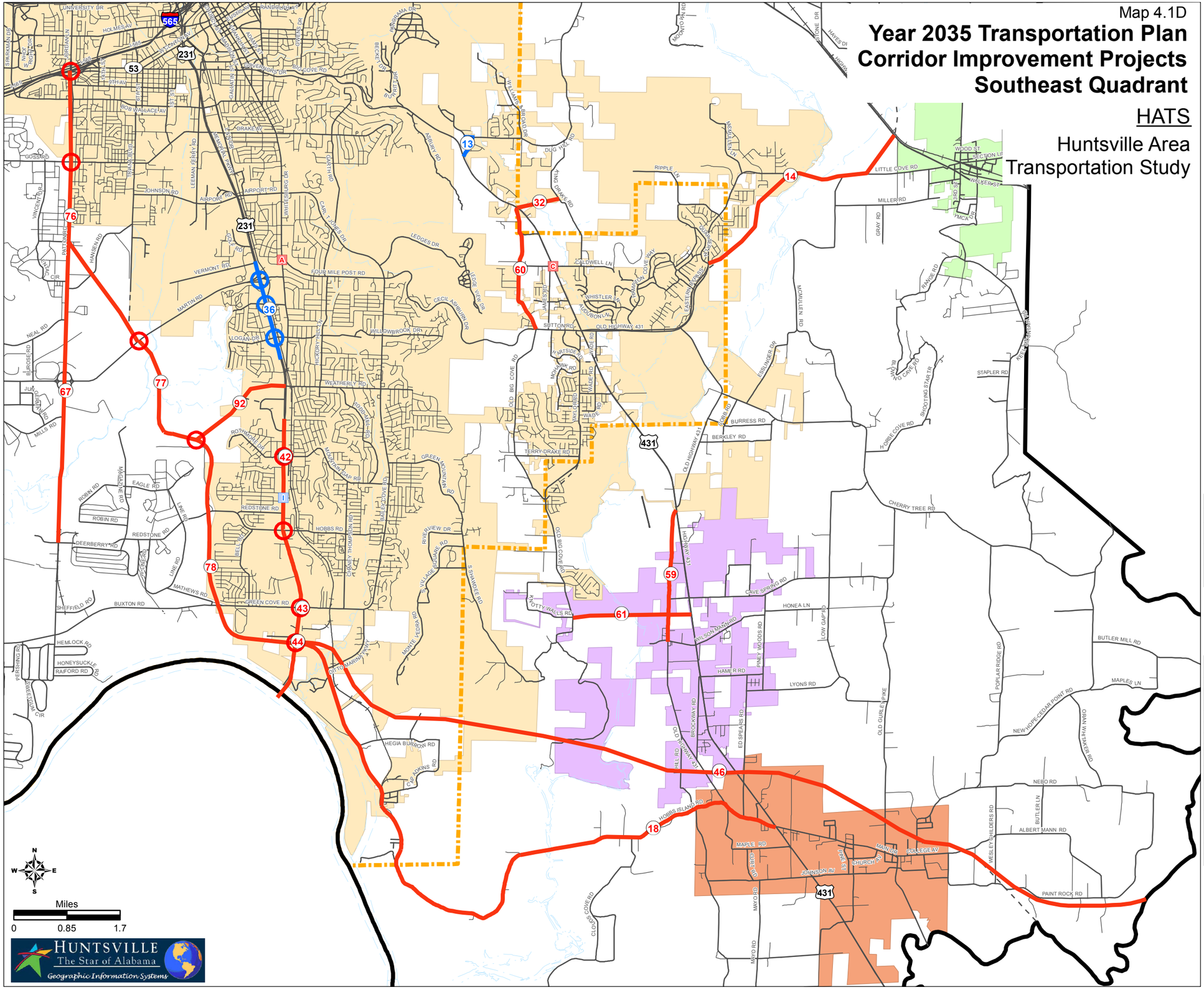
* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Map 4.1D

Year 2035 Transportation Plan
Corridor Improvement Projects
Southeast Quadrant

HATS

Huntsville Area
Transportation Study



VISIONARY MAINTENANCE AND OPERATION PROJECTS		
	LOCATION	PROJECT DESCRIPTION
A	Four Mile Post Rd @ Whitesburg Dr	Signal & major geometric improvements to Four Mile Post Rd approach
C	Caldwell Ln @ Hwy 431	Construction of w est to north right turn lane and acceleration lane on Hwy 431
I	US 231 from Hobbs Rd to Weatherly Rd	Access management and intersection improvements

CAPACITY PROJECTS			
	ROADWAY	FROM	TO
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431
14	Eastern Bypass (PH 2)	Quarter Ln	U.S. 72 East
18	Hobbs Island Rd	U.S 231	U.S. 431
32	King Drake Rd - 431 Connector	King Drake Rd	US 431
36	Memorial Pkw y Interchange*	N. of Whitesburg-S. of Golf Rd	
42	Memorial Pkw y Interchange*	Mtn. Gap Rd/Hobbs Rd	
43	Memorial Pkw y Interchange	Green Cove Rd	
44	Memorial Pkw y Interchange	Hobbs Island Rd	
46	Memphis to Atlanta Highw ay	Southern Bypass	Marshall County Limits
59	Old 431 Hw y	Highw ay 431	Wilson Mann Rd
60	Old Big Cove Rd	Hw y 431	Sutton Rd
61	Old Big Cove Rd	South Green Mountain Rd	Highw ay 431
67	Patton Rd	Aerobee Rd	Redstone Rd
76	Southern Bypass (PH 1)	I-565	Martin Rd
77	Southern Bypass (PH 2)	Martin Rd	Weatherly Rd Extension
78	Southern Bypass (PH 3)	Weatherly Rd Extension	U.S. 231
92	Weatherly Rd Extension	Memorial Pkw y	Southern Bypass

* These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked within the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

Table 4.1: Year 2035 Long Range Transportation Plan
Capacity Projects

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
*1	Ardmore Hwy–AL 53	Research Park Blvd	Jeff Rd	5	MjA	2	C	A	PBL	The purpose of this project is to improve traffic flow, LOS, and enhance regional connectivity.
*2	Ardmore Hwy-AL 53	Jeff Rd	North of Harvest Rd	2.4	MjA	2	C	A	PBL	The purpose of this project is to improve traffic flow, LOS, and enhance regional connectivity.
3	Ardmore Hwy-AL 53	North of Harvest Rd	Tennessee State Line	5.7	MjA	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow, LOS, and enhance regional connectivity.
4	Balch Rd	Browns Ferry Rd	Gooch Ln	0.75	MjC	2	C	C	PGSP	The purpose of this project is to reduce travel delay.
5	Balch Rd	Capshaw Rd	Gooch Ln	2.2	MjC	2	C	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
6	Balch Rd Extension	Browns Ferry Rd	Madison Blvd	2.5	MnA	0	N/A	A	PBR, SW	The purpose of this project is to improve traffic flow and provide needed connectivity/access in the City of Madison.
7	Beadle Ln	Swancott Rd	Zierdt Rd	2	MnC	2	D	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
8	Blake Bottom Rd	Jeff Rd	Research Park Blvd	.8	MnC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
9	Brock Rd	U.S. 72 East	Ryland Pike	2.5	MnC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
10	Browns Ferry Rd	Mooresville Rd	County Line Rd	5	MnC	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
11	Capshaw Rd	Jeff Rd	Old Railroad Bed Rd	2	MjC	2	C	C	PBL, SW	The purpose of this project is to reduce travel delay.
12	Church St	Monroe St	Oakwood Ave	1.3	MjC	2	C	B	BR, SW	The purpose of this project is to improve traffic flow and LOS.
13	Dug Hill Rd	Broad Armstrong Dr	U.S. 431	1.5	MjC	2	B	A	BR, SW	The purpose of this project is to improve traffic flow and LOS.
14	Eastern Bypass (Ph 2)	Quarter Ln	U.S. 72 East	3.7	MjA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
15	EastviewDr	Slaughter Rd	Hughes Rd	.5	MjC	2	A	C	PGSP	The purpose of this project is to add corridor capacity to handle increased traffic flow.
16	EastviewDr Extension	Hughes Rd	Sullivan St	2	MnC	0	N/A	D	PGSP	The purpose of this project is to improve traffic flow and provide needed connectivity/access in the City of Madison.
17	Greenbrier Rd/Powell Rd Extension	North of I-565	U.S. 72 West	8	MnA	2	A	A	PBL, SW	The purpose of this project is to add corridor capacity and provide connectivity to U.S. 72 West.
18	Hobbs Island Rd	U.S. 231	U.S. 431	11.5	MjA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
19	Homer Nance Rd	Jordan Rd	Winchester Rd	2	MjC	2	B	A	PBR, SW	The purpose of this project is to improve traffic flow and LOS.
20	Hughes Rd	Old Madison Pike	U.S. 72 West	3.2	MnA	3	C	A	PBR, SW	The purpose of this project is to improve traffic flow and LOS.
21	Hughes Rd Extension	U.S 72 West	Wall Triana Hwy	0.5	MnA	0	N/A	A	PBL, SW	The purpose of this project is to add connectivity and improve traffic flow by dispersing traffic along an alternate route.
22	I-565	Interstate 65	Wall Triana Hwy	9.1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
23	I-565	Oakwood Ave	High Mountain Rd	2	InT	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
Δ 24	I-565 Interchange	County Line Rd	I-565	1	InT	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
Δ 25	I-565 Interchange	Greenbrier Rd	I-565	0.5	InT	4	N/A	N/A		The purpose of this project is to enhance regional connectivity, improve traffic flow, and reduce travel delay.
26	Jeff Rd (Ph 1)	University Dr	Capshaw Rd	1.1	MjC	2	B	B	PBL, SW	The purpose of this project is to reduce travel delay.
27	Jeff Rd (Ph 2)	Capshaw Rd	Douglass Rd	2	MjC	2	B	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
28	Jeff Rd (Ph 3)	Douglass Rd	AL 53	3.2	MjC	2	B	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.
29	Johns Rd	Plummer Rd	University Dr	2	MnC	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
30	Jordan Rd (Ph 1)	Homer Nance Rd	U.S. 72 East	2	MnC	2	C	B	PBR, SW	The purpose of this project is to improve traffic flow and LOS.
31	Jordan Rd (Ph 2)	Moores Mill Rd	Homer Nance Rd	2.3	MnC	2	C	C	PBR, SW	The purpose of this project is to reduce travel delay.
32	King Drake Rd - 431 Connector	King Drake Rd	U.S. 431	0.6	MjC	0	N/A	A	PBL, SW	The purpose of this project is to add connectivity and improve traffic flow by dispersing traffic along an alternate route.
33	Martin Rd	Zierdt Rd	LaracyDr	2.76	MnA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
34	Martin Rd	Zierdt Rd	Rideout Rd	2.5	MjA	2	C	D	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.
35	Maysville Rd Connector	Maysville Rd	Epworth Dr	.32	MnC	2	N/A	A	PRB, SW	The purpose of this project is to add connectivity and improve traffic flow.
Δ 36	**Memorial Parkway Interchange	No. of Whitesburg-So.of Golf Rd	At U.S. 231 South	1.5	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing interchanges and service roads to reduce travel delay.
37	**Memorial Parkway Interchange	Mastin Lake Rd	At U.S. 231 North	0.67	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
38	**Memorial Parkway Interchange	Winchester Rd	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
39	**Memorial Parkway Interchange	Meridianville Bottom Rd	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
40	**Memorial Parkway Interchange	Patterson Ln	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
41	**Memorial Parkway Interchange	Walker Ln	At U.S. 231 North	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
Δ 42	**Memorial Parkway Interchange	Mtn. Gap Rd/Hobbs Rd	At U.S. 231 South	2	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing interchanges and service roads to reduce travel delay.
43	**Memorial Parkway Interchange	Green Cove Rd	At U.S. 231 South	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
44	**Memorial Parkway Interchange	Hobbs Island Rd	At U.S. 231 South	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructingan interchange and service roads to reduce travel delay.
45	Memphis to Atlanta Highway	I-65	I-565	8	MjA	0	N/A	N/A		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
46	Memphis to Atlanta Highway	Southern Bypass	Marshall County Limits	15	MjA	0	N/A	N/A		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
47	Meridian St	Winchester Rd	Memorial Parkway	1.5	MnA	2	B	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
48	Meridian St (Ph 1)	Oakwood Ave	Pratt Ave	0.7	MnA	2	B	B	PBL, SW	The purpose of this project is to reduce travel delay.
49	Mill Rd	County Line Rd	Hughes Rd	2.5	MnC	2	B	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
50	Moontown Rd	Ryland Pike	U.S. 72 East	1.2	MnC	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
51	Moores Mill Rd	Winchester Rd	Northern Bypass	4.5	MnA	2	N/A	D	PBL, SW	The purpose of this project is to reduce travel delay.
52	Mt. Lebanon/Jack Thomas Rd	Grimwood Rd	Northern Bypass	4.5	MnC	2	A	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.
53	Nance Rd	University Dr	Capshaw Rd	1.1	MnC	2	N/A	A	PBL, SW	The purpose of this project is to reduce travel delay.
54	Northern Bypass (Ph 2)	East of Pulaski Pike	U.S. 231	3.3	MjA	2	N/A	A	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
55	Northern Bypass (Ph 3)	U.S. 231	Moores Mill Rd	2.6	MjA	0	N/A	A	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
56	Northern Bypass (Ph 4)	Moores Mill Rd	Winchester Rd	3	MjA	0	N/A	B	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
57	Northern Bypass (Ph 5)	Winchester Rd	U.S. 72 East	11	MjA	0	N/A	A	PBL, SW	The purpose of this project is to provide regional and national connectivity for various modes of transportation.
58	Oakwood Rd	Adventist Blvd	Research Park Blvd	1	MnC	2	N/A	C	PBL, SW	The purpose of this project is to reduce travel delay.
59	Old 431 Highway	Highway 431	Wilson Mann Rd	2	MjC	2	A	A	PBL, SW	The purpose of this project is to add corridor capacity and enhance regional connectivity.
60	Old Big Cove Rd	Highway 431	Sutton Rd	2	MjC	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
61	Old Big Cove Rd	South Green Mtn Rd	Highway 431	2	MjC	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
62	Old Hwy 20	Greenbrier Rd	County Line Rd	3	MnA	2	N/A	A	PBL, SW	The purpose of this project is to reduce travel delay.
*63	Old Madison Pike	Thornton Industrial Park	Slaughter Rd	0.5	MnA	2	E	D	PBL	The purpose of this project is to improve traffic flow and LOS.
64	Old Madison Pike	Hughes Rd	Slaughter Rd	2	MjA	3	F	C	PBR, PGSP	The purpose of this project is to improve traffic flow and LOS.
65	Old Railroad Bed Rd (Ph 1)	U.S. 72 West	Capshaw Rd	1.8	MnA	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
66	Old Railroad Bed Rd (Ph 2)	Capshaw Rd	AL Highway 53	8.5	MnA	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
67	Patton Rd	Aerobee Rd	Redstone Rd	5	MjA	4	D	D	PBL, SW	The purpose of this project is to reduce travel delay.
68	Plummer Rd	Research Park Blvd	Indian Creek Rd	0.8	MjC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
69	Portal Ln Extension	Shelton Rd	Zierdt Rd Extension	0.5	MnC	0	N/A	A	PGSP	The purpose of this project is to improve traffic flow and provide needed connectivity/access in the City of Madison.
70	Powell Rd	Powell Rd	Browns Ferry Rd	1.5	MnA	0	N/A	C	PBL, SW	The purpose of this project is to improve traffic flow and provide needed connectivity/access to the area.
71	Research Park Blvd and Interchanges	I-565	Ardmore Highway – AL53	5.9	MjA	4	C	E		The purpose of this project is to add corridor capacity and enhance regional connectivity.
72	Ryland Pike	U.S. 72 East	Northern Bypass	3.75	MjC	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
73	Shelton Rd	Madison Blvd	¼ mile No. of Madison Blvd	0.25	MnC	2	N/A	A	PGSP	The purpose of this project is to reduce travel delay.
74	Shields Rd	Jordan Rd	Winchester Rd	1.5	MnC	2	B	C	PBL, SW	The purpose of this project is to add corridor capacity to handle increased traffic flow.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
75	Slaughter Rd	Madison Blvd	U.S. 72 West	5	MnA	2	C	B	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
76	Southern Bypass(Ph 1)	I-565	Martin Rd	6.5	MjA	0	N/A	C		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
77	Southern Bypass(Ph 2)	Martin Rd	Weatherly Rd Extension	2	MjA	0	N/A	B		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
78	Southern Bypass(Ph 3)	Weatherly Rd Extension	U.S. 231	4.5	MjA	0	N/A	B		The purpose of this project is to enhance regional and national connectivity and access for various modes of transportation.
79	Sullivan St	Royal Dr	Front St	0.5	MjC	3	E	D	PGSP	The purpose of this project is to improve traffic flow and LOS.
80	Swancott Rd	I-565	County Line Rd	5.5	MnA	2	A	A	PBL, SW	The purpose of this project is to reduce travel delay.
Δ 81	**U.S. 72 East/ARC Corridor V	Moores Mill & Shields Rd	U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
82	**U.S. 72 East/ARC Corridor V	Jordan Rd Extended	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
83	**U.S. 72 East/ARC Corridor V	Moontown Rd	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
84	**U.S. 72 East/ARC Corridor V	Brock Rd	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
85	**U.S. 72 East/ARC Corridor V	Eastern Bypass	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
86	**U.S. 72 East/ARC Corridor V	High Mountain Rd	@ U.S. 72 East	1	MjA	4	N/A	N/A		The purpose of this project is to enhance regional connectivity by constructing an interchange and service roads to reduce travel delay.
Δ 87	U.S. 72/University Drive	Providence Main Blvd	County Line Rd	5	MjA	4	C	D		The purpose of this project is to add corridor capacity and enhance regional and national connectivity and access for various modes of transportation.
88	U.S. 72/University Dr	County Line Rd	Mooresville Rd	5.2	MjA	4	C	C		The purpose of this project is to add corridor capacity and enhance regional connectivity and access for various modes of transportation.
89	Wall Triana Highway	Mill Rd	U.S. 72 West	3.6	MjC	2	B	B	PGSP	The purpose of this project is to reduce travel delay.
90	Wall Triana Highway	U.S. 72 West	Capshaw Rd	1.4	MjC	2	B	B	PBL, SW	The purpose of this project is to reduce travel delay.
91	Wall Triana Highway	Capshaw Rd	Yarborough Rd	4	MnA	2	C	C	PBL, SW	The purpose of this project is to reduce travel delay.
92	Weatherly Rd Extension	Memorial Parkway	Southern Bypass	1.5	MjC	0	N/A	D		The purpose of this project is to improve traffic flow and provide needed connectivity/access to the area.
93	Winchester Rd (Ph 2)	Dominion Cr	Naugher Rd	2	MnA	2	C	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
94	Winchester Rd (Ph 3)	Naugher Rd	Bell Factory Rd	1.5	MnA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
95	Winchester Rd (Ph 4)	Bell Factory Rd	State Line	9.5	MnA	2	B	A	PBL, SW	The purpose of this project is to improve traffic flow and LOS.
Δ 96	Zierdt Rd (Ph 1)	Madison Blvd	South of Martin Rd	3	MjC	2	C	D	PGSP	The purpose of this project is to add corridor capacity to handle increased traffic flow.

