

I-485 Interchange Analysis

Adopted July 21, 1999 by:
Mecklenburg-Union Metropolitan
Planning Organization

Detail Report of

Existing Conditions & Recommendations

The central map shows the I-485 interchange area, including I-77, I-85, and Independence Blvd. Five callout images illustrate existing conditions and recommendations:

- Sidewalks:** A photograph of a paved road with a concrete sidewalk.
- Screening:** A photograph of a large, light-colored building with a gabled roof, partially obscured by trees and a fence.
- Roundabout:** An aerial photograph of a roundabout with a central island and surrounding greenery.
- Landscaping:** A photograph of a road with a landscaped shoulder featuring rows of young trees and shrubs.
- Bicyclists:** A photograph of a road with a dedicated bicycle lane, showing a cyclist riding along the lane.

Ourston & Doctors, 1996

Mecklenburg-Union Metropolitan Planning Organization

The Mecklenburg-Union Metropolitan Planning Organization (M-UMPO) is responsible for coordinating transportation policy for local governmental jurisdictions within the Charlotte Urbanized Area. In that role, M-UMPO adopted this *I-485 Interchange Analysis* on July 21, 1999, and highlighted the importance of land use considerations with the following statement:

“The Mecklenburg-Union Metropolitan Planning Organization (M-UMPO) takes particular note of the caveat in this study that intensified land use will keep the belt road from functioning effectively. Therefore we urge all governmental units with zoning authority at an interchange to avoid intensifying land uses other than those recommended in the study.”

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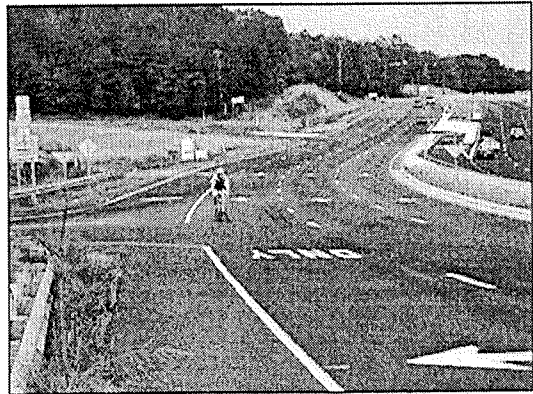


EXECUTIVE SUMMARY

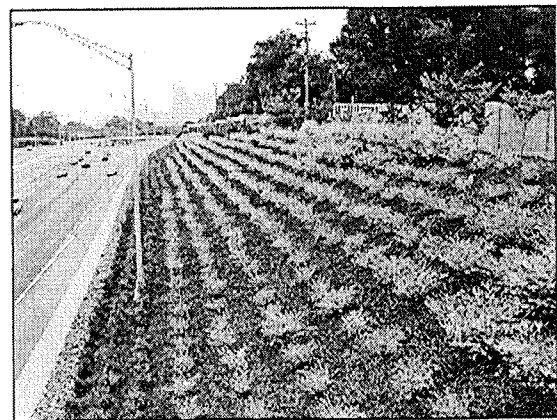
The table and map on the following pages provide a summary of the interchange-specific recommendations provided in this *I-485 Interchange Analysis*. The table lists each of the 35 interchanges by name and indicates the type of recommendation being proposed. Recommendations are divided into two categories: transportation and land use. The map illustrates the key transportation recommendations for each interchange.

In addition to the interchange specific recommendations listed in the table and illustrated on the map, the following general recommendations apply to all of the interchanges:

- Design interchange areas to accommodate pedestrian and bicycle travel. This includes providing sidewalks, crosswalks and medians for pedestrians, and extra width on the road for bicyclists, particularly at bridge locations.
- Encourage internal connectivity between land uses/developments near interchanges.
- Include streetscape improvements, such as landscaping and pedestrian-scale lighting, as part of the design for each interchange to better integrate the interchange area into the community.
- Locate any proposed service roads far enough away from I-485 so that land can be developed along both sides of the road. In addition, build service roads to the local standard for their intended future use or, at a minimum, inform the land owners that they may be required to improve the road to local standards when they develop their property.
- Ensure that any “land-locked” property is provided access through the land subdivision process.
- Amend local subdivision ordinances to require developers to utilize natural land contours, or otherwise provide visual screening in residential areas along I-485 wherever the NCDOT is not proposing to construct noise walls.
- Provide adequate lighting at interchange areas, especially at on and off ramps, to facilitate the safety of motorists, pedestrians and bicyclists. The lighting should not intrude into adjacent neighborhoods.

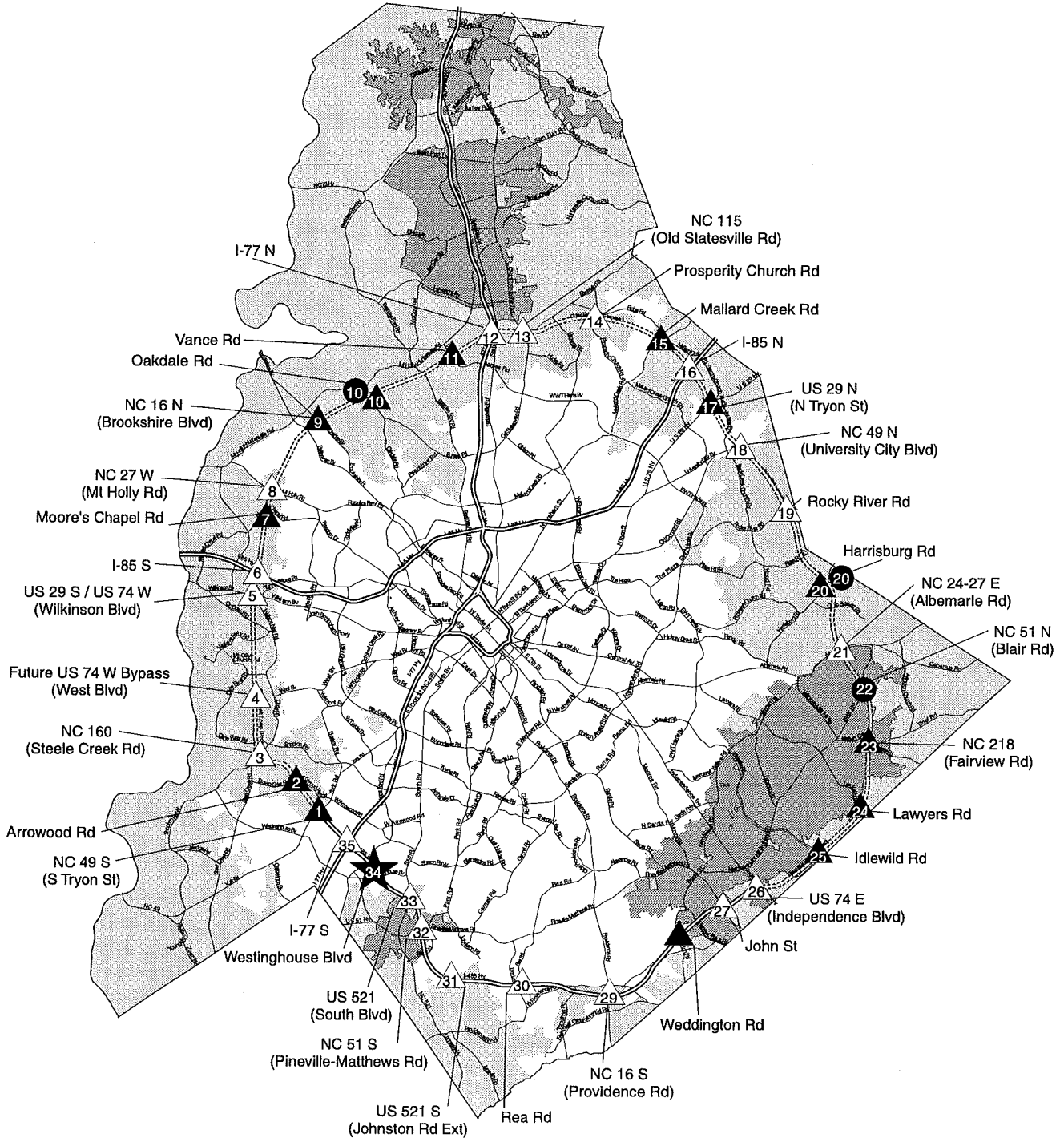


Design all interchanges to accommodate pedestrians and bicyclists.

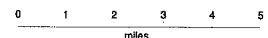
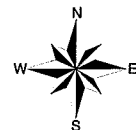


Visual screening should be required adjacent to residential areas.

I-485 Interchange Analysis Key Recommendations



- Key Recommendations**
- 22** Delay Construction of Ramps
 - 34** Remove Interchange
 - 25** Improve Interchange Design
 - 27** No Significant Changes



INTERSTATE 485 INTERCHANGE ANALYSIS: SUMMARY OF RECOMMENDATIONS

(as of June 1999)

Interchange Name	TRANSPORTATION							LAND USE			
	Add Loop(s)	Access Management	Extend Control Access	Construct Roundabouts	Delay Interchange Ramp Construction	Thoroughfare Plan Amendments/ Road Realignments/ Other Road Improvements or Studies	Build or Convert to Urban Diamond Interchange	Amend District Plan	Conduct Area Planning Study	Support Draft Plan	Improve Connectivity
Wilkinson Boulevard (US 29-74)						X			X	X	
I-85 South										X	X
Moore's Chapel Road			X	X		X				X	
Mount Holly Road (NC 27)			X			X					X
Brookshire Boulevard (NC 16)	X								X	X	
Oakdale Road			X	X	X	X				X	
Vance Road		X	X			X	X			X	
I-77 North		X				X					
Old Statesville Road (NC 115)			X			X		X			X
Prosperity Church Road						X				X	X
Mallard Creek Road		X				X	X		X		
I-85 North		X							X		X
N. Tryon Street (US 29)	X		X			X	X		X		
University City Boulevard (NC 49)		X	X					X			
Rocky River Road		X	X			X		X			X
Harrisburg Road		X		X	X	X					
Albemarle Road (NC 24-27)		X	X							X	
Blair Road (NC 51)					X	X					
Fairview Road (NC 218)	X		X				X				
Lawyers Road		X		X							X
Idlewild Road	X					X					
Independence Boulevard (US 74)						X					
John Street		X	X			X					X
Weddington Road				X		X					
Providence Road (NC 16)						X				X	
Rea Road		X									
Johnston Road Ext. (US 521)			X			X		X			X
Pineville-Matthews Road (NC 51)		X				X					
Polk St./South Blvd. (US 521)						X					
Westinghouse Boulevard						X					
I-77 South											X
S. Tryon St. (NC 49)	X						X				X
Arrowood Road	X	X	X			X				X	X
Steele Creek Road (NC 160)		X				X			X	X	
West Blvd. Extension		X	X						X	X	
TOTAL	6	15	14	5	3	24	5	5	7	12	12

Southwest

Westinghouse Blvd.
I-77 South
NC 49 (S. Tryon St.)
Arrowood Rd.
NC 160 (Steele Ck. Rd.)
West Boulevard Ext.

East

US 29 (N. Tryon St.)
NC 49 (Univ. City Blvd.)
Rocky River Rd.
Harrisburg Rd.
NC 24/27 (Albemarle Rd.)

Northwest

US 29/74 (Wilkinson Blvd.)
I-85 South
Moores Chapel Rd.
NC 27 (Mt. Holly Rd.)
NC 16 (Brookshire Blvd.)
Oakdale Rd.

North

Vance Rd.
I-77 North
NC 115 (Old Statesville Rd.)
Prosperity Ch. Rd.
Mallard Ck. Rd.
I-85 North

South

Weddington Rd.
NC 16 (Providence Rd.)
Rea Rd.
US 521 (Johnston Rd. Ext.)
NC 51 (Pine.-Matt. Rd.)
US 521 (South Blvd.)

Southeast

NC 51 (Blair Rd.)
NC 218 (Fairview Rd.)
Lawyers Rd.
Idlewild Rd.
US 74 (Independence Blvd.)
John St.

Following the series of public meetings, the staff reconvened to assess **each** observation from attendees at the public meetings, and crafted preliminary recommendations. The preliminary recommendations were presented in two public forums in April 1999 at Central Piedmont Community College. Approximately 100 citizens attended the public forums, and gave their reactions to the recommendations that were discussed.

The draft recommendations report was presented to the M-UMPO in May 1999. M-UMPO then held a public hearing on the draft recommendations on June 16, 1999. On July 21, 1999, M-UMPO voted to approve the recommendations presented in the *draft I-485 Analysis* with the following language:

“M-UMPO takes particular note of the caveat in the study that intensified land use will keep the belt road from functioning effectively. Therefore we urge all governmental units with zoning authority at an interchange to avoid intensifying land uses other than those recommended in the study.”

Staff is currently developing an implementation and monitoring strategy to ensure that the recommendations in this analysis are carried out. The strategy makes specific assignments to organizations. These organization will then be responsible for implementing and tracking their specific recommendations.

Transportation and Land Use Paradox

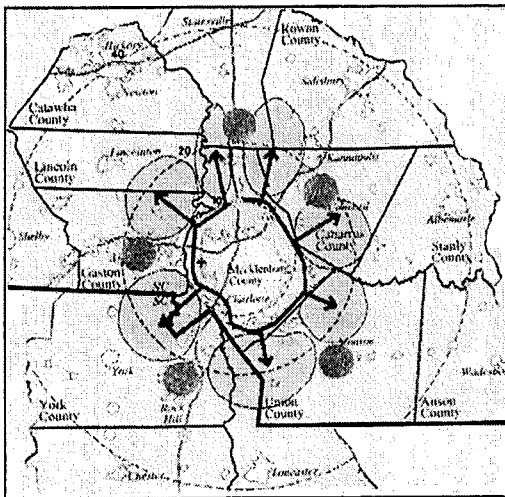
An outer loop freeway creates a complex system of transportation and land use. If the land use could be held constant and the interchanges spaced so that the ramp systems did not interfere with each other, the loop would work well with a large number of interchanges. Each of the interchanges would enhance mobility and lessen the traffic demands on the other interchanges.

What has happened throughout the nation, however, is that building an outer loop has increased the demand for new development and land use was not held constant.

Correspondingly, the loop was not able to function effectively given the impact of the intensified land use.

Traffic volumes on an outer loop grow, in large part, because of new trips among the various developments at the interchanges. Because outer loop freeways offer phenomenal mobility during off-peak hours, each interchange becomes a popular location for businesses. Businesses located at an interchange have good connectivity with all of the other businesses at all of the other interchanges for about twenty hours of the day.

Thus, outer loops present a paradoxical spiral. Additional interchanges imply more mobility and lower volumes at the other interchanges. However, because the additional interchanges facilitate growth and urban sprawl, the net result can be less mobility and more congestion.



I-485 impacts communities throughout the metropolitan region.

The paradox is particularly difficult in the case of Charlotte-Mecklenburg. The I-485 Outer Loop is a freeway not just for Mecklenburg County, but for the entire region. As such, its impacts, both positive and negative, will be realized by various communities, each making their own land use and transportation decisions with sometimes conflicting goals. Coordinating plans and managing growth and development across jurisdictional boundaries will be crucial to addressing the “transportation and land use paradox” and ensuring the long-term viability of the Charlotte-Mecklenburg region.

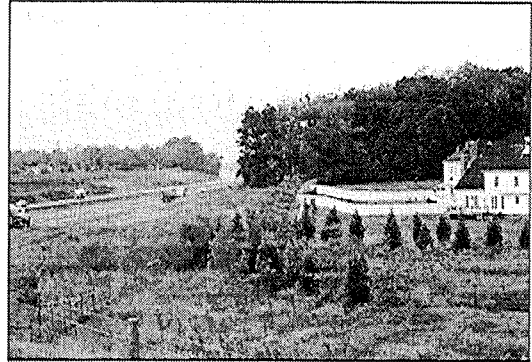
Guiding Principles

The following key principals guided the interchange analysis and provided the framework for the proposed recommendations for each of the thirty-five interchanges planned for I-485.

- Each interchange area has unique characteristics that must be understood in making specific land use and/or transportation recommendations.
- An interchange should allow the land use future envisioned for the surrounding community. Therefore, the preferred land use future should be determined, and then the transportation/mobility infrastructure needed to achieve that future should be identified.
- The interchange design should correspond with expected future conditions, including land use, access issues, signal system needs, capacity of local roadways, and

environmental concerns. A simple diamond interchange is not always the best design.

- Good access management is a critical element in ensuring that the interchange functions effectively.
- Opportunities to provide open space near interchange areas should be identified and pursued as a key part of integrating the interchange area into the community.



Negative impacts on existing neighborhoods should be minimized.

- Negative impacts of the interchange on existing neighborhoods should be mitigated as much as possible.
- Development in the interchange area should be designed to provide connections to adjacent areas.



CHAPTER TWO: RECOMMENDATIONS

As detailed in Chapter One, recommendations provided in this analysis were developed by a team of land use and transportation staff representing the City of Charlotte; Cabarrus, Gaston, Mecklenburg, and Union counties; and the Towns of Cornelius, Huntersville, Matthews, Mint Hill, Pineville, and Stallings. Considerable emphasis was also given to the input received from citizens during the public involvement process.

In developing recommendations, the staff team considered existing, planned and proposed conditions, including both land use and transportation. Because several of the I-485 interchanges are located within the transit corridors identified in the *2025 Transit and Land Use Plan*, it was particularly important to consider the relationship between the outer loop and rapid transit. The interchange specific recommendations reflect this consideration. However, as planning for the five rapid transit corridors progresses, it will be important to also determine the need for transit-related facilities (i.e., park and ride lots) near interchange areas.

Land Use Analysis

The land use analysis included mapping the existing land use within a mile radius of each interchange to provide a “snap shot” of each specific area as it looks today. Additionally, zoning maps were assembled for each interchange area and the adopted future land use maps from each of the jurisdictions were provided. Any known proposed developments were also mapped.

By combining the zoning maps, adopted future land use maps (which reflect the community’s vision), and proposed developments, a better understanding of the future land use was achieved. Once the land use future was identified, an analysis of the transportation infrastructure was undertaken to determine how the transportation system could help to ensure that that land use vision could be realized.

In many cases, adopted land use plans were already in the process of being updated to better address the impacts of I-485. In such cases, the recommendations presented herein support the updated plans.

Transportation Analysis

The transportation analysis involved review of the existing roadway conditions on each of the thoroughfares that currently interchange with Interstate 485, or will do so at some future time. The *2020 Transportation Plan*, which is the guide for determining what projects will be constructed over the next 20 years, and transportation model forecasting were used to make the draft recommendations. Also, transportation plans from surrounding counties provided needed information on the adjacent roadway networks to allow assessment of Interstate 485’s impacts in a larger context.

The transportation facilities and projects noted in the *2020 Transportation Plan*, included not only roadways, but bicycle, pedestrian, and transit improvements. The Plan recommended projects based on estimated travel demand generated by population and employment growth projections for the metropolitan area. Projects in the Plan were compared to plans for Interstate 485 construction to determine shortcomings, overlaps, etc.

The roadway network used in the modeling includes the existing network and projects in the fiscally-constrained project list for 2020. The list included all funded facilities and assumes roadway funding will continue at present levels over the next twenty years. Projects are chosen from the 2020 priority list adopted by the Mecklenburg Union Metropolitan Planning Organization (MUMPO). The transportation networks also include significant progress towards the transit system shown in the *2025 Integrated Transit / Land Use Plan*. Capital transit improvements (busway and light rail) are assumed in all five transit corridors. Land use projections reflect the *2025 Integrated Transit / Land Use Plan*.

General Recommendations for All Interchanges

Although each of the thirty-five interchanges considered in this analysis are unique, they share many of the same characteristics and present many of the same issues related to land use, design and transportation infrastructure. Therefore, the following recommendations were developed which apply to all thirty-five interchange locations:

- Design interchange areas to accommodate pedestrian and bicycle travel. This includes providing sidewalks, crosswalks and medians for pedestrians, and extra width on the road for bicyclists, particularly at bridge locations. (More specific design criteria for accommodating bicycle travel is provided in the draft *Charlotte-Mecklenburg Bicycle Transportation Plan*.)
- Encourage internal connectivity between land uses/developments near interchanges.
- Include streetscape improvements, such as landscaping and pedestrian-scale lighting, as part of the design for each interchange to better integrate the interchange area into the community.
- Locate any proposed service roads far enough away from I-485 so that land can be developed along both sides of the road. In addition, build service roads to the local standard for their intended future use or, at a minimum, inform the land owners that they may be required to improve the road to local standards when they develop their property.
- Ensure that any “land-locked” property is provided access through the land subdivision process.
- Amend local subdivision ordinances to require developers to utilize natural land contours, or otherwise provide visual screening in residential areas along I-485 wherever the NCDOT is not proposing to construct noise walls.

- Provide adequate lighting at interchange areas, especially at on and off ramps, to facilitate the safety of motorists, pedestrians and bicyclists. The lighting should not intrude into adjacent neighborhoods.





















Interchange-Specific Recommendations

The Charlotte metropolitan region is rapidly growing and faces many challenges. The unique character of each of the various geographic areas impacted by the construction of I-485 allows for new and unique opportunities to affect growth and development patterns at every interchange.

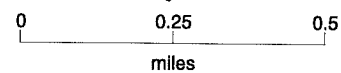
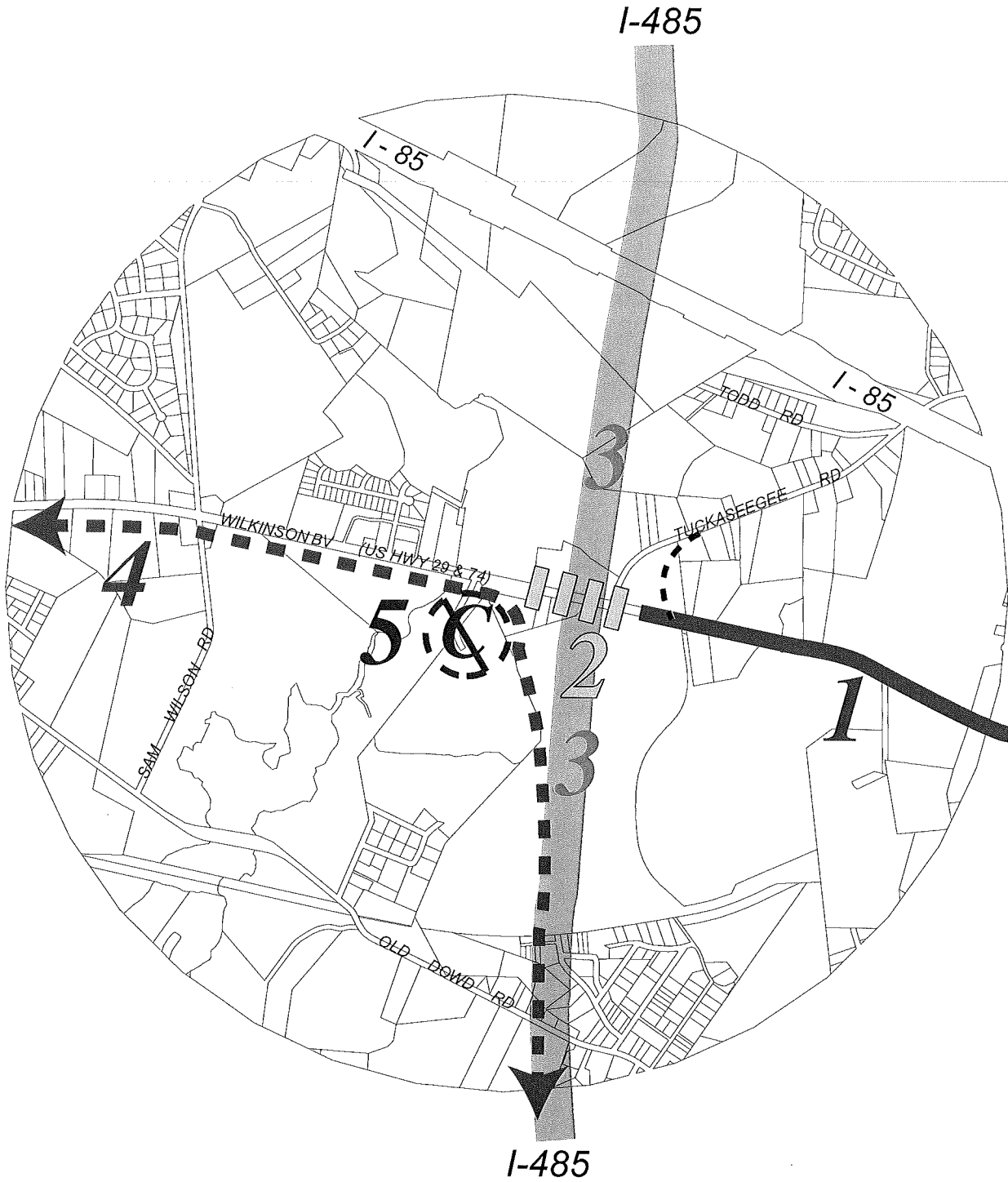
The transportation and land use recommendations on the following pages reflect citizen and staff comments received throughout the study process. The recommendations included here range from upgrading interchange design, to managing traffic movement around interchanges, to realigning some roads, to amending the locally adopted Thoroughfare Plan. Other recommendations include conducting more detailed area planning studies and implementing land use controls that encourage connectivity in interchange areas. The combined recommendations at each location strive to enhance and maximize mobility for cyclists, motorists and pedestrians.

Each interchange-specific recommendation is illustrated on the interchange map and identified with a number that corresponds to the text on its facing page. The legend below corresponds to all of the interchange-specific maps.

Legend

 Single Family	 Utility, Industrial	 Proposed Roundabout
 Multi-Family	 Office, Open Space	 Proposed Bridge, Overpass
 Retail	 Single Family, Multi-Family	 Proposed Neighborhood Center
 Office	 Single Family, Retail, Institutional	 Proposed Control of Access
 Industrial	 Single Family, Multi-Family, Retail	 Proposed Road
 Open Space	 Multi-Family, Retail, Institutional, Industrial	 Proposed Traffic Signal
 Office, Industrial	 Single Family, Multi-Family, Retail, Institutional	

US 29 South / US 74 West (Wilkinson Boulevard)



US 29 South/74 West (Wilkinson Boulevard)

Transportation

Existing Plans for Interchange Area:

- The interchange is designed as a half cloverleaf with the ramps on the south side of Wilkinson Boulevard.
- There is a proposal to make Wilkinson Boulevard an expressway from I-485 to the Airport Entrance Road.
- The 4-lane sections of Wilkinson Boulevard will be widened to six lanes as part of a 1998 road bond project.
- There are no sidewalks on Wilkinson Boulevard in the interchange area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Coordinate interchange construction with the expressway plans for Wilkinson Boulevard.
- 2. Ultimately, the bridges will need to be re-built to provide enough width for at least six traffic lanes on Wilkinson Boulevard.
- 3. Include signage on I-485 to direct traffic for Sam Wilson Road to use the Wilkinson Boulevard interchange.

