AGENDA

Meeting Type:	WORKSHOP
Date:	02/07/1994

City of Charlotte, City Clerk's Office

CITY COUNCIL WORKSHOP AGENDA

Monday, February 7, 1994

AGENDA

5:00 p.m.	*Development Standards in City within a City Neighborhoods*
5:15 p.m.	*Dinner*
5:30 p.m.	*Long-Range Planning for Wastewater Treatment*
6:15 p.m.	*Uptown Charlotte Opportunities*
6:30 p.m.	*Parsons-Brinckerhoff Fixed Guideway Transit Study Recommendations*
7:15 p.m.	*Adjourn*

COUNCIL WORKSHOP AGENDA ITEM SUMMARY

TOPIC: Development Standards in City-Within-A-City Neighborhoods

KEY POINTS (Issues, Cost, Change in Policy):

- In 1982 the City of Charlotte and Mecklenburg County adopted a policy known as the "Comprehensive Street Classification System" It provided a uniform basis from which public and private sector planning could proceed and served as the model for subsequent ordinance amendments in both jurisdictions It contains definitions of the various street types, typical cross sections, and right-of-way standards to guide future street construction In conjunction with the Thoroughfare Plan, it has been and continues to be an invaluable tool to preserve and provide future roads

- In the years since the policy was adopted considerable experience has been gained in the impact of the existing standards when applied to areas of existing development In general the area bounded by Route 4 and I 85, which contains many of the CWAC neighborhoods is largely developed and the application of essentially "suburban' standards in these "urban" areas has proven problematic Wider street standards make development and redevelopment of existing neighborhoods more difficult and costly and may result in the loss of existing structures thus making neighborhood preservation more difficult In urban settings the application of a 100' suburban road standard is inappropriate and potentially damaging to the fabric of the community A standard more in keeping with these urban settings is appropriate to preserve development opportunities and neighborhood integrity

- The City Planning and Transportation Departments join in this recommended change to street standards in urban areas In the vicinity of intersections it is normally the case that wider rights-of-way are needed and this recommend change will not affect those circumstances There may be areas where, due to turn lanes or other unusual traffic and/or development configurations rights-of-way will have to be adjusted as they are now However, the changes recommended here are sufficient to protect the city's need for an appropriate transportation system <u>and</u> reduce the development restrictions and preserves our older inner city neighborhood

Proposed changes in Right-of-way widths

Present Standard	Proposed Urban Standard

Class III Major Thoroughfare	Class III Urban Thoroughfare
100'	80'
Class IV Minor Thoroughfare	Class IV Minor Urban Thoroughfare
70'	60'

- Detailed construction standards will be jointly developed and added to the Land Development Standards Manual A public hearing for the needed text amendments to the Subdivision and Zoning Ordinances can be scheduled as early as March If needed the Thoroughfare Plan can be amended to include the geographic area covered by the revised standard

OPTIONS: Leave existing standards in place This will make more difficult the preservation of existing neighborhoods and potentially limit economic development and redevelopment opportunities

COUNCIL DECISION OR DIRECTION REQUESTED: Schedule February 14 decision on policy change and adopt resolution for public hearings to be held in on March 21

ATTACHMENTS: None

COUNCIL WORKSHOP AGENDA ITEM SUMMARY

TOPIC: Wastewater Treatment Long Range Planning

KEY POINTS (Issues, Cost, Change in Policy):

- Adequate wastewater treatment capacity must be provided to allow for continued growth and economic development of Charlotte-Mecklenburg while protecting the natural environment
- CMUD is planning now so that future wastewater treatment demands can be met
- CMUD is working with the surrounding utilities to study regionalization, but is also pursuing the ability to provide treatment within Mecklenburg County should regional systems not be available
- Planning studies show that 16 MGD of additional treatment capacity is needed by 2005
- CMUD may need additional capacity as early as 1997

OPTIONS:

- Expand and build new CMUD facilities to meet all Charlotte-Mecklenburg needs
- Purchase treatment capacity from Cabarrus County's existing plant
- Participate in regional treatment facility in South Carolina
- Combinations of options

COUNCIL DECISION OR DIRECTION REQUESTED:

Council will be asked to attend a regional meeting of elected officials on March 22, 1994 At that meeting, more detail will be presented about the South Carolina regional options In the future, Council will be asked to fund more detailed study of regional options Council will be asked to approve engineering and construction contracts for continued expansion of existing CMUD treatment plants

ATTACHMENTS: None

COUNCIL WORKSHOP AGENDA ITEM SUMMARY

TOPIC: Emerging Center City Opportunities

KEY POINTS (Issues, Cost, Change in Policy):

- Center City Charlotte is a vital economic asset
- There are a variety of key locations - prioritization required
- Coordination of public and private initiatives required
- Direction for public role in priority activities - possibilities

OPTIONS:

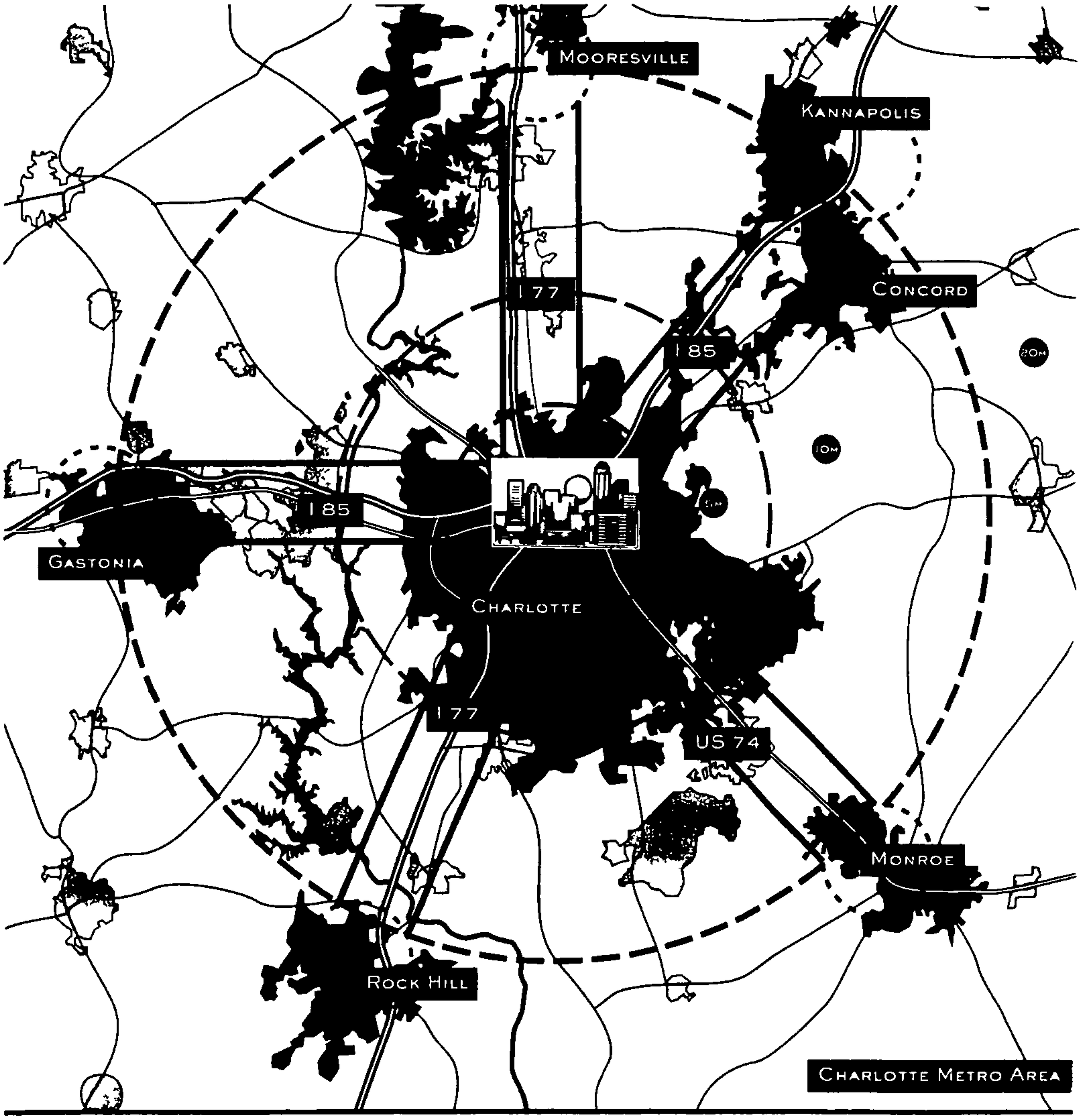
- No Action
- Clarify City role and priorities for Center City development project

COUNCIL DECISION OR DIRECTION REQUESTED:

- Receive as information and schedule subsequent discussion on priorities and City role

ATTACHMENTS:

- Regional Map
- Center City Opportunities - Key Locations
- Project Activities - List and Map