Map No.	Roadway	From	To	Miles	Func Class	2005 Lanes	Ex LOS	Proj LOS	Bike/Ped Facility	Purpose and Need
97	Zierdt Rd (Ph 2)	South of Martin Rd	Beadle Ln	3	MjC	2	C	A	PGSP	The purpose of this project is to improve traffic flow and LOS.
98	Zierdt Rd Extension	¼ mile No. of Madison Blvd	Old Madison Pike	0.8	MnC	0	N/A	A	PGSP	The purpose of this project is to improve traffic flow and provide needed connectivity/access to the area.
99	Zierdt Rd/Kellner Rd Corridor	Kellner Rd	Zierdt Rd	3	MjC	0	N/A	B	PBR, SW	The purpose of this project is to promote economic development of undeveloped land in the City of Madison.

**=Bridge Overpass Construction
Ex LOS = Existing Level of Service
Proj LOS = Projected Level of Service

Δ = These projects include the segments identified in Section 8: "Congestion Management, Safety Management, and Security Element" that are ranked as the top ten locations where congestion currently is or will be a factor in the future. Section 8.2.3 and Appendix C describes the procedures for selecting these corridors.

*= These projects were under design prior to FHWA policy regarding the construction of bike/ped facilities.

MnC = Minor Collector
MjC = Major Collector
MnA = Minor Arterial
MjA = Major Arterial

PBR = Proposed Bike Route
PBL= Proposed Bike Lane
PGSP=Proposed Greenway/Shared Path (These facilities include bike lanes)
SW= Sidewalk
BR = Existing Bike Route

Level of Service
A = .60 - .69
B = .70 - .79
C = .80 - .89
D = .90 - .99
E = 1.00 – 1.10
F = 1.11 >

Projects highlighted "blue" are limited access or controlled access facilities, and do not include bicycle/pedestrian accommodation due to these special exceptions.

Projects highlighted "green" are State or U.S. routes, and as such carry high volumes of traffic. The cost of constructing ***appropriate*** facilities for bicycle/pedestrian use is costprohibitive. US 72 East is planned as an expressway or limited access corridor.

ALL CITY OF HUNTSVILLE ROADS WILL HAVE R/W, CURBS, GUTTERS, AND SIDEWALKS IN ACCORDANCE WITH SUBDIVISION REGULATIONS.

Table 4.2: Year 2035 Long Range Transportation Plan
Maintenance and Operations Projects

Map No.	Location	Description	Func Class	Bike/Ped Facility	Purpose and Need
A	Four Mile Posr Rd @ Whitesburg Dr	Signal and major geometric improvements to Four Mile Post Rd approach	MjC	N/A	This project will improve traffic flow
B	Enterprise Way @ University Dr	Reduce island width or eliminate to construct additional Northbound approach lane to University Dr.	MjC	N/A	This project will improve safety and traffic flow
C	Caldwell Rd @ Hwy 431	Construction of West to North right turn lane and acceleration lane on Hwy 431	MjC	N/A	This project will improve safety and traffic flow
D	Old Madison Pike @ Research Park Blvd	Construct joint use pedestrian &bicycle bridge and sidewalk approaches across Research Park Blvd	MjC	Added as part of project	This project will improve safety
E	Explorer Dr @ Pegasus Rd	New traffic signal installation	MjC	N/A	This project will improve traffic flow
F	Enterprise Way: Moores Farm to University Dr	Add signal, left turn restrictions island at shopping center exits, a sidewalk, plus 3rd left turn lane to University Dr	MjC	N/A	This project will improve safety and traffic flow
G	County Line Rd @ HWY 72	Upgrade displays, phasing and timings and geometric improvements	MjA	N/A	This project will improve safety and traffic flow
H	Church St Bridge @ Big Spring Park	Construct bridge to improve pedestrian access to Big Spring Park and reduce vehicular/pedestrian conflicts	MjC	Added as part of project	This project will improve safety and traffic flow
I	US 231	Access management and intersection improvements at US 231 between Hobbs Road and Weatherly Road	MjA	N/A	This project will improve safety and traffic flow
*J	I-565 near Zierdt Rd	Construct interchange on I-565 near Zierdt Rd	MjA	N/A	The purpose of this project is to allow direct access to undeveloped land suitable for economic development and the existing Intergraph campus that is suitable for future redevelopment.

*An Interchange Justification Study is under development for this project.

MnC = Minor Collector
MjC = Major Collector
MnA = Minor Arterial
MjA = Major Arterial

4.2 The "No Build" and Other Alternatives Evaluation of the Adopted Plan

The previous chapters of this document explained the estimation and forecasting procedure and the data required as input. The development scenario used in the Huntsville Area 2035 update was explained in **Section 2**. This section will examine and explain in detail the procedure used to simulate trips under either present or future conditions.

Future road needs are determined by assigning the forecast trips to a road network with the model structure developed and validated for the base year, or known conditions. There are two types of deficiencies that need to be addressed in formulating the alternate transportation plan, capacity and mobility. Capacity deficiencies occur when the traffic volume exceeds the design capacity of a roadway facility i.e., Memorial Parkway and Governors Drive. Mobility deficiencies occur when travel is impeded by topographical barriers because of a lack of roadway, i.e., Tennessee River or HuntsvilleMountain.

The next step in the process is to assign trips to the existing and committed or E+C network using the projected socioeconomic data for the future year. The E+C system is the system of roads now open to traffic plus those recently opened, currently under construction or under contract for preliminary engineering. In the MPO area, some of these major additional projects on the E+C network include:

- Memorial Parkway @ Whitesburg/Weatherly Road
- Memorial Parkway @ Sparkman/Max Luther Drive
- Memorial Parkway from north of Whitesburg Drive to south of Golf Road
- Memorial Parkway @ Mastin Lake Road
- Memorial Parkway, additional lanes, from Tennessee RiverBridge to Hobbs Island Road
- Widening Meridian Street from Oakwood Drive to Monroe Street
- Old Madison Pike widening from Slaughter Road to Thornton Industrial Park
- Widening Church Street from Oakwood Drive to Monroe Street
- Dug Hill Road from US 431 to King Drake Road
- Moores Mill Road overpass @ US 72 - including overpass @ Moores Mill Road
- Pulaski Pike from Liberty Hill Road to Bob Wade Lane
- Downtown Connector from Memorial Parkway to Williams Avenue

The next step is to evaluate the alternate plans. The build alternates involves expansion of arterial and collector systems including upgrading of some arterials, expressways and constructing new freeways and expressways. The evaluation is undertaken for each type of highway facility: (a) interstate, (b) freeway, (c) expressway, (d) major arterial, (e) minor arterial, (f) collector type of facility, with the following data summarized for each network:

1. Network Street Mileage - Linear miles of street
2. Lane Miles - major street mileage multiplied by lanes in the street
3. Vehicle Miles - The number of vehicle miles traveled on the network
4. Vehicle Hours - The number of vehicle hours of travel on the network
5. Average Network Speed – The average speed on each system

4.3 Network Analysis

In forecasting the future population growth for the Huntsville Metro Area and its impact on its road and highway system, it is necessary to look at alternate scenarios within the long range transportation plan to ensure that traffic congestion remains at a most a minimal issue. **Table 4.3** shows three different scenarios and its impact on the network.

Alternate 1 displays the results of the Existing + Committed network which involves only projects that are currently under construction or design. The end result of this scenario increases the number of vehicle miles driven in the study area by almost 104 percent from 9.3 million miles to over 19.5 million miles daily. The available lane-miles to accommodate this increase would only be about 136 miles greater than today, representing an increase capacity of only about 2 percent. The travel time increases nearly to 400 percent from 289,473 hoursto over 1,682,042 hours.