Land Use and Zoning

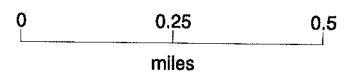
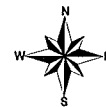
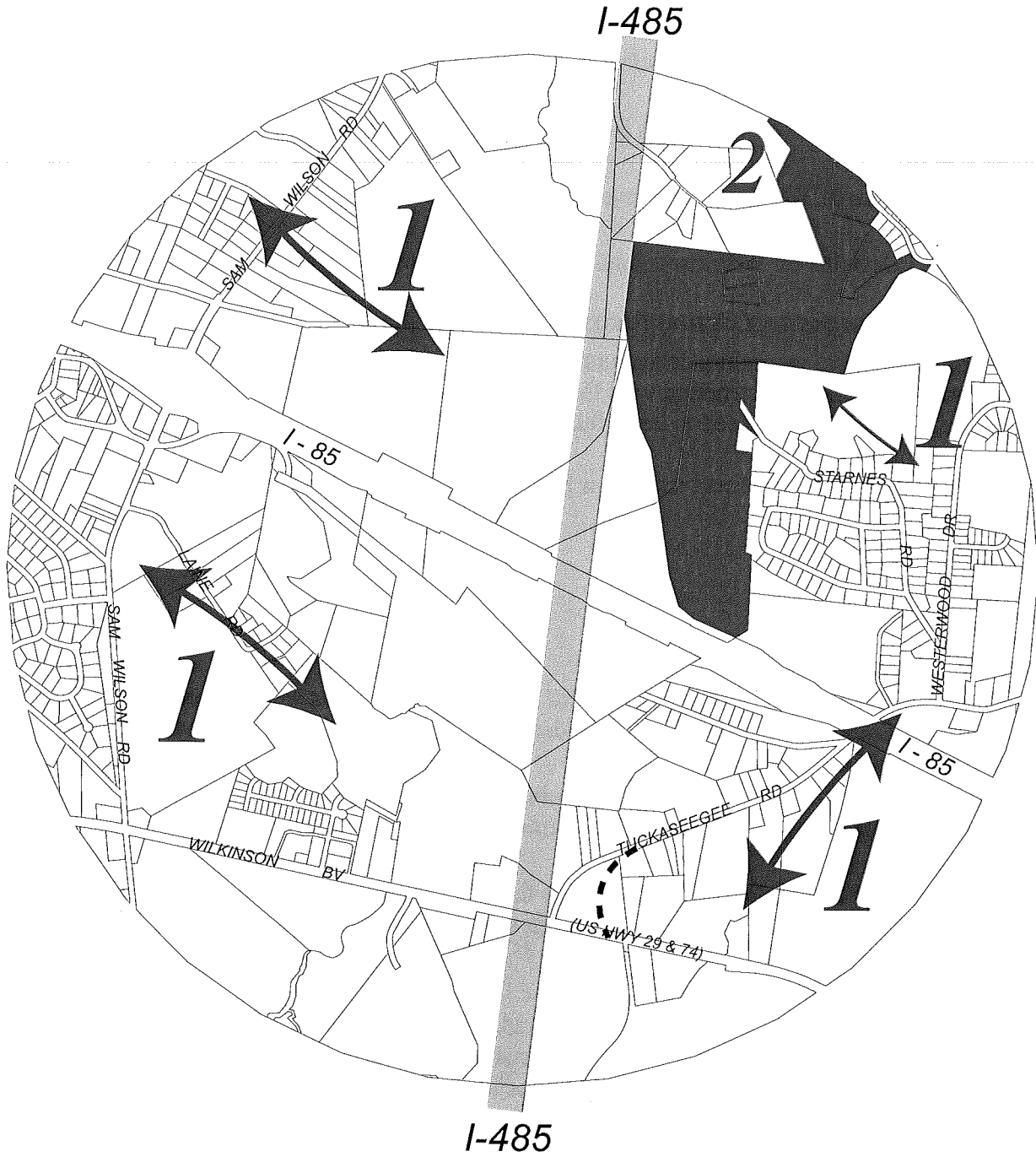
Existing and Planned Land Use/Zoning:

- North of the interchange is primarily zoned for single family uses, as well as mobile home development. South of the interchange includes some single family zoning, but the majority of the area is zoned for industrial uses.
- The *Southwest District Plan* indicates that a mixture of office/industrial is appropriate for most of the area surrounding the interchange. A community retail center is also indicated at this interchange.
- The draft *Westside Strategic Plan* recommends that the community retail center designation be removed for this interchange and that the land in this area be developed as industrial/office.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 4. Support the development of an Airport Area Transit and Land Use Study as recommended in the draft *Westside Strategic Plan*. The boundaries for this study should generally encompass the approximately 5000 acres located west of I-485 to the county line, south of Wilkinson Boulevard and north of Shopton Road West.
- 5. Support the recommendation in the draft *Westside Strategic Plan* to remove the commercial center shown at this interchange in the *Southwest District Plan*, and show the future land use as industrial/office.

Interstate 85 South



Interstate 85 South

Transportation

Existing Plans for the Interchange Area:

- The interchange will be a partial cloverleaf and partial directional.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Although the general recommendations state that internal connectivity between land uses/developments should be encouraged near all interchanges, this is particularly important at “freeway to freeway” interchanges. These interchanges are unique in that surrounding properties can not be accessed from the interchange road, since it too is a freeway.

Land Use and Zoning

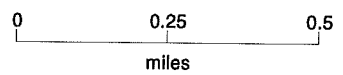
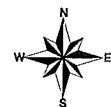
Existing and Planned Land Use/Zoning:

- The primary land uses near this interchange are office and industrial. Although much of the vacant land is zoned for residential development, most proposals are for office/industrial/business park uses.
- Northeast of the interchange is an existing golf course and single family development.
- The *Southwest District Plan* indicates that a mixture of office/industrial is appropriate for most of the area surrounding this interchange. Some commercial uses are indicated northwest of the interchange.
- The draft *Westside Strategic Plan* recommends that the existing golf course in the area just northeast of I-485 remain. (The current plan calls for multi-family development and a park.)

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
2. Support the land use recommendation for this interchange provided in the draft *Westside Strategic Plan* for the existing golf course in the area just northeast of I-485 to remain.

Moore's Chapel Road



Moores Chapel Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a simple diamond.
- Moores Chapel Road will be re-located.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Re-design this interchange to include roundabouts and consider constructing a roundabout at the intersection of Rhyne Road and Moores Chapel Road.
- 2. Design Moores Chapel Road as a two-lane, median-divided facility from Rhyne Road to Waldon Road.
- 3. Extend control of access along Moores Chapel Road from I-485 to Rhyne Road.

Land Use and Zoning

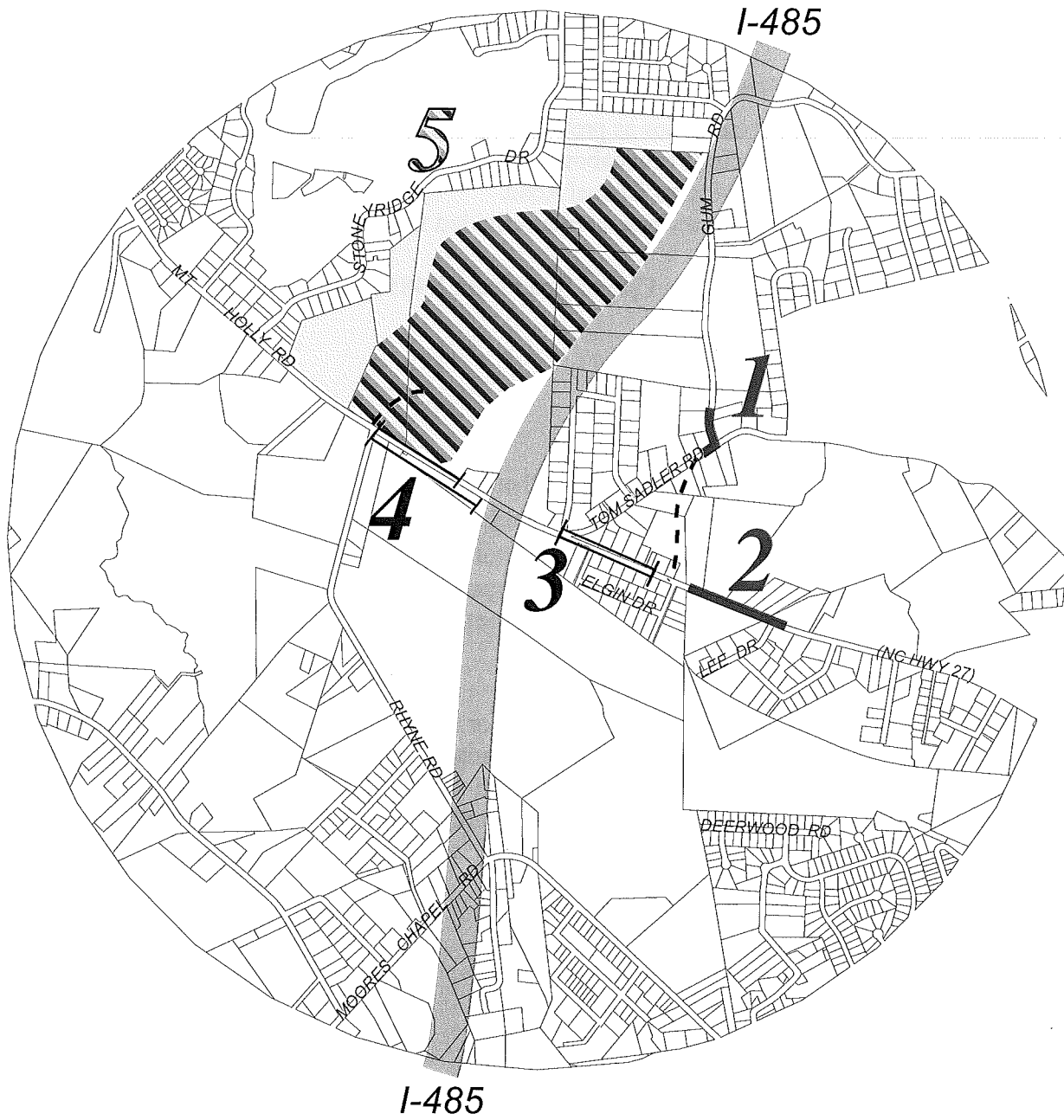
Existing and Planned Land Use/Zoning:

- Most of the land surrounding this interchange is either zoned for, or developed as residential.
- The *Northwest District Plan* indicates that residential is the appropriate land use in this area.
- The draft *Westside Strategic Plan* recommends a mixture of single family and multi-family development. It also recommends commercial development in the area adjacent to the interchange in the northwest quadrant of I-485 and Moores Chapel.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 4. Support the land use recommendations for this interchange provided in the *Westside Strategic Plan* which call for a mixture of single family and multi-family development, as well as commercial development in the area adjacent to the interchange in the northwest quadrant of I-485 and Moores Chapel.

NC 27 West (Mt. Holly Road)



0 0.25 0.5
miles

NC 27 West (Mt. Holly Road)

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a half cloverleaf.
- Two rail lines exist on the south side of the interchange.
- Gum Branch Road will be partially relocated.
- NC 27, from I-85 to the Charlotte City Limits, is funded to be widened to 4 lanes with a median.
- Tom Sadler Road is planned to be re-located at NC 27.
- The Bicycle Transportation Plan recommends a curb-lane width of 14 feet to accommodate bicycles on Mt. Holly Road.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Consider the operation of the intersection of Tom Sadler Road and Gum Branch Road with the idea of making Gum Branch the through movement to NC 27.
 2. Widen Mt. Holly Road to a median divided multi-lane facility, with a minimum 14 foot curb lane, from Lee Drive to I-485. Include provisions for petroleum spill containment in the roadway design.
 3. As rezonings/developments are proposed, the control of access should be extended along Mt. Holly Road from I-485 to Tom Sadler Road.
 4. Extend control access along Mt. Holly Road from I-485 to Rhyne Road and construct a service road to provide access to the property in the northwest quadrant of the interchange.

Land Use and Zoning

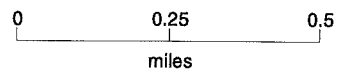
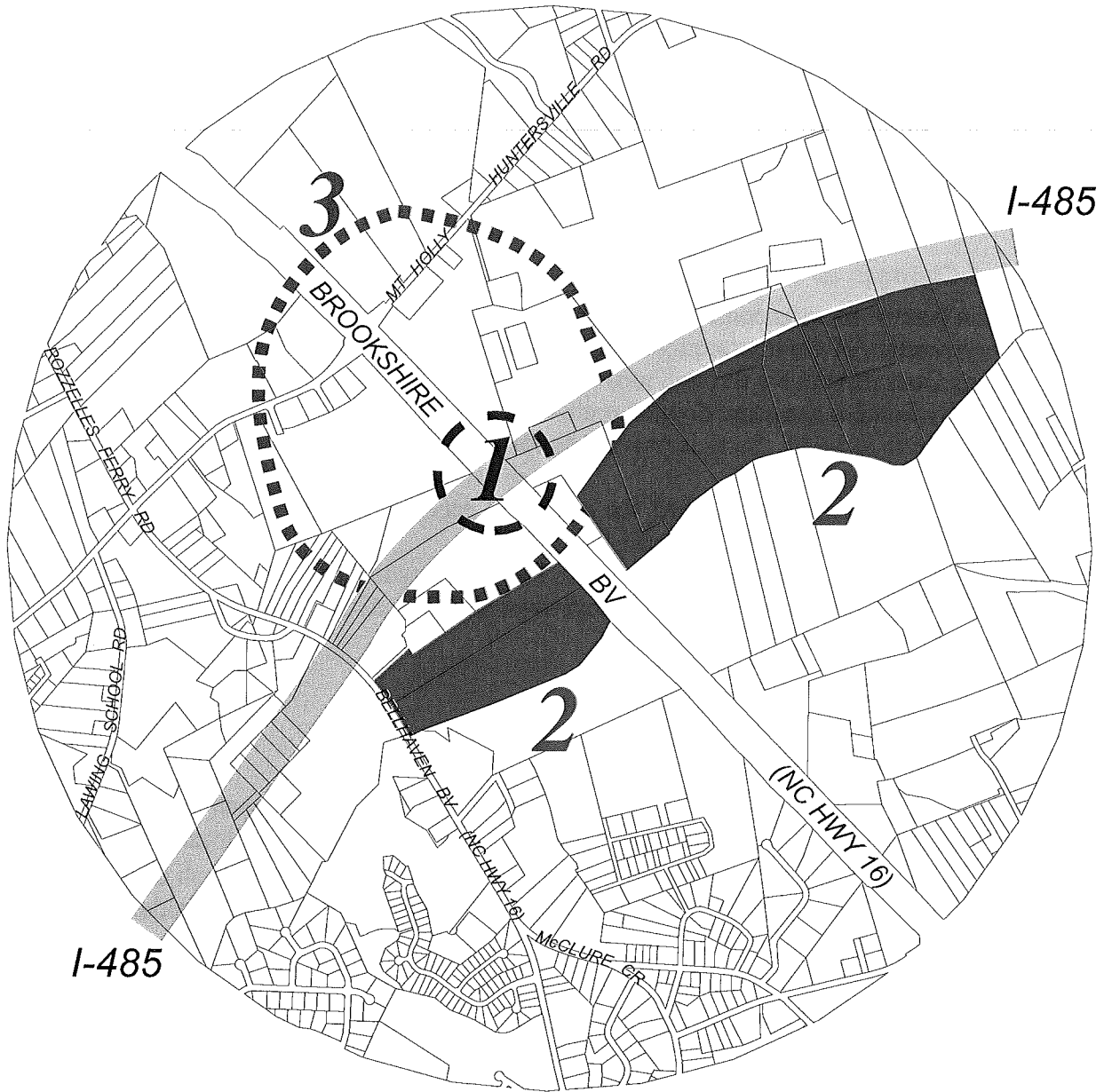
Existing and Planned Land Use/Zoning:

- Much of the land surrounding this interchange is either zoned for, or developed as residential. Industrial development/zoning is located south of the interchange near the railroad line.
- The *Northwest District Plan* indicates residential as the appropriate land use north of the interchange, and a combination of land uses south of the interchange including residential and industrial.
- The draft *Westside Strategic Plan* recommends a mixed use center in the northwest quadrant of Mt. Holly Road and I-485, including higher density housing transitioning to lower density adjacent to the existing neighborhood to the west and north. (The Mt. Holly road Special Project Plan calls for a neighborhood commercial center at this location.)

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
5. Support the land use recommendations for this interchange in the draft *Westside Strategic Plan* which call for a mixed use center in the northwest quadrant of Mt. Holly Road and I-485, including higher density housing transitioning to lower density adjacent to the existing neighborhood to the west and north.

NC 16 North (Brookshire Boulevard)



NC 16 North (Brookshire Boulevard)

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a diamond with two loops.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Revise the interchange design to include, at a minimum, an additional loop to be located in the southeast quadrant. Ultimately, a full cloverleaf will be needed at this interchange.

Land Use and Zoning

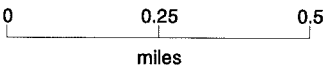
Existing and Planned Land Use/Zoning:

- Much of the land north of this interchange is either zoned for, or developing as commercial, business and higher density residential. South of the interchange is primarily existing/zoned for lower density residential development.
- The *Northwest District Plan* calls for a mix of office, commercial, multi-family and business park north of the interchange. South of the interchange is indicated as a mixture of multi-family and office.
- The draft *Westside Strategic Plan* recommends that a specific land use and urban design plan for an urban village/mixed use town center be developed for the area north of the interchange. South of the interchange is recommended for development of a park/recreation area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
2. Support the land use recommendations for this interchange in the draft *Westside Strategic Plan* to develop a park/recreation area south of the interchange.
 3. Support the recommendation of the draft *Westside Strategic Plan* to complete a land use and urban design plan for the I-485/Brookshire Boulevard interchange area.

Oakdale Road



Oakdale Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a simple diamond.
- Oakdale Road is a 2-lane minor thoroughfare. It is not currently planned to be widened.
- Sidewalks have not been constructed on Oakdale Road.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Consider delaying the construction of the interchange ramps until the interchange area is more developed (i.e., until 75% of the land within a ½ mile radius of the interchange has been developed).
 2. If interchange is to be built, consider constructing roundabouts at both ramps.
 3. Construct a median (with no openings) on Oakdale Road from Mt. Holly-Huntersville Road to approximately Long Creek.
 4. As rezonings/developments are proposed, the control of access should be extended along Oakdale Road from I-485 to Mt. Holly-Huntersville Road to the north and to Long Creek to the south.

Land Use and Zoning

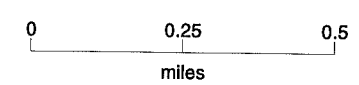
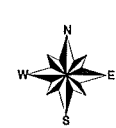
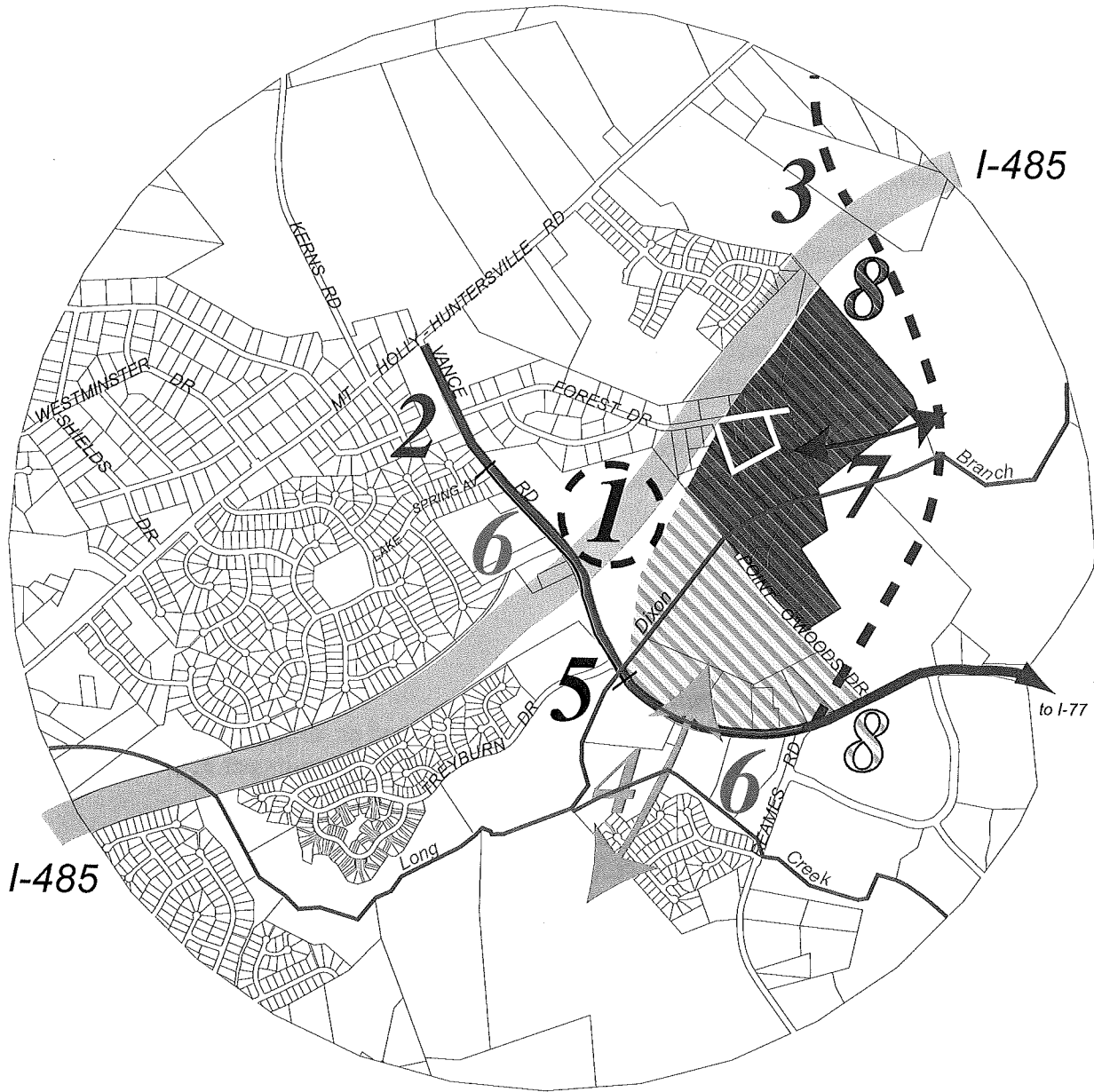
Existing and Planned Land Use/Zoning:

- Most of the land surrounding this interchange is either developed as, or zoned for low density residential development. A residential development with 8 dwelling units per acre has been proposed just northwest of the interchange.
- The adopted *Northwest District Plan* calls for residential development in most of the area around this interchange. The nearest non-residential land uses are at Sunset Road.
- The draft *Westside Strategic Plan* recommends a mixture of single family and multi-family residential development up to 8 units per acre in the northwest and northeast quadrants of the interchange. The draft plan also recommends a park/recreational area in the southwest quadrant.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
5. Support the land use recommendations for this interchange in the draft *Westside Strategic Plan* which call for a mixture of single family and multi-family residential development up to 8 units per acre in the northwest and northeast quadrants of the interchange and a park/recreational area in the southwest quadrant.

Vance Road



Vance Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a simple diamond.
- Widening Vance Road (a 2-lane major thoroughfare) currently ranks #26 in the 2020 TIP.
- I-77 is planned to be widened beginning in 2003.
- Fred Alexander Blvd. is a proposed major thoroughfare that parallels I-485 on the south side.
- Sidewalks have not been constructed on Vance Road in this area, and the existing road network does not provide for bicycle transportation.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Consider designing the interchange as an urban diamond to accommodate expected development.
 2. Fund the widening of Vance/Reames Road between I-77 and Mt. Holly-Huntersville Road.
 3. Construct a minor thoroughfare between Reames Road and Mt. Holly-Huntersville Road.
 4. Provide for a Dixon Creek greenway connection to the proposed Long Creek greenway trail.
 5. Extend the control of access and access management along Vance Road, from Lake Spring Avenue to Treyburn Drive.
 6. Do not allow full median openings on Vance Road from Mt. Holly-Huntersville Road to Reames Road except at I-485.
 7. Provide access to the Bonnie Circle area from the proposed mall site rather than building a separate service road.

Land Use and Zoning

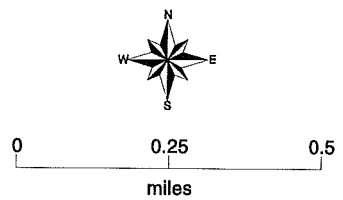
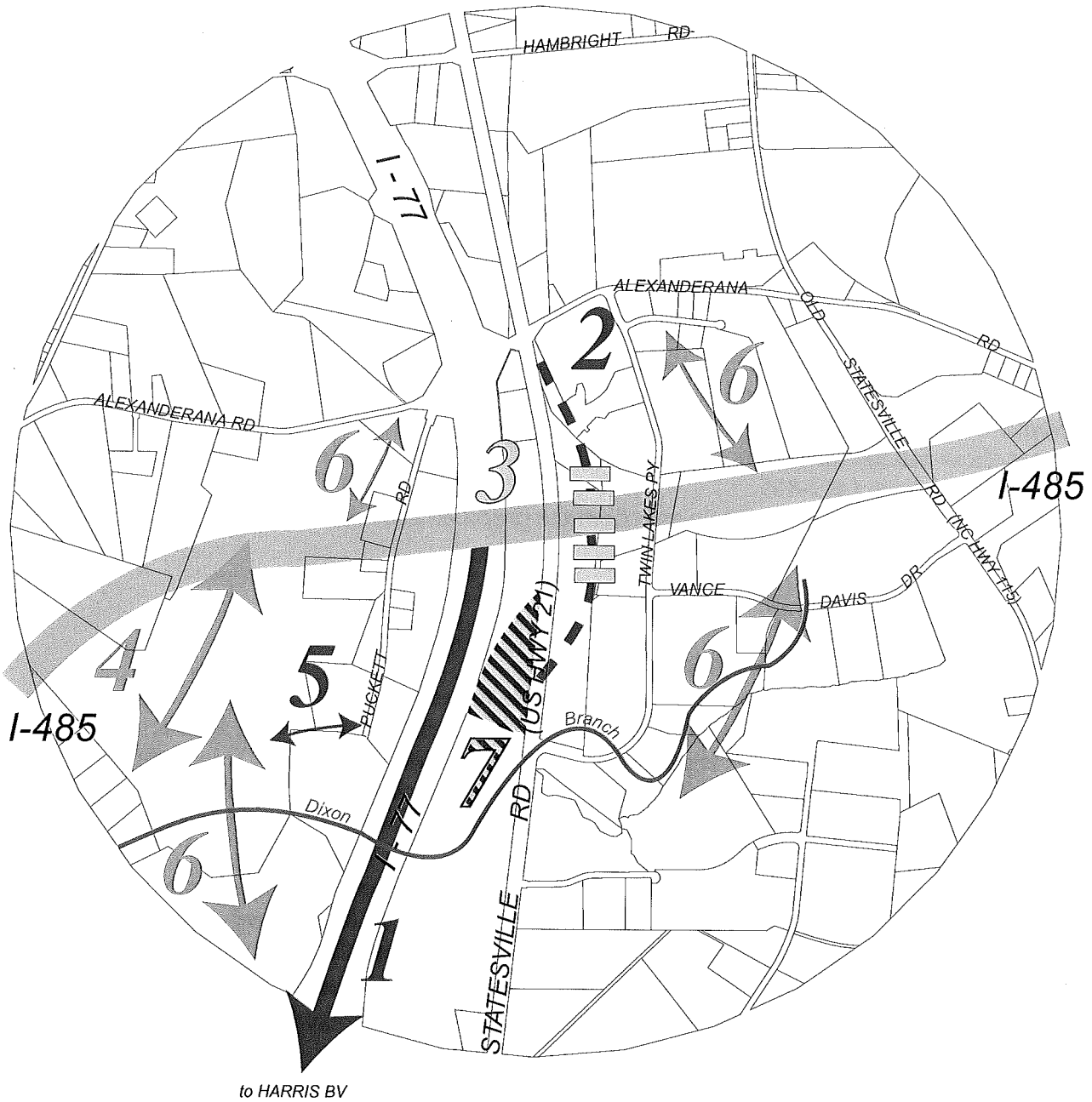
Existing and Planned Land Use/Zoning:

- The predominant existing land use is residential close to the interchange. Pecan Ridge Shopping Center (Food Lion) is located at Mt. Holly Huntersville and Vance Roads. Most of the non-residential development is proposed closer to Reames Road and I-77, including a 700,000 square foot business park (Perimeter Woods) and a one million square foot mall. Between the proposed mall and I-485 there is a proposal for development of a 2 million square foot business park. A greenway is proposed along Long Creek.
- The adopted *Northwest District Plan* indicates the future land use in the area immediately surrounding the interchange as residential, with a neighborhood convenience center. Closer to Reames Road and I-77, the plan shows office uses and a regional shopping center.
- The draft *Westside Strategic Plan* calls for a mixture of residential development up to 8 units per acre in the southeast quadrant of Vance and I-485, and business park/industrial uses east of I-485 and north of Pointe O' Woods Drive.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
8. Support the land use recommendations for this interchange provided in the draft *Westside Strategic Plan* which call for a mixture of residential development in the southeast quadrant of Vance and I-485 and business park/industrial uses east of I-485 and north of Pointe O' Woods Drive.

