

# **SOUTHWEST AREA TRANSPORTATION AND LAND USE STUDY**

## **Transportation Plan Technical Memorandum - #5**

# TRANSPORTATION PLAN

With the desirable land use conditions identified as the Preferred Growth (PG) scenario assumed as the 2035 growth conditions within the study area, the Southwest sub-region transportation needs have been identified for this planning horizon. As discussed in Technical Memorandum 4, the majority of roadway needs will occur in transitional areas surrounding established cities. Much of the land area where these needs will be present are currently within established urban growth boundaries, and are thus expected to be released from the jurisdiction of the unincorporated county and become fully part of the respective city in the future.

This jurisdictional dynamic between city and unincorporated county will continue to be a source of required coordination, especially with regard to roadway planning. The transportation improvements recommended in this Study are largely congruent with previous jurisdictional plans in effect within the study area.

The objectives of this Technical Memorandum are to inventory the transportation needs already identified in the jurisdictional roadway planning efforts, and provide the strategies needed to implement roadway improvement projects in accordance with the sub-regional growth objectives.

# 1. COMMITTED AND PLANNED PROJECTS IN THE 2035 LONG-RANGE TRANSPORTATION PLAN (LRTP)

Many of the transportation deficiencies identified in the testing of the PG scenario will be mitigated with the schedule of projects identified in the MPO's 2035 Regional LRTP. These are projects for which funding has been identified and are reasonably assured of future completion. For this reason, the final transportation demand model run includes these committed and planned projects. A list of the committed and planned highway projects as presented in the LRTP within the study area by horizon year is given as Table 1.1. These projects are mapped in Figure 1.1.

L RTP ID	COUNTY	TYPE OF WORK	PROJECT/ROADWAY NAME	FROM	TO	DESCRIPTION
<b>2011 - 2015 Projects</b>						
1012-157	Davidson	Road Widening	McCrary Lane	SR-100	I-40	Widen from 2 to 5 lanes.
1014-259	Davidson	Intersection	Harding Place/ Battery Lane	Franklin Pk, Lealand Ln, Granny White Pk		Turn lane construction at 3 intersections along Harding Place/ Battery Lane: at Franklin Pike, Lealand Lane, and Granny White Pike.
1021-172	Maury	New Road	Reserves Boulevard	US-31/SR-6	Port Royal Road	Extend Reserves Boulevard as a new 3-lane road.
1022-169	Maury, Williamson	Road Widening	Port Royal Road	Saturn Parkway (SR 396)	Duplex Road	Widen Port Royal Road from 2 to 3 lanes and correct horizontal and vertical alignment issues.
1041-130	Rutherford	New Road	Veterans Pkwy (formally SW Loop Rd)	St. Andrews / Armstrong Valley	Lone Oak / Barfield Crescent	Construct new 5-lane road and widen/ reconstruct existing substandard 2-lane road.
1042-285	Rutherford	Reconstruction	Manson, Gresham, Fortress	I-24	Puckett Creek Crossing	Realign Manson Pike/Fortress Blvd and Gresham Lane; build as five lane roadways with bike lanes, curb & gutter and sidewalks.

Table 1.1 Subregional Projects in the Current LRTP (1 of 5)