Alternate 2 constructs all of the future projects except the Southern Bypass which was designated as being a major north-south corridor through Redstone Arsenal connecting Interstate 565 to US 231 south at the Tennessee River. While this scenario does improves traffic flow, the average speed of the network only increases from 11.61 mph to 20.25 mph. Travel time increases an additional 25 percent while total vehicle distance increases almost 11 percent over the E+C network to 18.2 million miles. The operating conditions on these alternate networks would be totally unacceptable, with overcrowded conditions and level of service at E and F on most of the major arterials in the study area. The ultimate result of this network scenario would be a deterioration of air quality along with heavy congestion and the continuing need for additional highway capacity throughout the study area with Memorial Parkway, University Drive and Governors Drive possibly requiring the most attention. **Figures 4.1** and **4.2** summarize the projected characteristics and operating condition of all alternates in detail.

Alternate 3 constructs all future projects in addition to the Southern Bypass and the Memphis to Atlanta highway. This scenario is preferred due to the reduction in travel time and increase in overall network speed.

A synopsis of the statistics for each network as projected by the travel models is shown in **Table 4.3.** Note that the average speed on the 2005 base year network is 32.22 mph compared with that of Alternate 1 and 2 that have an average network speed of 15 mph, which is a reduction of 19.1mph or 64 percent – evidently a sign of traffic congestion. By comparison, the average speed on the 2035 future network decreases about 41 percent or to 19.7 mph and even increases slightly from the Alternate 1 and 2 networks.

Table 4.3: Comparison of Modeled Alternatives

	Base Year 2005	Alt 1 2035 E+C No Build	Alt 2 2035Plan No Southern Bypass	Alt 3 2035 Adopted Plan
Total Network Distance	2,455	2,456	2,566	2,627
Lane Miles	6,321	6,457	6,696	7,090
Total Vehicle Distance	9,326,964	19,528,558	18,246,166	20,394,344
Total Vehicle Travel Time (hours)	289,473	1,682,042	901,039	1,084,015
Average Network Speed	32.22	11.61	20.25	19.77

Figure 4.1 demonstrates the comparison of the network average speed among the different classification of roads and alternative network scenarios. **Figure 4.2** graphically demonstrates the relationship of each network to the other in the category of projected daily vehicle miles traveled and its impact on the roadway system. In comparing the 2005 base year network with the other networks, the amount of VMT increased dramatically on the overall comparison but especially on arterials and expressways.

Further analysis indicates an increase of nearly 42 percent of vehicle miles traveled on arterials when comparing the 2035 build networkto the 2005 base year network.Collectors andExpressways also significantly increased nearly 59 percent and 44percent respectively.

Figure 4.1: Average Modeled Speed per Classification

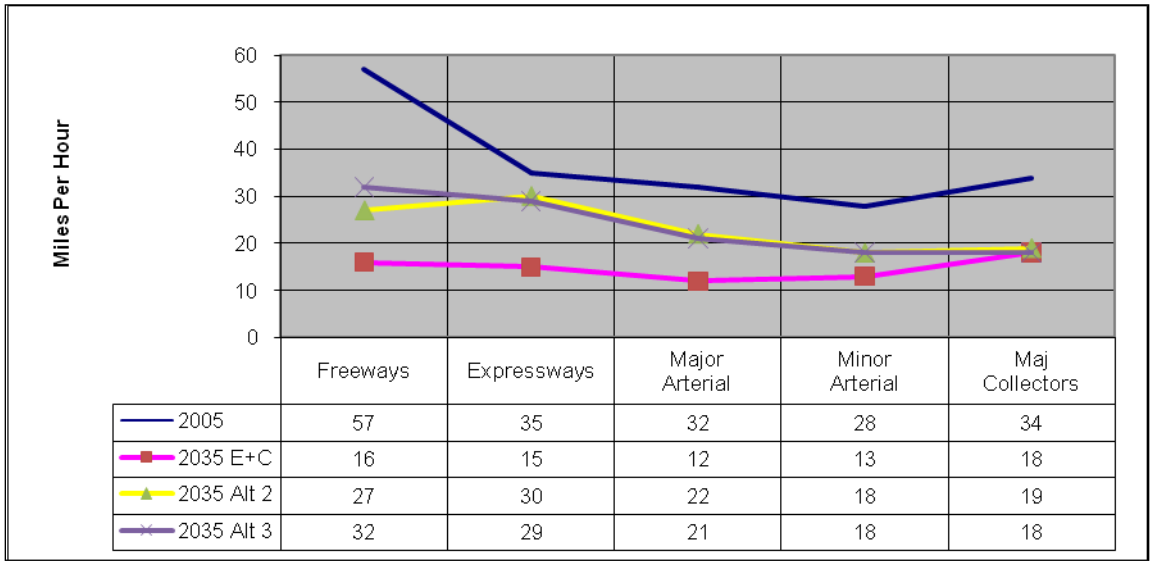
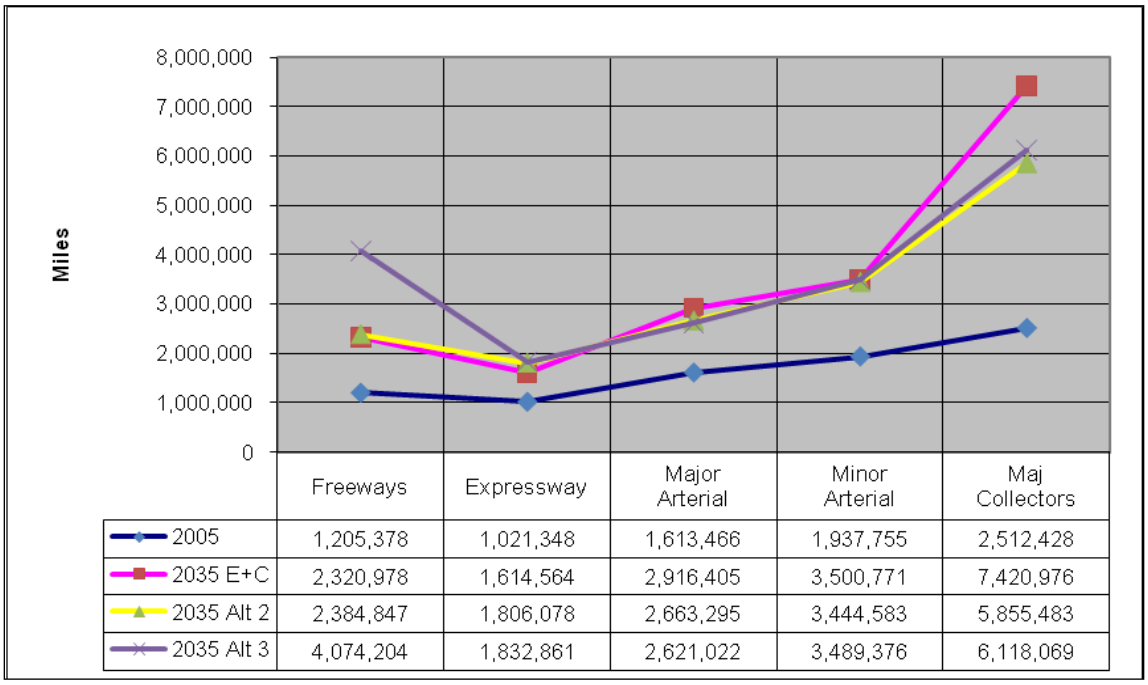


Figure 4.2: Vehicle Miles Traveled on Modeled Network



	Freeways	Expressway	Major Arterial	Minor Arterial	Maj Collectors
2005	1,205,378	1,021,348	1,613,466	1,937,755	2,512,428
2035 E+C	2,320,978	1,614,564	2,916,405	3,500,771	7,420,976
2035 Alt 2	2,384,847	1,806,078	2,663,295	3,444,583	5,855,483
2035 Alt 3	4,074,204	1,832,861	2,621,022	3,489,376	6,118,069

4.4 Volume/Capacity Projections for the National Highway System

Table 4.4 indicates the volume to capacity (V/C) ratios as projected in the 2035 build alternate for major corridors on the National Highway System (NHS).

Table 4.4: Volume/Capacity Ratios for NHS System

Functional Class	Location	2005 Capacity	2005 ADT	2005 V/C Ratio	2035 Capacity	2035 ADT	2035 V/C Ratio
Arterial	**I-565**						
	East of Wall Triana Hwy	102,000	52,900	0.52	102,000	126,300	1.24
	West of Research Park Blvd.	102,000	76,000	0.74	102,000	162,000	1.20
	East of Research Park Blvd.	136,000	85,200	0.62	136,000	151,000	1.11
	East of Sparkman	136,000	89,700	0.65	136,000	107,000	0.79
	East of Governors Dr	136,000	75,500	0.56	136,000	100,000	0.72
	West of 72 E	68,000	36,200	0.53	102,000	59,000	0.59
Arterial	**U.S. 72 E**						
	East of Interstate 565	33,900	36,200	1.07	50,000	59,300	1.14
	West of Moores Mill Rd	33,900	41,000	1.21	50,000	56,600	1.13
	*East of Moores Mill Rd	33,900	25,000	0.74	50,000	52,000	1.01

Table 4.4: Volume/Capacity Ratios for NHS System							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Arterial	**U.S. Hwy 72 W**						
	East of Hughes Rd	33,900	51,000	1.50	50,000	72,600	1.45
	West of Slaughter Rd	33,900	45,000	1.33	50,000	61,400	1.23
	East of Slaughter Rd	33,900	43,000	1.27	50,000	61,600	1.23
	West of Enterprise Dr	33,900	41,000	1.21	50,000	61,700	1.24
	East of Enterprise Dr	33,900	59,000	1.18	50,000	51,700	1.04
	West of Sparkman Dr	50,000	47,200	0.94	50,000	48,400	0.97
	West of Jordan Ln	50,000	44,500	0.89	50,000	54,800	1.10
	East of Jordan Ln	50,000	44,200	0.88	50,000	49,400	.99
Arterial	**U.S. 231 S**						
	South of Governors Dr	75,000	108,900	1.45	125,000	112,700	0.90
	North of Airport Rd	75,000	94,000	1.25	125,000	110,800	0.88
	South of Airport Rd	75,000	71,500	0.95	125,000	101,300	0.81
	South of Weatherly Rd	75,000	53,000	1.06	125,000	84,300	0.67
	North of Redstone Rd	75,000	41,500	0.83	125,000	49,100	0.39
	South of Hobbs Rd	75,000	22,700	0.30	125,000	59,800	0.48
Arterial	**U.S. 231 N**						
	North of Meridian St	33,900	29,200	0.86	125,000	79,700	1.07
	*South of Winchester Rd	33,900	31,300	0.92	125,000	77,000	0.62
	*North of Mastin Lake Rd	33,900	33,000	0.97	125,000	94,000	0.75
Arterial	**U.S. 431**						
	West of Memorial Pkwy	50,000	21,300	0.43	50,000	37,400	0.75
	East of Memorial Parkway	33,900	34,200	0.68	50,000	42,700	0.85
	East of California St	33,900	24,200	0.71	50,000	29,300	0.49
	West of Monte Sano Blvd	33,900	27,900	0.82	33,900	30,300	0.90
	East of Monte Sano Blvd	33,900	20,000	0.59	33,900	31,600	0.93
Arterial	**Southern Bypass**						
	South of I-565	N/A	N/A	N/A	102,000	70,000	0.80
	North of Martin Rd	N/A	N/A	N/A	102,000	59,160	0.58
	North of Weatherly Rd	N/A	N/A	N/A	102,000	76,100	0.75
	South of Weatherly Rd	N/A	N/A	N/A	102,000	60,100	0.59

*Includes frontage roads

4.5 Volume/Capacity Projections for Other Roadways

The Surface Transportation Program (STP) includes all roads not on the NHS. A number of arterial and collector roads in the Huntsville urban area are included in this category. **Table 4.5** includes the V/C ratio for a number of local roadways in the study area.