Interstate 77 North



Interstate 77 North

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a freeway-to-freeway interchange.
- I-77 is planned to be widened.
- US 21 is planned to be re-located, and possibly designed as a 4-lane, median-divided roadway.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Re-assess the operation of I-77 from Harris Boulevard to the I-485 interchange in light of the proposed mall development at Harris Boulevard and I-77.
- 2. Design the relocation of US 21 as a 4-lane median divided road with the 2-lane initial construction off-set on the east side of the right of way.
- 3. Ensure that the five I-485 bridges over US 21 are designed to accommodate the future cross section of US 21 (4 lanes) including adequate room for sidewalks and bicycle accommodations.
- 4. Ensure that the I-485 roadway project allows for the Dixon Creek greenway to pass under I-485.
- 5. Provide access to Puckett Road from proposed mall site rather than from a separate service road.
- 6. Although the general recommendations state that internal connectivity between land uses/developments should be encouraged near all interchanges, this is particularly important at “freeway to freeway” interchanges. These interchanges are unique in that surrounding properties can not be accessed from the interchange road, since it too is a freeway.

Land Use and Zoning

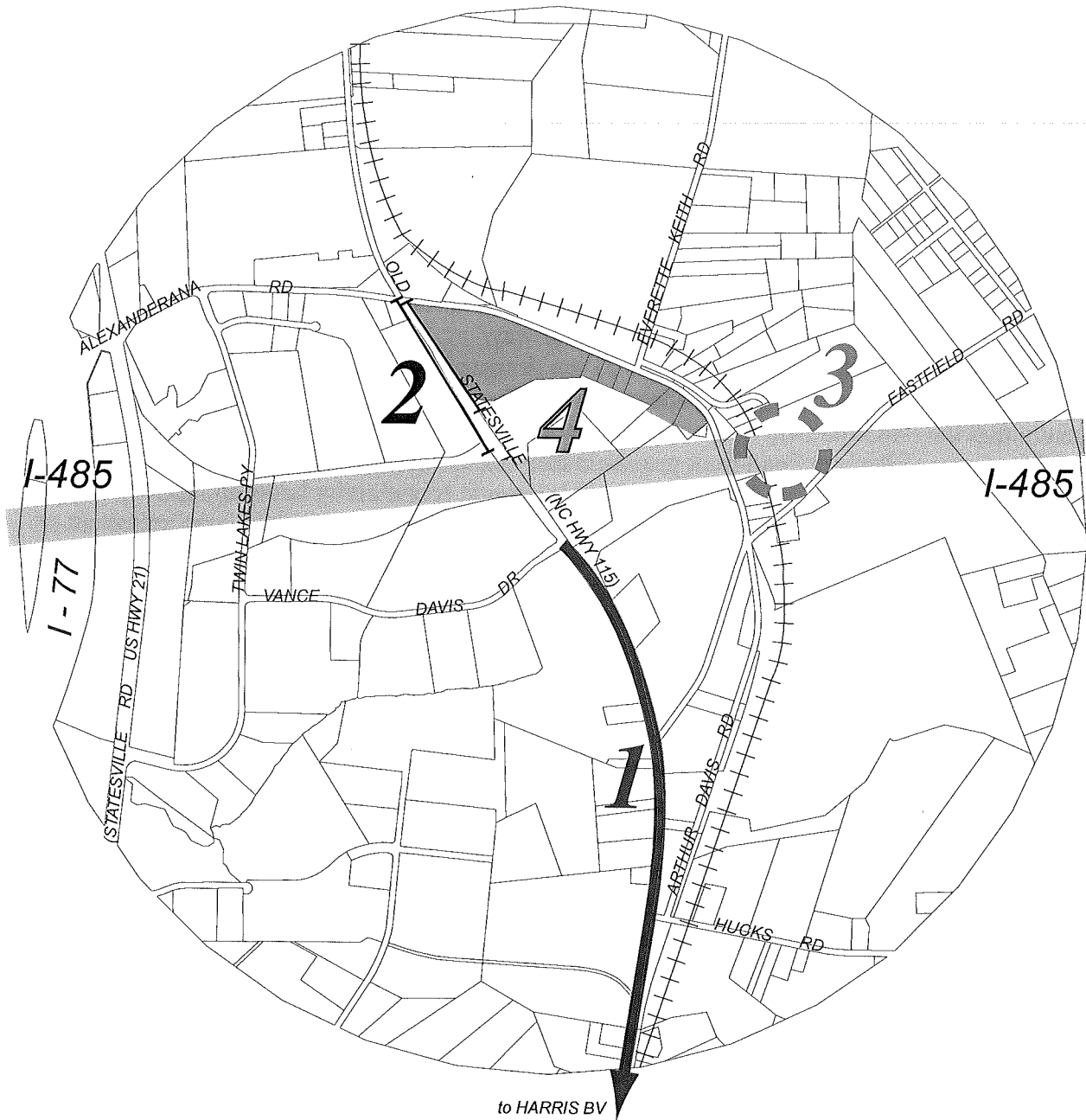
Existing and Planned Land Use/Zoning:

- The predominant exiting land use is non-residential. North Mecklenburg High School is in the northeast quadrant. Twin lakes Business Park is in the southeast quadrant.
- The northwest quadrant is zoned for business park and residential development.
- The adopted *Northeast District Plan* indicate the future land use in the area immediately surrounding the interchange as predominantly non-residential, including office, industrial and business park. North of Alexanderana Road is shown as residential.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 7. Amend the *Northeast District Plan* to indicate industrial/business park land use in the southeast quadrant of the interchange, consistent with the existing B-D zoning. (The adopted plan currently shows this area as commercial.)

NC 115 (Old Statesville Road)



NC 115 (Old Statesville Road)

Transportation

Existing Plans for the Interchange Area:

- The current design is for a half cloverleaf. It is not scheduled for construction until after 2007.
- I-77 is planned to be widened beginning in 2003.
- US 21 is planned to be re-located where it crosses I-485.
- NC 115 is a 2-lane major thoroughfare. It is currently scheduled for widening to 4 lanes from US 21 to Harris Blvd. (From Harris Blvd. to I-485 ranks #79 in the 2020 Transportation Plan.)
- The draft *Bicycle Transportation Plan* proposes bike lanes for Old Statesville Road.
- Alexanderana Road will be “severed” at I-485.
- Hambright-Ridge Connector will parallel I-485 on the north side.
- Sidewalks have not been constructed along Old Statesville Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Fund the widening of NC 115 between Harris Boulevard and I-485.
 2. Extend control of access along NC 115 from I-485 north to Alexanderana Road.
 3. Ensure that the I-485 crossing of the railroad tracks is designed to accommodate dual tracks to provide for future transit.

Land Use and Zoning

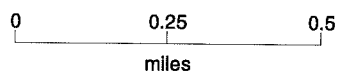
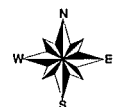
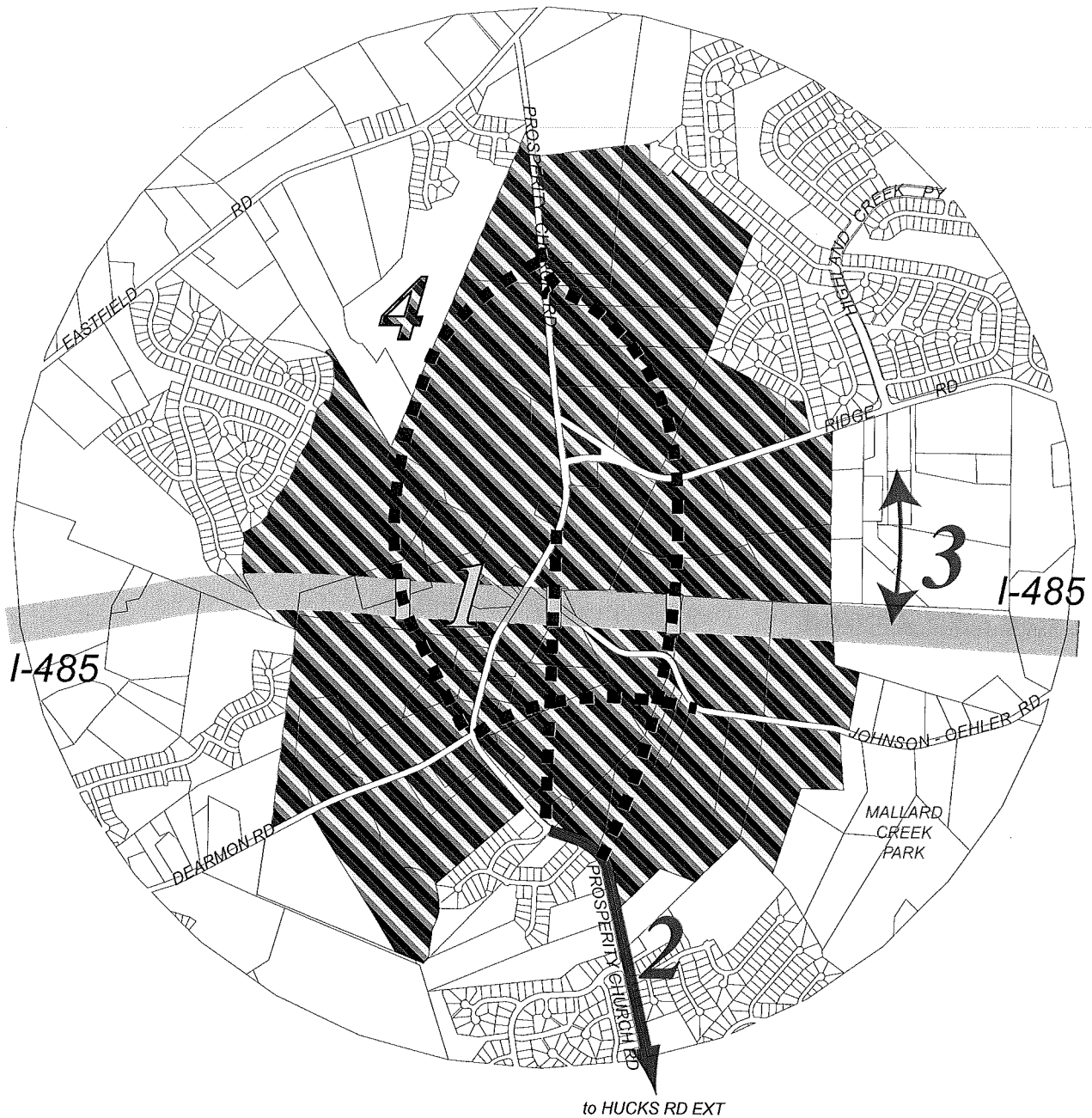
Existing and Planned Land Use/Zoning:

- North Mecklenburg High School and Twin Lakes Business Park are in the northwest quadrant. Southwest of the interchange is either developed or already zoned for business park or industrial uses. East of Old Statesville road is zoned primarily for low density residential development.
- The adopted *Northeast District Plan* indicates the future land use in the area immediately surrounding the interchange as predominantly non-residential, including industrial and business park. A neighborhood retail center is indicated at the intersection of Eastfield and Alexanderana Roads.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
4. Consider amending the *Northeast District Plan* to indicate a multi-family residential land use future in the area south of Alexanderana Road (northeast quadrant of interchange). This area is currently zoned R-4. (The adopted plan currently shows this area as business park.)

Prosperity Church Road



Prosperity Church Road

Transportation

Existing Plans for the Interchange Area:

- The current design is for three bridge crossings within 1/4 mile of each other with on and off ramps at the two outside bridges. The three minor thoroughfares planned to lead up to the bridges, are proposed to have sidewalks and bicycle lanes.
- Prosperity Church Road is funded to be widened to 4 lanes from Mallard Creek Road to Katelyn Drive beginning in 2002.
- The street network will be on a grid pattern surrounding the interchange.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Given the large amount of proposed development in this area and the delayed schedule for constructing this part of the Outer Loop, provide all three of the proposed bridges at the project outset.
 2. Fund the widening of Prosperity Church Road from Loganville Drive to Hucks Road Extension.
 3. Provide a bicycle/pedestrian crossing across I-485 from the Highland Creek area to Mallard Creek Park.

Land Use and Zoning

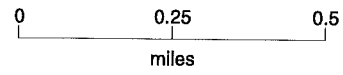
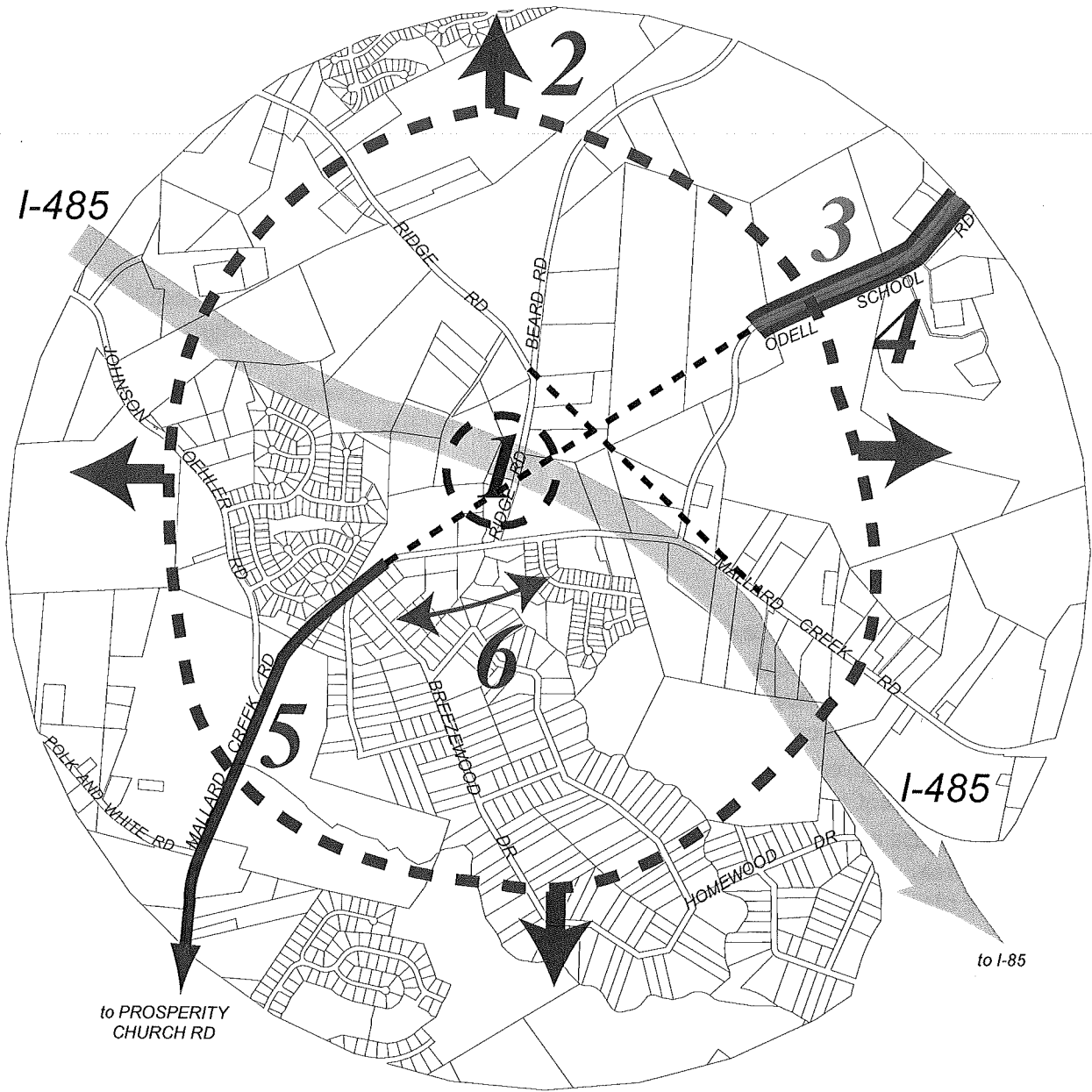
Existing and Planned Land Use/Zoning:

- Most of the land in the interchange area is currently vacant or developed with single family homes. A small convenience center exists at Prosperity Church and Ridge Roads. Prosperity Presbyterian Church is located just north of the interchange.
- Most of the land is currently zoned for residential development, with the exception of a few tracts of land adjacent to I-485 which have been rezoned for retail and business uses.
- A specific land use and urban design plan was recently (March 2, 1999) adopted for this interchange area. That plan proposes development of a compact, pedestrian oriented mixed use village. The plan calls for higher density land uses (office, retail, mid-rise residential) to be located adjacent to I-485, transitioning to multi-family development, then to single family development.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
4. Support the land use recommendations provided in the *Prosperity Church Road Villages* small area plan (March 1999) that call for development of a compact, pedestrian oriented mixed use village with higher intensity land uses located adjacent to I-485, transitioning to multi-family development, then to single family development.

Mallard Creek Road



Mallard Creek Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is currently planned to be a simple diamond.
- Mallard Creek and Odell School Roads are 2-lane thoroughfare. They will be re-aligned, but are not scheduled for widening.
- Christenbury Road could be extended to Highland Creek parkway in conjunction with subdivision expansion.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Design the interchange as an urban diamond.
- 2. Request the NCDOT to facilitate a process to determine needed transportation improvements between the interchange and Concord Mills Mall and surrounding development.
- 3. Change the designation of Odell School Road to a major thoroughfare on the Thoroughfare Plan.
- 4. Fund the widening of Odell School Road as a multi-lane facility.
- 5. Fund the widening of Mallard Creek Road to four lanes from I-485 to Prosperity Church Road.
- 6. NCDOT should develop alternative access to the Mallard Woods subdivision with input from the surrounding neighborhoods.

Land Use and Zoning

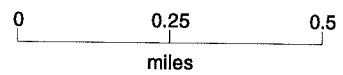
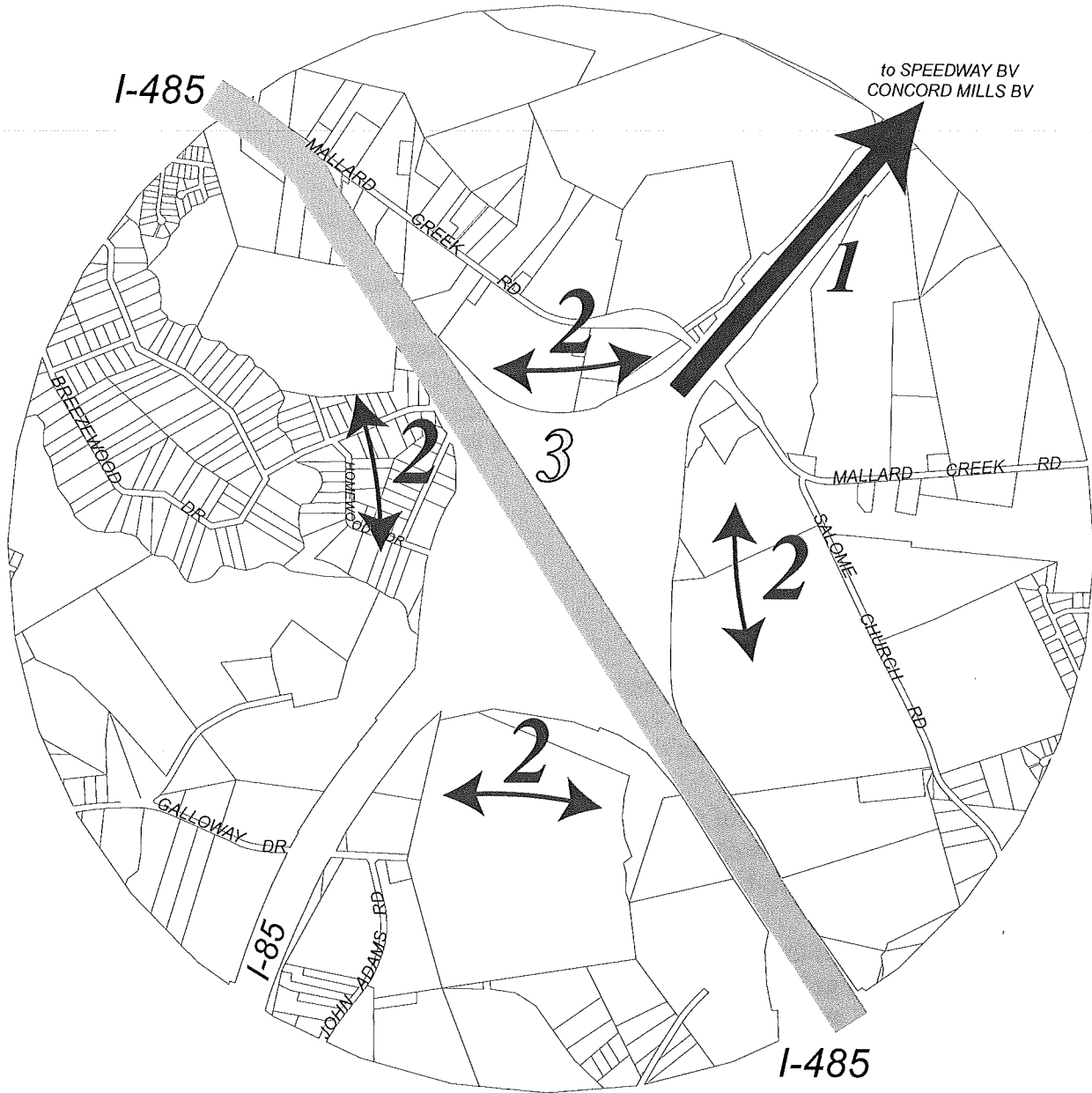
Existing and Planned Land Use/Zoning:

- Most of the land in the immediate interchange area is currently vacant or developed with single family homes and is zoned for residential development. The adopted land use plan call for primarily residential development in this area with a community retail center at the intersection of Mallard Creek and Ridge Roads.
- A proposal for 100,000 square feet of retail, 100 single family homes and 420 multi-family homes was recently approved for the area east of the interchange. Another proposal is currently being considered for 700,000 square feet of retail, 2400 multi-family homes and 1.5 million square feet of office in this area.
- In Cabarrus County, most of the nearby land is developing with retail, office and multi-family uses. The 1.7 million square foot Concord Mills mall, approximately one mile from this interchange, is scheduled to open in September 1999.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 7. Support the Planning Commission in the completion of a special project plan for this area (see map in appendix). The special project plan will consider amending existing land use, transportation and transit plans in response to tremendous growth pressures in this area.

Interstate 85 North



Interstate 85 North

Transportation

Existing Plans for the Interchange Area:

- The interchange will be a freeway-to-freeway design.
- Mallard Creek and Salome Creek Church Roads are currently 2-lane thoroughfares in this area and are not scheduled for widening.
- Sidewalks have not been constructed on Mallard Creek Road or Salome Creek Church Road in the interchange area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Reassess the operation of I-85 from I-485 to Speedway Boulevard/Concord Mills Boulevard in response to both the recent development in this area and to the proposed additional interchange (T.I.P. #I-4029).
 2. Although the general recommendations state that internal connectivity between land uses/developments should be encouraged near all interchanges, this is particularly important at “freeway to freeway” interchanges. These interchanges are unique in that surrounding properties can not be accessed from the interchange road, since it too is a freeway.

Land Use and Zoning

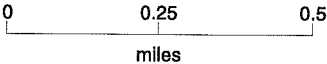
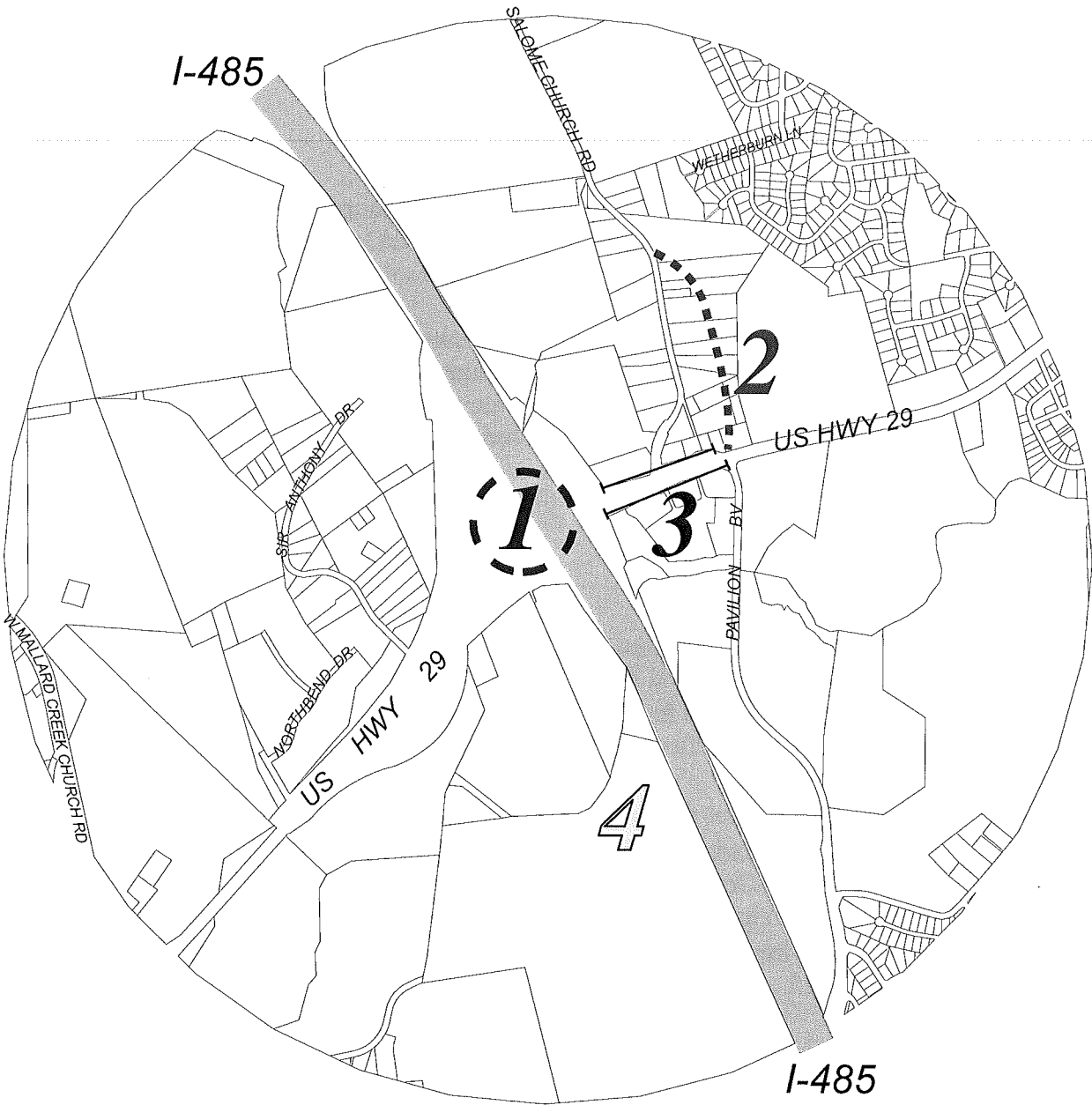
Existing and Planned Land Use/Zoning:

- Most of the land in the immediate interchange area is currently vacant or developed with single family homes and most of the land is zoned for residential development
- A proposal is currently being considered for 700,000 square feet of retail, 2400 multi-family homes and 1.5 million square feet of office in this area. Another proposal is for 800 residential units adjacent to the interchange.
- A business park has been proposed for the southwest quadrant.
- In Cabarrus County, most of the nearby land is developing with retail, office and multi-family uses. The 1.7 million square foot Concord Mill mall, approximately 1.5 miles from this interchange, is scheduled to open in September 1999.
- The adopted land use plan call for primarily residential and research-related development in this area with a neighborhood retail center at Salome Church Road.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
3. Support the Planning Commission in the completion of a special project plan for this area (see map in appendix). The special project plan will consider amending existing land use, transportation and transit plans in response to tremendous growth pressures in this area.