L RTP ID	COUNTY	TYPE OF WORK	PROJECT/ ROADWAY NAME	FROM	TO	DESCRIPTION
1042-286	Rutherford	Reconstruction	Brinkley Road	Hwy-96	Manson Pike	Rebuild Brinkley Road from a 2-lane ditch section to a 3-lane curb & gutter street with sidewalks.
1042-287	Rutherford	Reconstruction	Rucker Lane	SR-96	Veterans Pkwy	Rebuild Rucker Lane to a 3-lane roadway with curb & gutter and sidewalk.
1042-289	Rutherford	Road Widening	Fortress Blvd	Blaze Drive	Puckett Creek Crossing	Widen Fortress Boulevard from Blaze Drive to approximately Puckett Creek Crossing from 3-lanes to 5-lanes with bike lanes, curb & gutter and sidewalks.
1043-261	Rutherford	Interchange	Interstate 24/ Rocky Fork Road	Rocky Fork Road		Construct a new interchange at Interstate 24 and Rocky Fork Road
1061-171	Williamson	New Road	Buckner Road	Buckner Lane	Lewisburg Pike (US 431)	Extend Buckner Road as a 3-lane road from Buckner Lane to Lewisburg Pike.
1061-201	Williamson	New Road	McEwen Drive	SR-252 (Wilson Pike)	Clovercroft Rd	New 4 lane divided roadway aligned with McEwen Drive.
1061-225	Williamson	New Road	SR-840	Bending Chestnut	Thompson Station	Construct new 4-lane roadway. ROW acquired 11/13/09. Let 2/5/09.
1061-226	Williamson	New Road	SR-840	Thompson Station	SR-6	Construct new 4-lane roadway. Let 2/16/04. Construction underway.
1062-113	Williamson	Road Widening	I-65	SR-840	SR-96	Widen from 4 to 8 lanes with HOV to Goose Creek (SR-248).
1062-135	Williamson	Road Widening	Columbia Avenue	Mack Hatcher Memorial Pkwy (SR-397)	Downs Blvd	Project would provide congestion relief to one of Franklin's heaviest corridors. Columbia Ave (SR 6/US 31) provides connectivity between Columbia, Spring Hill and Thompson's Station with Franklin and Nashville.
1062-136	Williamson	Road Widening	Goose Creek Bypass	Lewisburg Pike (US 431)	Peytonsville Rd	4-lane median divided roadway with additional turn lanes as required This cross section will include curb and gutter, sidewalks, bike lanes and other appurtenances as indicated.

Table 1.1 Subregional Projects in the Current LRTP (2 of 5)

L RTP ID	COUNTY	TYPE OF WORK	PROJECT/ ROADWAY NAME	FROM	TO	DESCRIPTION
1062-137	Williamson	Road Widening	Hillsboro Rd.	New Hwy SR-96 W/Bridge St	Mack Hatcher Memorial Pkwy (SR 397)	3-lane with continuous center turn lane, bike lanes, sidewalks and street lighting from Del Rio to Mack Hatcher (SR 397). 4-lane with bike lanes, sidewalks and street lighting from New Hwy 96 W/Bridge St to Del Rio.
1062-138	Williamson	Road Widening	Lewisburg Pike	Goose Creek Bypass (SR-248)	Mack Hatcher Memorial Pkwy (SR-397)	4-lane median divided with multi-use path and curb and gutter.
1062-141	Williamson	Road Widening	McEwen Drive	Carothers Parkway	East Cool Springs Blvd	Widen and improve McEwen Drive to four lanes from Carothers Parkway to East Cool Springs Blvd.
1062-142	Williamson	Road Widening	McEwen Drive	East Cool Springs Blvd	Wilson Pike (SR 252)	Widen and improve McEwen Drive to four lanes from East Cool Springs to SR 252 (Wilson Pike).
1062-159	Williamson	Road Widening	Concord Road (S.R. 253)	SR-252	Arrowhead Drive	Widen from 2 to 3 lanes, includes 2 travel lanes and a continuous center turn lane, elimination of hazardous curves. Bikeway/walkway separated by 4' green strip on south side of road with sidewalk under consideration on north side.
1062-160	Williamson	Road Widening	Franklin Road	Moores Lane (SR-441)	Concord Road (SR-253)	Widening of Franklin Rd (US-31) from two to five lanes including a continuous center turn lane, with a curb and gutter section. Project would also include a 10 ft wide bikeway/walkway on west side placed a minimum of 4 ft behind the curb.
1062-162	Williamson	Road Widening	Split Log Road	Ragsdale Road	Pleasant Hill Rd	Widening to provide 12 foot travel lanes and elimination of sight distance problems. Includes center turn lanes for certain segments, especially for subdivision entrances with strategically placed medians to provide traffic calming features.
1062-170	Williamson	Road Widening	Duplex Road (SR 247)	SR 6 (US 31)	I-65	Widen Duplex Road from 2 to 3 lanes with shoulders and sidewalks, and remove vertical curves with sight distance issues.