Table 4.5: Volume/Capacity Ratios For Local Roads and Streets

Functional Class	Location	2005 Capacity	2005 ADT	2005 V/C Ratio	2035 Capacity	2035 ADT	2035 V/C Ratio
Arterial	**Bob Wallace**						
	Intersection at I-565	31,900	20,200	0.63	31,900	39,800	1.25
	West of Triana Blvd	31,900	20,200	0.63	31,900	30,500	0.96
	East of Triana Blvd	31,900	19,000	0.59	31,900	18,500	0.58
	West of Leeman Ferry Rd	31,900	20,800	0.65	31,900	22,500	0.71
Arterial	**California St**						
	North of Adams St	28,000	17,500	0.62	28,000	23,500	0.89
	North of Governors Dr	28,000	19,500	0.69	28,000	27,500	0.98
Arterial	**California St**						
	North of Bob Wallace Ave	28,000	18,000	0.64	28,000	27,200	.97
Arterial	**Carl T. Jones Bailey Cove Rd**						
	East of Whitesburg Dr	31,900	23,000	0.72	45,600	25,800	0.81
	North of Four Mile Post Rd	31,900	23,500	0.74	31,900	28,500	0.89
	North of Weatherly Rd	31,900	20,600	0.65	31,900	20,800	0.65
	South of Mountain Gap Rd	31,900	12,000	0.38	31,900	22,600	0.71
Arterial	**County Line Rd**						
	North of Hwy 20 W	13,700	12,400	0.91	31,900	26,700	0.83
	So. of 72W Brownsferry Rd	27,400	12,500	0.51	31,900	32,600	1.15
Arterial	**Hughes Rd**						
	South of Hwy 72 W	14,800	17,400	1.18	31,900	35,700	1.12
	North of Hwy 20 W	31,900	25,300	0.79	31,900	29,600	0.93
Arterial	**Martin Rd**						
	East of Memorial Pkwy	13,700	5,000	0.36	31,900	19,700	0.62
	West of Memorial Pkwy	27,400	10,500	0.38	31,900	28,400	0.89

Table 4.5: Volume/Capacity Ratios For Local Roads and Streets							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Arterial	**Meridian St**						
	North of Winchester Rd	14,800	6200	0.41	31,900	13,400	0. 64
	S of Max Luther &U.S. 72	31,900	17,400	0.55	31,900	21,700	0.68
	South of Oakwood Ave	13,700	6,000	0.44	17,500	20,100	.96
Arterial	**Northern Bypass**						
	Nick Fitcheard N. of Hwy 53	50,000	9200	0.18	50,000	24,600	0.49
	Bob Wade Ln W. of U.S. 231	16,600	3500	0. 21	50,000	31,600	0.62
Arterial	**Old Madison Pike**						
	East of Slaughter Rd	13,700	13,700	1.00	31,900	21,300	0.74
	West of Research Park Blvd	31,900	14,300	0.45	31,900	50,800	1.59
	East of Research Park Blvd	31,900	18,900	0.59	31,900	31,600	0.99
Arterial	**Patton Rd/Jordan Ln**						
	South of Drake Ave	31,900	12,900	0.40	33,900	31,500	0.92
	South of Bob Wallace Ave	31,900	24,600	0.77	33,900	33,000	0.99
	South of Oakwood Ave	31,900	23,500	0.73	31,900	28,800	0.85
Arterial	**Pulaski Pike**						
	South of Sparkman Dr	31,900	19,700	0.54	31,900	25,800	0.81
	South of Winchester Rd	31,900	17,400	0.55	31,900	15,300	0.48
	North of University Dr	31,900	17,200	0.62	31,900	24,300	0.76
Arterial	**Research Park Blvd**						
	North of Oakwood Rd	50,000	23,600	0.47	50,000	44,200	0.85
	North of Interstate 565	50,000	47,000	0.94	75,000	62,400	0.86
	South of University Dr	50,000	44,500	0.89	75,000	67,500	0.91
Arterial	**Slaughter Rd**						
	South of University Dr	13,700	8900	0.65	31,900	36,200	1.14
	North of Hwy 20	13,700	8000	0.58	31,900	32,443	1.02

Table 4.5: Volume/Capacity Ratios For Local Roads and Streets							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Arterial	**Whitesburg Dr**						
	South of Drake Ave	31,900	26,300	0.82	45,600	31,900	0.70
	South of Airport Rd	31,900	19,600	0.61	31,900	24,700	0.81
Collector	**Blue Springs Rd**						
	North of Oakwood Ave	28,500	8000	0.28	28,500	9,400	0.33
	North of Sparkman Dr	28,500	20,500	0.72	28,500	26,400	0.93
	South of Winchester Rd	28,500	12,800	0.45	28,500	13,200	0.47
Collector	**Chaney Thompson Rd**						
	South of Mountain Gap Rd	16,600	3500	0.21	20,800	18,400	0.84
	North of Green Cove Rd	16,600	1,700	0.08	20,800	6,200	0.30
Collector	**Drake Ave**						
	East of Jordan Ln	28,500	20,200	0.71	26,200	26,000	0.99
	East of Memorial Pkwy	28,500	22,700	0.80	28,500	12,400	0.44
Collector	**Drake Ave**						
	East of Whitesburg Dr	16,600	11,300	0.68	16,600	15,900	0.96
Collector	**Dug Hill Rd**						
	North of Hwy 431	16,600	2400	0.14	20,800	3,900	0.24
	South of Hwy 72 E	16,600	2,200	0.13	16,600	7,200	0.44
Collector	**Four Mile Post Rd**						
	East of Garth Rd	20,800	2,300	0.11	20,800	9,900	0.48
	East of Whitesburg Dr	20,800	5400	0.26	20,800	11,700	0.71
	East of Bailey Cove	28,500	11,100	0.39	28,500	26,700	0.94
Collector	**Holmes Ave**						
	West of Pulaski Pike	20,800	10,900	0.52	20,800	14,500	0.70
	West of Triana Blvd	20,800	9500	0.46	20,800	19,100	0.92
	West of Jordan Ln	20,800	11,000	0.39	20,800	21,600	1.04

Table 4.5: Volume/Capacity Ratios For Local Roads and Streets							
Functional Class	**Location**	**2005 Capacity**	**2005 ADT**	**2005 V/C Ratio**	**2035 Capacity**	**2035 ADT**	**2035 V/C Ratio**
Collector	**Moores Mill Rd**						
	North of U.S. 72 E.	31,900	21,000	0.66	31,900	22,800	0.72
	South of Winchester Rd	31,900	21,000	0.66	31,900	18,500	0.58
	North of Winchester Rd	16,600	10,900	0.66	31,900	22,600	0.71
Collector	**Mountain Gap Rd**						
	East of Memorial Pkwy	28500	6500	0.23	28,500	17,500	0.62
	West of Bailey Cove Rd	28500	5900	0.21	28,500	9,200	0.32
Collector	**Oakwood Ave**						
	East of Jordan Ln	28,500	15,000	0.53	28,500	21,900	0.77
	East of Pulaski Pike	28,500	20,000	0.70	28,500	22,200	0.78
	W of Andrew Jackson Way	28,500	18,800	0.66	28,500	20,300	0.78
Collector	**Pratt Ave**						
	E of Andrew Jackson Way	20,800	5,200	0.25	20,800	12,700	0.61
	East of Meridian St	26,200	13,000	0.50	26,200	13,100	0.50
	West of Washington St	28,500	21,500	0.75	26,200	21,600	0.79
Collector	**Sullivan St (Madison)**						
	South of U.S. Hwy 72 W	20,800	12,000	0.58	28,500	24,300	0.85
	South of Old Madison Pike	28,500	23,700	0.83	28,500	29,600	1.04
Collector	**Weatherly Rd**						
	East of S Memorial Pkwy	28,500	16,200	0.57	28,500	25,600	0.90
	East of Todd Mill Rd	28,500	14,900	0.52	28,500	14,800	0.52
Collector	**Wynn Dr**						
	South of University Dr	28,500	17,000	0.60	28,500	27,300	0.96
	South of Bradford Dr	28,500	13,500	0.47	28,500	26,100	0.92
	North of University Dr	28,500	5,200	0.18	28,500	23,100	0.81

4.6 Traffic Assignment and Volume/Capacity Maps

Maps 4.2–4.17, located at the end of this Section, display the traffic assignment and the volume capacity ratio maps for the 2005 base year network, the 2035 E+C network, 2035 future network without the Southern Bypass or the Memphis to Atlanta Highway, and the adopted 2035 future network which includes the Southern Bypass as well as the Memphis to Atlanta Highway. All of the maps are color coded to display the different levels and volumes of traffic. This information is used to display where traffic congestion occurs in each network and show where the need for improvement in a facility is necessary.

The volume/capacity ratio is needed to determine the level of operation or service for each facility or road segment. The volume of the roadway is divided by its capacity to determine how close the facility is to reaching its maximum capacity. There are six levels of operation by which roads and highways are classified specifically A to F which were discussed in chapter 3.

In the Huntsville study the ratios ranged from 0.03 which is level A to 1.34 which is level F. The standard operating level at which is considered normal is level C or 0.80 –0.89. As traffic continues to build upon the network, the ratios increase and as it approaches and exceeds 1.0 congestion becomes a problem thus the need for improvements to those facilities are examined.

4.7 Model Validation

The base 2005 model was reviewed against existing available traffic counts to check and validate the accuracy of the model. Traffic counts on numerous road segments within the Huntsville Urbanized area, as designated from the U.S. Census Bureau, were obtained from several data sources including the City of Huntsville, Madison County Engineering and the State of Alabama Department of Transportation. The traffic counts that were used were collected between 2004and 2005. Network links were categorized by functional classification and evaluated by each of these classes for acceptable accuracy. The accuracy of the model against actual traffic counts varies on different road segments. The deviations are, however, within the nominal parameters as stated by the Federal Highway Administration.

Table 4.6
Network Assignment by Functional Class

Facility Type	Links with Counts	Mean Count	Mean Load	% Difference	FHWA Target	Average Congested Speed
Freeway	18	28,608	27,412	4.1%	+/- 7%	57.1
Principle Arterial	116	19,558	18,642	4.6%	+/- 10%	35.4
Minor Arterial	161	7,941	7,540	5.0%	+/- 15%	28.7
Collector	271	3,874	4,251	8.9%	+/- 22%	34.1
All Links	566	9,781	9,510	2.7%	n/a	32.24

Table 4.7
Network Assignment by Volume Group

Volume Group	Links with Counts	Mean Count	Mean Load	% Difference	FHWA Target
1000 -2000	88	2228	4175	46.6	+-47%
2001- 5000	129	6650	9118	27.6	+/-36%
5001 – 10,000	194	14757	13780	6.6	+/- 29%
10,001 - 25,000	150	17441	16996	2.5	+/- 25%
>25000	46	38075	30748	19.2	+/-22%