US 29 North (North Tryon Street)



US 29 North (North Tryon Street)

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a diamond with one loop.
- Modeling information shows significant congestion may occur at this interchange.
- Salome Church Road is planned to be aligned with Pavilion Boulevard at US 29.
- US 29 will be widened to 6 lanes (reversible)
- Sidewalks do not exist on US 29 in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Ultimately, the interchange may need to be an urban diamond. For the short-term, add a loop in the southeast quadrant.
 2. Align Salome Church Road with Pavilion Boulevard at US 29 and signalize intersection.
 3. Extend control of access along US 29 from I-485 north to Pavilion Boulevard.

Land Use/Zoning

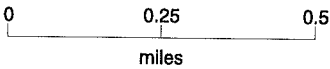
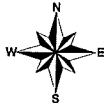
Existing and Planned Land Use/Zoning:

- North of the interchange is primarily existing residential and vacant land zoned for residential development.
- South of the interchange is the Blockbuster Music Pavilion and the Starlight multi-plex theater, as well as some convenience retail.
- Commercial and office uses exist west of the interchange nearer to Mallard Creek Church Road.
- Industrial/employment land uses exist and are planned in Cabarrus County in the interchange area.
- The area surrounding the interchange is shown as appropriate primarily for multi-family residential, retail and research land uses on the adopted land use plan. A neighborhood center is shown in the southeast quadrant of the interchange.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
4. Support the Planning Commission in the completion of a special project plan for this area (see map in appendix). The special project plan will consider amending existing land use, transportation and transit plans in response to tremendous growth pressures in this area.

NC 49 North (University City Boulevard)



NC 49 North (University City Boulevard)

Transportation

Existing Plans for Interchange Area:

- This interchange is built as a half cloverleaf with all of the ramps on the north side. The interchange is scheduled to open in June 1999.
- The State has plans to ultimately widen NC 49 to 8 lanes up to the County line. NC 49 will be 4 lanes in Cabarrus County.
- Sidewalks do not exist on NC 49 in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. As rezonings/developments occur, control of access should be extended along NC 49 from I-485 east to Oak Leigh Drive.
- 2. Extend control access along NC 49 from I-485 west to Pavilion Boulevard.
- 3. Determine how access will be provided to properties located south of the interchange, from the Eastern Circumferential to the county line, considering the impact of the high speed rail corridor.

Land Use and Zoning

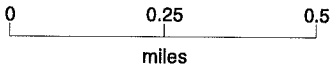
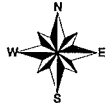
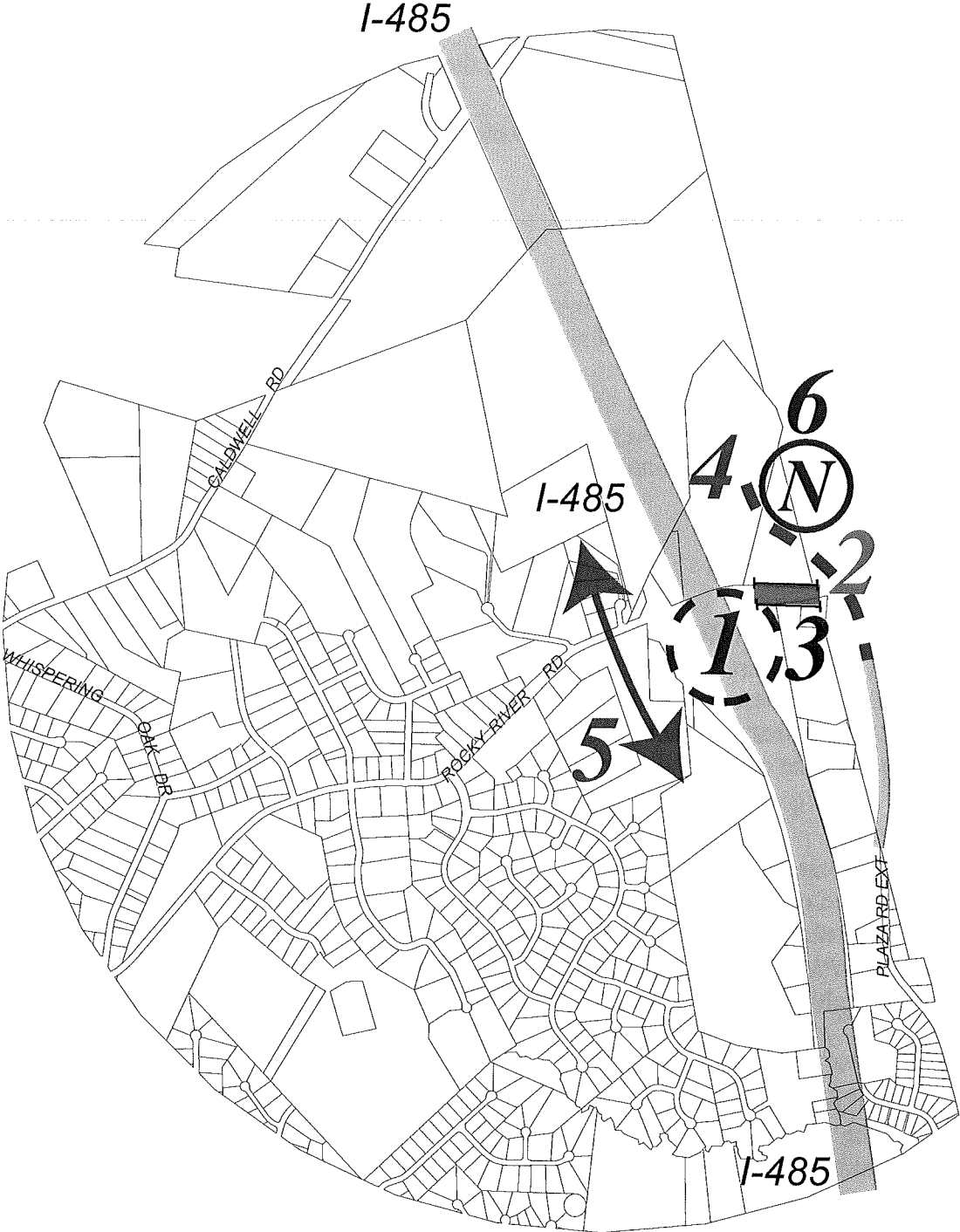
Existing and Planned Land Use/Zoning:

- Commercial and multi-family are the predominant land uses that currently exist along most of University City Boulevard, even beyond I-485, transitioning to low density single family away from the highway. An elementary school sits in the northwest quadrant of the interchange, and Backcreek Church sits in the southwest quadrant.
- Seven convenience stores/gas stations have been approved on NC 49 from Mallard Creek Church Road to I-485.
- Cabarrus County anticipates office/industrial employment in the NC 49 corridor. Retail development is restricted eastward until you reach the “town center”. Multi-family development will extend into Mecklenburg, north of Caldwell Road.
- The *Northeast District Plan* shows primarily multi-family and office development at the interchange, with a neighborhood center to the west and one to the east (both already exist).

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 4. Consider amending the *Northeast District Plan* to indicate a single family residential land use future in the two quadrants south of NC 49. (The adopted plan currently shows this area as multi-family and mixed housing.)
- 5. Consider amending the *Northeast District Plan* to indicate a light industrial land use future and delete the neighborhood center designated for the property southeast of the interchange, abutting the eastern most side of the property described above. (The adopted plan currently shows this area as retail.)

Rocky River Road



Rocky River Road

Transportation

Existing Plans for the Interchange Area:

- The Interchange is planned as a simple diamond design.
- Sidewalks have not been constructed on Rocky River Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Ensure that adequate right of way is protected in all quadrants of this interchange to add loops if needed.
- 2. Change the designation of Rocky River Road to a major thoroughfare east of I-485 to the Cabarrus County Line on the Thoroughfare Plan.
- 3. Extend control of access on both sides of Rocky River Road, from I-485 east to Plaza Road Extension.
- 4. Locate a frontage road in the northeast quadrant to align with Plaza Road Extension at Rocky River Road.
- 5. Determine how access will be provided to property located west of I-485 in this area.

Land Use and Zoning

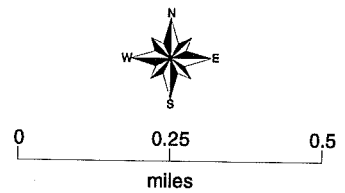
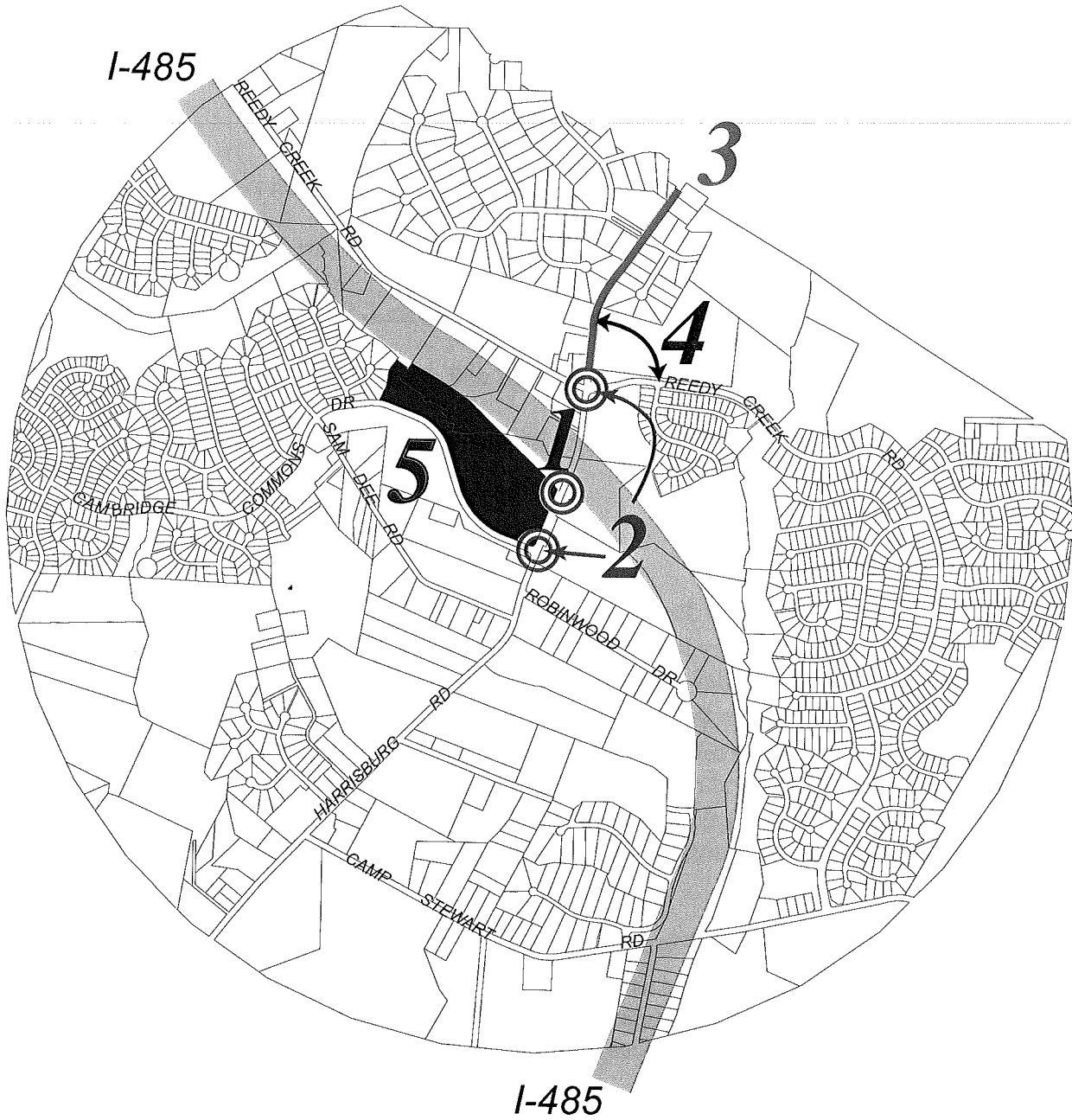
Existing and Planned Land Use and Zoning:

- Land use in this area is primarily very low density single family. The Brantley Oaks subdivision, south of the interchange area, includes approximately 500 single family homes.
- Sewer service is not yet available in this area.
- The *Northeast District Plan* shows mixed density residential at this interchange with multi-family on the eastern side. A neighborhood retail center is also shown at this interchange.
- Cabarrus County sees this as an employment area (light industrial, office and very limited retail). Cabarrus is trying to direct growth away from designated “preservation” areas, and into the town center area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 6. Amend the *Northeast District Plan* to indicate that the neighborhood retail center should be located east of I-485. (The adopted plan does not specify in which quadrant of the interchange the center should be located.)

Harrisburg Road



Harrisburg Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a simple diamond.
- Harrisburg Road is a 2-lane major thoroughfare and is not scheduled for widening.
- Sidewalks have not been constructed on Harrisburg Road, nor are there any provisions for bicycling.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Delay construction of the interchange ramps until the ramp system can be redesigned.
 2. Construct roundabouts at the Harrisburg Road/Reedy Creek Road and Harrisburg Road/I-485 South intersections. Also, consider a roundabout at the Cambridge Commons Drive/Harrisburg Road intersection.
 3. Change the designation of Harrisburg Road from I-485 to the county line to a minor thoroughfare on the Thoroughfare Plan.
 4. Close Reedy Creek Road east of Harrisburg Road and provide a new connection north of the interchange.

Land Use and Zoning

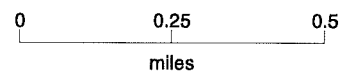
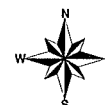
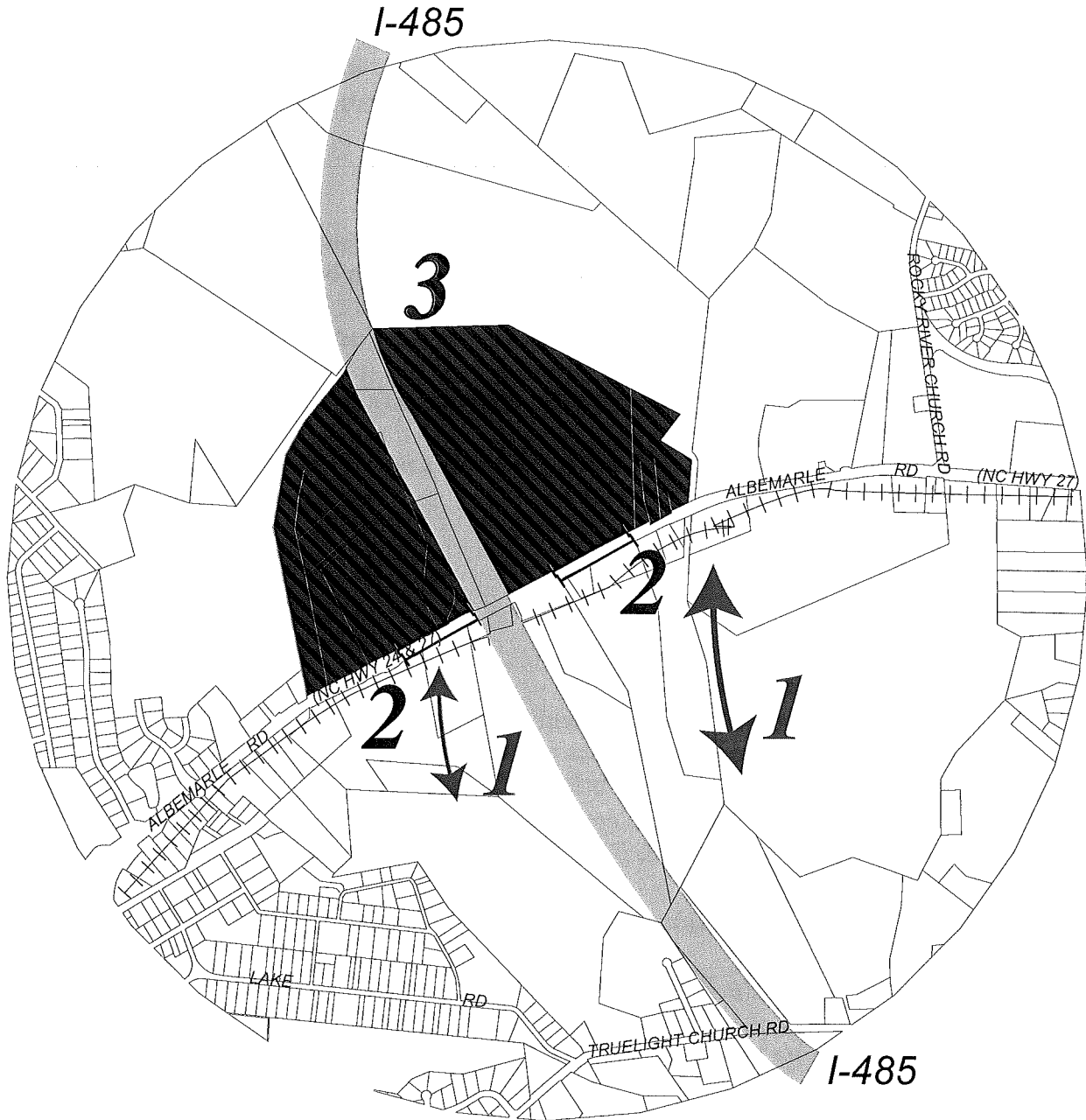
Existing and Planned Land Use/Zoning:

- Land use in this area is primarily low density residential development. The Bradfield Farms subdivision, south of the interchange area, includes approximately 1000 single family homes. A grocery-anchored (Food Lion) shopping center is located south of the interchange.
- The *East District Plan* shows residential development at this interchange, with the neighborhood retail center as developed. The draft *Eastside Strategy Plan* does not recommend any additional retail.
- Cabarrus County is proposing country side/rural residential because of limited sewer access.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
5. Clarify the adopted *East District Plan* to show that only the northwest quadrant (assuming I-485 runs north-south in this area) of this interchange as appropriate for nonresidential uses. This area is adjacent to Cambridge Commons Drive.

NC 24-27 East (Albemarle Road)



NC 24-27 East (Albemarle Road)

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a half cloverleaf (rail line poses a constraint to the south).
- Albemarle Road is a 4-lane major thoroughfare.
- There are no sidewalks on this portion of Albemarle Road.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Determine how access will be provided to the properties located south of railroad tracks.
- 2. Extend control of access on the south side of Albemarle Road, to the east and west beyond the interstate ramps.

Land Use and Zoning

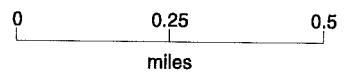
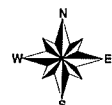
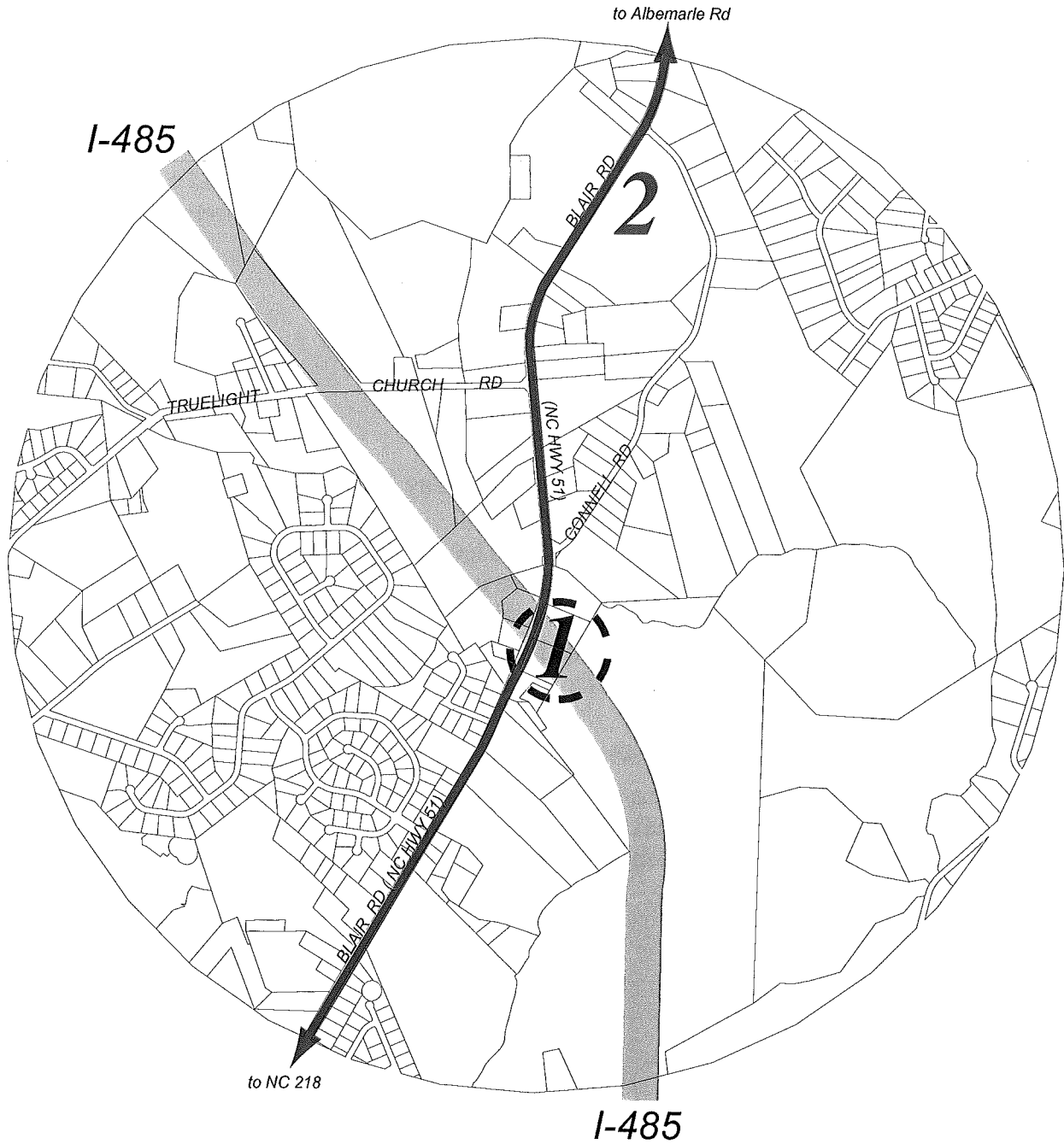
Existing and Planned Land Use/Zoning:

- Land use in this area is primarily vacant and very low density residential development with limited convenience retail at Albemarle Road and NC 51.
- Mint Hill plans call for a mixed use office park at this location. The town is planning to do a more detailed plan for this area. The vision is to have non-residential land uses along Albemarle between I-485 and NC 51, transitioning to residential east of NC 51.
- The adopted *East District Plan* shows multi-family surrounding the north side of the interchange, but the draft *Eastside Strategy Plan* proposes to change the land use to office/light industrial to be consistent with the Mint Hill Plan.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 3. Support the recommendation in the draft *Eastside Strategy Plan* to change the future land use north of the interchange to office/light industrial. (The adopted plan shows this area as multi-family.)

NC 51 North (Blair Road)



NC 51 North (Blair Road)

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a simple diamond.
- Sidewalks have not been constructed on Blair Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Delay the construction of the interchange ramps until the area is more developed and the interchange is needed to relieve traffic congestion at Albemarle Road, sometime after the year 2015.
- 2. Widen NC 51 to four lanes from NC 218 to Albemarle Road.

Land Use and Zoning

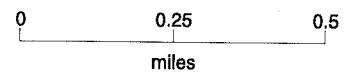
Existing and Planned Land Use/Zoning:

- The predominant existing land use is vacant with some low density residential development.
- Mint Hill's land use plan shows 1-acre lots in areas without utilities and 1/2 acre lots in areas with utilities. Most of the land in the interchange area does not currently have utilities.
- Town land use plan is currently being updated.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended at this time.

NC 218 (Fairview Road)



NC 218 (Fairview Road)

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a simple diamond.
- Sidewalks have not been constructed on Fairview Road in this area.
- A road project is planned to revise the NC 218 intersection with NC 51 and Wilgrove-Mint Hill Road Road.
- The Bartlett Road intersection with NC 218 will not be relocated as originally proposed by NC DOT.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Add a loop in the southwest quadrant of the interchange in the short-term. Ultimately, an urban diamond interchange will be needed.
 2. As development/rezonings are proposed, extend control of access along NC 218 from Bartlett Road to Brief Road.