Mooresville
Kannapolis
Concord
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Gastonia
Charlotte
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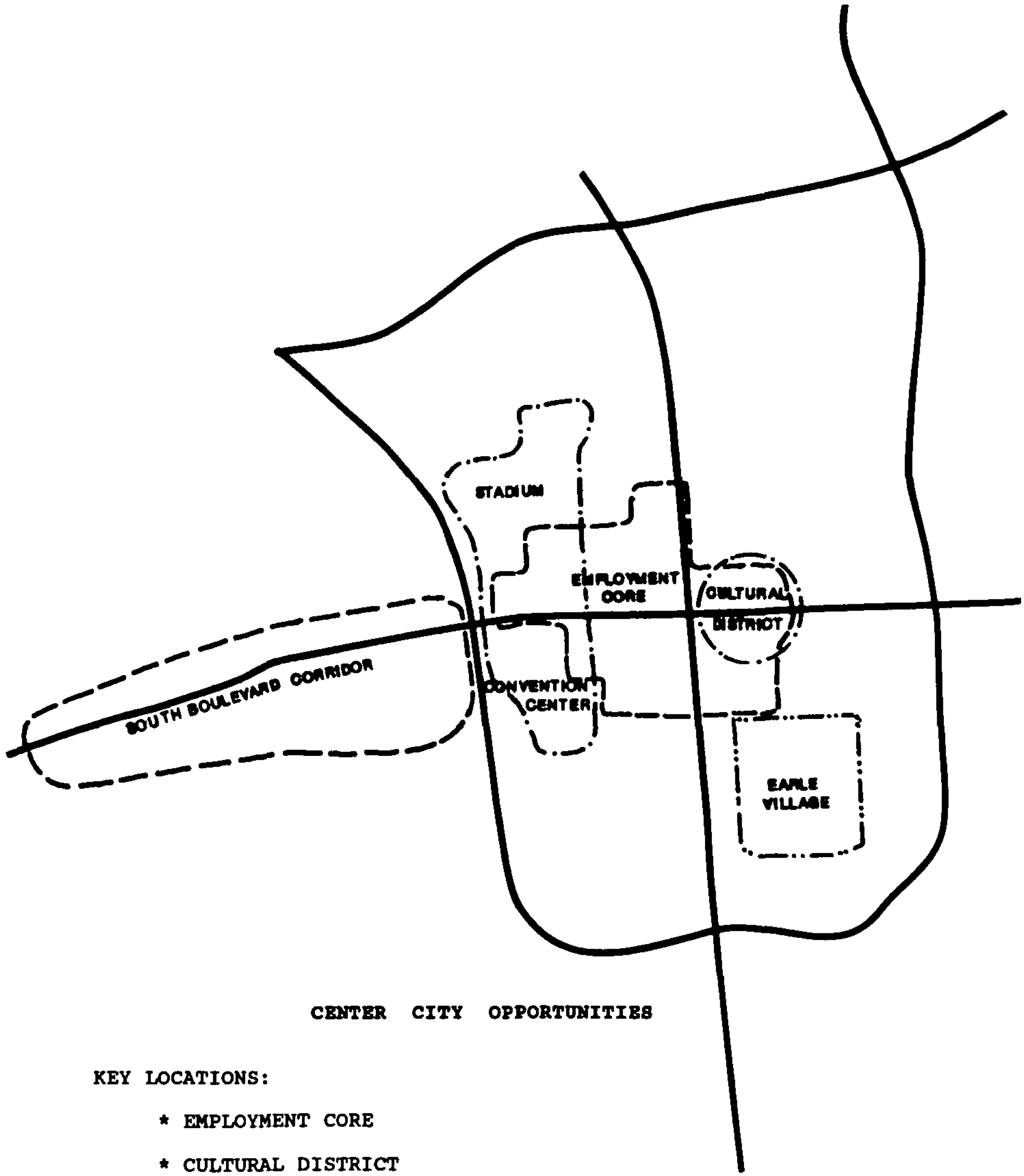
US 74
Monroe
Rock Hill
Charlotte Metro Area



CENTER CITY OPPORTUNITIES

KEY LOCATIONS:

* EMPLOYMENT CORE
* CULTURAL DISTRICT
* CONVENTION CENTER/STADIUM DISTRICT
* SOUTH BOULEVARD CORRIDOR
* FIRST WARD/EARLE VILLAGE

CENTER CITY POSSIBILITIES

PROJECT ACTIVITIES :

* TROLLEY CONNECTIONS
  - Atherton Mill to Stonewall
  - North/South Tryon shuttle connection
* SHUTTLE SERVICE (Trolley/Street vehicles)
  - Circulation/Activity connections: Parking, entertainment, conventions, hotels, sports, etc.
  - UTC/Duke Power Proposal... Electric Vehicles
* TRYON MALL/TRANSPORTATION CENTER
  - Old Convention Center Site... Low cost, surface proposal
  - Tryon Pedestrianway/Events... Central spine
* OLD CONVENTION CENTER REUSE/REDEVELOPMENT
  - Report date... May 1994
* NEW CONVENTION CENTER/STADIUM AREA
  - First Street/Stonewall Pedestrian connections
  - Area Sidewalk improvements
  - Lighting...College and Church Streets
  - Entertainment/Restaurant District
  - Hotel
  - Office
* FIRST WARD REDEVELOPMENT
  - Earle Village Federal Grant
* OTHER
  - Public Market
  - High School for Performing Arts
  - Retail/entertainment
  - Housing
  - Museum/Acquarium
  - Marketing Center City
  - CityFair

JCSU
THIRD WARD
STADIUM
FOURTH WARD
ENTERTAINMENT/EDUCATION
DISTRICT
UPTOWN RAIL SHUTTLE
TRYON
CONVENTION
CENTER
TRANSPORTATION
CENTER
DILWORTH RAIL SHUTTLE
SOUTH BLVD
FIRST WARD
GOVERNMENT
CENTER
GREENWAY
CPCC
MIDTOWN
HOSPITAL
HOSPITALS

COUNCIL WORKSHOP
AGENDA ITEM SUMMARY

TOPIC: Information Report - Conclusions and recommendations from the Charlotte Fixed Guideway Study performed by Parsons Brinckerhoff Quade and Douglas, Inc

KEY POINTS (Issues, Cost, Change in Policy):

- The three corridors meriting priority consideration run from Uptown to (and beyond) the Airport, Pineville, and Matthews Other corridors (such as UNCC) should be re-examined as regional plans are developed

- Both light rail transit and busway/high occupancy vehicle technologies are viable candidates for major transit investments

- An estimated 41,000 to 46,000 daily riders would use the three-corridor starter system in 2015 Current daily transit ridership is 40,000 passengers Total system ridership in 2015 (including starter system) is estimated at 84,000-89,000 riders per day

- Fixed-guideway transit can serve as an organizing tool for more efficient land use patterns, however, **existing land-use patterns and typical development forms, if *unchanged, make providing good public transit service a real challenge.***

- Fixed guideway transit provides additional benefits·

  - Improved air quality
  - Enhanced quality of life
  - Impetus to economic development and redevelopment
  - Increased property values
  - Reduced traffic congestion on heavily-used roads in corridors and in Uptown Charlotte
  - Travel time savings for transit riders

- Estimated cost of a 26-mile, 3-corridor light rail system is $600 million in 1993 dollars Parsons Brinckerhoff analyzed capital cash flow needs for a phased construction schedule

  - Airport Corridor 1997 - 2003
  - Pineville Corridor 2001 - 2006
  - Matthews Corridor 2005 - 2011

- Estimated cost of a busway system in these same 3 corridors is $100 million Construction of this system also would be phased The High Occupancy Vehicle (HOV) lane under construction along Independence could be considered as the first segment of a Matthews Corridor busway

OPTIONS:

Await the recommendations of the Transportation/Transit Committee of 100 regarding fixed guideway transit This group is examining major transit investments as they relate to a metropolitan land use vision and other transportation needs

COUNCIL DECISION OR DIRECTION REQUESTED: None

ATTACHMENTS: Executive Summary (Second draft)

1. Executive Summary

Introduction

The Charlotte Transitional Analysis (TA) studied the potential need for and effectiveness of several modes of public transportation with capacities and levels of service beyond the existing bus service The planning horizon year was 2015 The study area included the portion of Mecklenburg County south of two corridors that meet in the CBD one going west toward (and beyond) the Charlotte-Douglas Airport the other headed east past the University of North Carolina — Charlotte (UNCC) campus This summary describes the work and findings of the study

The study began in August 1992 and was completed in November 1993 Eight corridors were examined, all of which have a common Uptown portion along the North Carolina Rail Road (NCRR) right-of-way between Second Street and Thirteenth Street

- **UNCC/Highway,** from Uptown to UNCC via NCRR Norfolk Southern (NS), and NC 49 and US 29 highway alignments
- **UNCC/Railroad,** from Uptown to UNCC via NCRR, NS alignments only
- **Albemarle,** from Uptown to the Outer Loop beyond Wilgrove via the NCRR, NS main line and the Aberdeen Carolina, and Western (AC&W) alignment
- **Matthews,** from Uptown to Matthews via NCRR and CSX Transportation railroad rights-of-way
- **Providence Road,** from Uptown to the Outer Loop at Providence Road via NCRR, Third Street, and Providence Road rights of-way
- **Park Road,** from Uptown to the Outer Loop via NCRR, Third Street Providence Road, Sharon Lane, Sharon Road, Morrison Boulevard, SouthPark Mall access road, Fairview Road, Park Road, and Johnston Road rights-of-way
- **Pineville,** from Uptown to New Heritage USA (in South Carolina) via the NCRR and the NS line to Columbia, SC
- **Airport,** from Uptown to the vicinity of the Outer Belt beyond Charlotte Douglas Airport, primarily via the NCRR and the NS main line to Atlanta, but with the possibility of routing a portion of the line along Wilkinson Boulevard

Figure 1-1 shows the corridors studied

Scope of Study

The tasks in the Transitional Analysis included

Select primary corridor(s). As part of the process prescribed for transit projects that may seek federal financial assistance, the TA identified the first corridor in which a major transit investment should occur This effort involved examination of the travel demands, facility costs, and other pertinent factors such as land-use and environmental considerations in all corridors, and designation of the corridor on