Trip Assignment Summary

Assigned Interzonal Trips = 942,140

Unassigned Interzonal Trips = 0

Intrazonal Trips = 59,829

Total Trips = 1,001,969

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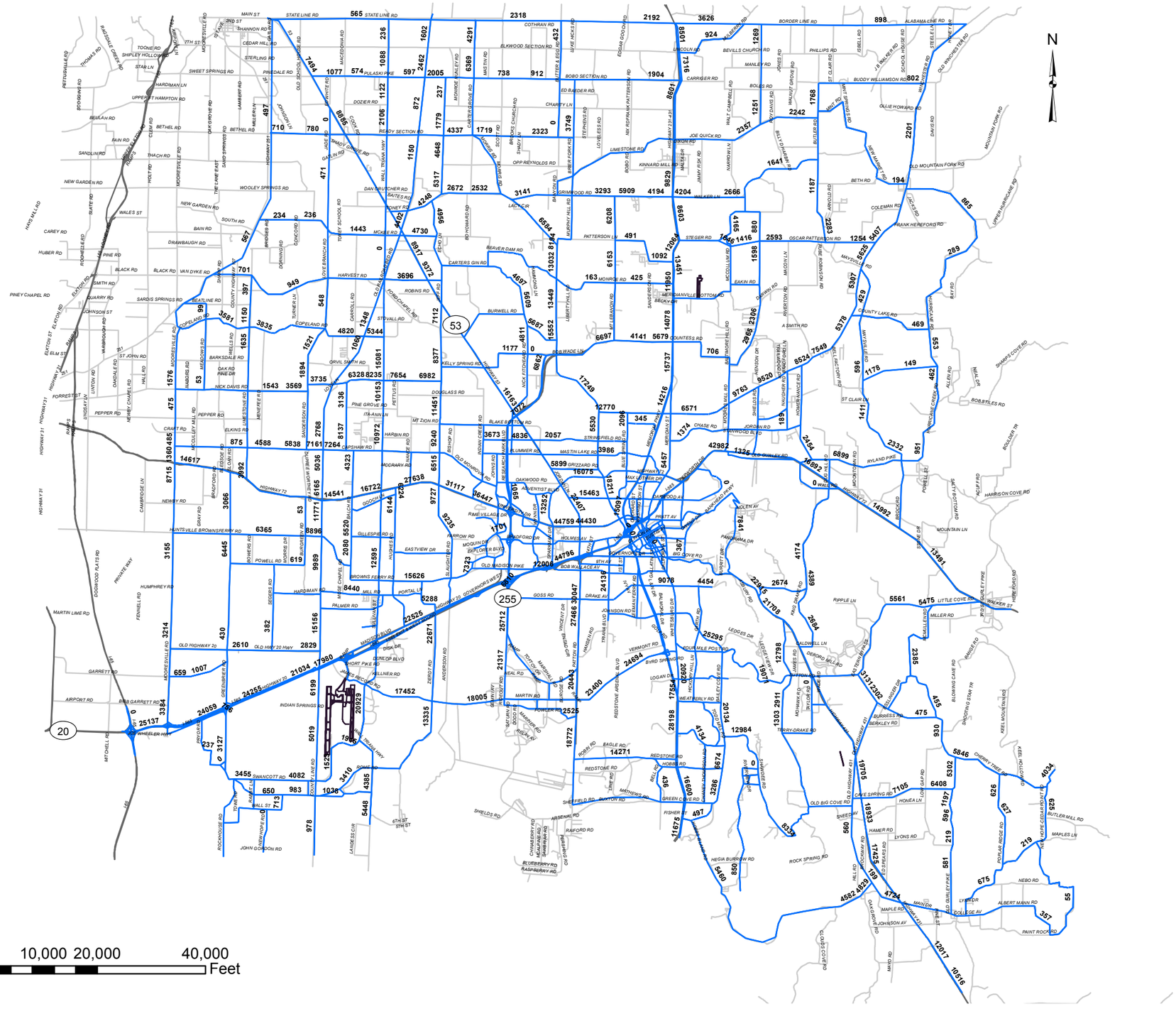
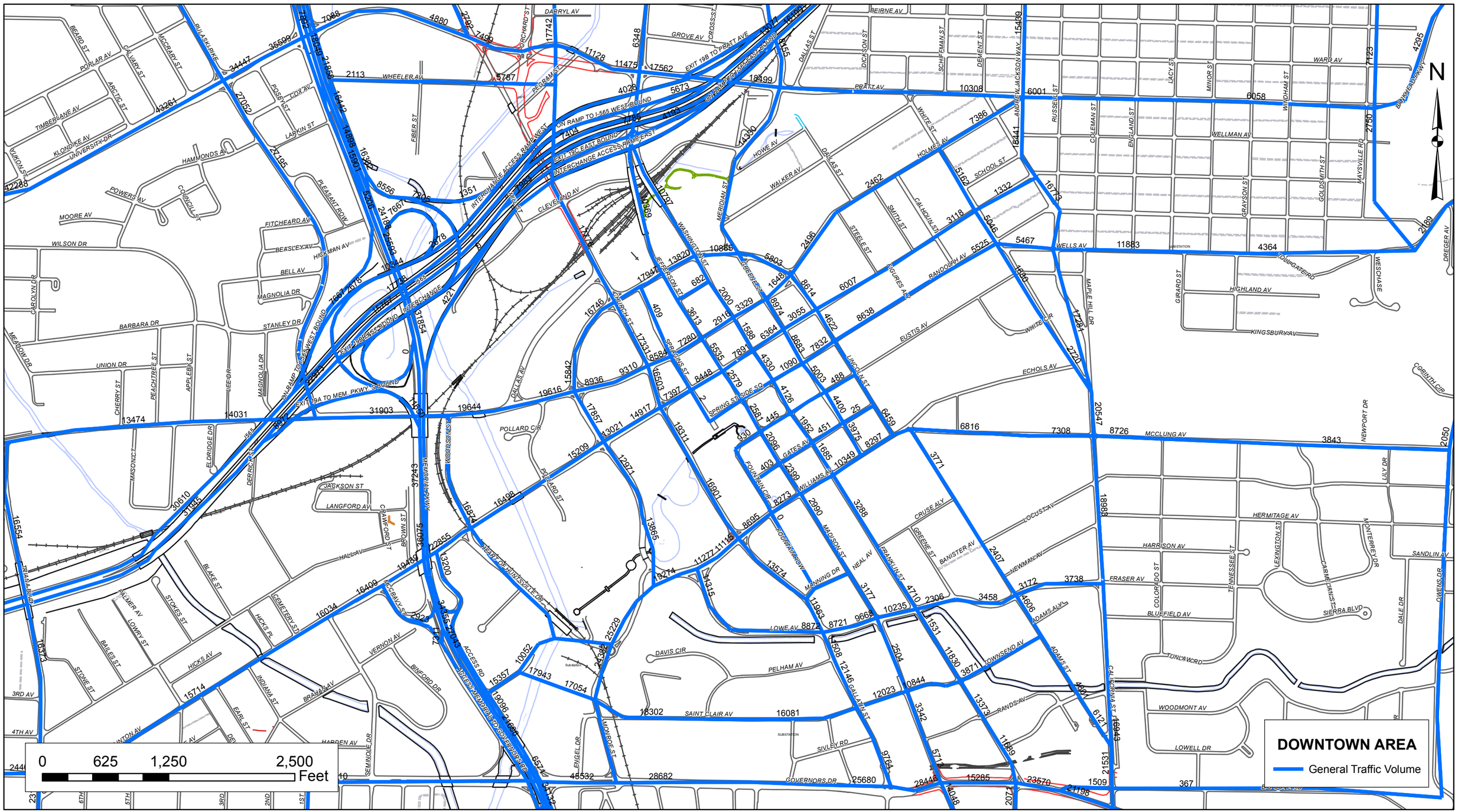
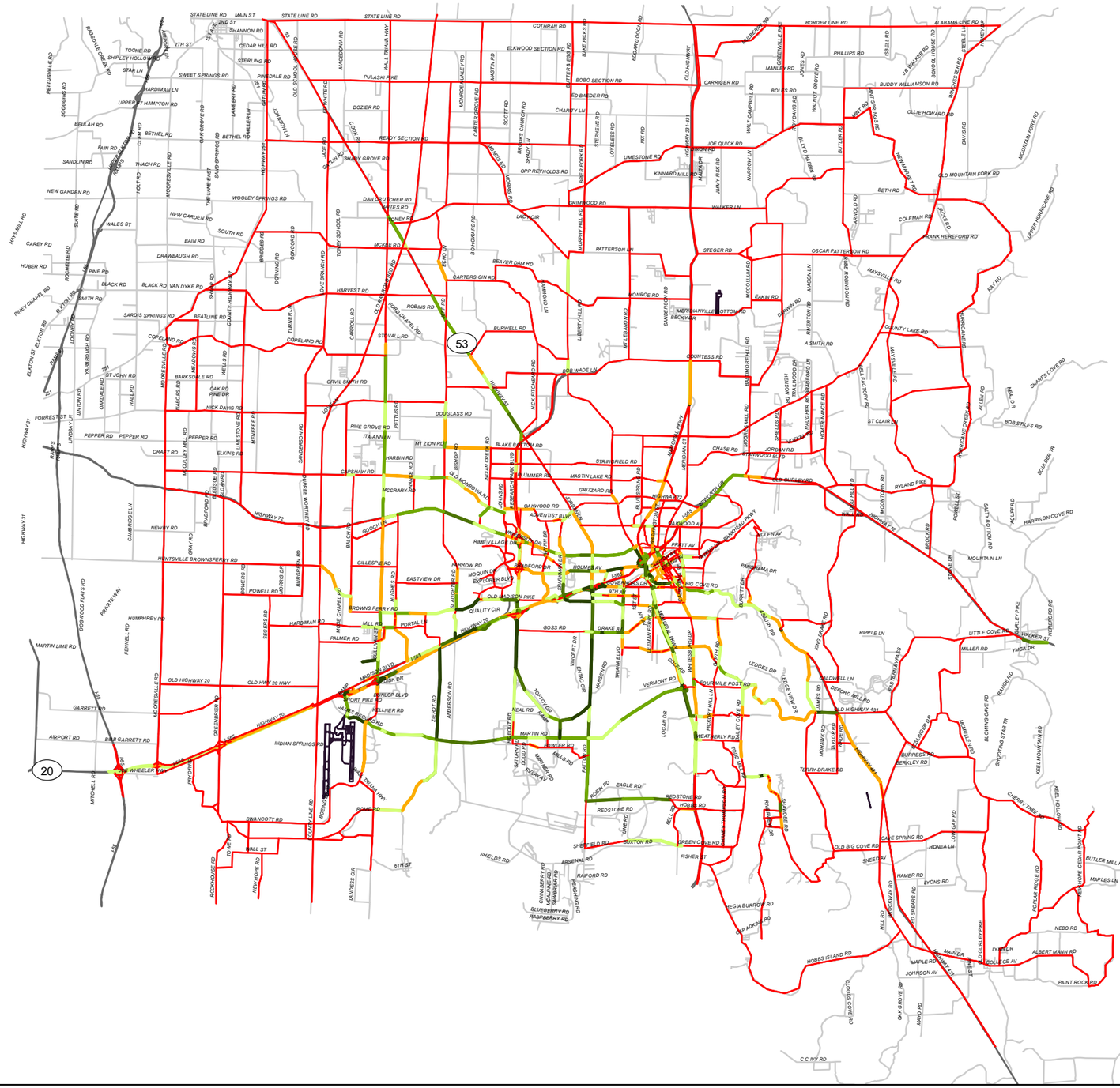
MAP 4-2
2005 BASE YEAR NETWORK
TRAFFIC VOLUME MAP



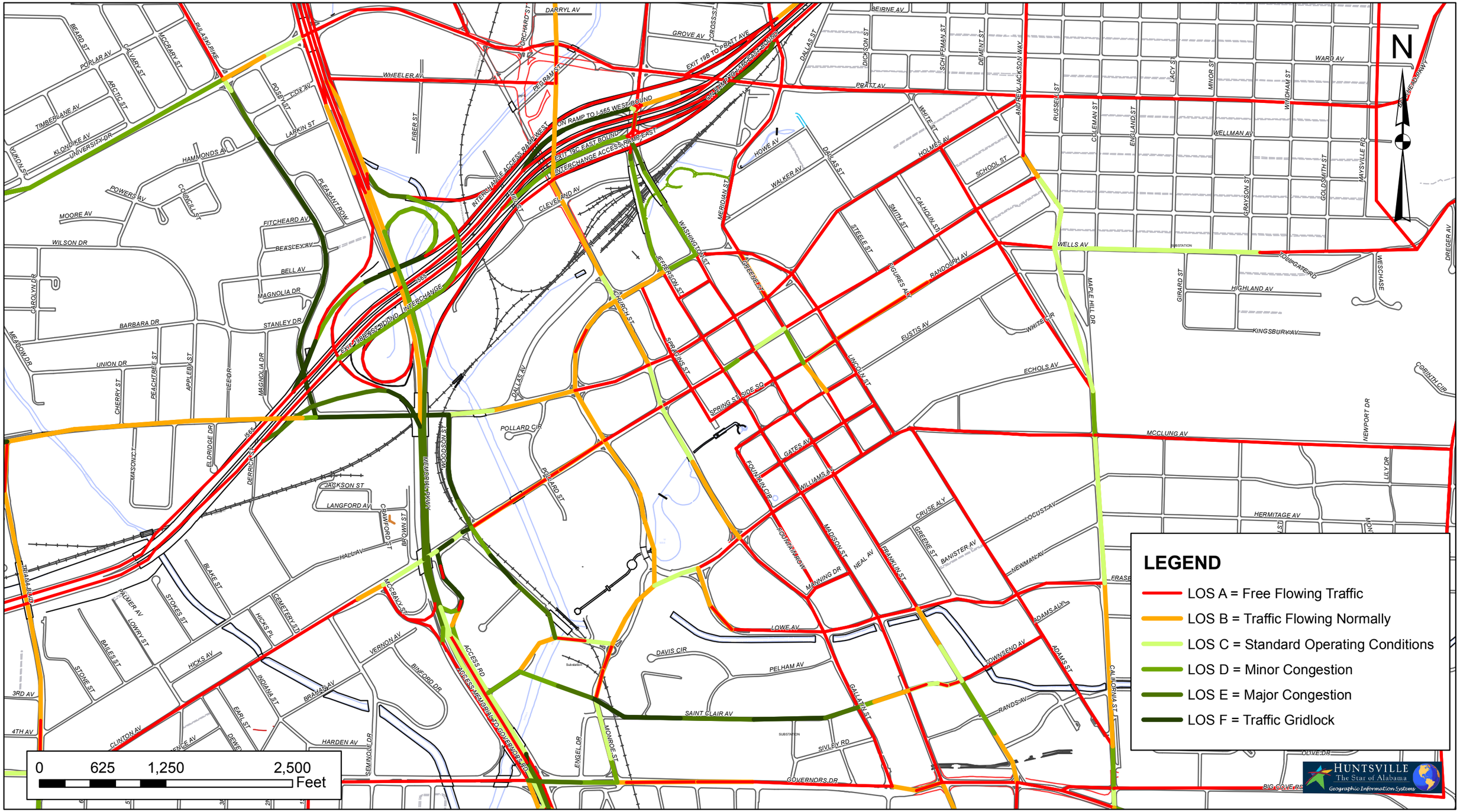
MAP 4-3
2005 BASE YEAR NETWORK
TRAFFIC VOLUME MAP