Table 1.1 Subregional Projects in the Current LRTP (3 of 5)

L RTP ID	COUNTY	TYPE OF WORK	PROJECT/ ROADWAY NAME	FROM	TO	DESCRIPTION
1062-346	Williamson, Davidson	Road Widening	Concord Road (S.R. 253)	Edmonson Pike	Nolensville Road (US-31A/41A)	Widen to 3 lanes with 10' multi-use path along the south side of the road.
1064-252	Williamson	Intersection	SR-106 (Hillsboro Rd)	SR-46 (Old Hillsboro Rd)		Realign existing intersection.
<b>2016 - 2025 Projects</b>						
1042-231	Rutherford	Road Widening	SR-96	SR-840	Overall Creek	Reconstruct from 2 to 5 lanes with curb and gutter. PE completed 7/15/98.
1042-232	Rutherford	Road Widening	SR-99	SR-16 in Eagleville	Swamp Road (W of Concord)	Construct new alignment from SR-16 to Swamp Rd as a 2 lane with continuous center turn lane; from Swamp Road, improve existing alignment to 2 lane. Reconstruction from US 41A (SR-16) to SR-269 Let 12/14/07.
1062-143	Williamson	Road Widening	Murfreesboro Rd	S Margin St	North Royal Oaks Blvd.	3-lane cross section with shared lanes and continuous two way left turn lane, 5 foot parkway strips and 5 foot sidewalks from Third Ave (Harpeth River Bridge) to Mack Hatcher Memorial Parkway. 7-lane cross section with bike lanes and continuous two way left turn lane.
1062-170	Williamson	Road Widening	Duplex Road (SR 247)	SR 6 (US 31)	I-65	Widen Duplex Road from 2 to 3 lanes with shoulders and sidewalks, and remove vertical curves with sight distance issues.
1062-215	Williamson	Road Widening	SR-96	Mack Hatcher Pkwy (SR 397)	Hillsboro Road/ SR-106	Widen from 2 to 4 lanes with curb and gutter.
1062-234	Williamson	Road Widening	SR-96	Arno Road	Wilson Pike (SR-252)	Widen from 2 to 4 lanes with curb and gutter. ROW underway 10/28/02.
1062-346	Williamson, Davidson	Road Widening	Concord Road (S.R. 253)	Edmonson Pike	Nolensville Road (US-31A/41A)	Widen to 3 lanes with 10' multi-use path along the south side of the road.
1064-252	Williamson	Intersection	SR-106 (Hillsboro Rd)	SR-46 (Old Hillsboro Rd)		Realign existing intersection.
1062-163	Williamson	Road Widening	Wilson Pike (SR-252)	Concord Road (S.R. 253)	Church Street	Widen Wilson Pike (SR 252) to provide for improved safety and improved traffic flow. Four alternate cross-sections have been proposed, all of which provide for two twelve (12) foot travel lanes and 2-6 foot shoulders.

Table 1.1 Subregional Projects in the Current LRTP (4 of 5)

L RTP ID	COUNTY	TYPE OF WORK	PROJECT/ROADWAY NAME	FROM	TO	DESCRIPTION
1063-166	Williamson	Interchange	I-65	n/a		New interchange on I-65 between Old Hickory Blvd and Concord Road (SR 253).
1064-164	Williamson	Interchange	I-65 Interchange with Moores Lane (S.R. 441)	n/a		Modify southbound I-65 exit ramp to eastbound Moores Lane. Eliminate dual lane conflict between traffic merging on to eastbound Moores Lane and traffic exiting eastbound Moores Lane to enter the I-65 northbound entrance ramp. May include other modifications.
1064-165	Williamson	Interchange	I-65 Interchange with Concord Road (S.R.253)	n/a		Modify southbound I-65 exit ramp and the exit ramp signals.
1064-253	Dickson, Williamson	Interchange	I-40	SR-96		Reconstruct substandard cloverleaf design.
<b>2026 - 2035 Projects</b>						
1012-148	Davidson	Road Widening	Edmonson Pike	Davidson Co. Line (Holt Rd)	Old Hickory Blvd (SR-254)	Widen from 2 to 5 lanes.
1012-185	Davidson	Road Widening	Nolensville Pike (SR-11)	Burkitt Road	Old Hickory Blvd (SR-254)	Widen from 2 to 5 lanes.
1042-124	Rutherford	Road Widening	SR-99 (New Salem Rd)	Cason Ln	Old Fort (SR-96)	Widen from 2 to 5 lanes.
1043-261	Rutherford	Interchange	Interstate 24/ Rocky Fork Road	Rocky Fork Road		Construct a new interchange at Interstate 24 and Rocky Fork Road.
1062-134	Williamson	Road Widening	Columbia Avenue	Downs Blvd	Fowlkes Street	Project would complete link between current Franklin Corridor and Connector Streets Economic Development Project phases north of the project terminus and the Columbia Ave South widening project between Mack Hatcher (SR 397) and Downs Blvd.
1062-139	Williamson	Road Widening	Mack Hatcher Memorial Parkway	Murfreesboro Rd. (SR 96E)	Franklin Rd. (SR 6/US 31)	Widen to 4-lane divided with multi-use pathway.
1062-140	Williamson	Road Widening	Mack Hatcher Memorial Parkway	Columbia Pike (SR-6/US-31)	Murfreesboro Rd (SR-96E)	Widen to 4-lane divided with a multi-use pathway