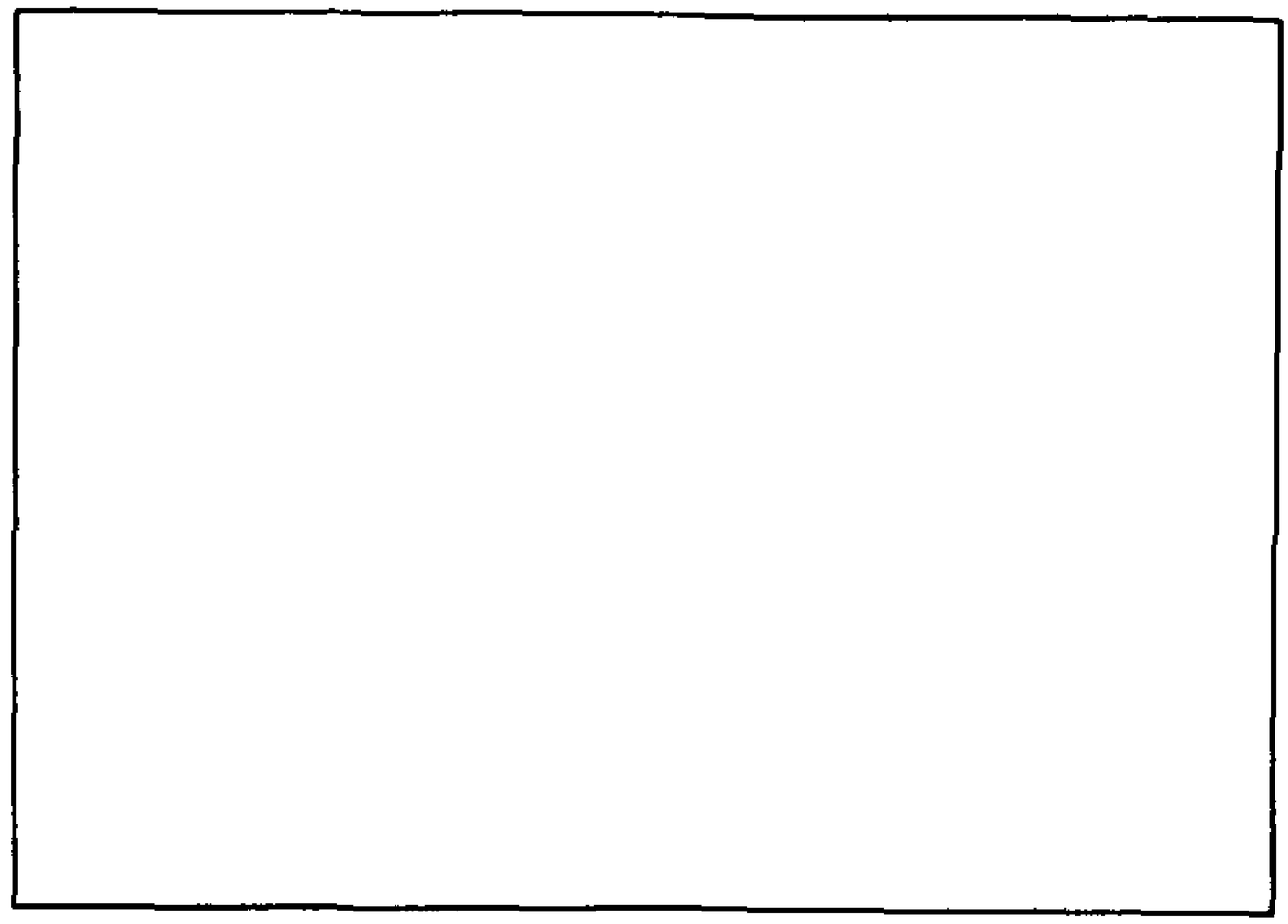


figure 1 1
Potential Transit Corridors

which the initial investment and effort should be concentrated

Select range of modes. Transit demand in a corridor may be met by a number of modes The TA considered a range of modes including

- local bus on city streets
- express bus on city streets and highways
- buses on exclusive busways and/or HOV lanes
- light rail transit
- heavy rail transit
- commuter rail

and recommended the bus modes and light rail be studied further

Examine impacts of enhanced land use. Prior studies had generally assumed that the existing land use plan would be followed This implied that the spatial distribution of residences, workplaces, and other activity centers in the Charlotte region in the horizon year would be the same whether or not major investments were made in fixed guideway transit This study explicitly examined the transit and land-use implications of concentrating development, to the extent feasible and consistent with overall Charlotte density and development plans, in transit station areas

Prepare financial plan. The Federal Transit Administration (FTA) requires that the sponsoring agency (usually a transit authority or unit of local government) demonstrate its financial ability to pay for its share of the capital, operating, and maintenance cost of a proposed major transit investment for which federal financial assistance is requested The TA explored a number of feasible alternative funding options

Set stage for Alternatives Analysis. After a Transitional Analysis, if indications are favorable for proceeding with the project, the next step is an Alternatives Analysis (AA) This study, also conducted according to guidelines promulgated by the FTA, leads to selection of a Locally Preferred Alternative transit mode and alignment in the primary corridor Under new FTA regulations (published in October 1993) the

AA is regarded like the TA as part of the system planning effort The Draft Environmental Impact Statement (DEIS) formerly prepared in conjunction with the AA may now be postponed until the Locally Preferred Alternative has been se lected In that case it is produced during the Preliminary Engineering (PE) phase of the project FTA approval is required to proceed to PE but the AA may now be prepared without specific FTA authorization

Key Questions and Answers

The findings of the study may be simply summed up in the answers to a set of key questions

Express bus on exclusive busway

Is a light rail transit (LRT) or busway system feasible in Charlotte?

Yes, on all counts.

Physically either can be engineered to fit into railroad right-of way, city streets, or other locations as necessary

Financially, it is within the region's ability to pay for the capital, operating, and maintenance costs of the busway or LRT in the primary corridor by a number of schemes Various forms of additional taxation could be used (assuming approval of the region's voters or the State legislature in some cases) The system could be built either on a largely pay-as you-go basis or by debt financing (sale of bonds) depending on the financing plan selected Furthermore Expected *regional growth* justifies added infrastructure investment.

The Charlotte region will move closer to its *transportation goals* by providing either a busway or an LRT system in the primary corridor

Either mode is compatible with both existing *urban form* and potentially desirable changes in form

Light Rail Vehicle

Where should it run?

Initially, Airport to Uptown to Pineville.Next, Matthews.

Although not part of this study, a suggested staging concept, compatible with the new Comprehensive Plan, has been proposed and is shown on the adjoining figure

Commuter rail train

How many riders will it attract?

41,000 to 46,000 daily riders are expected to use the three-corridor starter system in 2015 Current daily CTS ridership systemwide, is around 40,000 Total system ridership (LRT or busway and local/express bus) in 2015 is predicted to reach 84,000 to 89,000 per day

How will it affect the need for, and service provided by, the existing bus system?

Bus service will be at least as good as it is today in corridors not served by busway or LRT Bus lines paralleling rail corridors would be converted to feeders if LRT is developed, and new feeder services to LRT would be developed as appropriate With busways some feeders may become through buses eliminating transfers to/from Uptown but otherwise busway and rail access would be the same

Bus service will be expanded as growth occurs, so newly-developed areas will have the same level of service as comparable areas today

What will it do for travelers?

The value of annual time savings to riders is $5 0 to $5 7 million

Vehicle-miles traveled *on the most heavily-congested roads in LRT corridors* will drop by 7 7% to 8 2%

What will it do to land use and vice versa?

Fixed guideway transit, either LRT or busways, can serve as an organizing tool for more efficient land use patterns. It represents a governmental commitment to services that is more substantial than general-purpose street transit

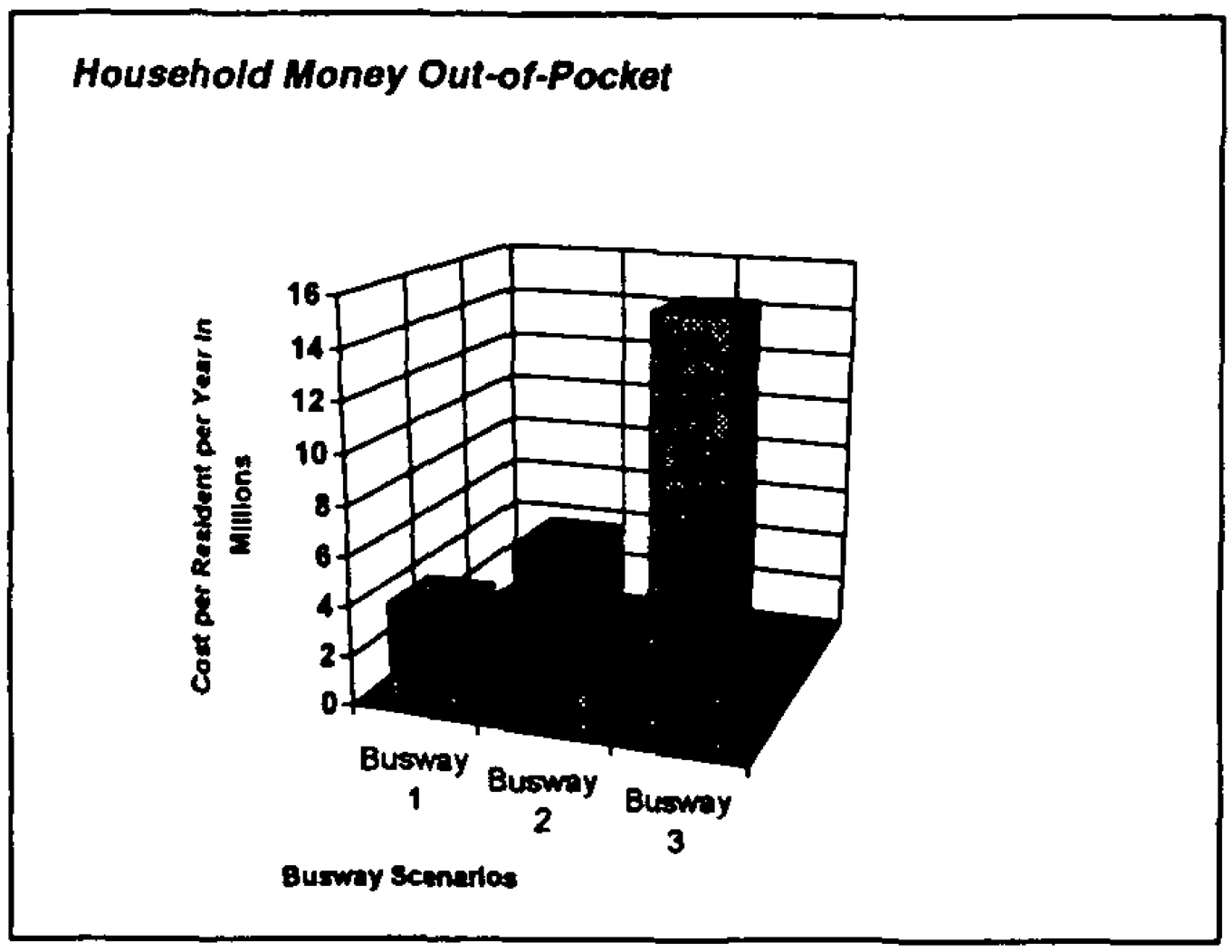
It will create high-accessibility nodes at stations which can serve as an impetus to healthy development and redevelopment. However because buses can operate on both the surface streets and on exclusive busways less foot traffic is generated at busway stations, so the development impetus may be greater with LRT than with busways