Land Use and Zoning

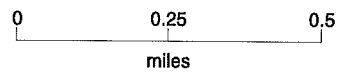
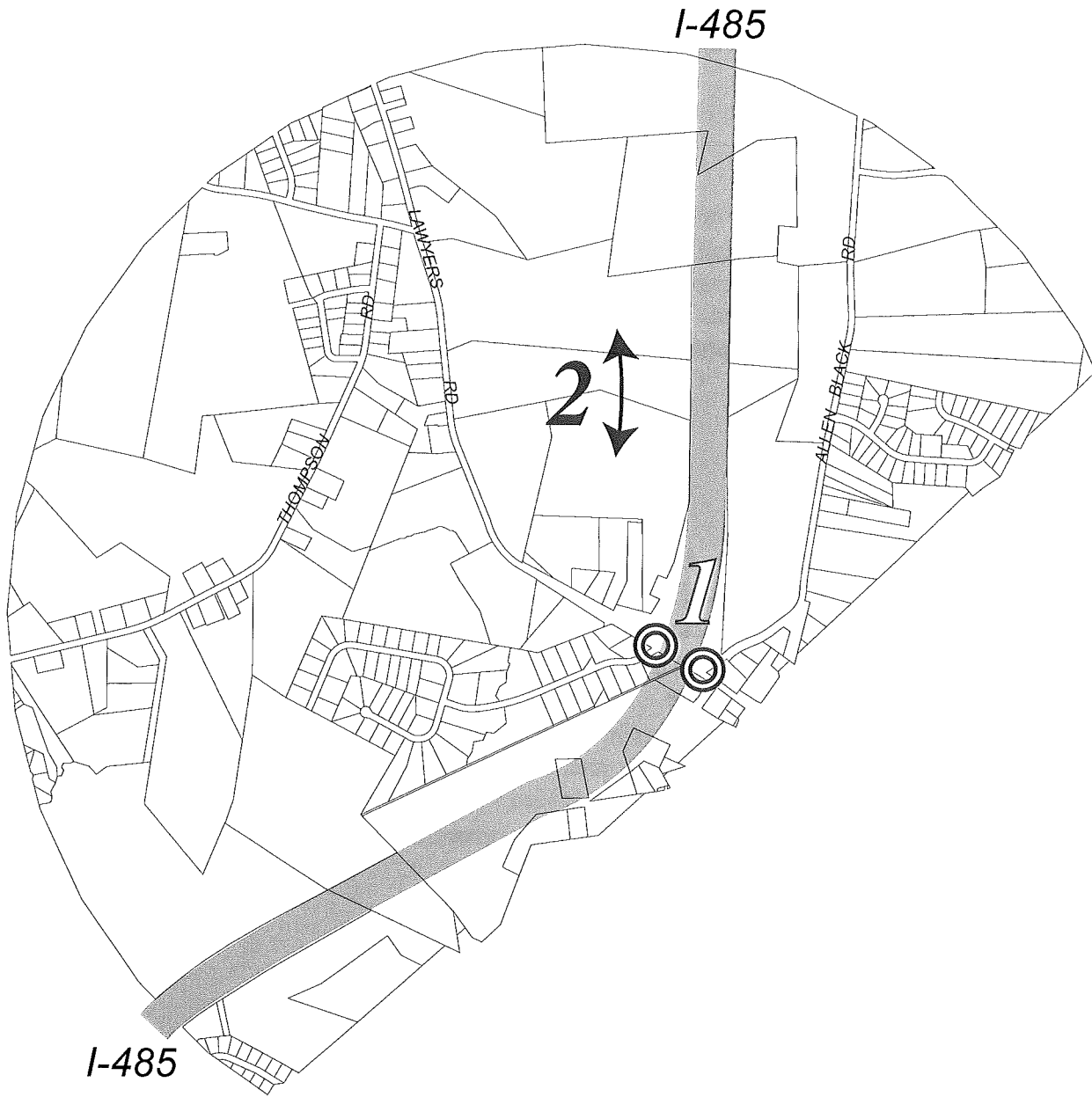
Existing Plans for the Interchange Area:

- The predominant exiting land use is low density residential and vacant in the interchange area. A park is located in the southwest quadrant.
- Union County has sewer service in this area. Old Sycamore residential golf course community is developed at 2-3 dwelling units per acre.
- Mint Hill's land use plan shows 1-acre lots in areas without utilities and 1/2 acre lots in areas with utilities. Most of the land in the interchange area does not currently have utilities, but CMUD will extend water to I-485 and sewer will be provided within 10 years.
- From the park towards downtown Mint Hill, some commercial, light industrial and office uses are called for.
- Town land use plan is currently being updated.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended at this time.

Lawyers Road



Lawyers Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a simple diamond.
- Sidewalks have not been constructed on Lawyers Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Consider adding roundabouts at the interchange ramps at a later date.
- 2. Review alternative access to land locked properties in the northwest quadrant of the interchange.

Land Use and Zoning

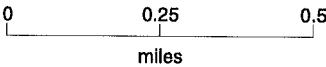
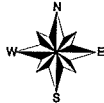
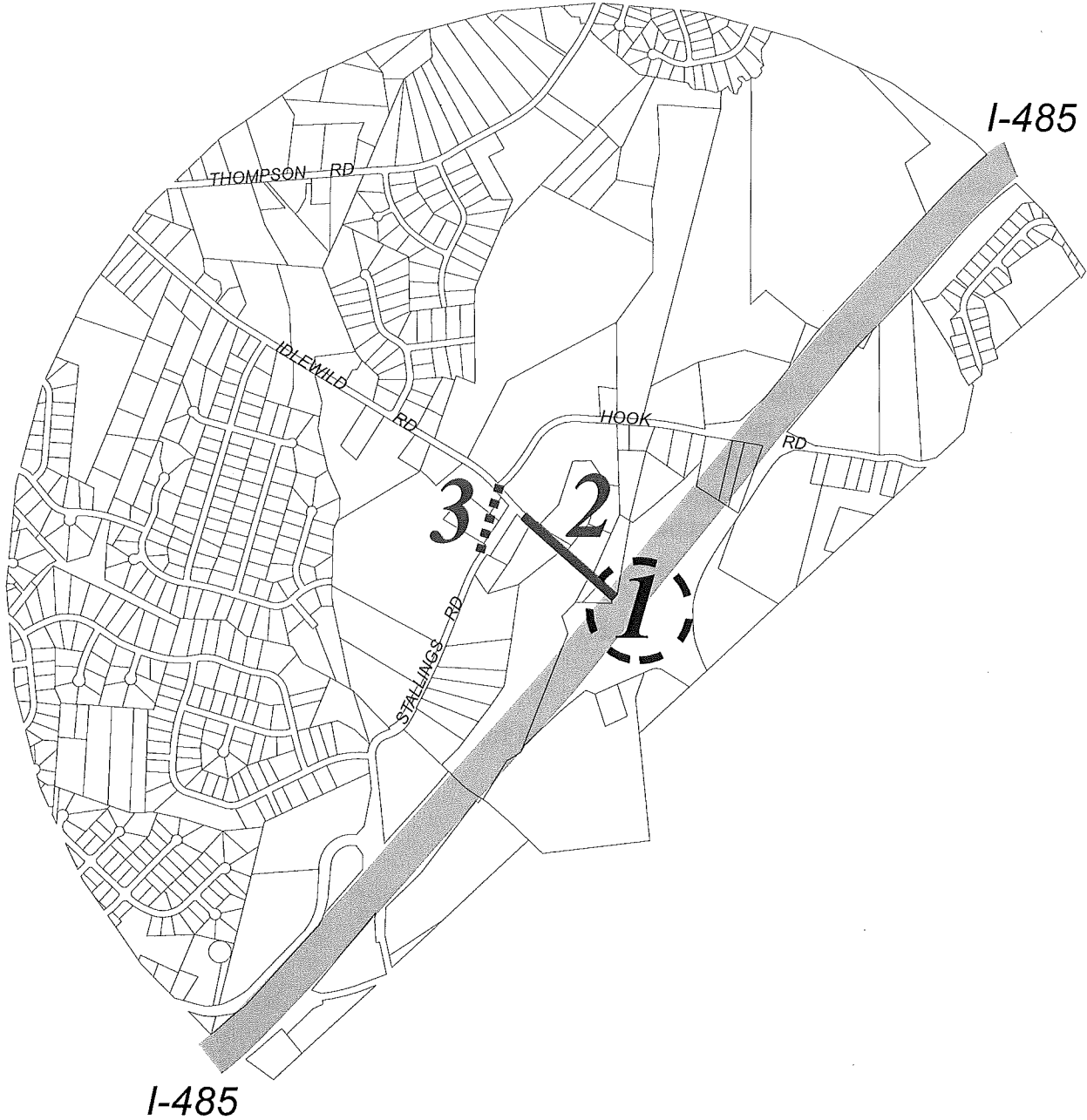
Existing and Planned Land Use/Zoning:

- The predominant exiting land use is low density residential and vacant in the interchange area. A golf course community has been developed south of the interchange, in Union County.
- Mint Hill's land use plan shows 1-acre lots in areas without utilities and 1/2 acre lots in areas with utilities. Most of the land in the interchange area does not have utilities.
- Union County plans call for 1-2 dwelling units per acre in this area, with some office uses further from the interchange.
- Town land use plan is currently being updated.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended at this time.

Idlewild Road



Idlewild Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is designed as a simple diamond.
- Sidewalks have not been constructed on Idlewild Road in this area.
- Idlewild Road is identified for widening in the 2020 Transportation Plan.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Add a loop in the northeast (assuming I-485 runs east/west) quadrant of this interchange. Ultimately, a second loop will be needed in the southeast or southwest quadrant.
 2. Construct a median with no openings between I-485 and Stallings Road.
 3. Relocate Stallings Road to align with Hook Road.

Land Use and Zoning

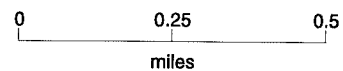
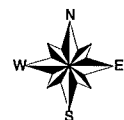
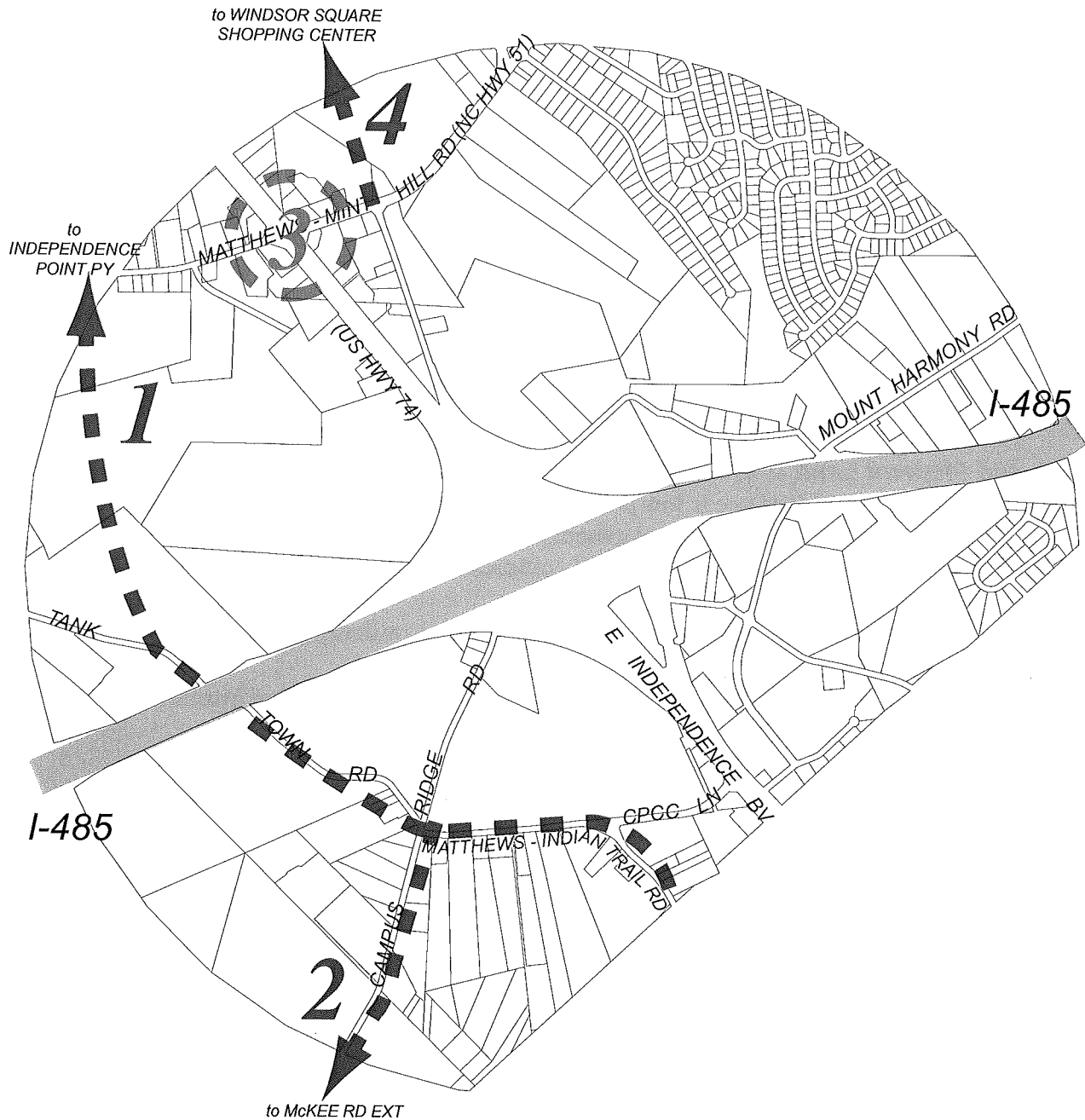
Existing and Planned Land Use/Zoning:

- The predominant existing land use is low density residential and vacant in the interchange area. At NC 51, a low density townhouse development has been approved along with some limited commercial uses. An elementary/middle school complex has been proposed north of NC 51 near Margaret Wallace Road.
- Matthews and Mint Hill have agreed to keep the land use as low density single family from the interchange north to NC 51.
- South of the interchange, in Union County, plans call for a mixture of office/institutional and office/business park land uses.
- Town land use plans are currently being updated.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended at this time.

US 74 East (Independence Boulevard)



US 74 East (Independence Boulevard)

Transportation

Existing Plans for the Interchange Area:

- The interchange is proposed as a partial cloverleaf with one directional ramp.
- Independence Blvd. is a 6-lane major thoroughfare and is identified as a mass transit corridor.
- Sidewalks have not been constructed on Independence Blvd. or on Campus Ridge Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Amend the Thoroughfare Plan to extend Independence Pointe Parkway across I-485 to Tank Town Road/Matthews-Indian Trail Road.
- 2. Amend the Thoroughfare Plan to make Campus Ridge Road a thoroughfare from the McKee Road Extension to Tank Town Road/Matthews Indian Trail Road.
- 3. Construct a grade separation where Matthews-Mint Hill Road crosses US 74.
- 4. Construct the Northeast Parkway from Windsor Square Shopping Center to Matthews-Mint Hill Road (at Moore Road).

Land Use and Zoning

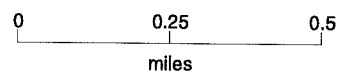
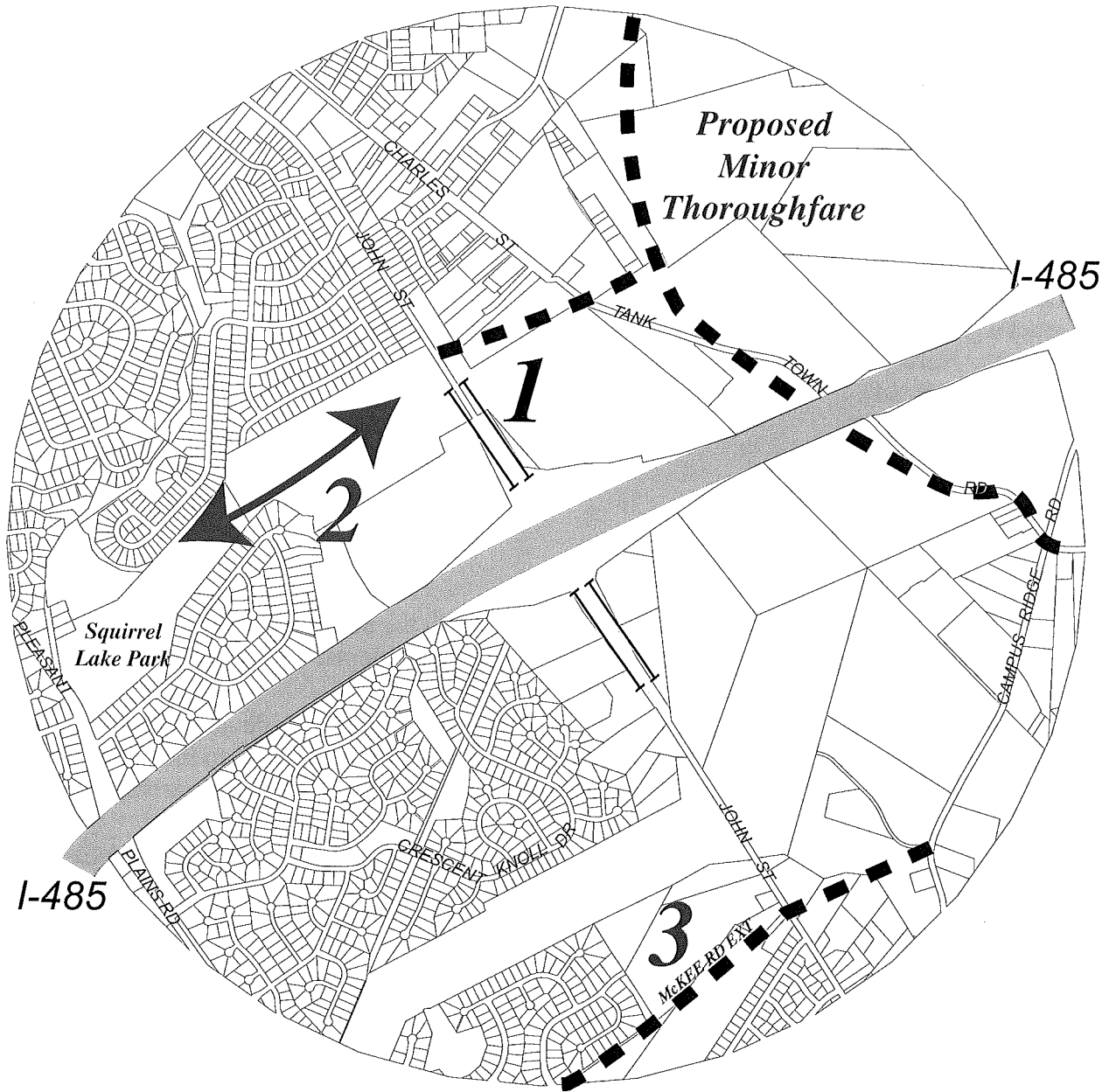
Existing and Planned Land Use/Zoning:

- A mixture of office, warehouse and residential is proposed in the northwest quadrant, nearest the interchange. Further from the interchange is predominantly developed with commercial land uses.
- The new CPCC campus is located in the southwest quadrant. A mixed use development (850,000 sq.ft.) is proposed south of the CPCC campus, for 86 acres off of Ridge Road, to include a residential component adjacent to existing neighborhoods transitioning to office/warehouse closer to the interchange.
- The northeast quadrant is primarily residential, along with Butler High School. The southeast is a mix of office, commercial, residential, vacant and industrial.
- The Matthews Land Use Plan, adopted in 1998, indicates the future land use in the area consistent with the above existing and proposed developments.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended at this time.

John Street



John Street

Transportation

Existing Plans for the Interchange Area:

- The interchange is proposed as a simple diamond.
- John Street is a 2-lane major thoroughfare. Widening John Street to 4 lanes ranks #10 on the 2020 Transportation Plan.
- Sidewalks are funded between Trade Street and I-485 by the Town of Matthews.
- A proposed minor thoroughfare, north of the interchange, would link Independence Blvd. with the proposed extension of Independence Pointe Parkway.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Prohibit full median openings on John Street from the proposed minor thoroughfare (north of I-485) to the Duke Power substation driveway, except at I-485.
 2. Include as part of the Transit Connectivity Analysis (that will be done as part of the Transit Corridor Study), the extension of the greenway from Squirrel Lake Park to the transit station.
 3. Fund the construction of McKee Road from Pleasant Plains Road to John Street.

Land Use and Zoning

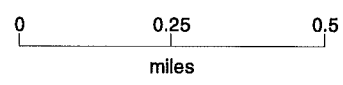
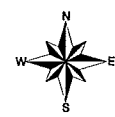
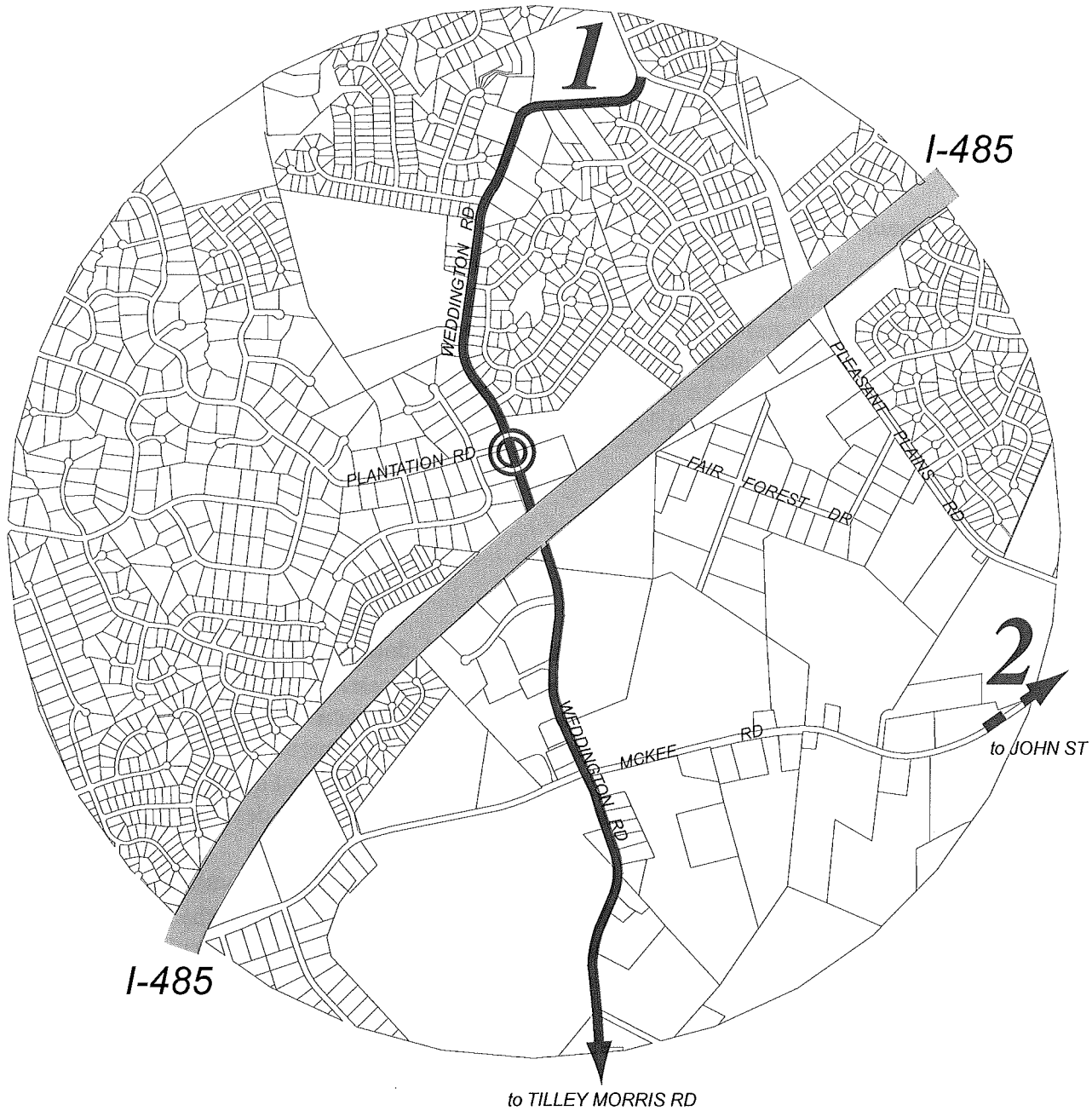
Existing and Planned Land Use/Zoning:

- The predominant existing land uses are vacant and residential close to the interchange.
- The northwest quadrant is zoned for development of a shopping center. A current development proposal for this site includes 25,000 sq. ft. of commercial; a 100 room hotel; 20,000 sq. ft. of office/apartments (this could be office or apartments); and 250 apartments.
- Habitat homes and a public works building are being built in the northeast quadrant, near the railroad tracks (transit corridor). There is also a proposal for single family development in this quadrant nearest the interchange.
- There is a proposal for office park or light industrial development in the southeast quadrant.
- The Matthews Land Use Plan, adopted in 1998, indicates the future land use in the area immediately surrounding the interchange as low density residential, with the shopping center in the northwest quadrant.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended at this time.

Weddington Road



Weddington Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a half cloverleaf, is funded, and is scheduled for construction beginning in 2006.
- Weddington Road and McKee Road are both 2-lane major thoroughfares and are not identified for widening in the 2020 Transportation Plan.
- Partial sidewalks exist along Weddington Road near I-485.
- Although there is a lot of bicycling in this area, the roads are not designed to facilitate bicycle travel.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Complete a transportation planning study on Weddington Road from Pleasant Plains Road to Tilley Morris Road to determine possible improvements to make this narrow, winding road safer for motorists, pedestrians and bicyclists and strongly consider constructing selected roadway improvements (including a roundabout at the proposed I-485 westbound ramp/Plantation Road/Weddington Road intersection) before the interchange is built.
 2. Fund the construction of McKee Road from Pleasant Plains Road to John Street.