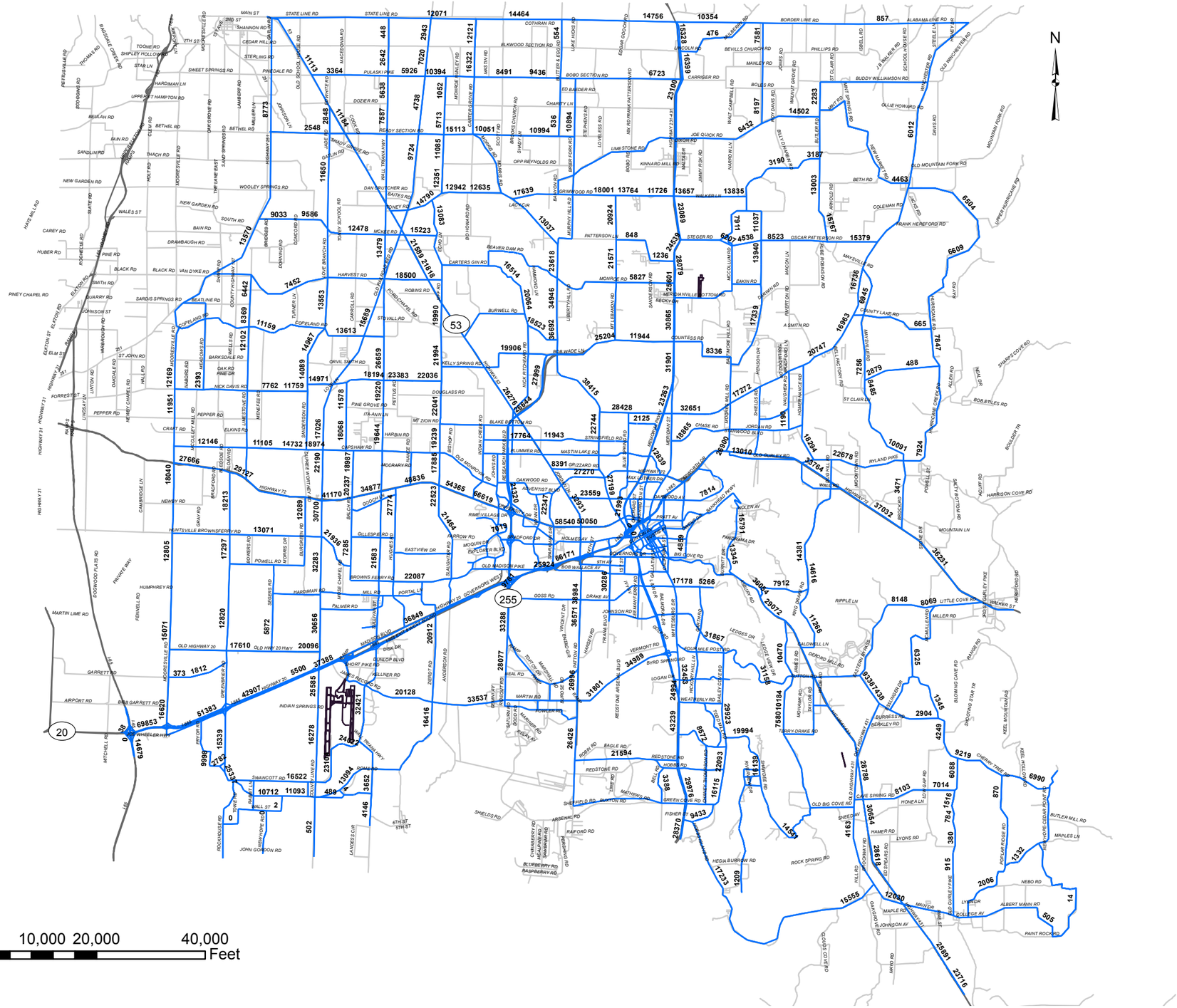
MAP 4-4
2005 LEVEL OF SERVICE MAP



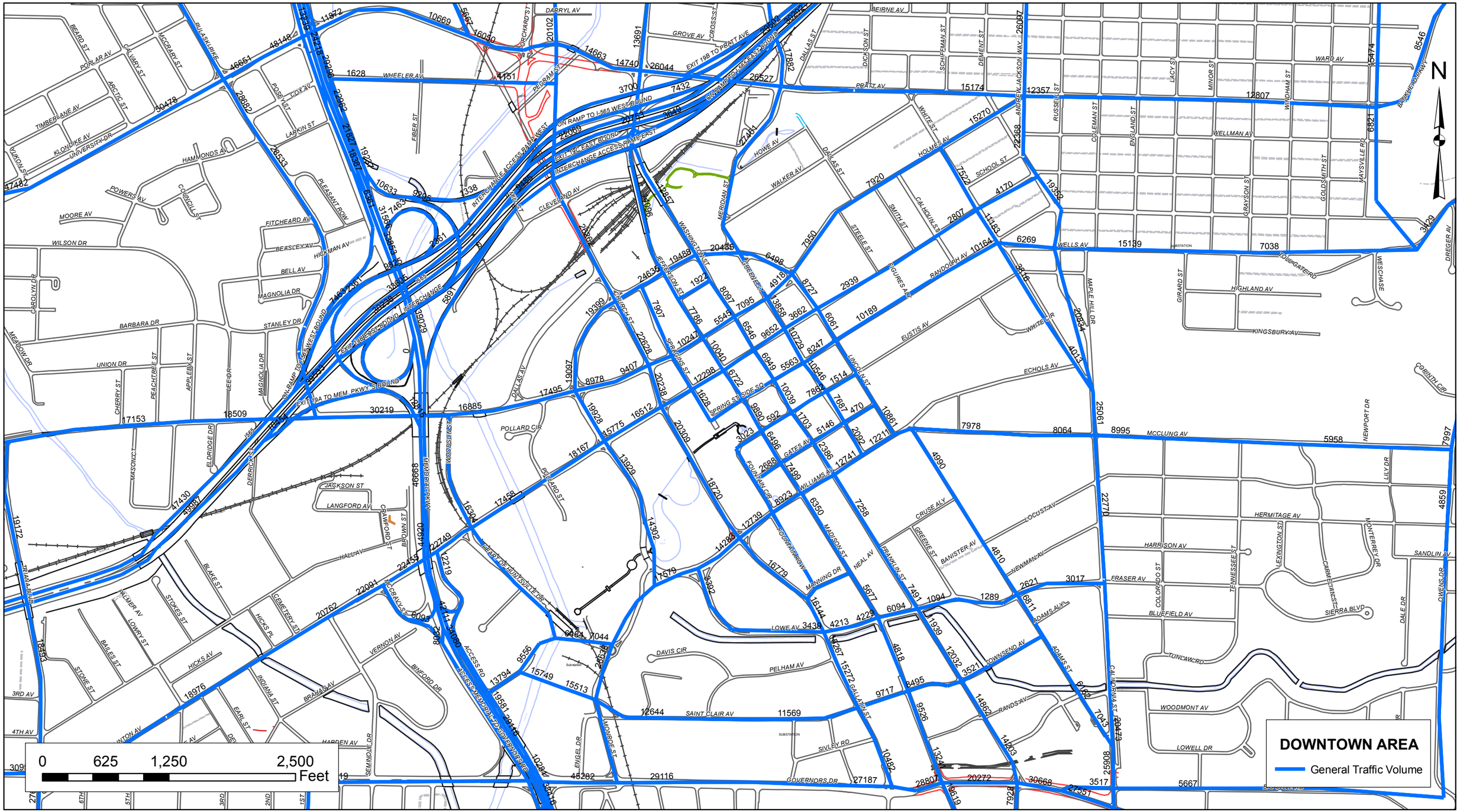
MAP 4-5
2005 LEVEL OF SERVICE MAP



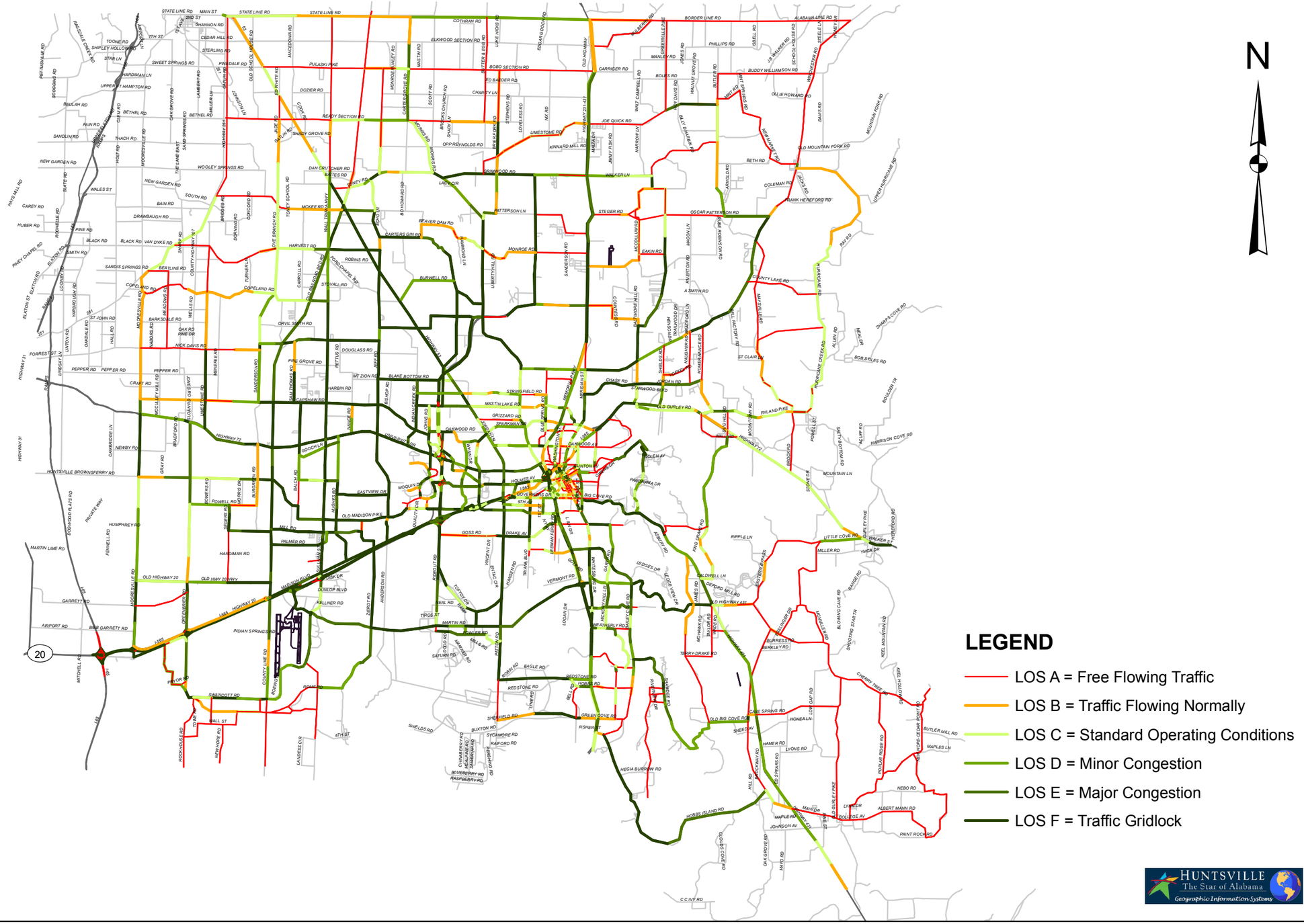
MAP 4-6
2035 EXISTING + COMMITTED NETWORK
TRAFFIC VOLUME MAP



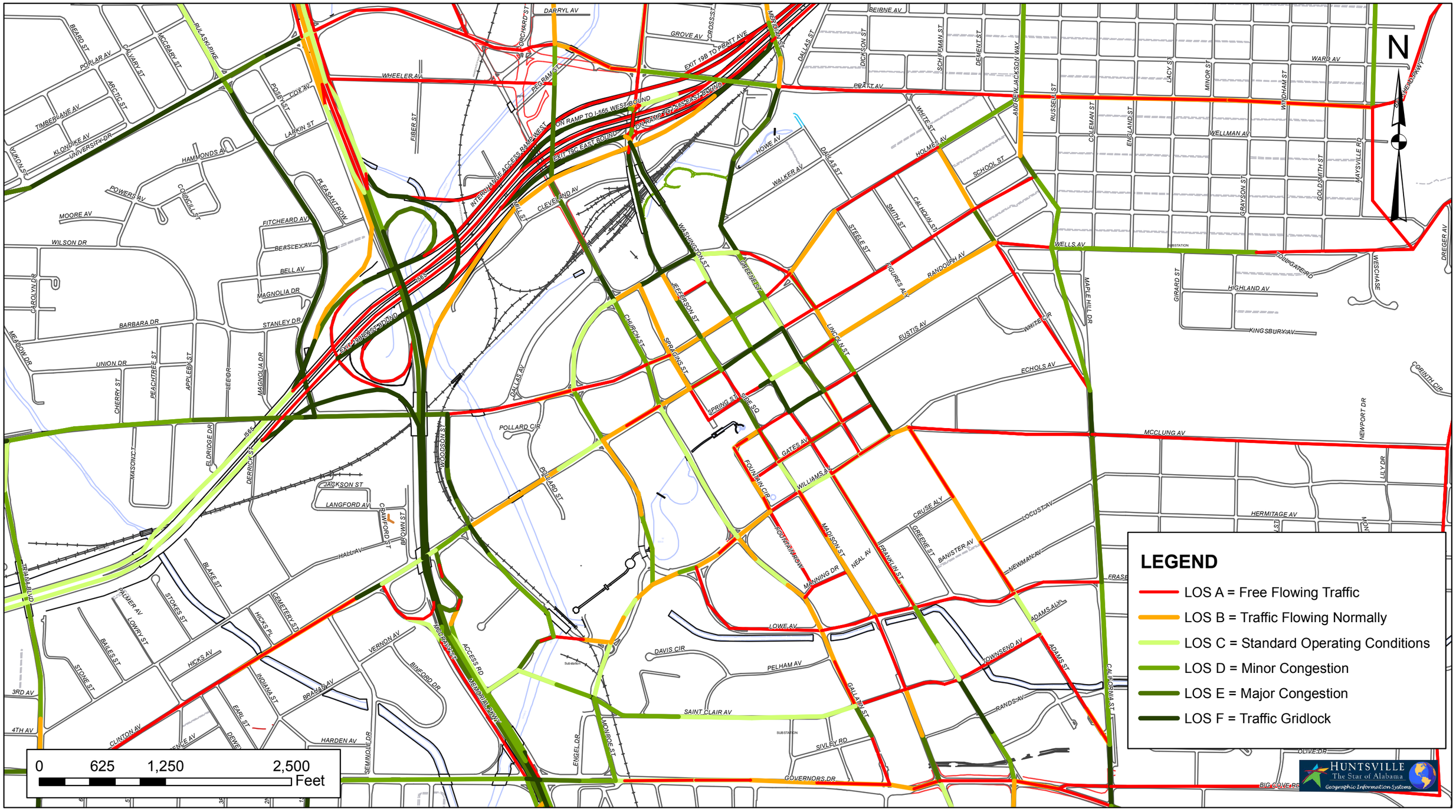
MAP 4-7
2035 EXISTING + COMMITTED NETWORK
TRAFFIC VOLUME MAP