It can help reduce traffic congestion in high-activity nodes such as Uptown.

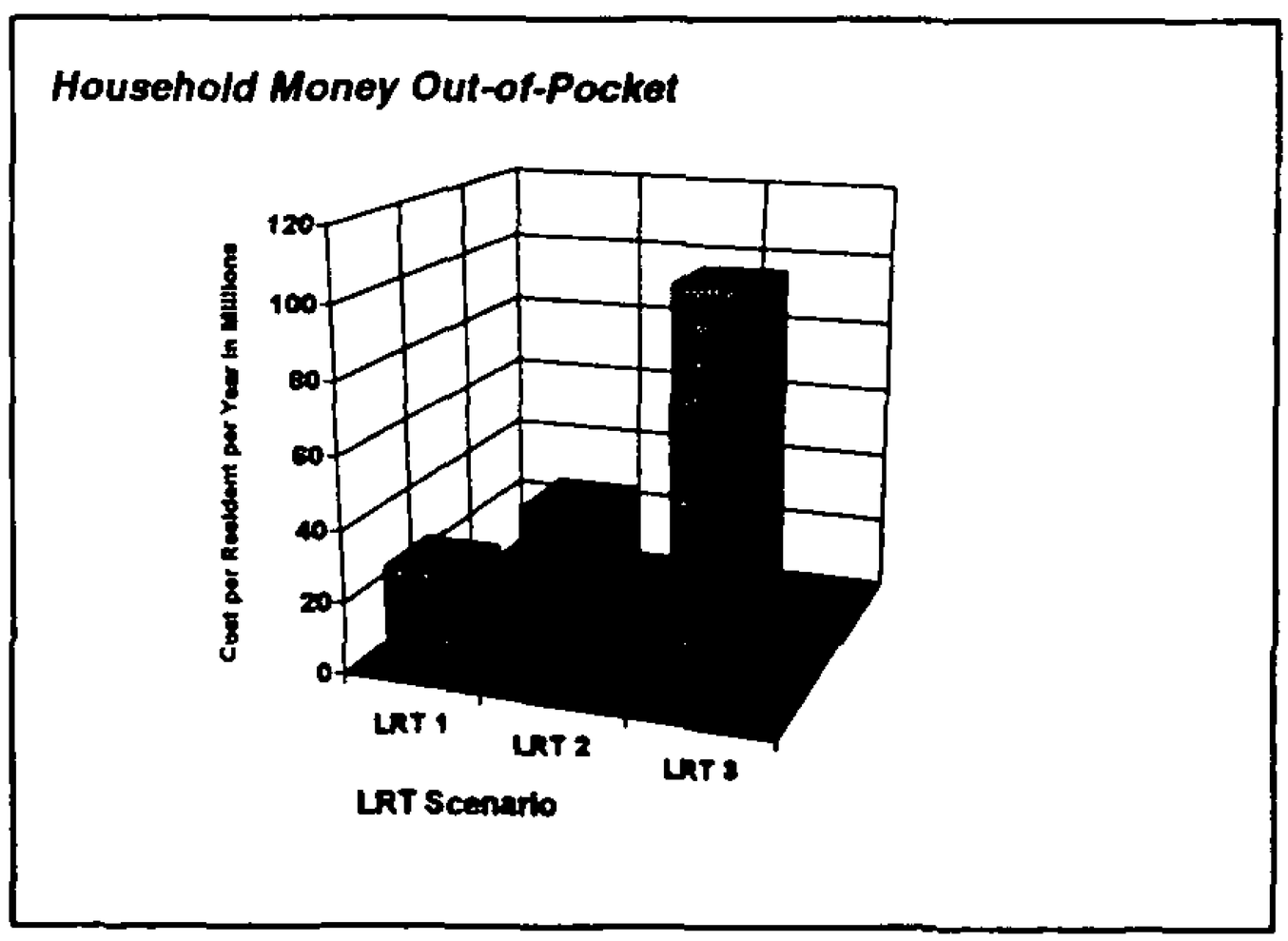
Ridership may be 15% higher if appropriate changes in land use regulation are adopted and implemented, than if the status quo persists However, existing land-use patterns and typical development forms, if unchanged, make providing good mass transit a real challenge

How much will it cost?

The three-route starter LRT system would cost $600,000,000 in 1993 dollars to build, including land acquisition, construction, and rolling stock Construction would occur in stages from 1996 to 2008 Total annual operating and maintenance (O&M) costs, in 1993 dollars for the LRT and associated bus system would be $14 7 $15 0 million more than in the No-Build alternative $9 4 to $9 7 million more than for an alternative (TSM) providing improved bus service on existing streets