Table 1.1 Subregional Projects in the Current LRTP (5 of 5)

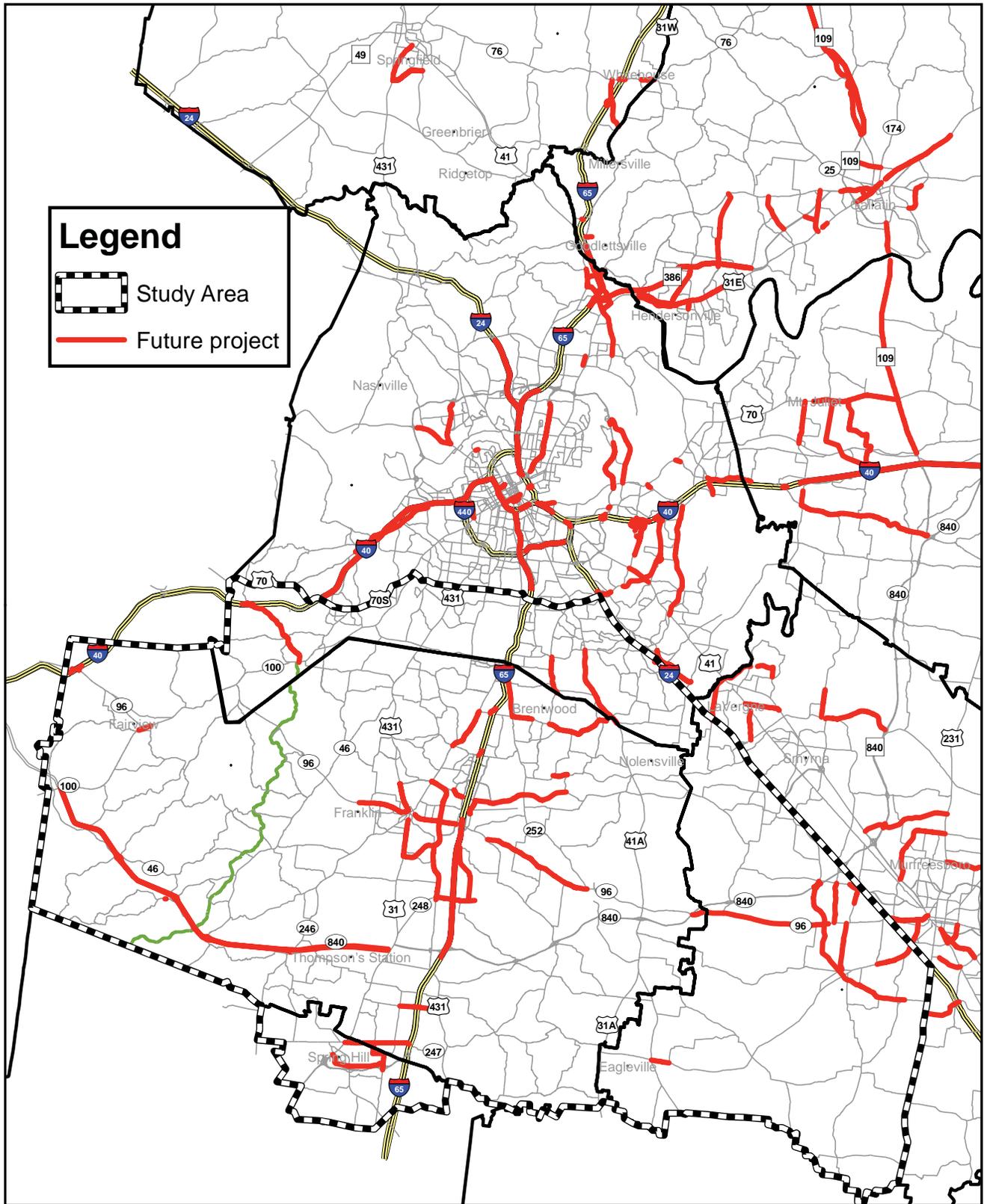


Figure 1.1 Projects in the 2035 Regional LRTP

## 2. OTHER JURISDICTIONAL PLANS

In addition to those committed and planned projects found in the 2035 Regional LRTP, several of the jurisdictions within the study area maintain transportation plans of their own. These local plans are regarded somewhat differently for several reasons.