Land Use and Zoning

Existing and Planned Land Use/Zoning:

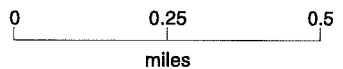
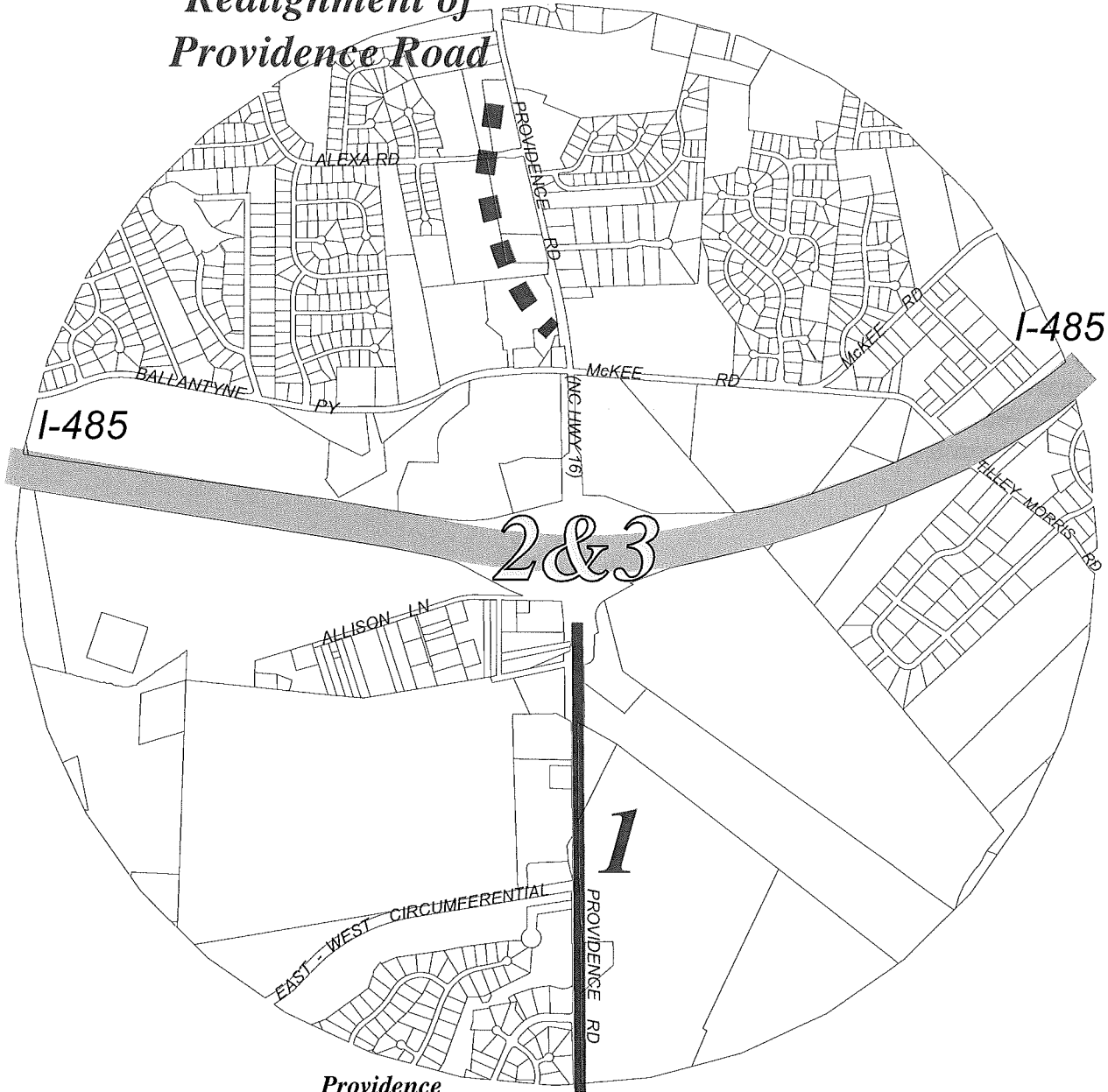
- North of the interchange is mainly developed as single family with some vacant tracts zoned for low density single family development.
- South of the interchange, to McKee Road is an existing grocery-anchored shopping center with a planned addition of 70,000 to 100,000 sq. ft. of additional office and retail (for a total of 127,500 sq. ft. retail, 167,000 sq. ft. office and 88 bed assisted living); a large YMCA recreational facility; Helenic Park; single family homes; and low density residentially zoned vacant land.
- South of McKee Road is a mixture of newly developing single family and multi-family residential at about 8 units per acre. Most of the vacant land is currently zoned for low density residential development.
- Most of the undeveloped land in the interchange area is shown as single family on land use plans.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

NC 16 South (Providence Road)

Realignment of Providence Road



NC 16 South (Providence Road)

Transportation

Existing Plans for the Interchange Area:

- This interchange was built as a simple diamond. The addition of two loops, in the northeast and southwest quadrants, will be completed by 2003.
- The widening/realignment of Providence Road to four lanes, between NC Highway 51 and Ballantyne Commons Parkway, is underway and is scheduled to be completed in 2001.
- Widening of the section of Providence Road south of I-485 is planned to begin in 2004.
- Sidewalks do not exist on Providence Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Phase the Providence Road widening project to construct the section from I-485 to Providence Country Club as early as possible.
 2. Implement the transportation recommendations provided in the draft *Providence Road/I-485 Area Plan Update* (April 1999).

Land Use and Zoning

Existing and Planned Land Use/Zoning:

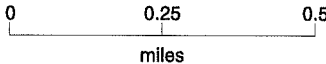
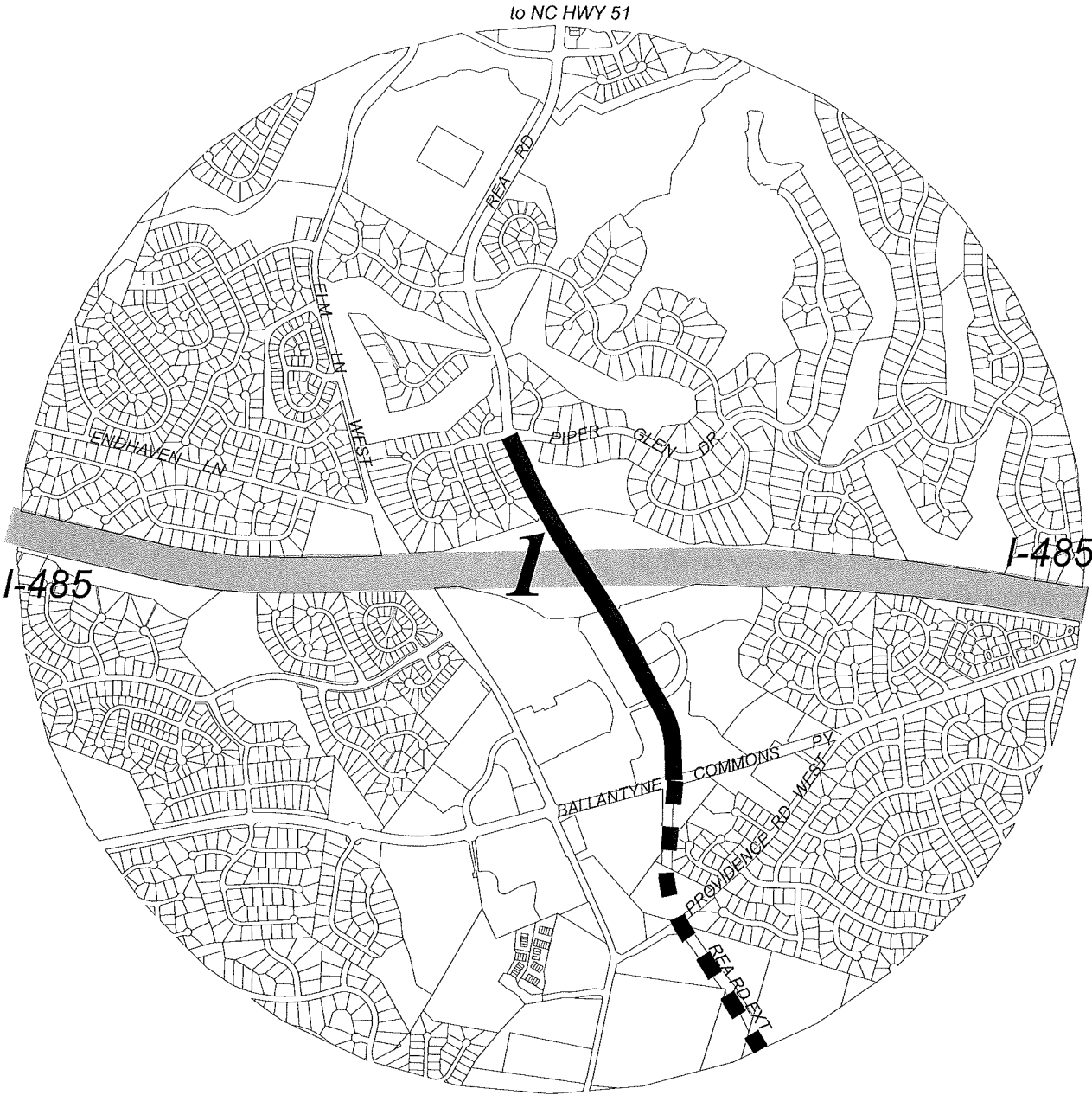
- Properties closest to the interchange are zoned for commercial and moderate density housing (up to 12 units per acre). Some of these properties have been developed while others remain vacant. Most of the remainder of the area is zoned for single family and institutional uses, and much of the land north of the interchange is developed with single family subdivisions.
- Two rezoning petitions for non-residential development have been submitted for this area. One proposal is for a 450,000 sq.ft. retail center in the northwest quadrant of the interchange. The other petition is requesting office development for a site on the west side of Providence Road, south of the interchange.
- A land use plan was adopted for this interchange in 1990 and amended in 1993. A process to update this plan has been underway since July of 1998, and a draft plan is currently available.

The draft plan addresses land use, public facilities, transportation, and community design. It proposes density changes to a number of residential properties. (It recommends reducing the number of higher density residential properties and increasing the base density for the area from 3 to 4 units per acre.) The draft plan also proposes that the northwest quadrant of the interchange be developed with a retail center, instead of office, hotel, and highway commercial uses. The plan proposes design guidelines for both residential and non-residential development.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
3. Implement the land use recommendations provided in the draft *Providence Road/I-485 Area Plan Update* (April 1999). (See proposed land use map in appendix.)

Rea Road



Rea Road

Transportation

Existing Plans for the Interchange Area:

- Interchange is opened and constructed as a diamond with two loops.
- The extension of Colony Road, north of the interchange, and Rea Road, south of the interchange, are scheduled to begin this year (1999).
- Sidewalks exist along most of Rea Road in the interchange area. However, sidewalks are needed on the bridge over I-485.
- A coordinated traffic signal system is proposed/underway on Rea Road.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Prohibit any additional median openings on Rea Road from Ballantyne Commons Parkway to Piper Glen Drive.

Land Use and Zoning

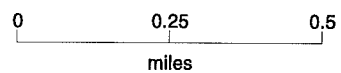
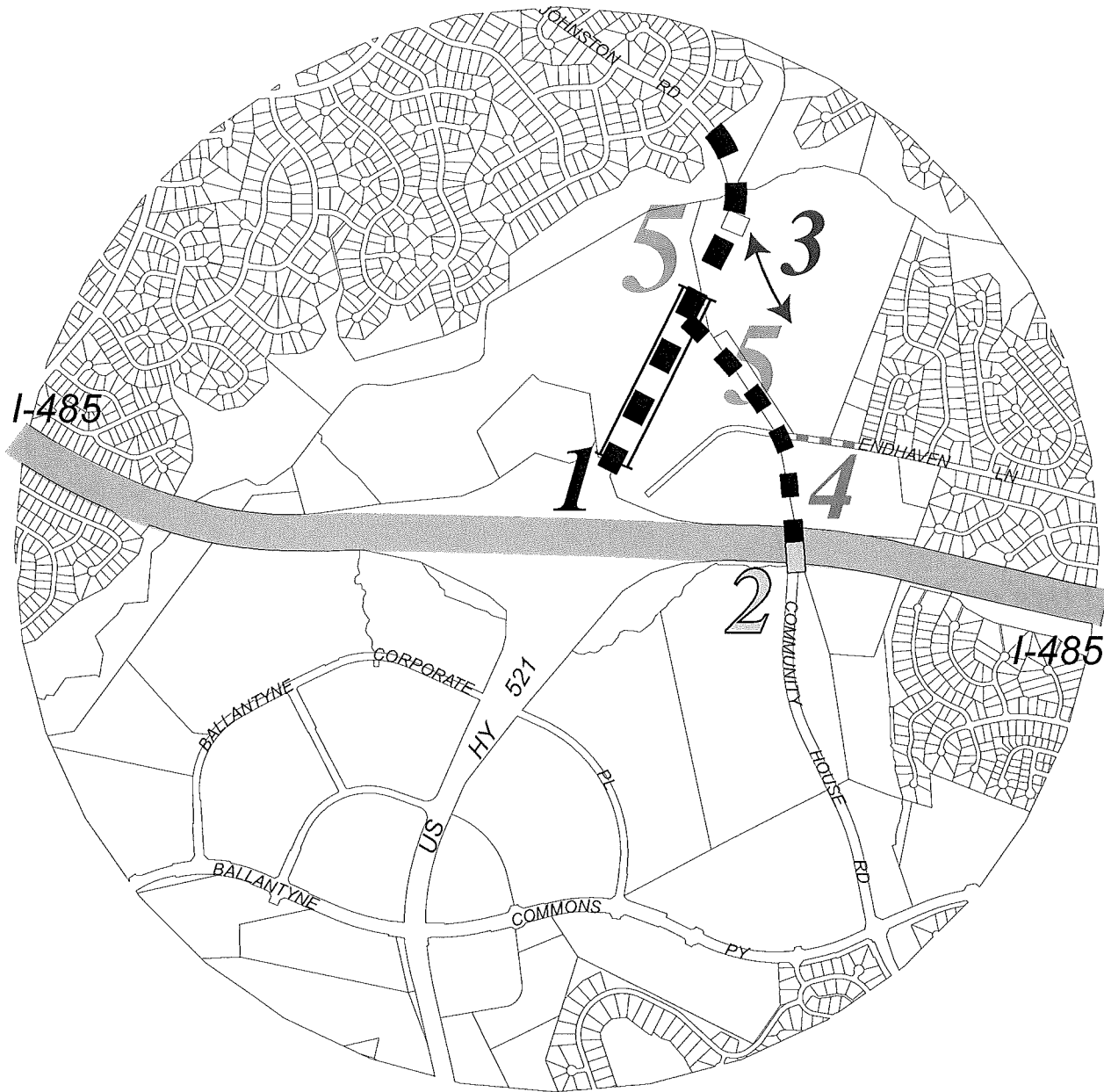
Existing and Planned Land Use/Zoning:

- The Piper Glen community is the predominate land use north of the interchange. This community includes a 60,000 sq. ft. grocery-anchored shopping center off of Rea Road, as well as approximately 2,323 residential units.
- Immediately south of the interchange is the new Stonecrest shopping center (467,000 sq.ft.). Across from Stonecrest, 550,000 sq. ft. of office, 50,000 sq. ft. of retail and 393 residential units have been approved (some is currently under development).
- Much of the vacant land south of the interchange is zoned for residential development. The multi-family zoning ranges from 8 to 20 units per acre, with the majority in the 8-12 range. The single family is generally zoned at 3 units per acre.
- North of the interchange is mainly developed as single family with some vacant tracts zoned for low density single family development.
- Land use plan shows a regional shopping center at this location with office and multi-family uses transitioning to single family further from the immediate interchange area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

US 521 South (Johnston Road Extension)



US 521 South (Johnston Road Extension)

Transportation

Existing Plans for the Interchange Area:

- State only constructed partial interchange here.
- Johnston Road is planned to be extended to NC 51. This project is funded and scheduled to begin in 2001.
- Pedestrian access is restricted on Johnston Road south of I-485.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Extend control of access on Johnston Road from I-485 to Community House Road.
 2. Fund the construction of the Community House Road bridge over I-485.
 3. Provide pedestrian access north and south of I-485 via Community House Road.
 4. Connect Endhaven Lane to Community House Road and implement appropriate roadway improvements and traffic calming measures on Endhaven Lane.

Land Use and Zoning

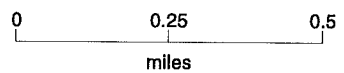
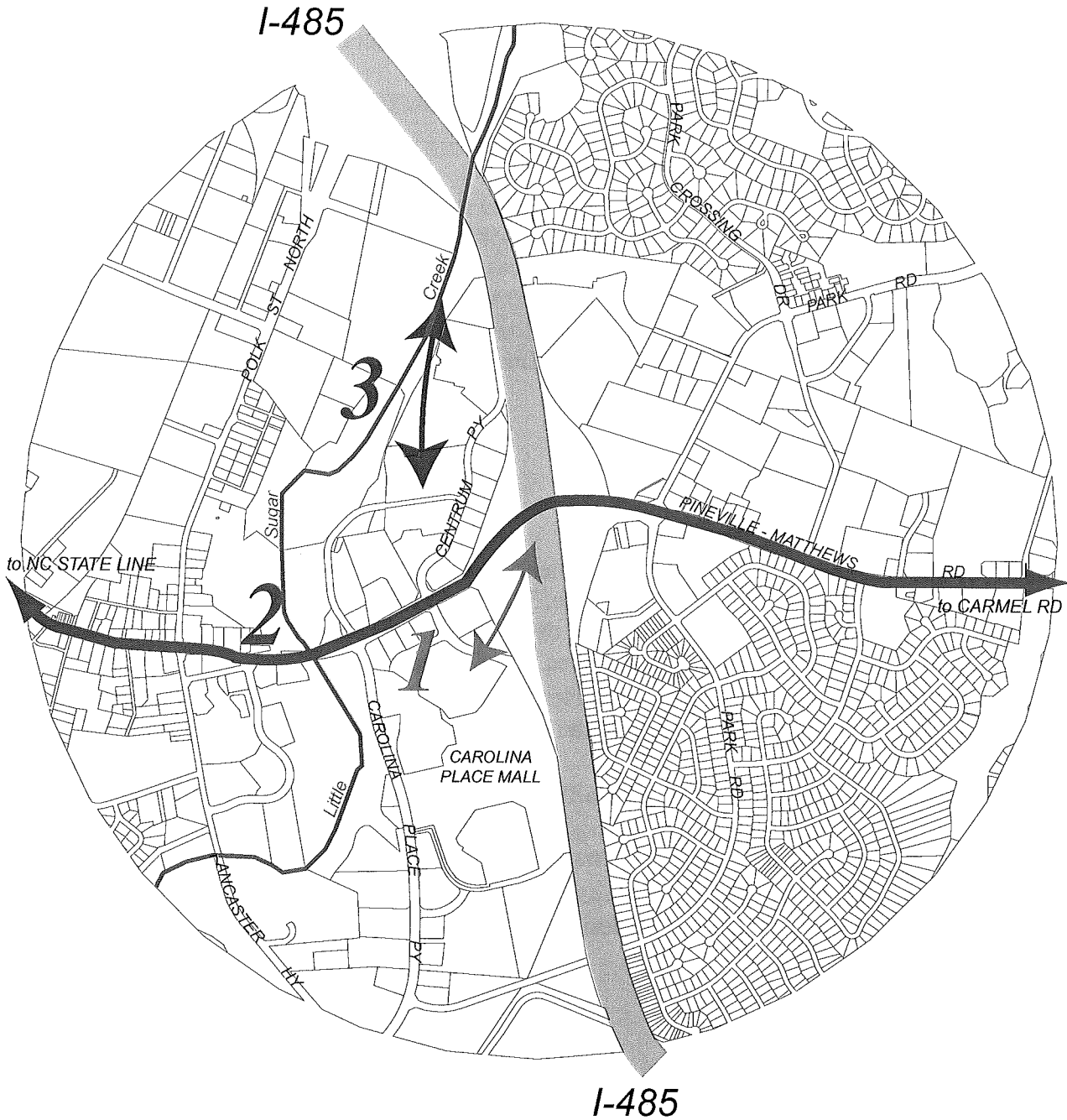
Existing and Planned Land Use/Zoning:

- South of this interchange is the 2000 acre Ballantyne mixed use development. Currently, this development includes 443,000 sq. ft. of office, 325 single family and 838 multi-family units, and employs 1,700 workers. When complete, the development will have a total of 5363 residential units, 590,000 sq. ft. of retail and 5,415,000 sq. ft. of office.
- North of the interchange is currently undeveloped, but multi-family is planned in the northwest and a combination of office/retail/hotel in the northeast. A new school is also planned northeast of the interchange.
- Land use plans indicate multi-family and office for the area immediately north of the interchange.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
5. Development north of I-485 should be designed as a mixed-use village with access off of Community House Road.

NC 51 South (Pineville-Matthews Road)



NC 51 South (Pineville-Matthews Road)

Transportation

Existing Plans for the Interchange Area:

- Interchange is open.
- No sidewalks exist along NC 51 in this area.
- Dorman Road could provide a back door to Heritage USA/South Carolina.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Encourage Carolina Place Mall to consider funding a special ramp from eastbound I-485 into the mall.
 2. Complete an access management study for NC 51 between the State Line and Carmel Road. As part of this study, look at access to Park Road and Carolina Place Mall from I-485 west.
 3. Encourage development of the proposed greenway in this area to provide greater accessibility for pedestrians and bicyclists.

Land Use/Zoning

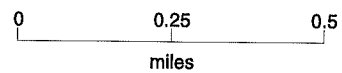
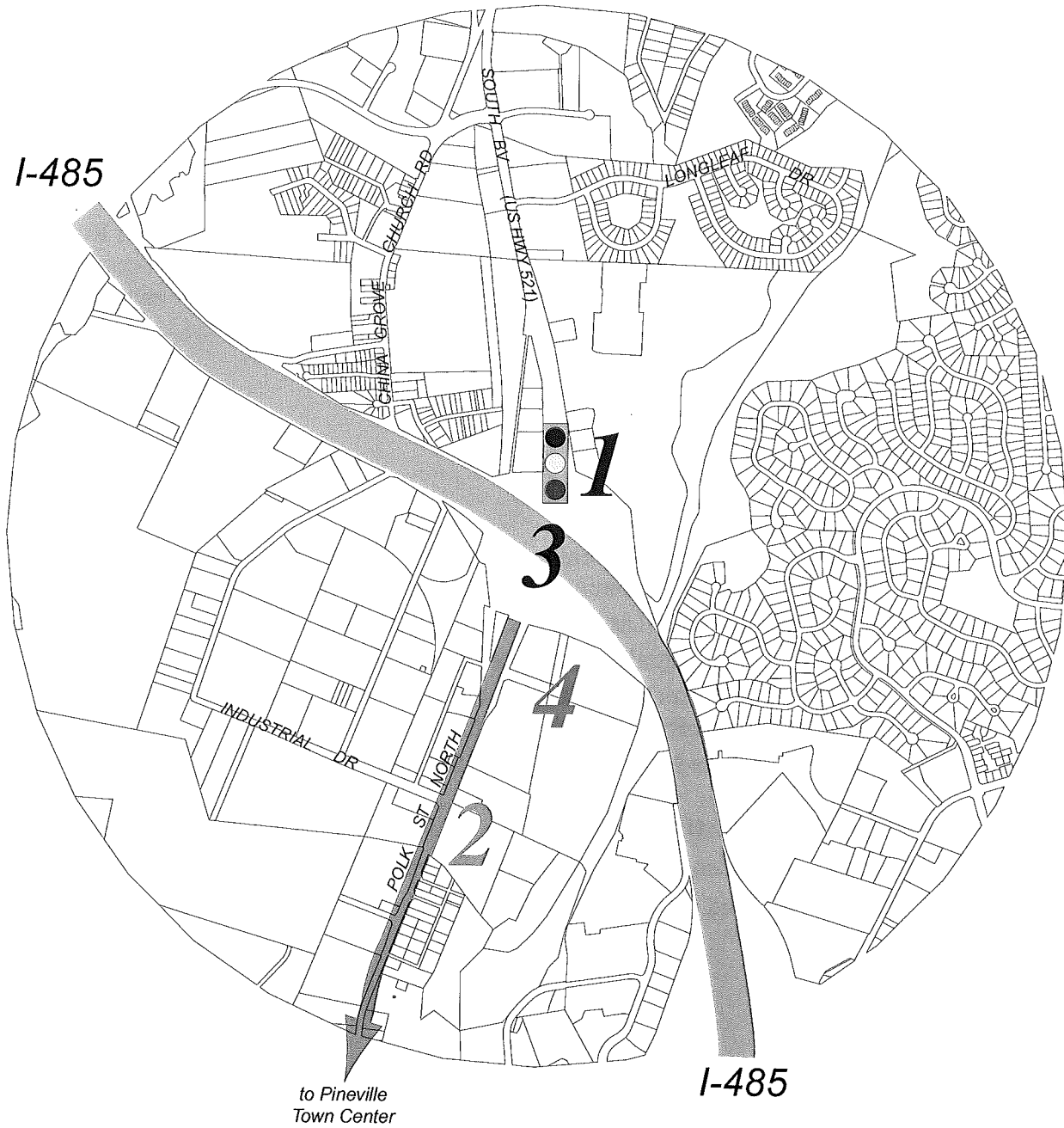
Existing and Planned Land Use/Zoning:

- Carolina Place Mall (1.1 mil. sq. ft.), the Centrum Shopping Center (320,000 sq. ft.) and associated retail and commercial uses dominate the existing land use pattern at this interchange.
- Potential for expansion of mall as well as additional retail along Park Road north of interchange.
- Predominantly single family residential southeast of interchange.
- Pineville's draft land use plan shows heavy commercial west of interchange and office/light industrial with some medium density residential northeast of the interchange.
- Residential is shown on Charlotte-Mecklenburg plans for land use southeast of the interchange.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

US 521 (Polk Street / South Boulevard)



US 521 (Polk Street/South Blvd.)

Transportation

Existing Plans for the Interchange Area:

- Interchange is open and is a diamond with two loops.
- U.S. 521 is a major 4-lane thoroughfare.
- Sidewalks exist along US 521 north of I-485. From the interchange area south, the sidewalk network is incomplete.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Re-evaluate the need for signals at both interstate ramps.
- 2. Complete the sidewalk system on Polk Street from I-485 to the Pineville town center.
- 3. Develop a streetscape plan for the Polk Street/I-485 area to create a “gateway” to Pineville.
- 4. Add landscaping at Interstate ramp areas.

Land Use and Zoning

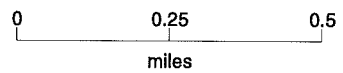
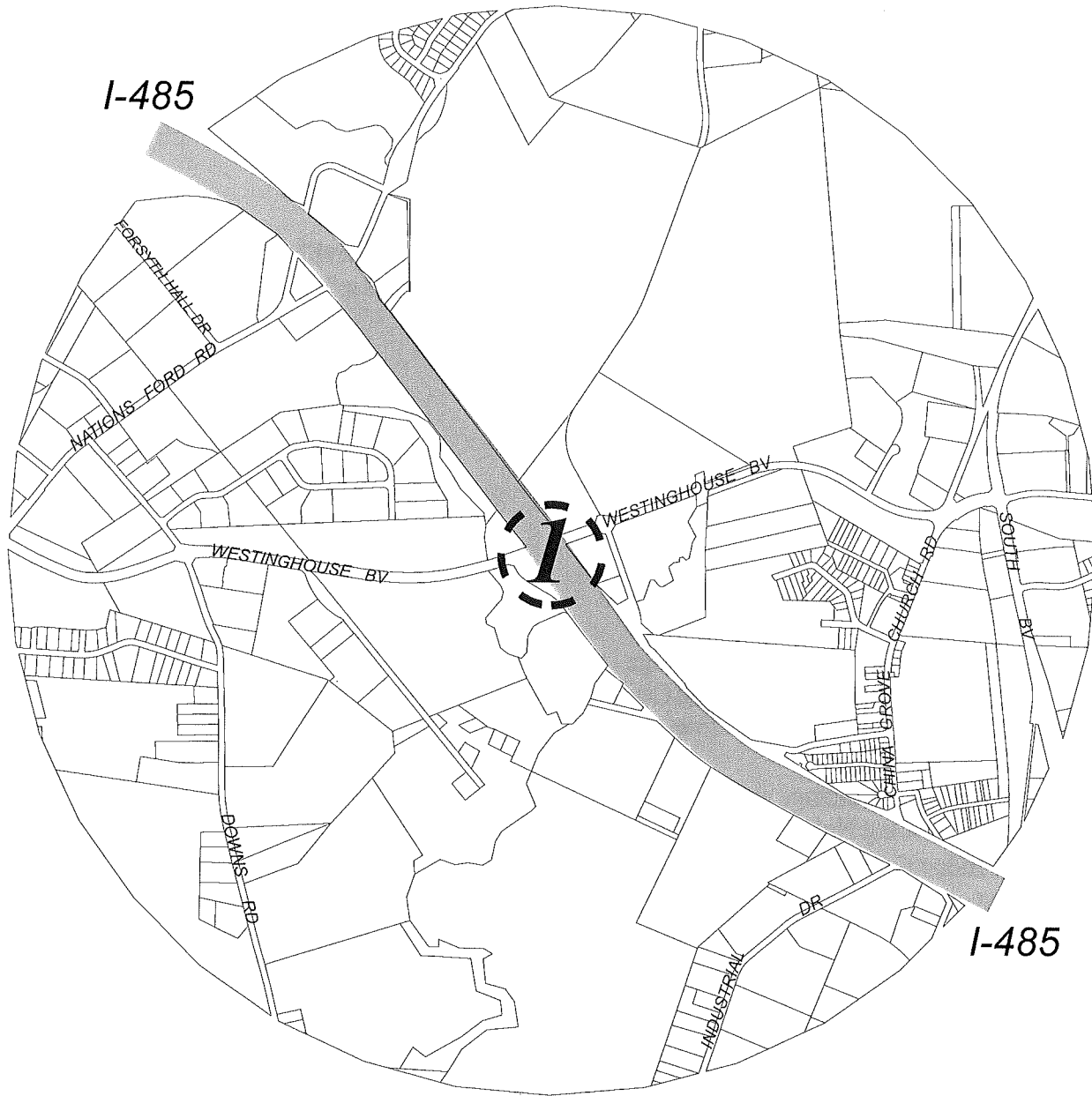
Existing and Planned Land Use/Zoning:

- Commercial uses/zoning line US 521.
- Northeast and southeast of the interchange is a large concentration of retail/commercial uses including Carolina Pavilion Shopping Center (874,000 existing square feet), several restaurants, a multi-plex cinema, and additional free-standing retail (i.e., Jumbo Sports) and a recreation facility (Celebration Station).
- Northwest of the interchange are some convenience retail as well as some residential areas, including the Sterling Neighborhood.
- Southland Industrial Park is southwest of the interchange and includes some vacant land.
- Land use plans show most of the area north of the interchange as commercial and multi-family, transitioning to industrial nearer Westinghouse Blvd.
- Industrial and heavy commercial is shown in Pineville’s draft land use plan for the area south of the interchange.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

Westinghouse Boulevard



Westinghouse Boulevard

Transportation

Existing Plans for the Interchange Area:

- Sidewalks have not been completed on Westinghouse Boulevard in this area, but they have been funded.
- Westinghouse is a 4-lane major thoroughfare.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. The State has not included construction of this interchange as part of the I-485 project. Ultimately, this interchange will not be needed and should be considered for removal from the Mecklenburg-Union Thoroughfare Plan.