Busway Scenario

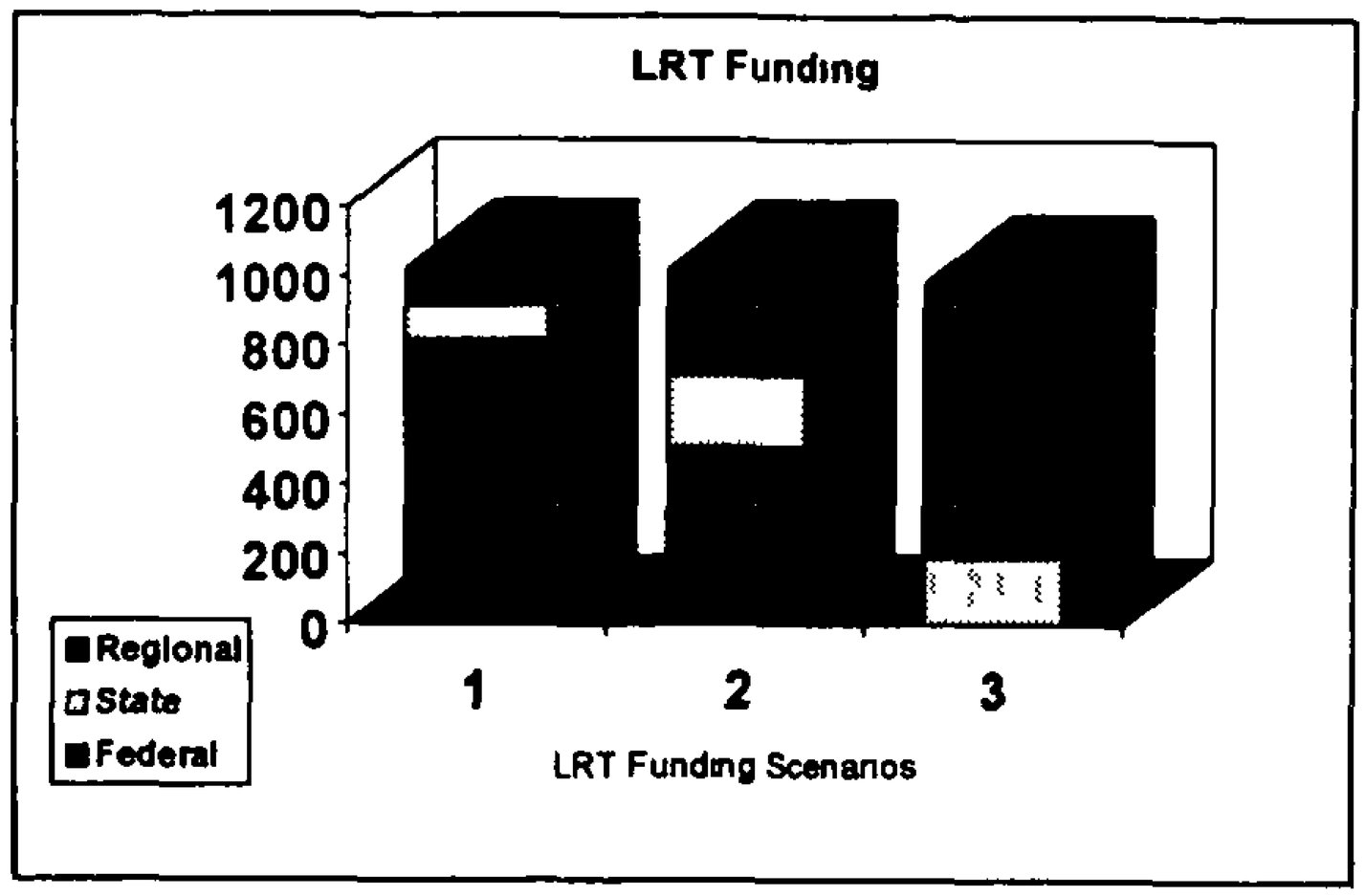


LRT Scenario

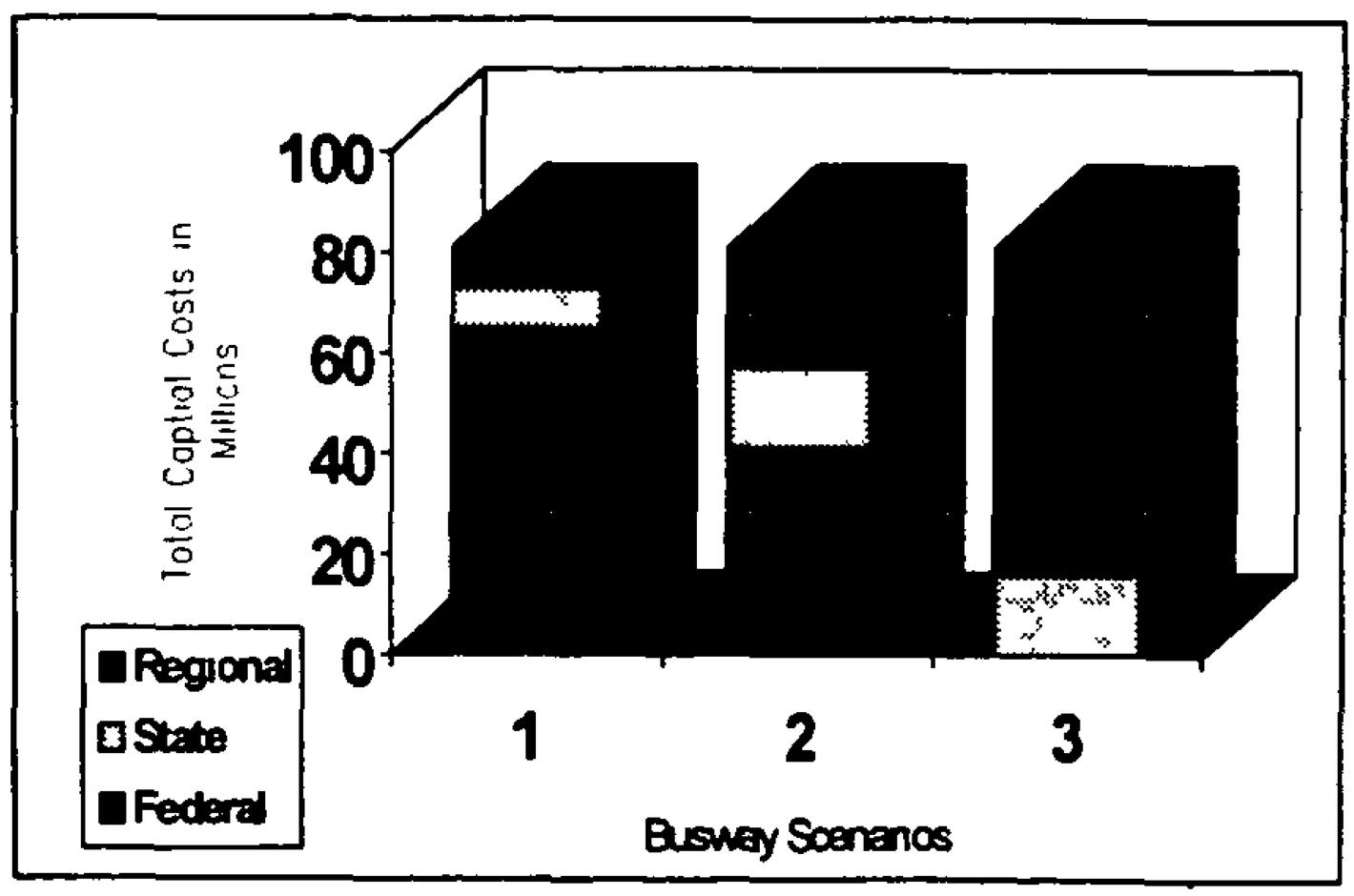
A busway system providing comparable levels of service would cost well under $100 million. Annual busway O&M costs would be about $8 4 million over the No-Build alternative or $3 2 million over TSM

How can we pay for it?

One possibility, with 80% federal funding for capital costs and bonding for the regional share, would require approximately $29 per capita per year from Mecklenburg County residents to support construction, operation and maintenance



LRT Funding Scenario



Busway Funding Scenario

Another scenario, with pay-as-you go funding, would require $50 per resident per year for the 20-year period studied, due largely to lower federal share

Other scenarios have been worked out, each with different levels of federal and state participation A scenario with no federal participation was studied, as were alternative scenarios with federal support ranging from 50%-80% and state support from 10-20% for capital costs Transit system operating costs not met from passenger fares were always assumed to be a local responsibility

A county-wide 1-cent sales tax could easily support both the local portion of LRT system construction cost and a variety of other transportation projects in parts of the county which would not benefit from LRT in the early years Other funding sources could include increases in the auto privilege tax, general

property tax increases and tax increment financing Busway costs would be substantially lower

If we want to go ahead, what do we do next?

Protect right-of-way *When rail service has been abandoned railroad right-of-way may be for sale* In some cases title may revert to abutting property owners if use for transportation purposes has been discontinued for a number of years Taking options on available right-of way, designating existing rights-of-way as transit corridors on comprehensive plan maps, and even outright purchase of available right-of-way are farsighted strategies It is far more difficult to purchase right-of-way for a corridor from many individual landowners than to acquire the right-of-way intact.

Start transit improvements now. Increasing and improving transit service in the primary corridors, and generally promoting transit use, can only help build *support for better future transit The popularity of the existing Rock Hill commuter service* is a good example of the type of result that can be achieved

Build regional support for public transportation. This involves such strategies as

- ***Working for federal and state funding assistance*** including federal "earmarks " Federal transit funding is allocated in response to both the technical merits of the proposed improvements and to "other factors " Cities that have secured federal funding for major transit investments in recent years have pursued several approaches with equal vigor

- ***Working towards a regional transportation sales tax.*** Charlotte's future transportation needs do not stop at the city line, nor at the Mecklenburg County line The needs and the problems are regional, and the solutions and their funding should be as well

- ***Working toward a regional implementing process.*** Along with the regional financial concept, of course, goes a need for a regional implementing process, possibly with interlocal agreements In light of the concepts expressed in the Intermodal Surface Transportation Efficiency Act (ISTEA) at the federal level, it is probably appropriate to think in terms of a multi-modal approach, capable of allocating funds to transit projects where appropriate and to highway projects elsewhere, so that all taxpayers receive benefits appropriate to their financial support.

Begin land-use plan and zoning changes The benefits of major investments in improved public transportation will only be fully realized if land use changes to take advantage of the high access provided by LRT or busways At a minimum,

this means approving proposed transit guideway alignments, incorporating them in the comprehensive transportation, and land use plans, and providing for more intensive development in station areas

Proceed to Alternatives Analysis The AA is the next step in the development of a major transit project requiring federal assistance Under the new guidelines key tasks in this phase consist of definition of alternative alignments, technologies and service plans in greater detail refinement of travel demand forecasts selection of the alignment and technology for the initial route and refinement of cost estimates and the financial plan The financial plan must be realistic and must reflect costs of operating the entire transit system, not just the new facilities Public involvement is important to the success of the AA phase as well The AA phase ends with selection of the Locally Preferred Alternative (LPA) and (usually) a request to FTA for approval to proceed into Preliminary Engineering (PE)

Conclusions

- An opportunity exists for Charlotte to make a major improvement in the public transportation services available to regional residents

- The corridors meriting priority consideration run from Uptown to (and beyond) the Airport Pineville, and Matthews Other corridors should be re-examined in a few years as development of the region progresses

- Both LRT and busway technologies are viable candidates The project is physically and financially "do-able "

- Advancing the project now requires

  A local decision to proceed.

  Follow-through with the next logical steps, in technical, institutional, and financial terms

  A champion who will advocate and promote the project locally, in Raleigh, and in Washington, particularly if the preferred mode is LRT The most successful new systems have been backed early-on by local advocates who made it their mission to "keep things moving " These advocates have worked on coalition-building where needed, generally encouraged local elected officials and agencies to continue devoting effort and resources to the project, and promoted the local cause at state and national legislative and funding levels

The remaining sections of this executive summary provide an abstract of the rest of the Transitional Analysis Final Report on a chapter-by-chapter basis Key points of each chapter will be found here, and further detail is available in the chapters

the concept of fixed-guideway transit and build support both within Mecklenburg County and beyond Such a program would be most effective if promoted by a local "champion " Such leadership has been instrumental in the development of every new LRT system in the U S Since the Charlotte region is not suffering a transportation crisis it may be more appropriate to devote the next year or two to building local support before proceeding to the next step in the FTA planning process The region would thus be able to sense when to proceed and would be able to make more effective use of federal monies

Need for Transportational Improvements

Existing Transit System

The Charlotte Transit System (CTS) is the major public transportation service provider for the region The CTS provides a fixed-route bus service almost entirely devoted to providing radial service to Uptown Charlotte Local routes provide most of the service and form the backbone of the system Express routes connect various outlying neighborhoods with Uptown The Tryon Street Mall was built in 1985 to improve bus movement in Uptown and create designated transfer points that would reduce crowding at bus stops The CTS also has 31 park-and ride lots

Regional Characteristics and Implications for Future Transit

The two most important influences on the need and feasibility of new fixed guideway transit in Charlotte are land use and future growth and traffic capacity and parking

Substantial increases in population and employment are expected in Charlotte and Mecklenburg County prior to 2015 The development characteristics of the Charlotte-Mecklenburg Generalized Land Use Plan 2005 (1985) are mixed however, in their ability to support capital-intensive transit investments The plan has identified three communitywide strategies that could be important in shaping the region employment reinvestment in older areas, neighborhood reinvestment in declining neighborhoods, and infill development in areas already served by the city's infrastructure Land use densities, however, are not expected to increase substantially The city also intends to continue to build a strong central area This is the one aspect of its land use plans that is most supportive of transit improvements The continued availability of ample or inexpensive parking in Uptown will, however, make increased transit use less desirable

Current congestion problems focus on the radial highways leading out of Uptown to the south and southeast. Planned thoroughfare improvements will help minimize future congestion Congestion will remain, however, on thoroughfares leading to the northeast, southeast, and southwest.