- The Regional LRTP includes only projects which are financially constrained by anticipated revenues. Most local transportation plans in the Southwest sub-region are drafted without comparison to corresponding revenue sources.
- Planned projects in the Regional LRTP have a planning horizon for anticipated completion. Local plans generally consider a long-term planning horizon (20-25 years), but individual projects are not given an anticipated completion date.
- Regional projects are generally completed with state and/or federal funding sources and thus follow specific planning, programmatic, and design requirements. Locally planned projects are often completed in coordination with local development initiatives, may be completed with private funding, and therefore may be exempt from certain requirements.
- The Regional LRTP considers the mobility needs of the region, using analysis of a regional-scaled transportation model. Local plans are more fine-grained; they may include smaller local roads and may not concern themselves with transportation deficiencies outside of their respective jurisdictions.

Similar to the Regional LRTP projects, however, locally planned projects have generally undergone some level of public review and comment as well as a formal political adoption process. This does not ensure public support of each project through the design and construction phases, but does provide a reasonable level of local understanding and approval of the projects in concept. For this reason, projects found in locally adopted transportation plans within the study area are considered to be recommendations for future improvement within

the Southwest sub-region. Lists and maps of these projects as documented in local transportation plans are given as an appendix to this technical memorandum.

## 3. SOUTHWEST SUB-REGIONAL TRANSPORTATION PLAN

As demonstrated through the regional land use analysis detailed in Technical Memorandums 2 through 4, certain transportation deficiencies are expected to occur in the absence of roadway improvements and additions. The committed and planned projects of the regional LRTP as well as the locally planned projects described above, when completed, are expected to significantly address the regional and many of the local transportation needs across the study area. Because each of these adopted plans strive to meet the long-range growth, development, and associated mobility-related planning objectives of the study area, the recommendations of this Southwest sub-regional study have been developed around three general plan strategies:

1. Work towards developing a more robust sub-regional transportation network by planning for a coordinated system of facilities within the study area. Because local plans in most jurisdictions provide for good local mobility, what is left is to knit these plans together by means of a transportation plan for unincorporated Williamson County, the one entity that connects all the jurisdictions of the sub-region together geographically and politically. The major emphasis of Technical Memorandum 6 is the implementation of this primary recommendation of the sub-regional analysis. The recommendations

from this analysis have been formulated for adoption into the updated Williamson County Major Thoroughfare Plan for projects within unincorporated Williamson County.

2. Continue to plan and implement improvements congruent with regional growth objectives as developed by the MPO. Using what is known about high growth areas of the sub-region from the PG scenario coupled with information on local development trends, certain corridors stand to face increasing challenges. These challenges should be met in accordance with the region's decided goals in mind.
3. Build increasingly closer coordination linkages between adjacent planning jurisdictions in the study area. Several project areas in the sub-region highlight the need for increased coordination. As with the transportation network, unincorporated Williamson County faces the challenge of increasing coordination the most as it is the sole entity adjacent to other sub-regional jurisdictions.

### 3.1 Work Towards a Sub-Regional Transportation Network

As mentioned, the combination of regional-scale projects found in the LRTP and the more localized proposed roadway projects found in jurisdictional plans generally account for the long-range transportation needs across the sub-region. The primary recommendation of this study is development of the "missing piece" of a coordinated sub-regional roadway network.

Specifically, this is the development of an updated Major Thoroughfare Plan for the unincorporated portions of Williamson County.

The previous Major Thoroughfare Plan for Williamson County was completed in 1996 and has been the basis for roadway planning in the county since. As study area jurisdictions have grown, and particularly since the passage of PC 1101, the overlapping planning jurisdictions within the Urban Growth Boundaries have changed the dynamic of County plans. The sub-regional road plan should seek to introduce sub-regional continuity to locally planned projects and to reconcile inconsistencies that exist between multiple city and town plans.