Land Use and Zoning

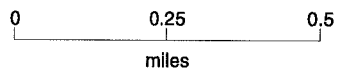
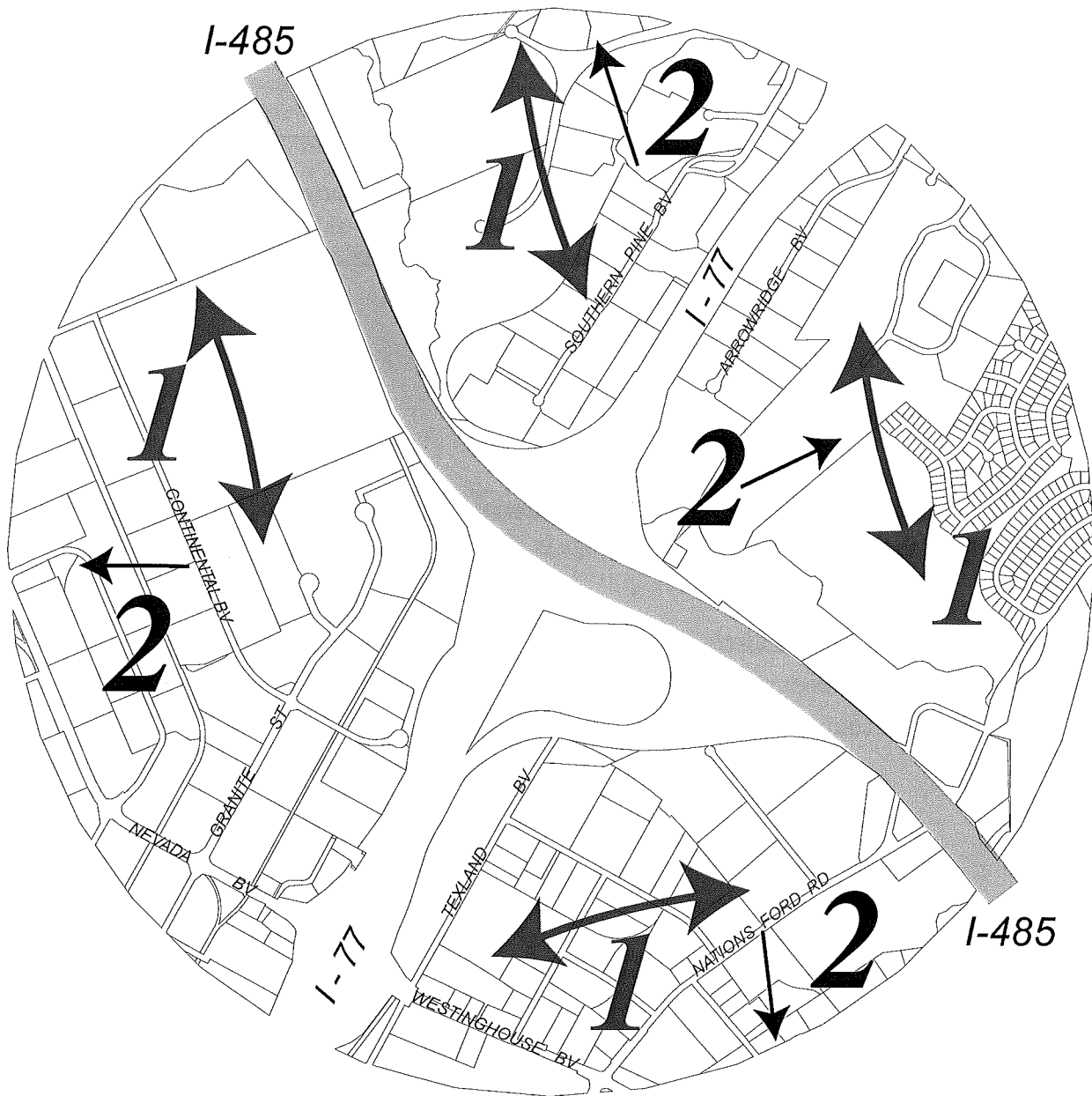
Existing and Planned Land Use/Zoning:

- Much of the land in this area is vacant. Vulcan Materials is located north of this interchange.
- The majority of the area around this interchange is shown as industrial on the adopted land use plan.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

Interstate 77 South



Interstate 77 South

Transportation

Existing Plans for Interchange Area:

- The interchange is open and is experiencing congestion problems during peak travel times.
- South Carolina is widening I-77 to 8 lanes at the state line. These 8 lanes will feed into 6 lanes in North Carolina.
- I-77 widening to 10 lanes between Uptown and the South Carolina state line ranks highly in the 2020 Transportation Plan.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Although the general recommendations state that internal connectivity between land uses/developments should be encouraged near all interchanges, this is particularly important at “freeway to freeway” interchanges. These interchanges are unique in that surrounding properties can not be accessed from the interchange road, since it too is a freeway.
- 2. Design new development with access a greater distance away from the interchanges that serve those properties where possible.

Land Use and Zoning

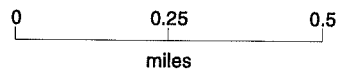
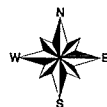
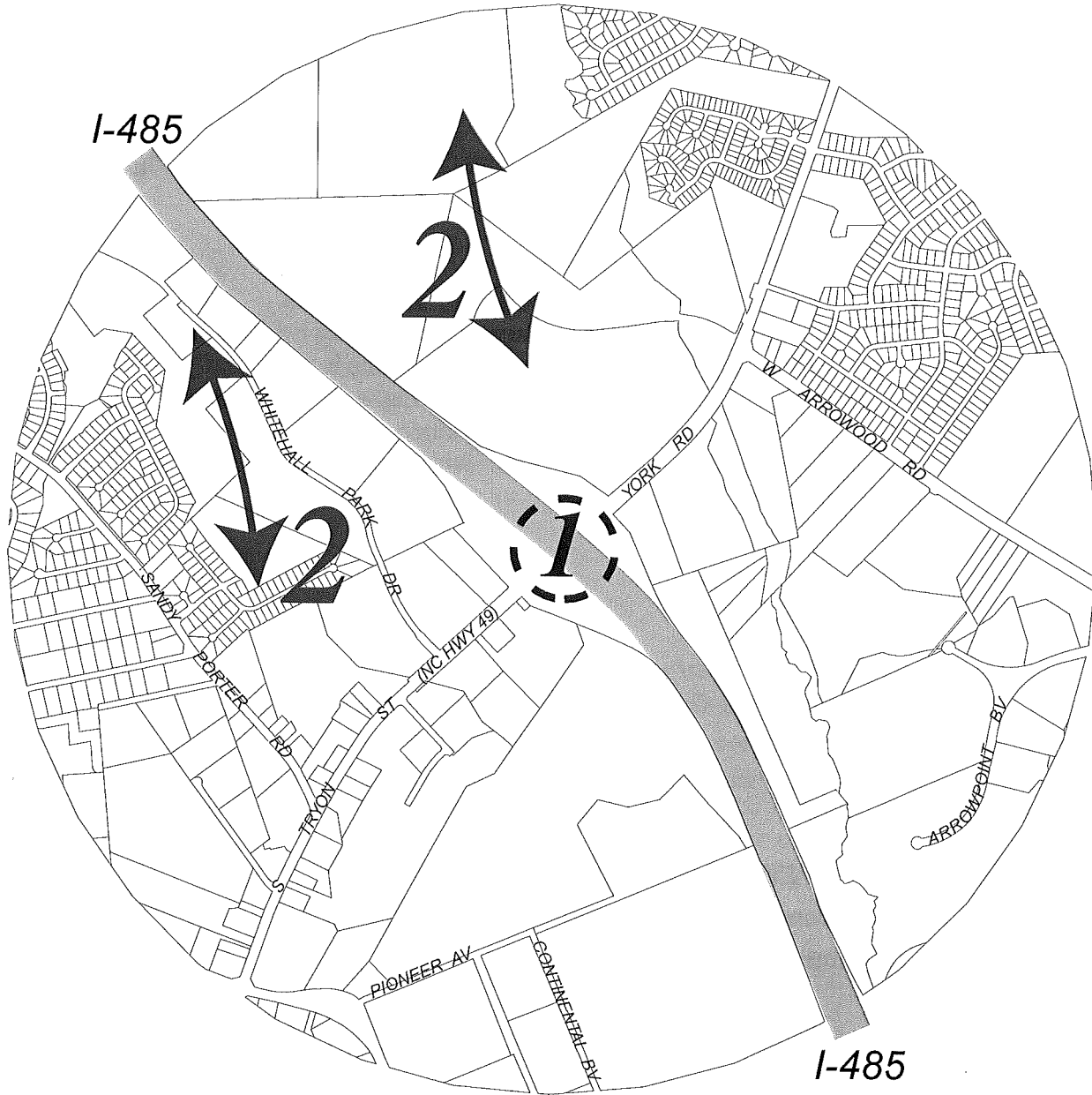
Existing and Planned Land Use/Zoning:

- Large land uses in this area include General Tire, Royal Insurance, and Ramblewood Park.
- Most of the land in the immediate area is zoned for business or industrial uses.
- South of the interchange is shown as industrial on the adopted land use map. North of the interchange is shown as office.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

NC 49 South (South Tryon Street)



NC 49 South (South Tryon Street)

Transportation

Existing Plans for the Interchange Area:

- The existing interchange design is a diamond with one loop.
- State is widening NC 49 to multi-lanes from Tyvola Road to the South Carolina state line.
- Sidewalks have been constructed on the east side of NC 49 in this area, including on the I-485 bridge.
- A coordinated traffic signal system will be provided on NC 49.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Add a second loop to the interchange (northeast quadrant). Ultimately, this interchange will need to be an urban diamond.
- 2. As site plan amendments/rezonings are proposed, encourage greater connectivity between land uses within the Whitehall development.

Land Use/Zoning

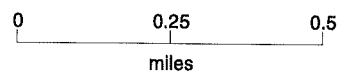
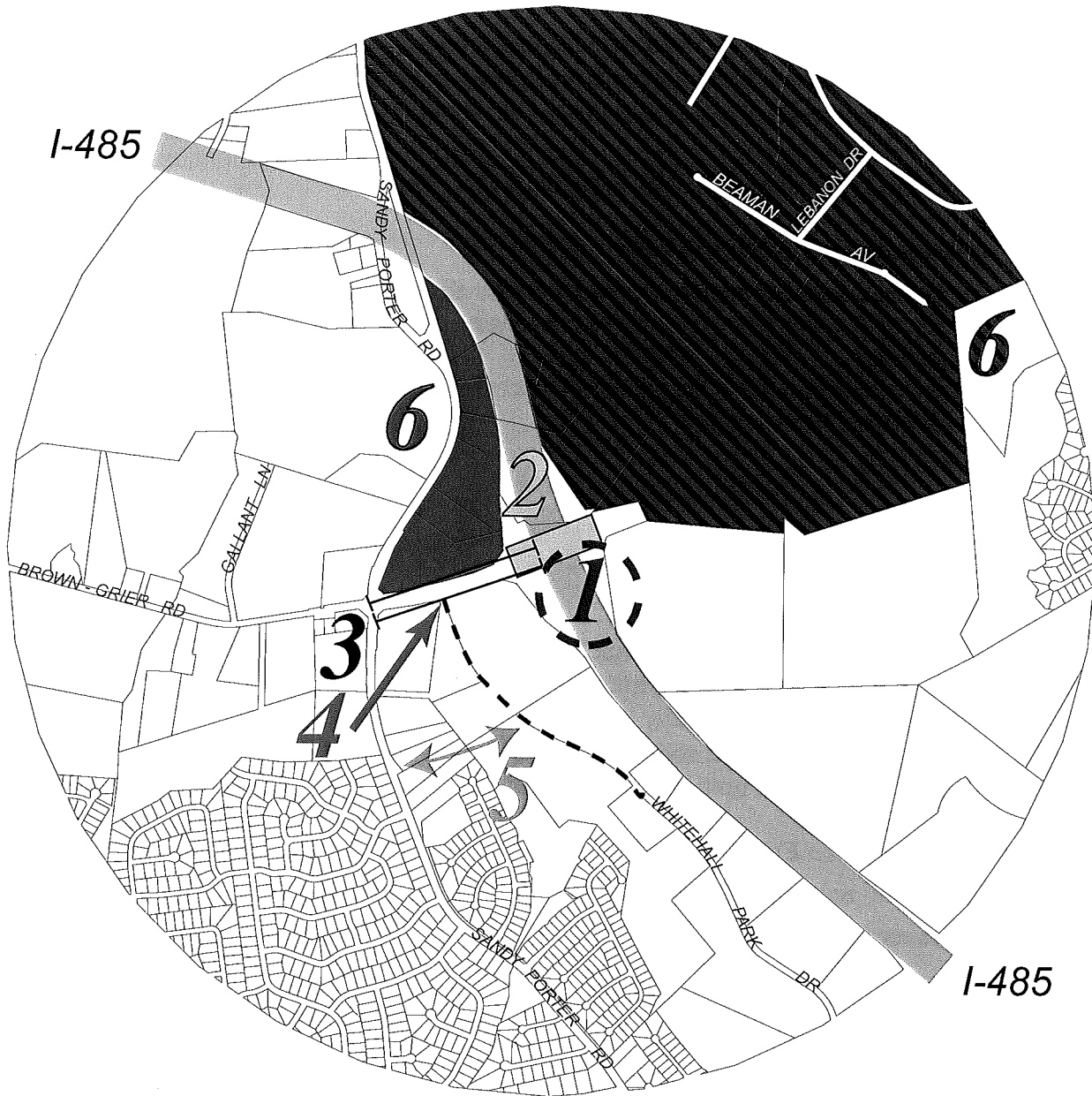
Existing and Planned Land Use/Zoning:

- The Whitehall development encompasses much of the interchange area. It includes 500,000 sq.ft. of commercial uses currently under construction; approximately 2.9 million sq.ft. of office and industrial development; 246 single family units; and 1647 multi-family units.
- The planned development described above is reflected on the adopted land use plan which shows industrial, office and residential uses in this area from NC 49 to the Arrowood Road interchange.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- » No other changes recommended.

Arrowood Road



Arrowood Road

Transportation

Existing Plans for the Interchange Area:

- The interchange is built as a simple diamond.
- Arrowood Road is a partially opened 4-lane major thoroughfare. It is under construction between NC 49 and I-485.
- Sidewalks have not been constructed on Arrowood Road in this area.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 1. Add two loops to the simple diamond interchange.
- 2. Reconstruct the bridge to accommodate sidewalks.
- 3. As development/rezonings are proposed, extend control of access along Arrowood Road to Sandy Porter Road.
- 4. Construct left-overs on Arrowood Road at Whitehall Park Drive.
- 5. Determine how a roadway connection can be provided between Whitehall Park Drive and Sandy Porter Road.

Land Use and Zoning

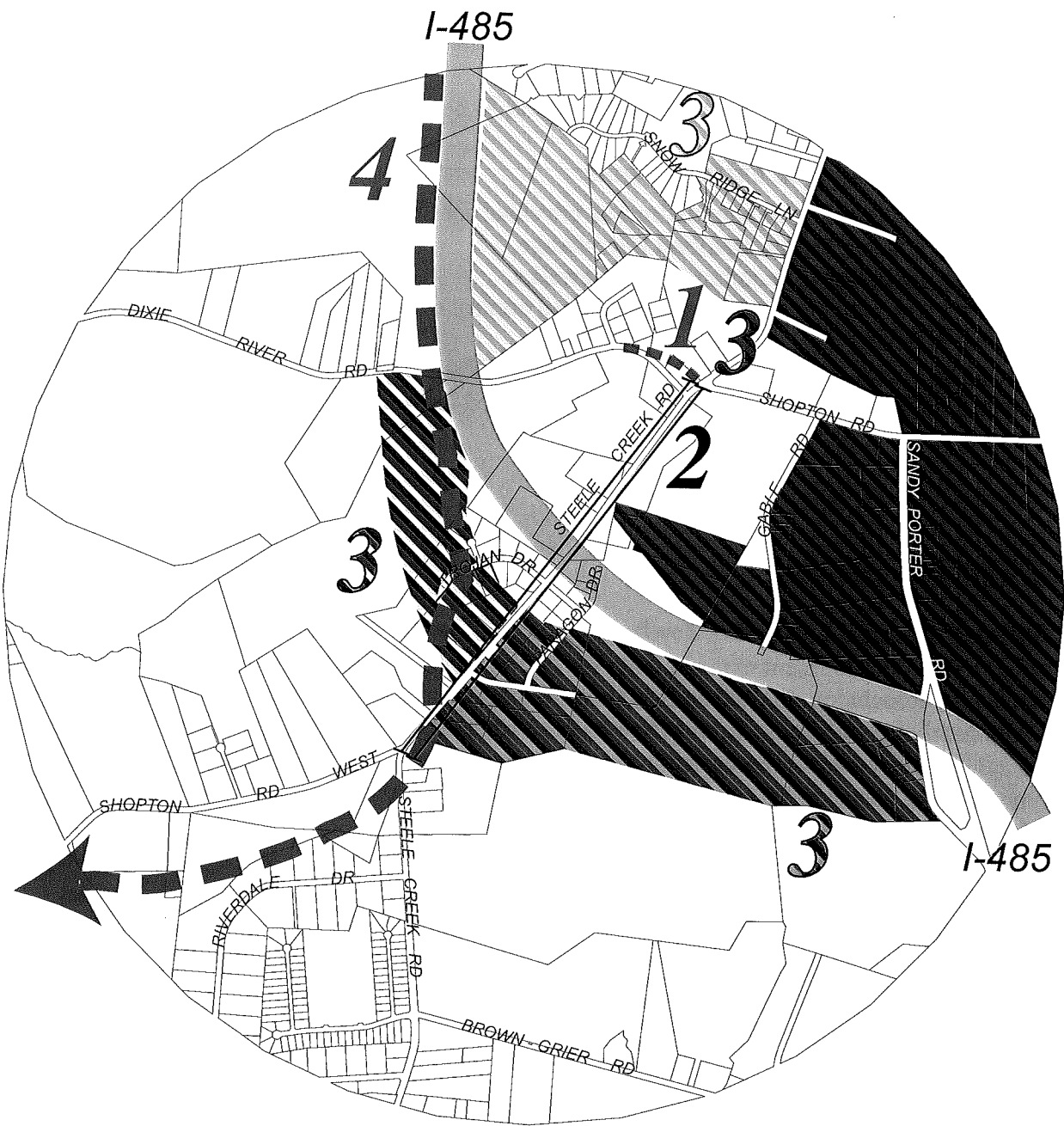
Existing and Planned Land Use/Zoning:

- The Whitehall development extends from the NC 49 interchange to the Arrowood Road interchange. It includes 500,000 sq.ft. of commercial uses currently under construction; approximately 2.9 million sq.ft. of office and industrial development; 246 single family and 1647 multi-family units. The commercial uses are oriented to the NC 49 interchange.
- Olympic High, Kennedy Middle, and Steele Creek Elementary schools are located northwest of the interchange.
- Much of the land north of the interchange is vacant and zoned for low density residential uses.
- The land north of the interchange is currently shown as appropriate for residential and park development on the adopted land use plan. The draft *Westside Strategic Plan*, however, proposes the future land use north of the interchange as office, and a combination of office, business park and industrial uses because of its location within the airport noise contours.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
- 6. Support the recommendations for this interchange provided in the draft *Westside Strategic Plan* that show the land use north of the interchange as office, and a combination of office, business park and industrial uses because of its location within the airport noise contours.

NC 160 (Steele Creek Road)



NC 160 (Steele Creek Road)

Transportation

Existing Plans for the Interchange Area:

- The interchange will have two loops off of NC 160 onto I-485.
- Wallace Neal Road is planned to be reconstructed, by the Airport, as a frontage road on the east side of I-485.
- Shopton Road and Dixie River Road may be aligned at NC 160.
- Alignment of Sam Wilson/NC 160 Connector is not determined.
- Sidewalks have not been constructed on Steele Creek Road in this area and are not proposed as part of the I-485 project.
- NCDOT will widen Steele Creek Road to 3 lanes north of the interchange to Shopton Road.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Align Shopton Road and Dixie River Road at NC 160.
 2. As development/rezonings are proposed, limit access along NC 160 between Shopton Road and Shopton Road West.

Land Use and Zoning

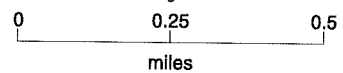
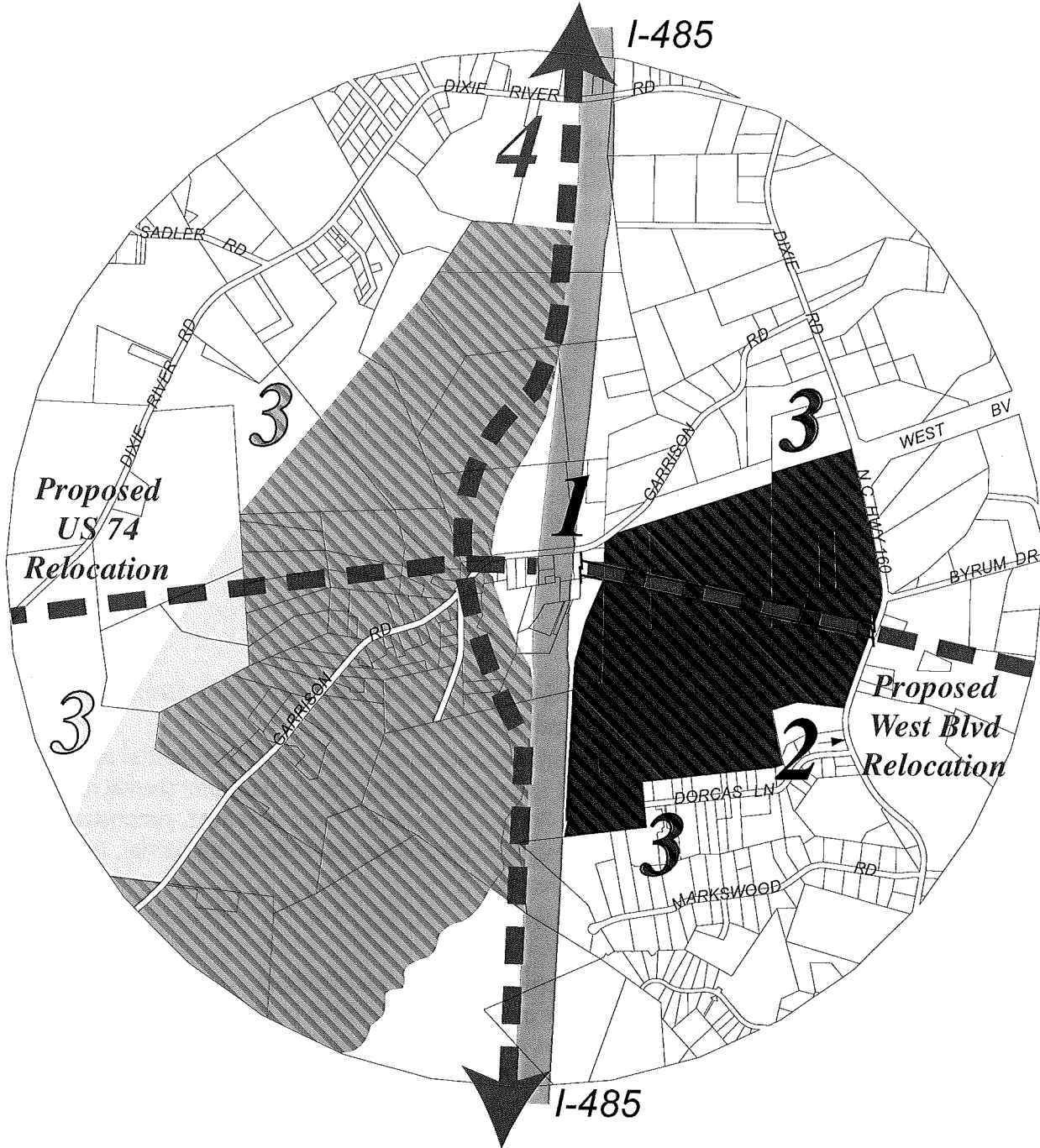
Existing and Planned Land Use/Zoning:

- Most of the land in this area is currently zoned/developed as low density single family with some commercial and industrial at Shopton and Steele Creek Roads.
- The land northeast of the interchange is currently shown as appropriate for residential and commercial development on the adopted land use plan, with the other quadrants shown as primarily single family residential. The draft *Westside Strategic Plan*, however, proposes the future land uses around the interchange as primarily non-residential (office, industrial, business park) with some mixture of multi-family residential.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
3. Support the land use recommendations for this interchange provided in the draft *Westside Strategic Plan* that indicate the future land uses around the interchange as primarily non-residential (office, industrial, business park) with some mixture of multi-family residential.
 4. Support the development of an Airport Area Transit and Land Use Study as recommended in the draft *Westside Strategic Plan*.

Future US 74 West (West Boulevard)



Future US 74 West (West Boulevard)

Transportation

Existing Plans for the Interchange Area:

- The interchange is planned as a simple diamond.
- West Boulevard is planned to be re-aligned and extended to I-485.
- Wallace Neal Road is planned to be reconstructed as a frontage road on the east side of I-485.
- Alignment of Sam Wilson/NC 160 Connector is not determined.
- Sidewalks do not exist on West Boulevard in this area, and are not proposed on the bridge over I-485.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
1. Extend control of access along West Boulevard Extension from the interchange to Steele Creek Road (NC 160).
 2. Access for the future retail center should be provided from Steele Creek Road only, not West Boulevard.