Recent Transit Planning History in the Region

The identification of future transportation needs and the means for meeting those needs has been addressed through the region's continuing planning processes

corresponding to the section headings

Overview of report

The study results presented in Chapters 2 through 9 encompassed

- The need for transportation improvements
- An evaluation of eight potential transit corridors and the selection of three primary corridors
- Transportation system management (TSM), busway/high occupancy vehicle (HOV) lanes and light rail transit (LRT) as promising transit alternatives for the three primary corridors
- Land use and transportation policy strategies that support the implementation of fixed-guideway transit (busway/HOV or LRT) in the primary corridors
- The capital and operation and maintenance (O&M) costs of the TSM, busway/ HOV and LRT alternatives
- Financial strategies for implementing fixed guideway transit and the regional financial commitment required for the LRT alternative
- Justification for proceeding with further fixed-guideway planning and in particu lar the next step in the Federal Transit Administration (FTA) planning process (until recently termed alternatives analysis)
- Recommendations for short-term actions to strengthen the viability of improved transit in the Charlotte region

In general, travel demand forecasts indicate that Charlotte is not expected to confront a transportation crisis by 2015 for which LRT is a necessary solution However, 2015 LRT ridership projections for the three-corridor starter system are in the same range as that of other LRT systems built in the recent past Thus, on technical (transportation) grounds, LRT is neither an outlandish idea nor an absolute necessity In addition, travel patterns expected by 2015 clearly indicate that public transportation must be addressed as a regional issue, and not limited to the city of Charlotte or Mecklenburg County

The financial analysis indicates that Charlotte can finance construction and operation of an LRT system if it chooses, if it is permitted to tax itself, and if some level of state and federal participation is available It is estimated that enhanced land use in station areas would increase ridership by 13 to 15 percent, enabling creative financing A fixed-guideway transit project could be viable, however, without increased development along the corridors

Most important to the ultimate implementation of a fixed-guideway transit system in the Charlotte region would be an expanded citizen information program to explain

including

- The 1977 long range transit plan
- Charlotte-Mecklenburg Generalized Land Use Plan 2005 (1985)
- *Charlotte 2005 Transportation Plan — Transit Corridors Study (June 1989)*
- Charlotte Uptown Transportation Plan Update (October 1989)
- Center City Charlotte Urban Design Plan (January 1990)
- Charlotte Mecklenburg County District Plans (1990 to 1992)
- 1990 and 1991 Transit Studies

The 1989 Transit Corridor Study and the city's 1990 and 1991 transit studies were *directed exclusively towards fixed guideway transit planning* The two studies evaluated a total of 13 rail and highway transit corridors Based on these studies, the eight corridors discussed in this document were selected for further study in the transitional analysis

Evaluation of Potential Transit Corridors

This study originally evaluated the following eight potential transit corridors for the Charlotte region

1. **UNCC-Highway**· to the University of North Carolina at Charlotte using railroad and highway right of-way
2. **UNCC-Railroad:** to the University of North Carolina at Charlotte using railroad right-of way
3. ***Albemarle.*** *leads toward Albemarle using railroad right-of-way*
4. **Matthews:** to the Matthews area using railroad right-of-way
5. **Providence Road**· follows Providence Road to the proposed Outer Loop
6. **Park Road:** uses highway right-of-way to the proposed Outer Loop via SouthPark
7. **Pineville:** uses railroad right-of-way to Pineville and New Heritage USA in South Carolina
8. **Airport:** uses either railroad or a combination of railroad and highway right-of-way to the Charlotte Douglas International Airport area

The eight corridors *were evaluated using criteria that fall under six broad categories* land use (household and employment concentrations), mobility (transit ridership increases and auto use decreases), cost/value (capital cost), cost-effectiveness implementability (including railroad right-of-way availability and environmental impact potential), and acceptability The corridors and evaluation findings are presented in Chapter 3

The corridor evaluation resulted in the selection of three primary corridors by the

Mass Transit Partnership (the study steering committee) for more detailed study Matthews, Pineville and Airport These three alternatives offer the best combination of benefits based on the six categories of evaluation criteria Selection of these primary corridors does not imply rejection of the others In the long term fixed-guideway transit may be implemented in all eight corridors The primary corridors simply serve as a starting point

Of the eight corridors, three were readily eliminated from consideration as primary corridors — Providence Road Park Road and Albemarle The Providence Road and Park Road corridors were eliminated primarily because transit service operates in traffic and effects traffic flow The Albemarle corridor was eliminated because of low projected ridership and high cost per passenger

Of the remaining corridors (UNCC Matthews Pineville, and Airport), the UNCC corridors had the lowest capital costs but also the lowest projected ridership Matthews ranked well on several criteria, including ridership, residents and employment served cost per passenger, reduction in vehicle-miles traveled (VMT), and capital cost per passenger The Pineville corridor performed well in terms of *serving higher-density development and jobs and reducing VMT on congested* roads It could also serve destinations in South Carolina Its railroad implementation issues were more complex, however, and its reduction in VMT on major roads was low The Airport corridor had the third highest ridership (a consequence of the airport) served the largest proportion of low-income residents, and had a comparatively low cost per passenger but had the highest cost per mile to construct The *airport management is very interested in providing a modern public transportation* link between the airport and Uptown

Promising Transportation Alternatives in the Primary Corridor

This study largely concurred with the findings of earlier studies and considered the characteristics of four technological alternatives for the primary corridors no-build, TSM, busway/HOV, and LRT These four alternatives are described in detail in Chapter 4 and examined for cost and cost-effectiveness in Chapters 6 and 8

The no-build alternative represents the conditions that would exist in 2015 if no further investment were made in transportation facilities beyond that which is already committed Transit service would be extended to newly developed areas to afford them comparable service to that now available in developed portions of the urbanized area

The TSM alternative represents a low capital alternative The net result of TSM improvements specifically aimed at transit is usually to decrease transit travel times Charlotte has been progressive in initiating TSM improvements One TSM alternative for Charlotte, assumed in the ridership modeling associated with this study was the addition of six "special express" buses serving Uptown Beyond the outer destinations of the express buses, feeder buses would serve local areas and provide timed transfer service to new and existing express lines

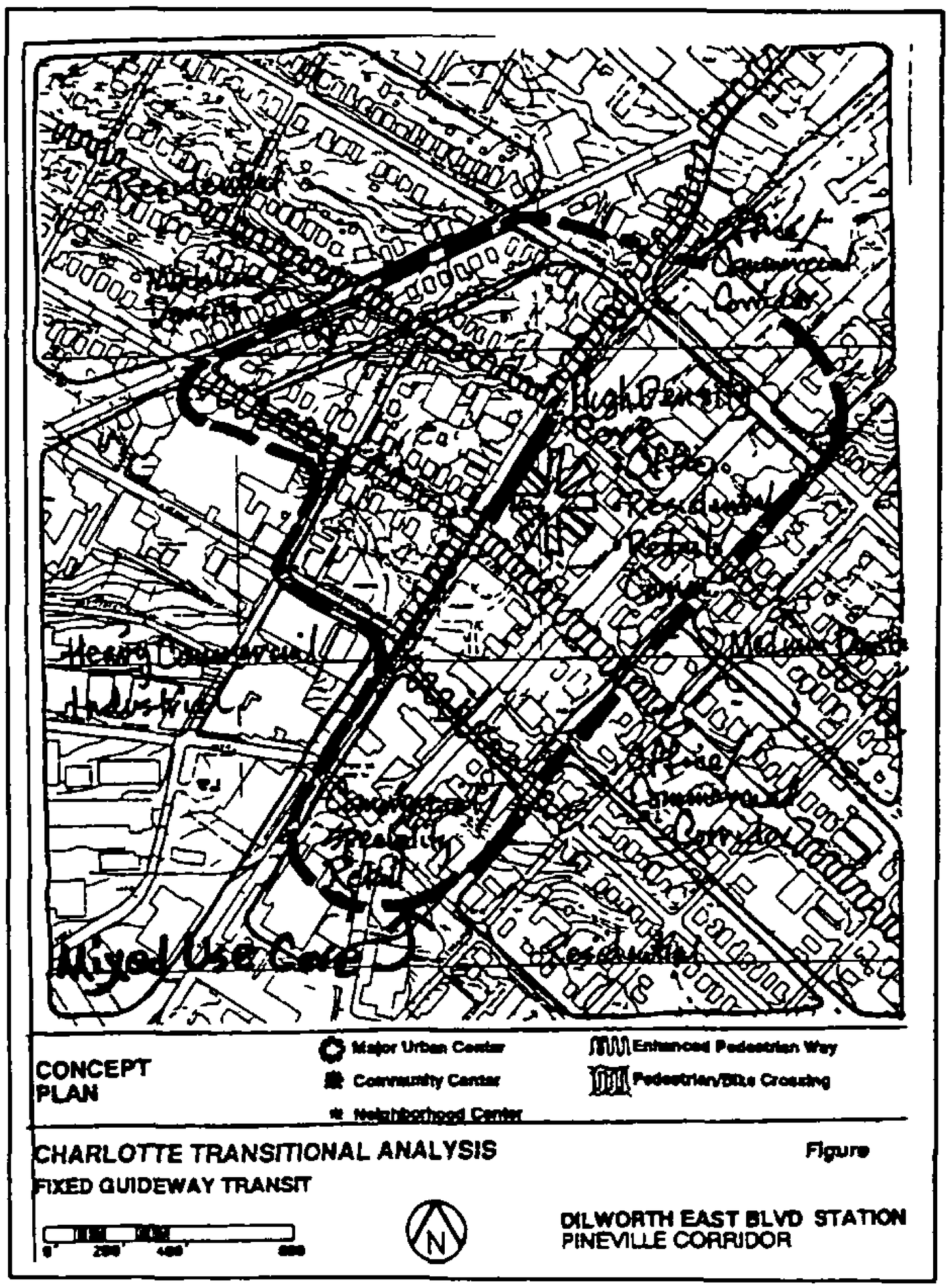
The busway/HOV alternative, like LRT is a fixed-guideway alternative providing a

means for buses to avoid the most congested areas It would include improvements in the three primary corridors with service levels similar to the LRT alterna tive The busway/HOV alternative involves