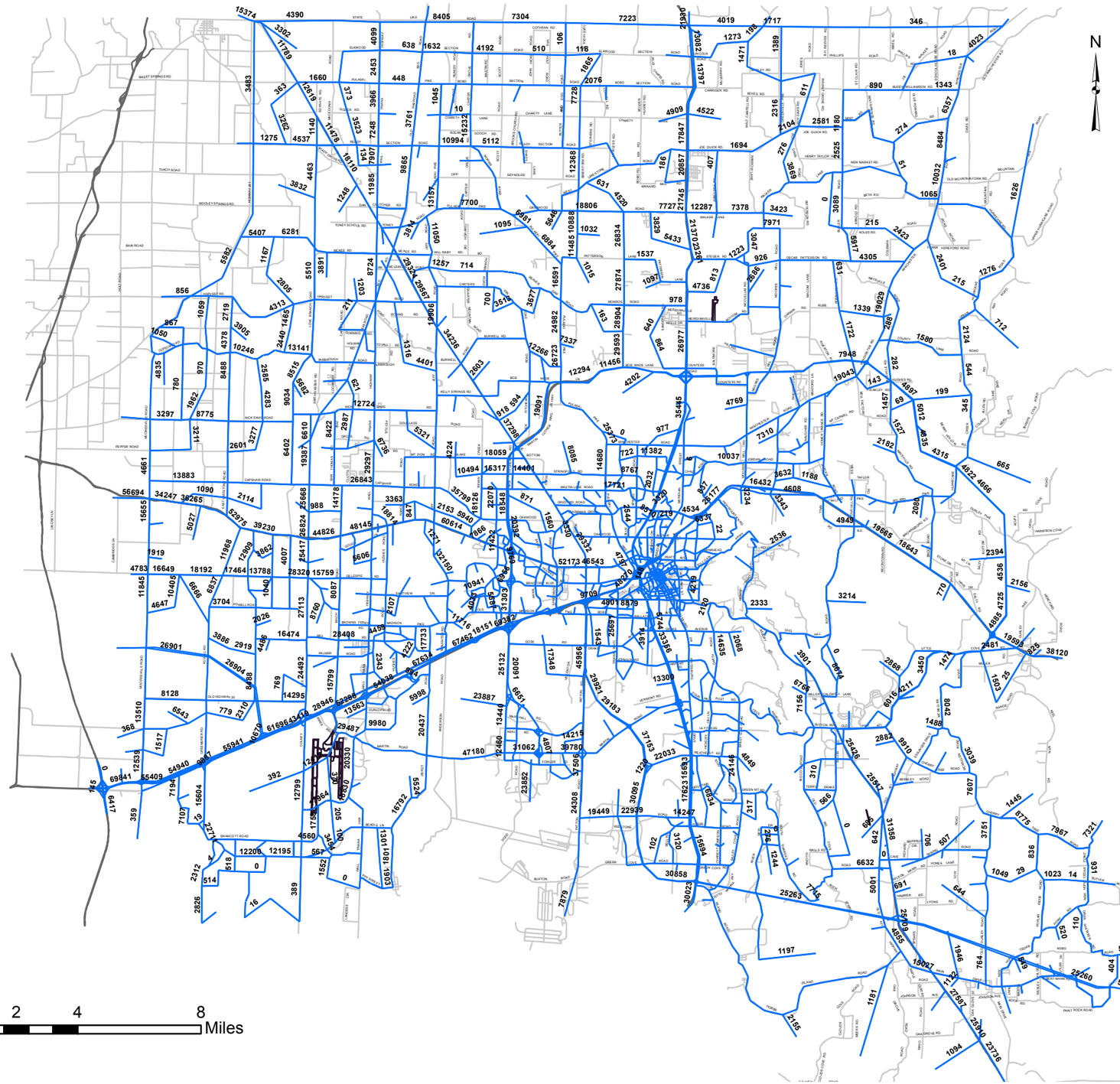
MAP 4-8
2035 EXISTING + COMMITTED NETWORK
LEVEL OF SERVICE MAP



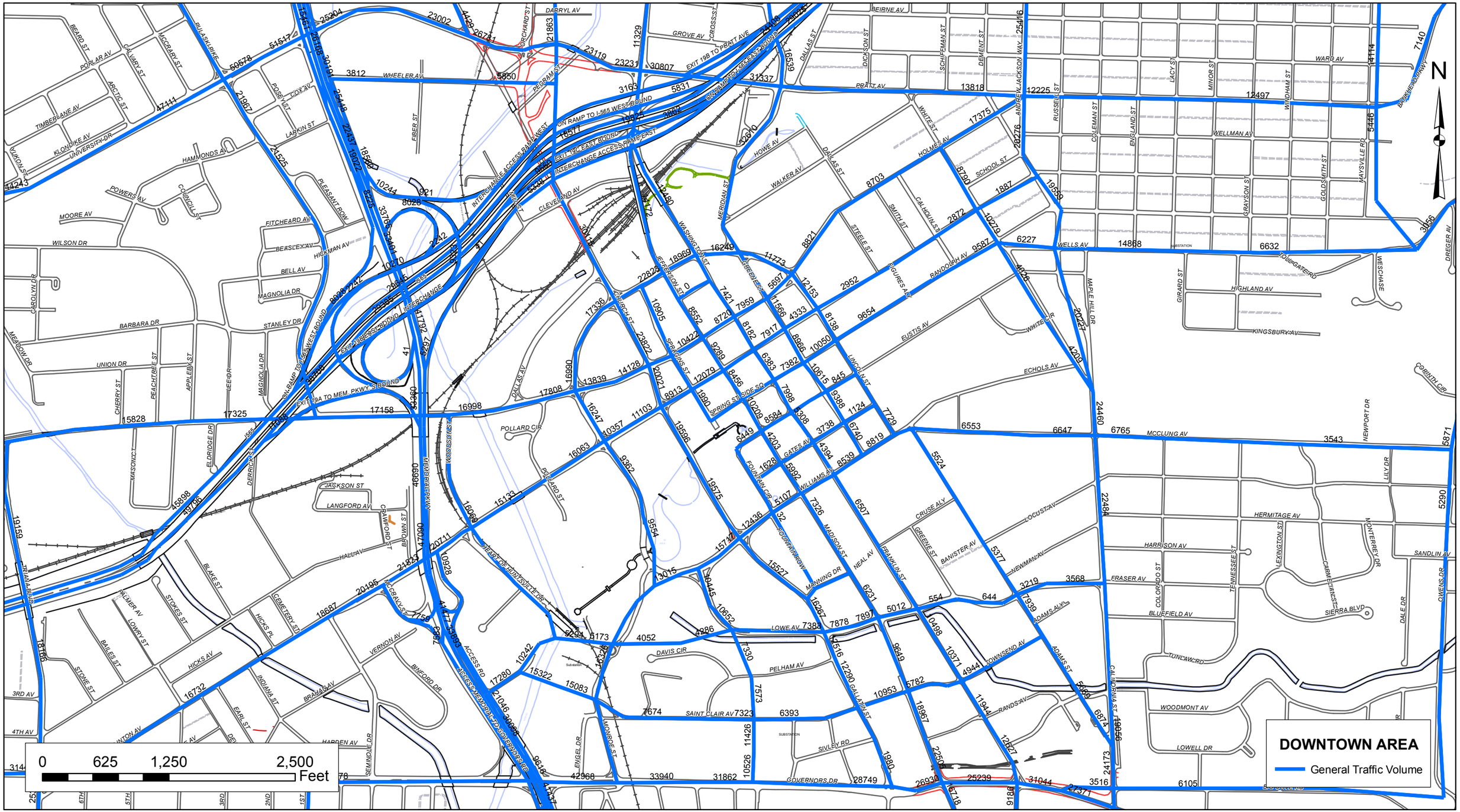
MAP 4-9
2035 EXISISTING + COMMITTED NETWORK
LEVEL OF SERVICE MAP



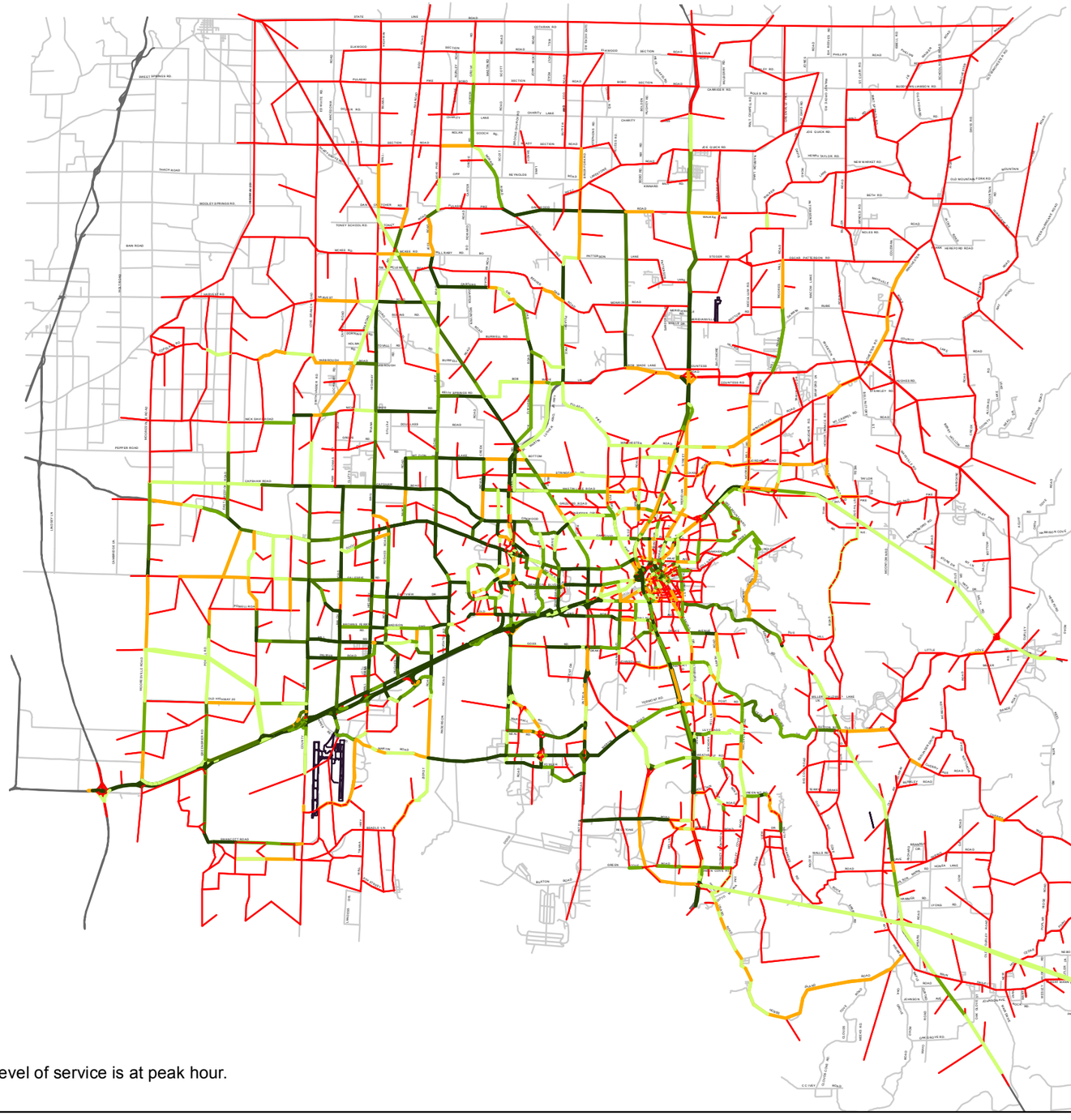
MAP 4-10
2035 NETWORK W/O SOUTHERN BYPASS
TRAFFIC VOLUME MAP



MAP 4-11
2035 NETWORK W/O SOUTHERN BYPASS
TRAFFIC VOLUME MAP



MAP 4-12
2035 NETWORK W/O SOUTHERN BYPASS
LEVEL OF SERVICE MAP



N

LEGEND

- LOS A = Free Flowing Traffic
- LOS B = Traffic Flowing Normally
- LOS C = Standard Operating Conditions
- LOS D = Minor Congestion
- LOS E = Major Congestion
- LOS F = Traffic Gridlock

0 10,000 20,000 40,000 Feet

* Level of service is at peak hour.