Land Use and Zoning

Existing and Planned Land Use/Zoning:

- Most of the land in this area is currently zoned/developed as low density single family with some light industrial uses nearer to the airport.
- The land northeast of the interchange is currently shown on the adopted land use plan as appropriate for industrial/office development, with the other quadrants shown as primarily parks and low density residential. A neighborhood shopping center is also shown at this interchange. The draft *Westside Strategic Plan*, however, proposes the future land uses around the interchange as primarily non-residential (office, industrial, business park), with open space. The neighborhood center is shown in the southeast quadrant.

Recommended Changes to Existing Plans:

- » Implement the general recommendations as provided for all interchanges.
3. Support the land use recommendations for this interchange provided in the draft *Westside Strategy Plan* that indicate the future land uses around the interchange as primarily non-residential (office, industrial, business park), with open space. The neighborhood center is shown in the southeast quadrant.
 4. Support the development of an Airport Area Transit and Land Use Study as recommended in the draft *Westside Strategic Plan*.



CHAPTER THREE: IMPLEMENTATION STRATEGY

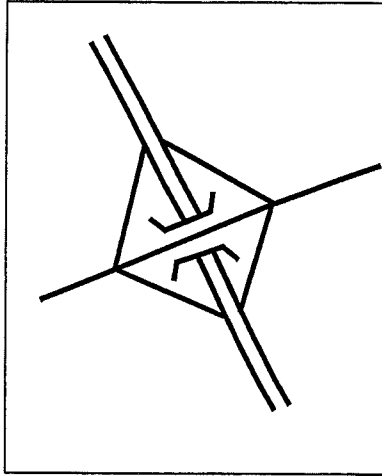
The Technical Coordinating Committee (TCC) will be responsible for developing an implementation strategy for this *I-485 Interchange Analysis*. The implementation strategy will make specific assignments to organizations and will hold them responsible for tracking and coordinating each recommendation so that it becomes a reality.

For proposed land use changes, the appropriate planning agency will be responsible for guiding the recommendation through the appropriate channels. Local agencies, municipalities or NCDOT will prioritize the recommended transportation improvements in their respective capital planning documents.



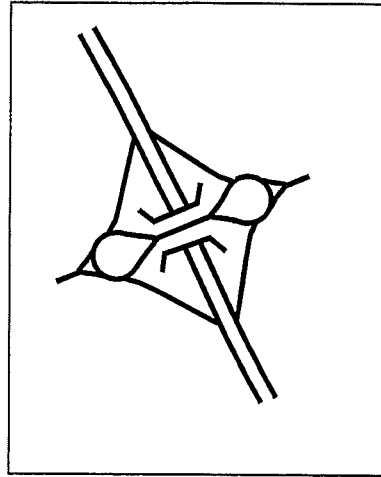
APPENDIX

- *Typical Interchange Designs*
- *Travel Demand Modeling Analysis*
- *Status of I-485 Interchanges (Table)*
- *Estimated Completion Dates of I-485 Segments (Map)*
- *Prosperity Church Road Villages: Map of Proposed Land Use*
- *Northeast Small Area Plan Map*
- *I-485/Providence Road Plan Update: Proposed Land Use Map*
- *Citizen Comments from Public Meetings (available under separate cover)*



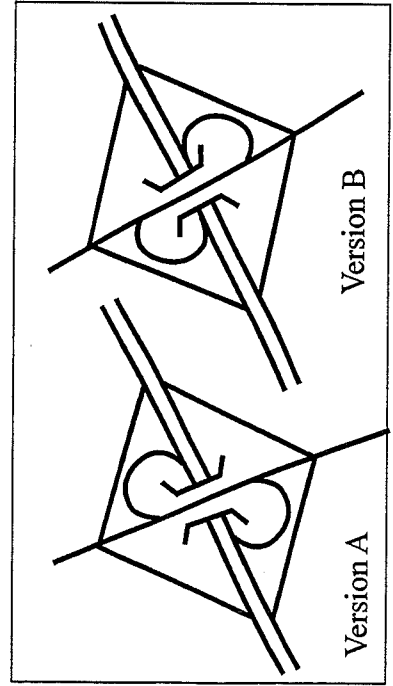
Diamond

- * High congestion once signals are required at both ramps
- * Frontage road signals dramatically increase congestion
- * Does not work well with nearby driveways
- * Usually lowest cost
- * With signals, most interchanging vehicles and cross road vehicles stop at least once



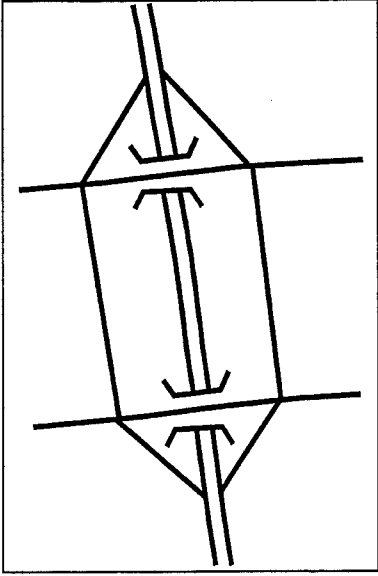
Diamond with Roundabouts

- * Works best with two-lane crossing road
- * High capacity with one-lane ramps and two-lane roads
- * Most vehicles never stop
- * Moderate operating speeds (25 mph - 35 mph) in roundabouts
- * Not always considered pedestrian friendly
- * Does not work as well with frontage roads
- * Does not work well with nearby driveways



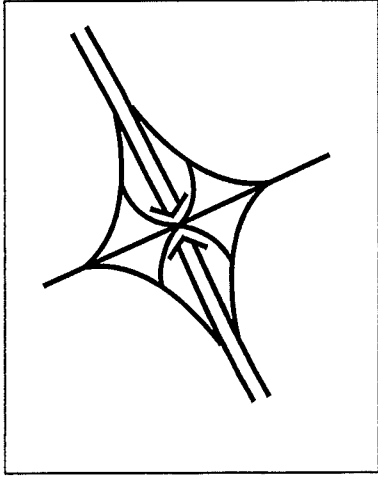
Diamond with Loops

- * Less congested, especially if there are no frontage roads or nearby driveways
- * Version A, with no frontage road, has efficient signal control (if required)
- * Version B, with no frontage road, may never require signals and if signals are required, the operation is even more efficient than Version A



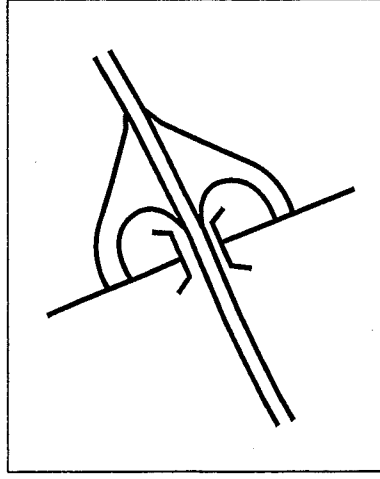
Split Diamond

- * Signal problems same as diamond, but for both cross streets
- * Should not be used with frontage roads
- * Spreads access area of interchange
- * Less impact on freeway than conventional diamond



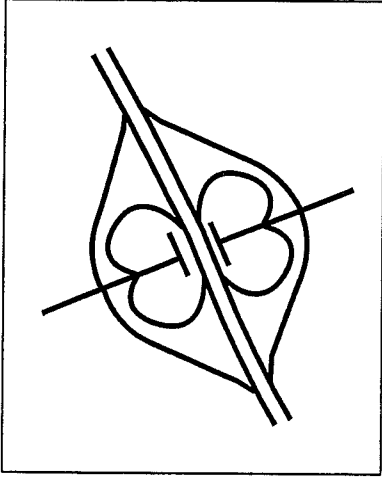
Urban Diamond

- * Very efficient interchange
- * Very expensive interchange
- * Requires less right-of-way than most interchanges
- * Requires a deeper (thicker) bridge deck (requires greater vertical separation)



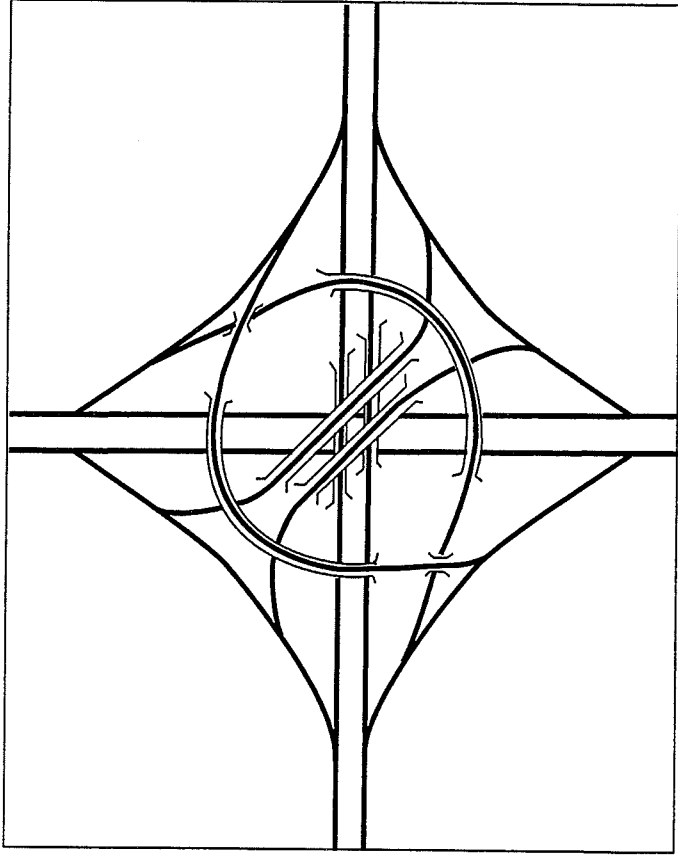
Half Cloverleaf

- * If no driveways or frontage roads are located opposite the ramp intersections, this interchange can be more efficient than a diamond because both left turns from the cross road are in the same direction
- * Most likely interchange to require signals at both ramp intersections



Full Cloverleaf

- * Most vehicles never stop
- * Weaving becomes a safety / congestion problem
- * Weaving is uncomfortable for drivers
- * Takes a lot of right-of-way
- * High capacity
- * Very expensive



Full Directional

- * Highest capacity
- * Most right-of-way
- * Highest cost
- * Safest - all right exits and right merges
- * Can be confusing
- * Most vehicles never stop

Travel Demand Modeling Analysis

The Charlotte Department of Transportation (CDOT) provided traffic modeling support to assist planners in developing land use and transportation recommendations for this I-485 interchange analysis. Traffic volume projections were provided using the CDOT travel demand model for the year 2020. Volumes were for daily traffic and carry the same assumptions used for the *2020 Transportation Plan* and the 2020 Transportation Plan conformity analysis.

The roadway network used in the modeling includes the existing network and projects in the fiscally-constrained project list for 2020. The list included all funded facilities and assumes roadway funding will continue at present levels over the next twenty years. Projects are chosen from the 2020 priority list adopted by the Mecklenburg Union Metropolitan Planning Organization (MUMPO). The transportation networks also include significant progress towards the transit system shown in the *2025 Integrated Transit / Land Use Plan*. Capital transit improvements (busway and light rail) are assumed in all five transit corridors. Land use projections reflect the *2025 Integrated Transit / Land Use Plan*.

For the I-485 interchange analysis, the baseline assumes the 2020 Plan network. This includes completion of the entire I-485 mainline and interchanges at all locations shown on the MUMPO Thoroughfare Plan with the exception of the interchange at Westinghouse Boulevard, which did not rank high enough in the fiscally-constrained project list. Recommendations for changes in the size or scope of interchanges (i.e., adding loops, urban diamond) are based on volume projections for 2020 from this run.

In addition, staff made three special runs of the travel demand model to test the effect on the network by removing interchanges. The scenarios are:

- A. Remove interchanges at Harrisburg Road, NC 51 (Blair Road), Weddington Boulevard, Westinghouse Boulevard and Oakdale Road. All other proposed interchanges were assumed to be open.
- B. Remove interchanges at NC 51 (Blair Road) and Westinghouse Boulevard. All other interchanges were assumed to be open.
- C. Remove interchanges at Harrisburg Road, Weddington Road, and Oakdale Road. Westinghouse Boulevard interchange and all others assumed to be open.

Future year volumes on the freeway, nearby interchanges and surface streets in the area were compared for each run and are reflected in the recommendations.

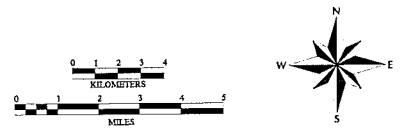
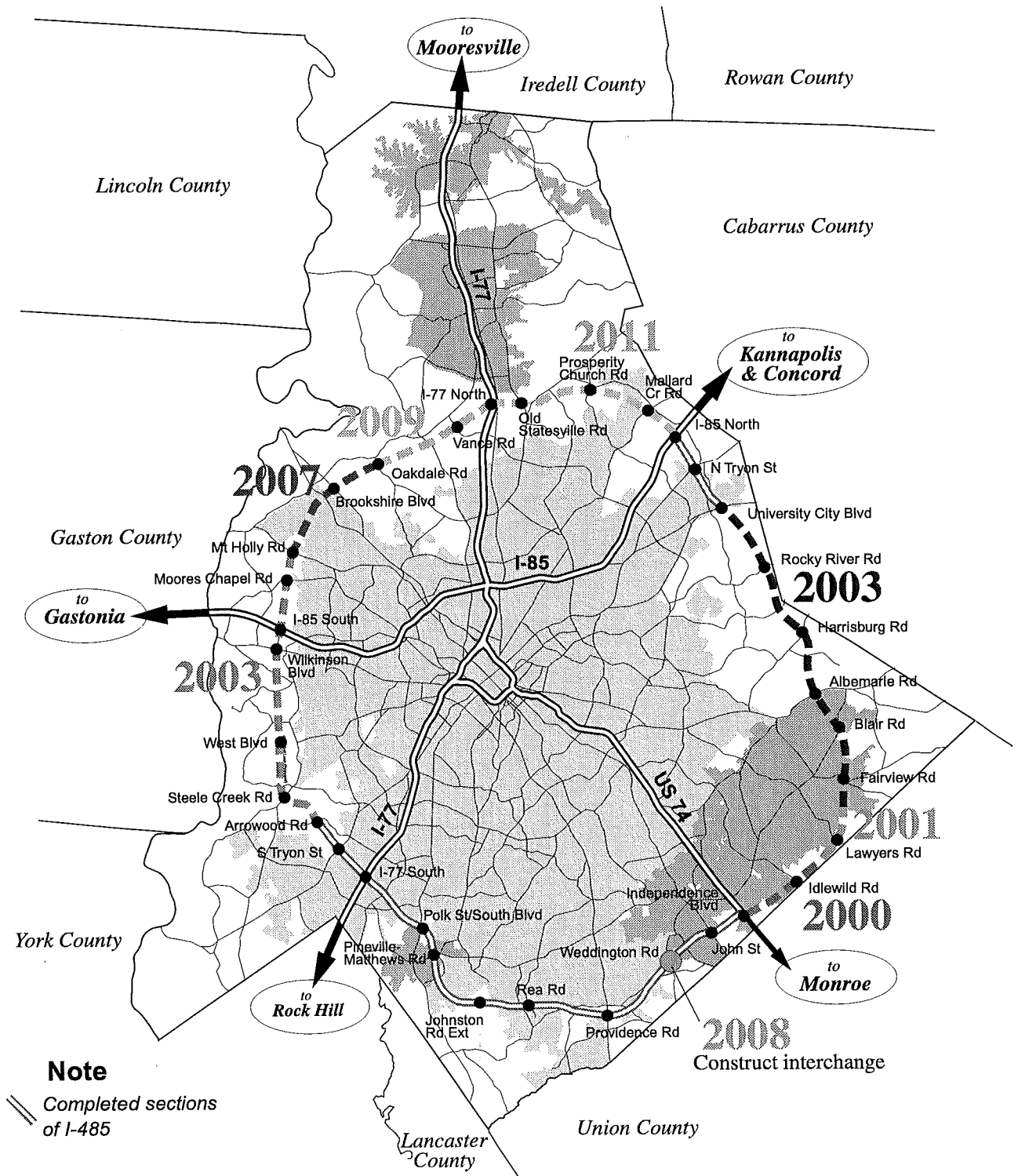
The recommendation for an urban diamond interchange at Mallard Creek Road will require additional work by the modeling team. At present, the model network ends at the Mecklenburg-Cabarrus County line. Development at the Concord Mills Mall site, just over the County line, is not adequately examined by the current model. Staff is currently adding traffic survey zones and additional network in the I-85 corridor. Further analysis will follow and results will be submitted to the MUMPO and NCDOT when completed.

INTERSTATE 485 INTERCHANGE STATUS






(As of June 1999)

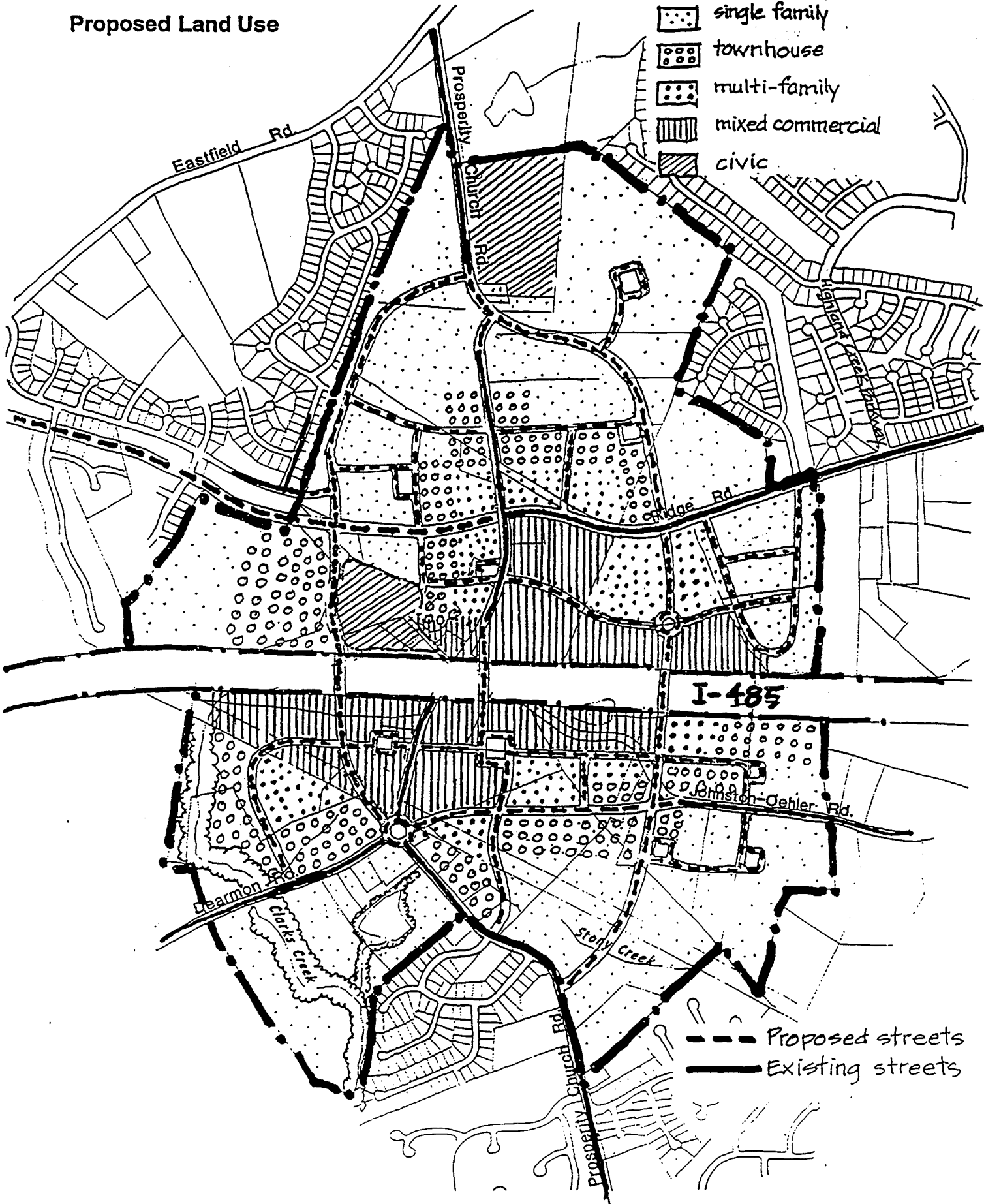
INTERCHANGE NAME	COMPLETE	PARTIALLY COMPLETE	UNDER CONSTRUCTION	NOT BUILT	
				FUNDED	UNFUNDED
S. Tryon St. (NC 49)	X				
Arrowood Road		X			
Steele Creek Road (NC 160)				X	
West Blvd. Extension				X	
Wilkinson Boulevard (US 29-74)				X	
I-85 South				X	
Moore's Chapel Road				X	
Mount Holly Road (NC 27)				X	
Brookshire Boulevard (NC 16)				X	
Oakdale Road				X	
Vance Road				X	
I-77 North				X	
Old Statesville Road (NC 115)				X	
Prosperity Church Road				X	
Mallard Creek Road				X	
I-85 North				X	
N. Tryon Street (US 29)			X		
University City Boulevard (NC 49)			X		
Rocky River Road				X	
Harrisburg Road				X	
Albemarle Road (NC 24-27)				X	
Blair Road (NC 51)				X	
Fairview Road (NC 218)				X	
Lawyers Road			X		
Idlewild Road			X		
Independence Boulevard (US 74)		X			
John Street	X				
Weddington Road				X	
Providence Road (NC 16)	X				
Rea Road	X				
Johnston Road Ext. (US 521)		X			
Pineville-Matthews Road (NC 51)	X				
Polk St./South Blvd. (US 521)	X				
Westinghouse Boulevard					X
I-77 South	X				
TOTAL	7	3	4	20	1

Estimated completion dates

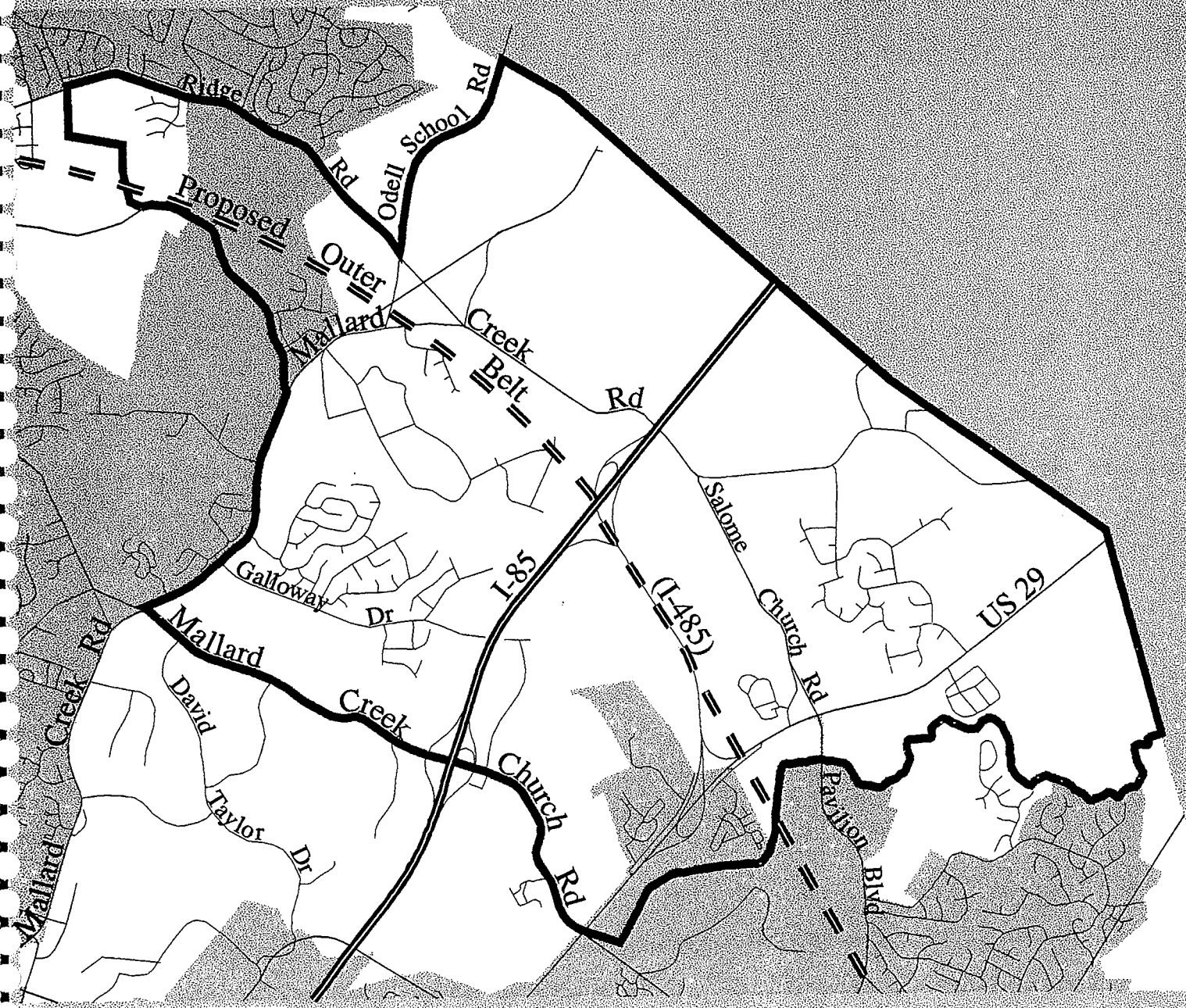





Proposed Land Use

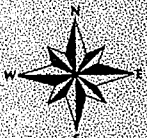
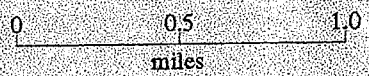
-  single family
-  townhouse
-  multi-family
-  mixed commercial
-  civic



Northeast Plan Study Area



-  City of Charlotte
-  Unincorporated Area
-  Northeast Plan Area

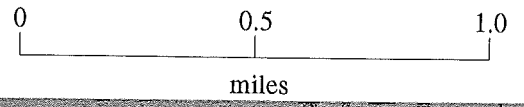
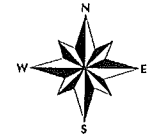


I-485 / PROVIDENCE ROAD PLAN UPDATE

Proposed Land Use



- | | |
|-------------------------------------|-------------------------------|
| Residential (Up to 4 Units/Acre) | Institutional |
| Residential (4-6 Units/Acre) | Utilities |
| Residential (6-8 Units/Acre) | Private Recreation/Open Space |
| Residential (8-10 Units/Acre) | Public Open Space |
| Residential (8-12 Units/Acre) | Proposed Roadway |
| Office | Proposed Greenway |
| Retail | Proposed Retail Center |
| Mixed Use (Multi-Family and Retail) | Proposed Park |



Produced by the Charlotte-Mecklenburg Planning Commission, June 1999.

***The Charlotte-Mecklenburg Planning Commission
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