Specifics regarding this primary study recommendation, the development of an updated Major Thoroughfare Plan for Williamson County, are detailed in Technical Memorandum 6.

### 3.2 Preserve and Promote Regional Goals in Project Delivery in Key Corridors

Certain corridors across the study area have the potential to substantially shape the sub-regional form and function as it grows over the next 25 years. Based on growth projections and the envisioned character areas of each, these corridors will each play key roles in shaping the communities that they provide access to. These sub-regional corridors are:

**Harding Place/Highway 70S:** This corridor is the northern boundary of the study area and extends across I-24, I-65, and I-40 in Davidson County. The corridor transects general urban, suburban, village, and rural character areas as defined in the PG scenario. Managing these character area transitions should especially follow MPO Goals 2, 3, and 6 to promote efficient cross-travel through southern Davidson County. Goal 5 will also be important in promoting Bellevue Center as a regional activity center.

**Highway 100:** The critical link for Fairview and northwestern Williamson County, Highway 100 will be

shaped by special attention to Goals 2, 3, and 7. Goal 4 will be especially important as Highway 100 crosses areas of complex geography near the Davidson/Williamson County Line.

**Hillsboro and Franklin Roads:** Generally already developed, these corridors may see growing redevelopment pressures in both commercial and residential areas. Hillsboro Road will require special attention as road widening becomes more of a need in keeping with Goal 2.

**Nolensville Road:** This corridor will bisect areas categorized as general urban, suburban, and rural, but the character area of the corridor itself is classified as suburban in the PG. Maintaining desirable densities and access along the corridor in keeping with its suburban designation (and the resulting protection of rural areas just off the corridor) will further regional Goals 3, 4, and 7.

**State Route 96 East:** Still considered a primary sub-regional connection from Franklin to Murfreesboro, this corridor will continue to play an increasingly access-oriented role as development extends east out of Franklin. Traffic capacity will be required to accommodate the suburban growth patterns envisioned by the PG. Contextually appropriate roadway features will be required in village areas like Arrington and Triune. Goals 2, 3, 5, and 7 will especially help shape State Route 96 East.

**Columbia and Lewisburg Pikes:** Having common roles of linking central Williamson County (Franklin – Thompson’s Station – Spring Hill) these arterials will continue to transition from urban into suburban

<b>Regional Goals</b>
Goal #1: Maintain and Preserve the Efficiency, Safety, and Security of the Region’s Existing Transportation Infrastructure.
Goal #2: Manage Congestion to Keep People and Goods Moving.
Goal #3: Encourage Quality Growth and Sustainable Land Development Practices.
Goal #4: Protect the Region’s Health & Environment.
Goal #5: Support the Economic Competitiveness of the Greater Nashville Area.
Goal #6: Offer Meaningful Transportation Choices for a Diverse Population Including the Aging.
Goal #7: Encourage Regional Coordination, Cooperation, & Decision Making.
Goal #8: Practice Thoughtful, Transparent Financial Stewardship by Ensuring that Transportation Improvements meet Regional Goals.

corridors heading south from Franklin. In the high-growth communities of southern Williamson County, planning for land use densities in accordance with roadway capacities will be critical. Simultaneously, looking for ways to add capacity in already built areas will remain a challenge. Adherence to Goals 2, 3, 6 and 7 will produce success for these corridors in the southern part of the study area.

**Access-Controlled Corridors:** The interstate routes in the study area as well as State Route 840 will obviously continue to shape transportation in the Southwest sub-region significantly. A major consideration for these corridors is found in regional Goal 5. Inherent in preserving these highway facilities as major economic tools is protecting their safety (Goal

1), and capacity (Goal 2).

The sub-regional key corridors are shown in Figure 3.1.