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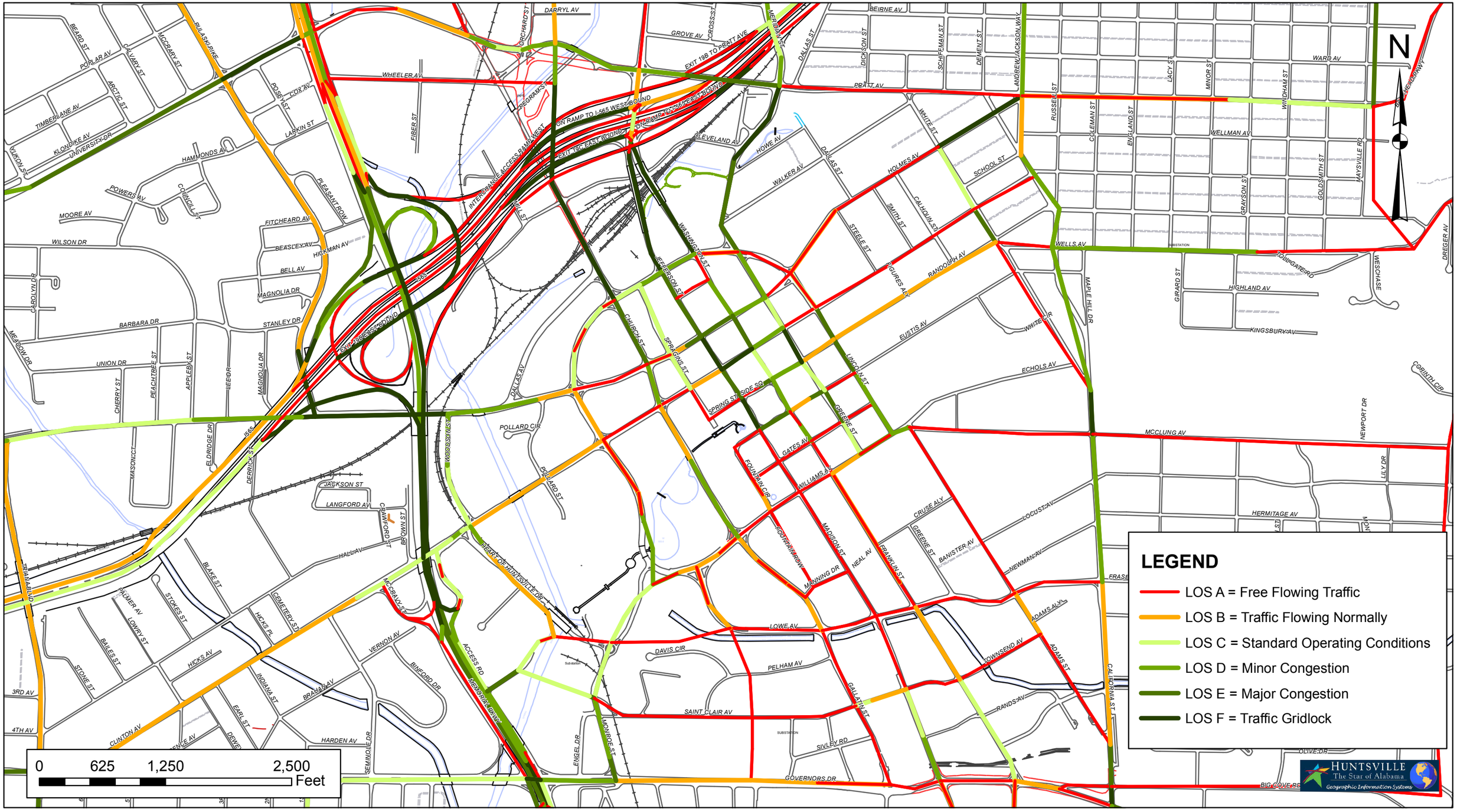
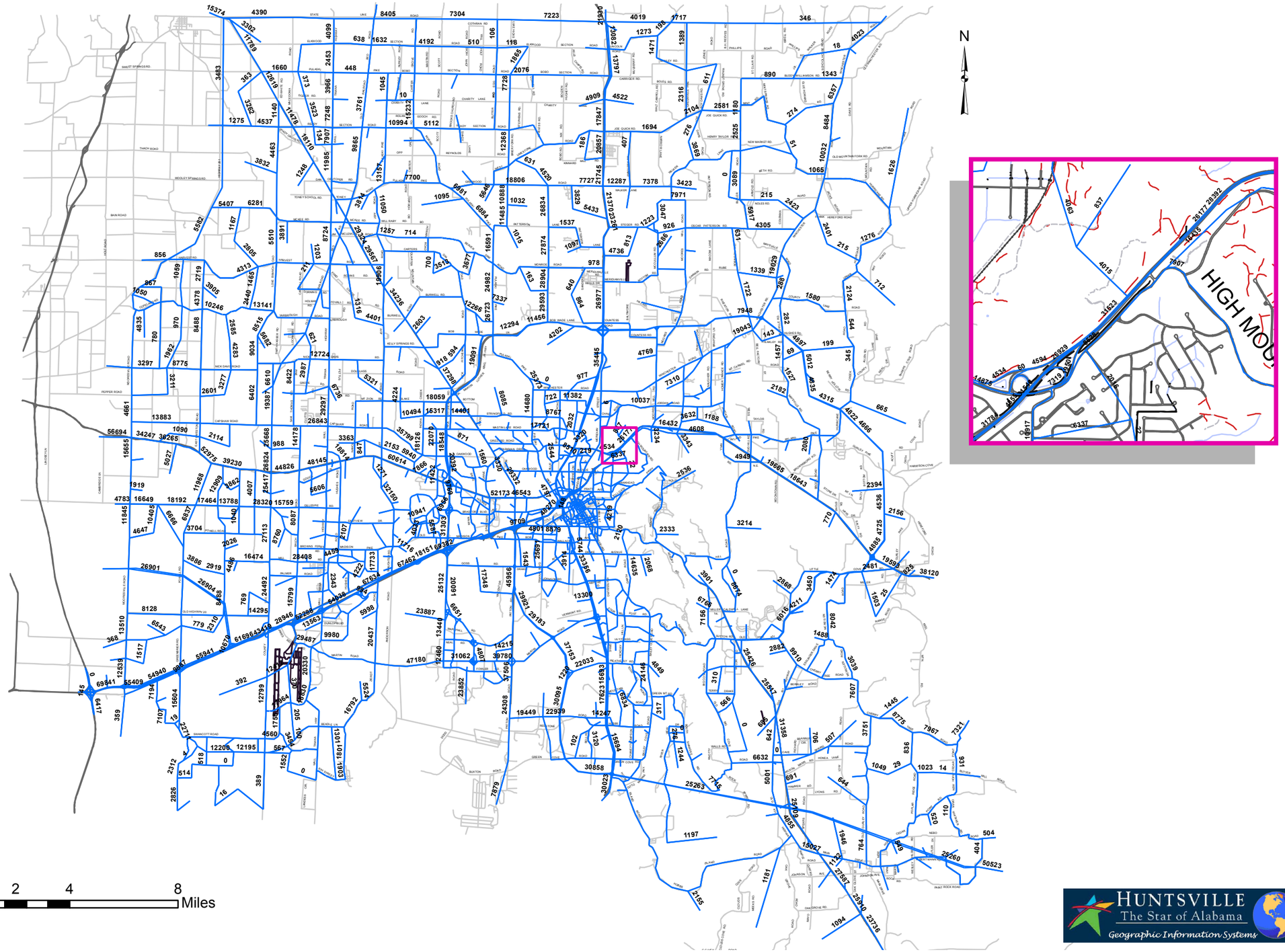
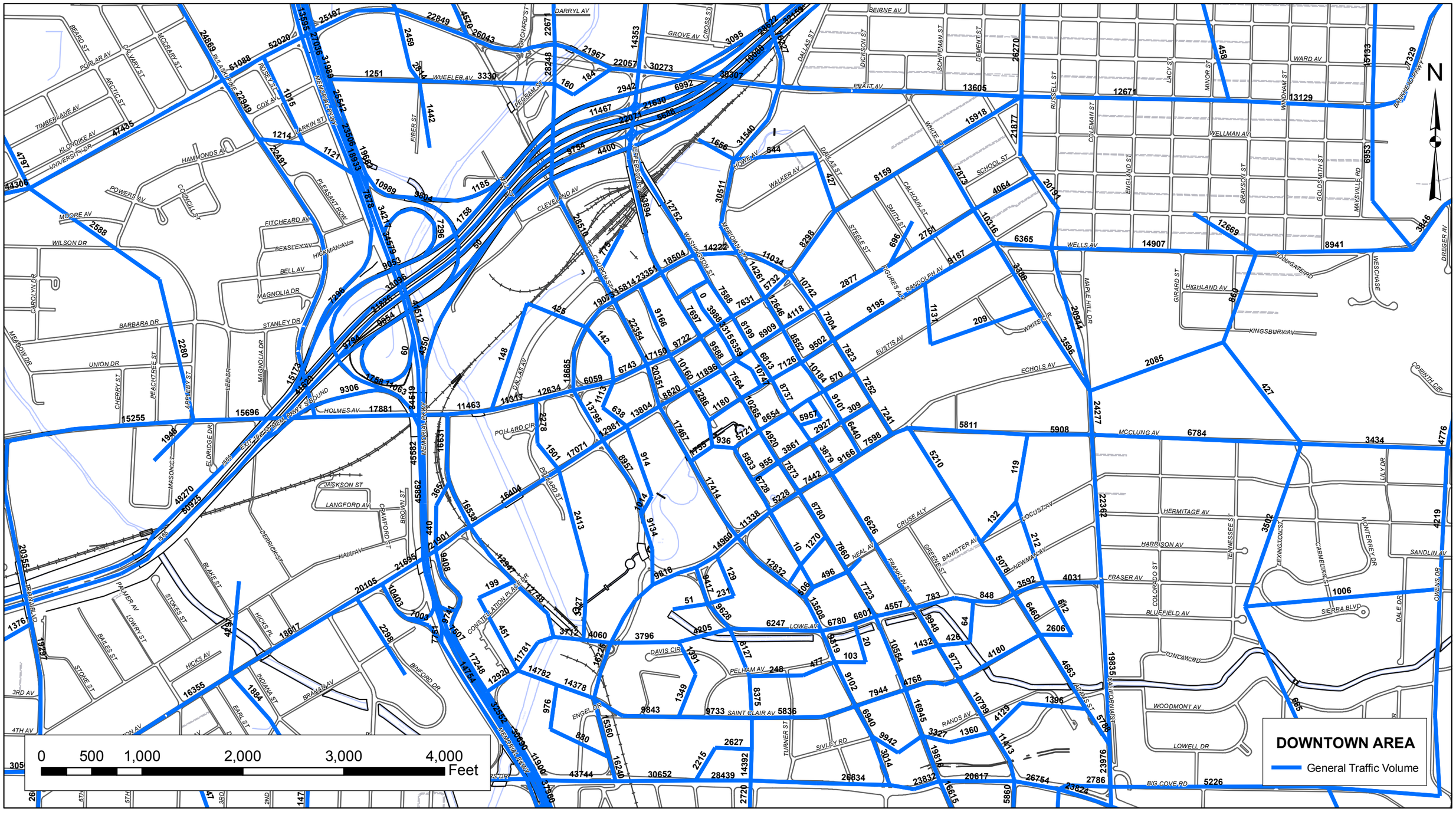
MAP 4-13
2035 NETWORK W/O SOUTHERN BYPASS
LEVEL OF SERVICE MAP



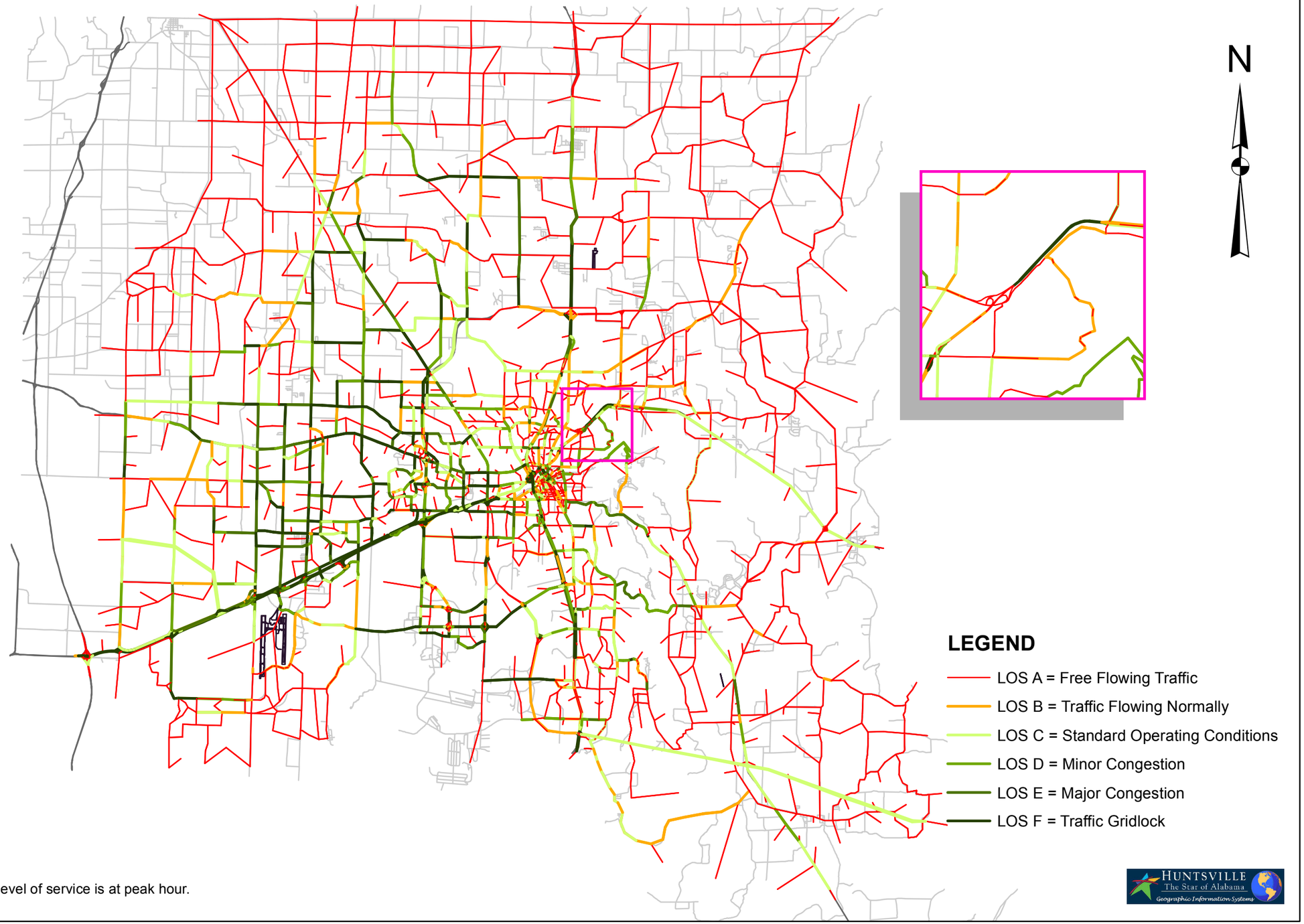
MAP 4-14
2035 NETWORK W/ SOUTHERN BYPASS
TRAFFIC VOLUME MAP



MAP 4-15
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
TRAFFIC VOLUME MAP



MAP 4-16
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
LEVEL OF SERVICE MAP



MAP 4-17
2035 NETWORK W/ SOUTHERN BYPASS AND MEMPHIS/ATLANTA HWY
LEVEL OF SERVICE MAP