- **Express bus service in the Matthews corridor** using the Independence Boulevard HOV lane and a new express route parallel to the rail corridor assumed for the LRT alternative

- **Express bus service in the Pineville corridor** using I 77 and/or an HOV lane in South Boulevard below Tyvola Road and a busway between Tyvola and Uptown along the NS alignment

- **Express bus service in the Airport corridor** using a busway in the Wilkinson Boulevard corridor



Plan of proposed revitalized land use due to station construction

- **Use of the North Carolina Rail Road alignment** through Uptown, in conjunction with a strategically located transit terminal

- **Traffic signal preemption.**

- **Feeder bus service**

An LRT alternative would include light rail in each of the three corridors combined with enhanced bus service providing feeder service to rail stations in the corridors Elsewhere the no-build level of service would be continued In a three route configuration trains from the Airport or Pineville routes would be through-routed with Matthews service to improve operating efficiency by reducing the number of turnbacks required Local bus routes operating through Uptown on Trade Street would stop at the LRT station nearest Trade Street Local bus routes operating through Uptown on Tryon Street would connect to the Uptown LRT station nearest the Square (Trade Street and Tryon Street) Park-and-ride lots would be built at outlying stations

Policy Issues

As of April 1993, the average weekday ridership on the existing transit service in the primary corridors was below the minimum level of 15,000 in a single corridor established by the Urban Mass Transportation Administration (UMTA), now FTA, as the threshold for a city to proceed into the alternatives analysis stage of project development. While the threshold is admittedly arbitrary, it has some merit as a target for justification of a future fixed-guideway operation Therefore land use and transportation policies that support transit and increased ridership would play an important role in planning for fixed-guideway transit in Charlotte

Land Use Benefits and Corridor Development Strategy

Land development patterns may change in the vicinity of fixed-guideway stations, as discussed in Chapter 5

It was found that nine of the 31 stations along the primary corridors appear to have the best opportunity for developing higher-density uses compatible with fixed-guideway transit three along the Matthews corridor, one along the Airport corridor, and five along the Pineville corridor The stations with the best opportunity tend to be at the outer ends of the Airport and Matthews corridors Such stations can also be found all along the Pineville corridor Eight stations appear to have only limited opportunities for developing transit-friendly land uses three along the Matthews corridor, two along the Pineville corridor and three along the Airport corridor In general, the extent and character of existing land use limits opportunities at these stations

Zoning techniques and economic development strategies offer the best means for encouraging transit development at stations The following planning policies would assist in the implementation of station area plans

- A commitment to improving the competitiveness of the station areas in relation to suburban development sites

- Agreement on the land use objectives for each station area by both the public and private sectors
- Inclusion in the station area planning process of the various governmental units involved in planning for fixed-guideway construction and supporting its successful operation
- Consideration of the opportunities presented through investment in fixed-guideway systems within the broad economic development strategies being formulated by the community

Interim measures for encouraging transit friendly development in the three primary corridors are described in Chapter 5 and summarized in Chapter 9

Transportation Policy Changes for Corridor Development

Several tactics may be used to discourage private automobile use and encourage transit use Chapter 5 describes six types of policies examples of such policies, and their potential outcomes reducing the supply of parking increasing the cost of parking increasing the cost of driving, increasing the time required to drive decreasing the cost of using transit and decreasing the time required to use transit

The most promising transportation policies that discourage private automobile use (particularly single occupant vehicles) and encourage transit use are described in Chapter 5 and summarized later in this chapter

Cost of Alternatives

Estimated capital and O&M costs for the TSM, busway/HOV and LRT alternatives are discussed in Chapter 6 For each alternative, transit service improvements are assumed in the three primary corridors — Matthews, Pineville and Airport Since each alternative produces different transit ridership gains and other benefits, one cannot judge desirability only on the basis of cost In Chapter 8, cost is compared with the transportation mobility and other benefits of each alternative in order to identify the effectiveness of the dollars that would be spent on each

Capital Costs

The capital costs for the TSM busway/HOV and LRT alternatives would be

Operation and Maintenance Costs

The annual incremental O&M costs for the four alternatives would be

Incremental costs are in addition to the transit costs that Charlotte would pay even if no further investment were made in transportation facilities beyond that which is already committed (2015 no-build alternative) The LRT feeder bus costs vary

depending upon future land use trends If higher densities are pursued at stations higher feeder bus costs will occur

Financial Strategy

Chapter 7 discusses potential funding sources for fixed-guideway transit describes the regional funding needed to build a three-corridor LRT system and discusses institutional strategies and transit/land use issues related to project financing Busway capital needs are less than 15% of LRT requirements the same strategies used for LRT could fund the busway system with proportionally lower tax burden

Total operating expenses for Charlotte s existing transit service are approximately $20 million annually Costs per service-hour have generally remained flat since 1990 Several internal CDOT studies have indicated the need for the city to identify additional sources of revenue to fund CTS Charlotte City Council has taken action to obtain state approval to increase the auto privilege allocation to transit It is clear however, that funding sources for the existing surface bus system are more than fully committed Other sources of revenue must be identified to support a regional fixed-guideway project

New Funding Sources

This study reexamined the full range of federal and state grant programs to determine if any sources were not being fully utilized It was found that the FTA's Section 3 program is the most likely vehicle for significant federal participation in a future Charlotte regional guideway system The financial implications of including or excluding such funds was considered in the financial analysis of the LRT alternative State and local/regional allocations from new federal "highway" programs do not present a significant funding opportunity for a fixed-guideway project As a consequence, no funding from these sources was assumed in any of the LRT funding scenarios examined No state program aimed specifically at implementation of urban fixed guideway systems now exists, and none is actively pending at this time All of the LRT funding scenarios analyzed, however assumed some level of state participation

There are typically more than 30 different local revenue raising mechanisms or sources identified at the start of a financial analysis Revenue forecasts made as a part of this study were prepared for the following 11 mechanisms

- Sales tax
- Employment tax
- Auto privilege tax
- Parking tax
- Property tax
- Utility franchise (excise) tax
- Fuel tax
- Tax increment financing
- Income tax
- Occupancy tax
- Impact fees

Financial Analysis

Three funding scenarios were evaluated to determine the amount of regional funding needed for a three corridor (Matthews Pineville and Airport) LRT system In Scenario 1 the maximum federal funding share permitted under current law (80 percent) was assumed as well as 10 percent state funding Under Scenario 2 a 50 percent level of federal involvement and a 20 percent state contribution was assumed Scenario 3 tested the implications of a local commitment to fund the project without federal assistance As in Scenario 2 the state share was limited to 20 percent One hundred percent debt financing was postulated for Scenario 1 mostly pay as you-go financing for Scenario 2 and a mix of the two in Scenario 3 *(though still weighted toward debt)*

The model results suggest that with an 80 percent federal capital contribution (Scenario 1) construction and operation of the three corridor LRT system as defined over the period 1994 to 2015 would require approximately $322 million in regional (i e countywide) resources The regional outlay would be $566 million for Scenario 2 and $1 23 billion for Scenario 3 Comparable figures for the busway alternative would be $44 million for Scenario 1, $77 million for Scenario 2 and $168 million for Scenario 3

Institutional Strategies

Because of size and complexity, implementation of a regional fixed-guideway system typically requires unprecedented interaction among local state and (potentially) federal agencies Several alternative institutional structures could be utilized adapted, or fashioned to provide for project development implementation, and ongoing operation Alternative structures potentially include the following examples listed in order of increasing size and/or complexity

- Existing/City of Charlotte
- Charlotte/Mecklenburg County Joint Agency
- County Transit Authority
- Multi-County Transit Authority
- State Sponsorship

Transit/Land Use Issues

To advance the goal of raising revenue to fund transit improvements, development-related funding mechanisms are commonly employed in the U S Specific planning and financial tools presently available to the city of Charlotte are quite limited Several policy recommendations aimed at increasing city and county involvement in land use and development activity — with the twin goals of increasing transit/land use linkages and of raising revenue to support transit investment — are discussed in Chapter 8 and summarized in Chapter 9 It is understood that a healthy development climate is essential for these policies to succeed

Justification for Proceeding to an Alternative Analysis

Transportation and Mobility Benefits

The total daily LRT ridership is projected to be 40 700 and 46 200 riders for the trend and enhanced land use scenarios respectively Busway ridership is equal to the trend land use LRT ridership The total transit system ridership (LRT and bus) for the same scenarios is projected to be 84 300 and 88 700 riders respectively in 2015 This represents increases in systemwide ridership of 16 and 21 percent respectively compared to the TSM alternative

The LRT alternatives would provide an additional average savings over the TSM alternative of 4 6 to 5 4 minutes The value of the travel time savings resulting from the LRT alternatives for riders who would have used the TSM alternative is *estimated at $5 0 to $5 7 million*