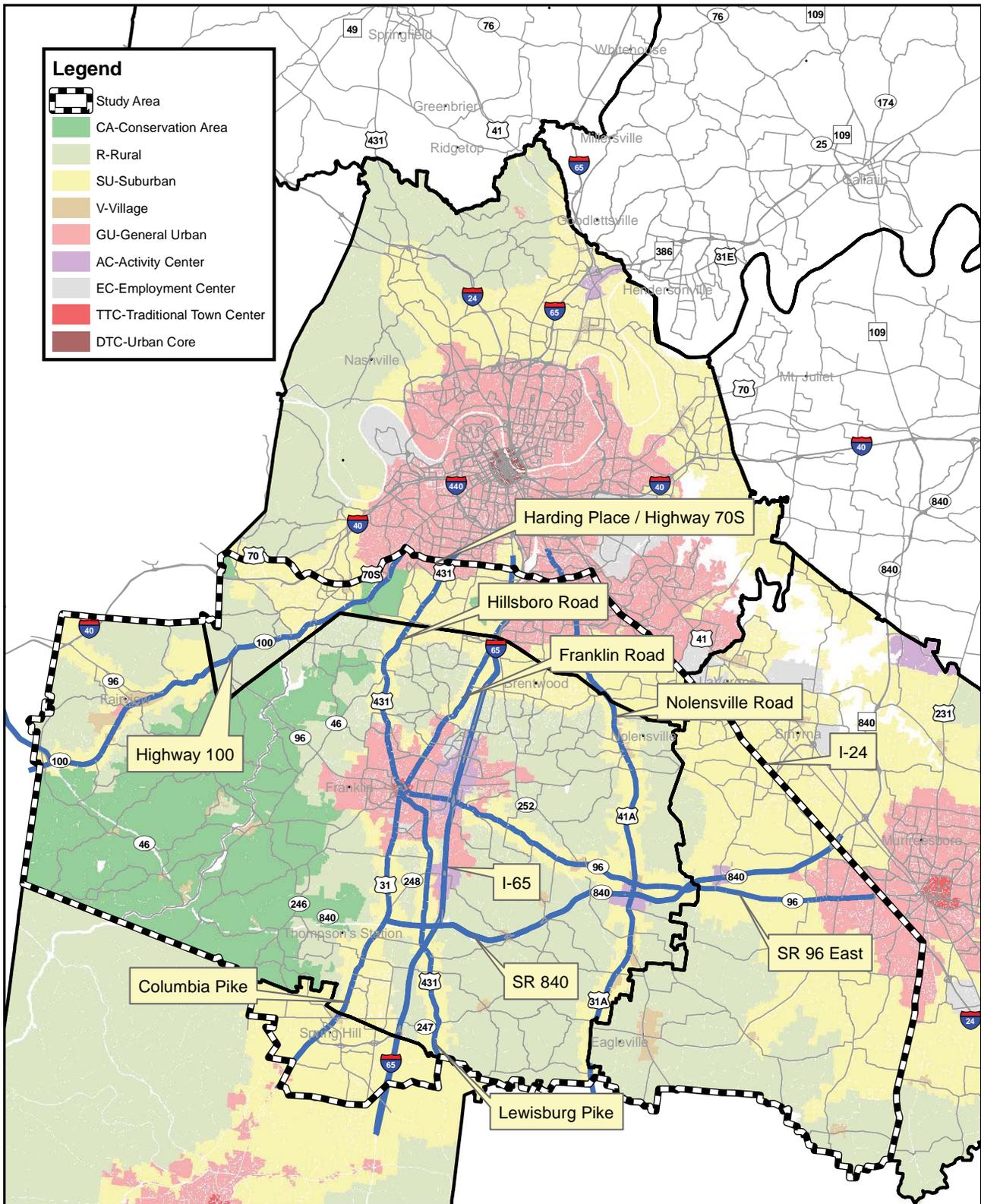


Figure 3.1 Key sub-regional corridors

### 3.3 Build Stronger Linkages in Jurisdictional Coordination

For many years, the jurisdictions of this area have worked well together in administering deliberate land use and transportation objectives. These partnerships continue and should be both maintained and strengthened as added pressures in development grow. There are three areas of the sub-region where the City Limits, Urban Growth Boundaries, and even county boundaries create unique coordination challenges.

One “critical coordination” area is the Wilson Pike/ Clovercroft Road area where Brentwood, Franklin, and Williamson County meet. As annexation and residential subdivision projects have occurred, planning staffs of these agencies have adapted local plans to develop a coordinated approach to transportation needs.

The Rocky Fork Road corridor will require special coordination with its improvement and emergence as a primary sub-regional route and growth corridor. The Towns of Nolensville and Smyrna as well as unincorporated Williamson and Rutherford Counties all have some level of planning jurisdiction within the corridor and all expect to see increasing future growth along this corridor.

The third coordination area is the I-65 corridor between Thompson’s Station and Spring Hill. Along with Williamson County, these agencies have partnered on a study of this corridor to determine key access needs. As new development and roadway planning continues, this area too will require close on-going coordination.

The special coordination areas are shown in Figure 3.2.

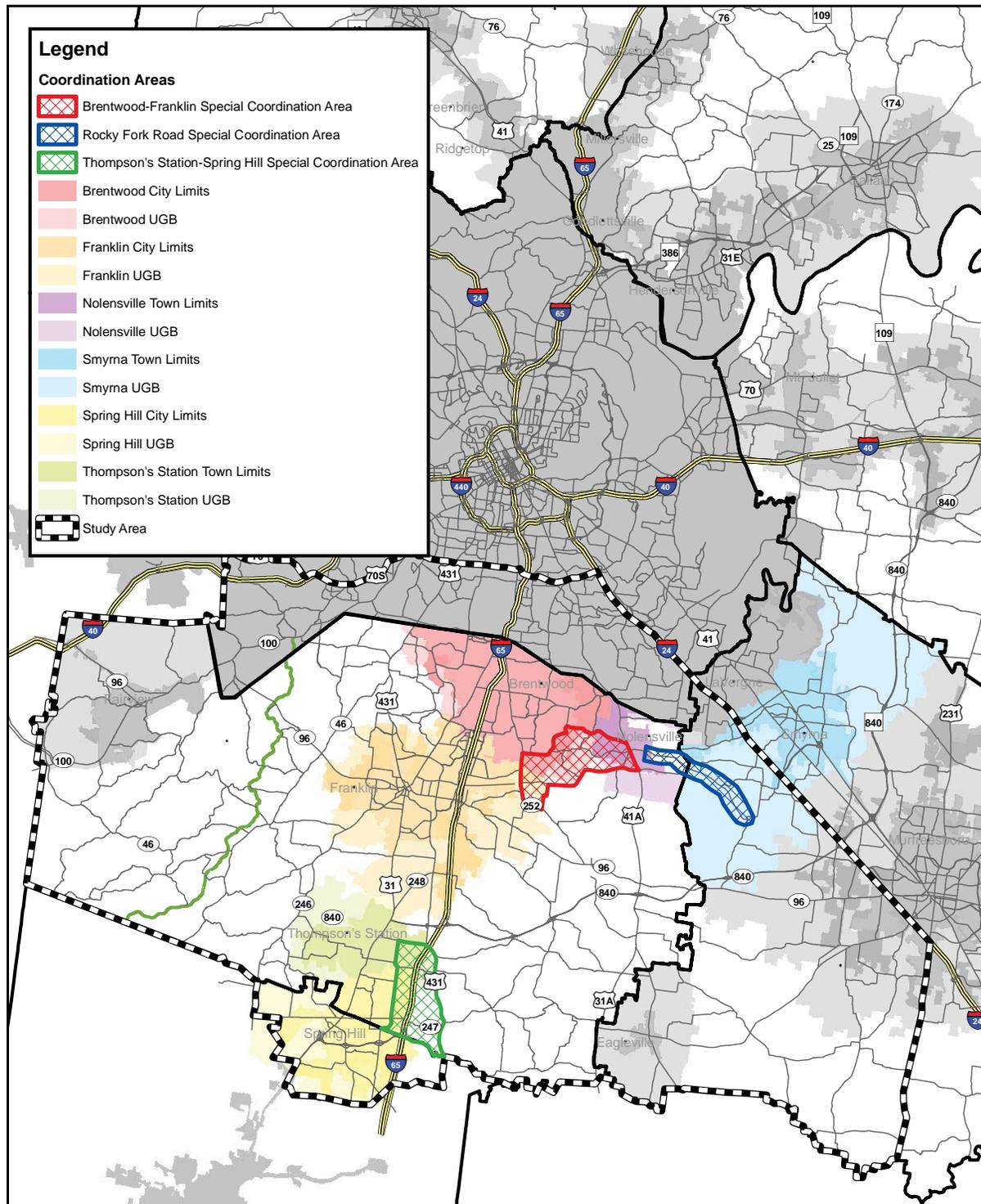


Figure 3.2 Special Coordination Areas