Vehicle miles traveled (VMT) on all major roads in the three combined corridors will decrease by 4 6 percent and 0 7 percent for the trend and enhanced land use scenarios respectively compared to the TSM alternative The reduction in VMT on the heavily congested roads however is significantly higher 7 7 percent and 8 2 percent, respectively

Cost-Effectiveness

The cost-effectiveness of a capital intensive transit project indicates the extent to which the project would return transportation benefits relative to its cost FTA s predecessor UMTA defined benefits as new transit riders resulting from the investment Costs are the annualized total capital cost plus the annual operating and maintenance cost (over that of the TSM alternative) minus the annual value of travel time savings for "existing" riders The cost per added rider is $17 25 and $12 26 for the trend and enhanced land use scenarios respectively Busway cost per added rider is $1 28

UMTA's Major Capital Intensive Investment Policy established two threshold criteria to guide decisions on the initiation of alternatives analysis

- A priority corridor should currently have more than 15,000 daily transit riders
- The total cost should be no more than $10 per added rider

None of the corridors currently have 15,000 riders Furthermore, this ridership level in a single corridor will not be achieved until around 2015 with the LRT alternatives The sum of the ridership of two corridors could however reach that level much earlier with appropriate transportation and land use policies

The cost-effectiveness indices for the three-corridor LRT system also do not meet the $10 per added rider threshold, although the busway index is well below it However FTA is in the process of preparing new guidelines under which a city may initiate and complete the alternatives analysis phase of project development without FTA approval *FTA approval will only be required in order to proceed to the preliminary* engineering phase Thus the cost-effectiveness indices should not longer be viewed as a barrier to alternatives analysis In reality most recent LRT projects have not met the threshold tests anyway

Recommendations for Further Action

Chapter 9 draws from the findings of Chapters 5 and 7 to present recommended

further actions related to fixed guideway transit planning and strengthening in the Charlotte region Even if the eventual goal is an LRT operation building bus ridership is a worthwhile intermediate goal This can be accomplished through interim transit improvements general promotion of transit over automobile use and land use plan and zoning changes

In addition to building ridership steps should be taken to preserve right of way that may be needed for future fixed guideway transit use not only in the primary corridors but in those corridors that may ultimately comprise the metropolitan area s full fixed guideway transit system Funding strategies and the institutions needed to support a regional fixed guideway system need to be established

Right-of-Way Protection

Steps should be taken to preserve right of way that may be needed for future fixed guideway transit use Several short term actions that should be taken are

- Develop procedures for optioning or acquiring railroad right of-way parcels that may become available This should include cooperative action with other government agencies as appropriate
- Future fixed-guideway planning should culminate with a design adequate to identify the right of way needed and the potential difficulties involved in acquir ing that right of way
- Take fixed guideway right-of way requirements into account when authorizing new development or roadway improvement projects

Interim Transit Improvements

These improvements could include

- Early implementation of route revisions that assign the express routes in the Matthews corridor to the Independence Boulevard HOV lane
- Expansion and aggressive marketing of existing express service in the Pineville corridor and modification of service on Routes 12 and 24 so that one operates express between Tyvola Road and Uptown This could be accompanied by signal preemption on South Boulevard
- Implementation of the Charlotte Trolley proposal
- Consideration in future years of the testing of park and ride service from a point beyond the Charlotte-Douglas International Airport A vanpool or small bus operation for airport employees may also prove cost effective and should be studied
- Additional park and-ride lots in all primary corridors

Funding Program Changes

In the course of the financial analysis several findings became apparent that could support the formulation of a strategy or strategies to fund a proposed fixed-guideway project With regard to federal programs a close liaison with the staff of the FTA their Congressional delegation and various Congressional committees should be maintained With regard to state assistance the city and county should

pursue the creation of a statewide transit assistance program for both capital and operating needs and work towards a new formulation of federal highway funds that includes a fixed guideway project

With regard to local sources and mechanisms the city and county should begin a process of coordinated financial planning leading to implementation of a regional (countywide or larger) sales tax dedicated to transportation Planning for such a local funding source should be multimodal and multijurisdictional emphasizing flexibility and the ability to address the specific needs A variety of other funding mechanisms should be implemented on a smaller scale to establish an overall balance diversity and the perception of fairness

The city should develop financial incentives to encourage changes in land use and travel patterns that support transit The use of such tools as density bonuses and more active involvement in land assembly infrastructure invest ment etc should be undertaken Private parties should be involved in transit funding through joint development and special service and maintenance districts State authority for creation of tax increment financing districts should be sought The city of Charlotte and Mecklenburg County should begin a process of coordinated financial planning leading to implementation of a regional (countywide or larger) sales tax dedicated to transportation While other alternatives exist the sales tax has proven to be more successful nationwide than any other single approach The mechanism is well-known to the public is somewhat inflation sensitive (unlike the present fuel tax) and avoids the ingrained negative image of a property tax

Institutional Strategies

If feasible a regional (multicounty) mobility plan should be developed as precursor to a regional transit agency In addition, a long-range multimodal transportation plan should be developed as the "blueprint" for establishment of a significant local funding mechanism such as a sales tax In the short term transit development efforts should continue to be managed through the Charlotte DOT and the Mecklenburg-Union metropolitan planning organization (MPO)

General Promotion of Transit

Several transportation policies could be used to discourage private automobile use (particularly single occupant vehicles) and encourage transit use One possible incentive to transit use is employer subsidies One deterrent to auto use, which should be considered in light of the general viability of fixed guideway transit in Charlotte would be a ceiling on parking in Uptown to be adopted well before implementing fixed guideway transit A second disincentive could arise from examining the tradeoffs between capital expenditure on roads and on transit A decision could be made to defer investment in in creased highway capacity and to provide better transit service instead

Land Use Plan and Zoning Changes

Several near term land use related measures would be important to building future transit ridership Proactive redevelopment planning should be pursued to take advantage of the opportunities offered by fixed guideway transit Conceptual land use plans should be developed at all station areas Area municipalities and counties should reach a mutual agreement on how transit should affect their jurisdictions

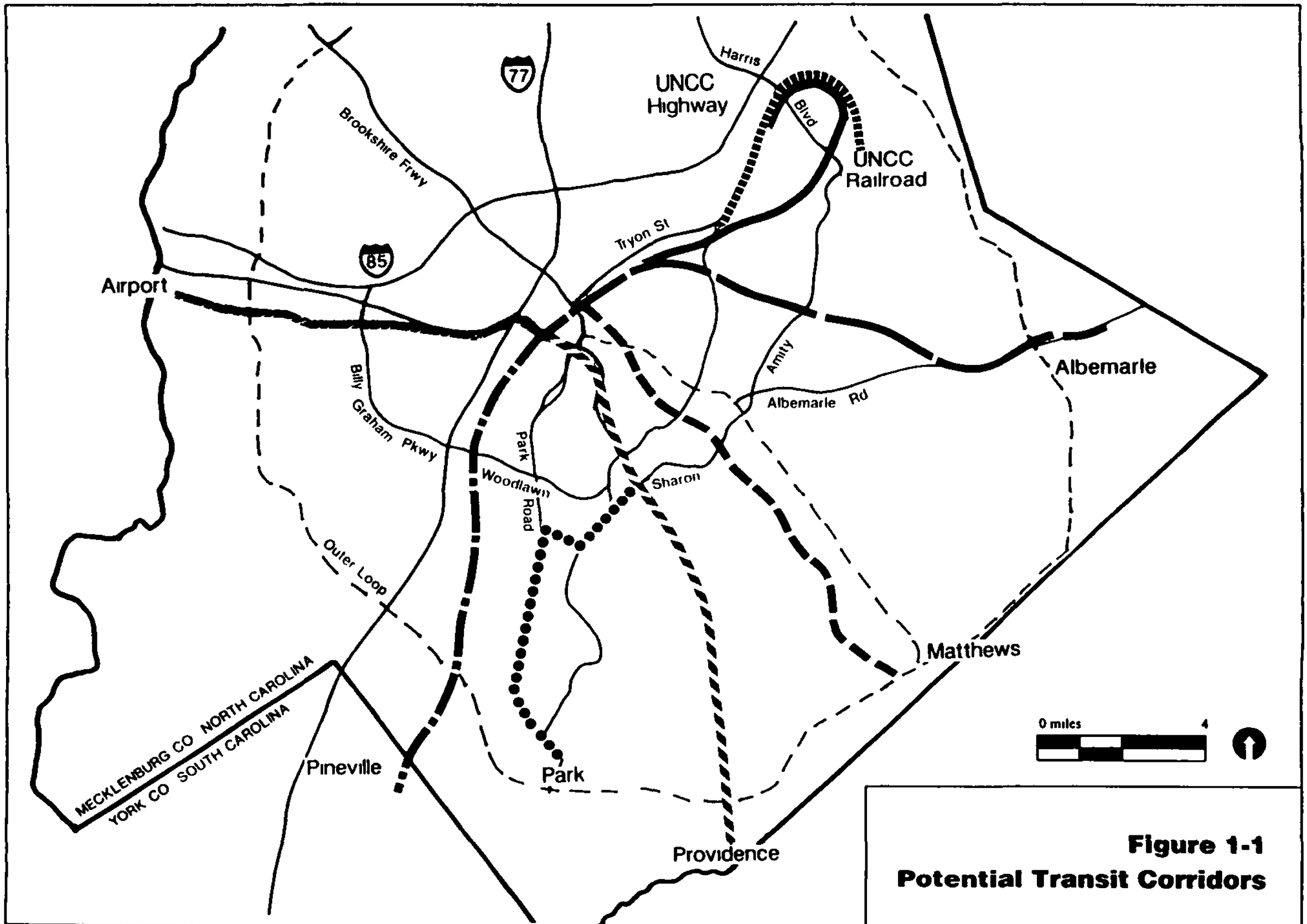


Figure 1-1
Potential Transit Corridors