Alexandria/Pineville

Metropolitan Transportation Plan

MTP 2029

State Project No. 736-40-0029
Federal Aid Project No. SPR-00010(025)

NEEL-SCHAFFER

PAN AMERICAN ENGINEERS
ALEXANDRIA INC.

ALLIANCE
Transportation Group, Inc.

July
2005

Louisiana
Department of Transportation
And Development

Alexandria/Pineville
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FINAL REPORT

Prepared by

NEEL-SCHAFFER

Lafayette, Louisiana

ALLIANCE Transportation Group, Inc.

Lake Charles, Louisiana

PAN AMERICAN ENGINEERS ALEXANDRIA INC.

Alexandria, Louisiana

July, 2005

This report was prepared in cooperation with the Louisiana Department of Transportation and Development (LA DOTD), U.S. Department of Transportation, and Federal Highway Administration (FHWA). The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of LA DOTD or FHWA at the time of publication. This report does not constitute a standard, specification, or regulation.

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GLOSSARY

3-C Process	– Comprehensive, Cooperative and Coordinated Urban transportation
ADT	– Average Daily Traffic
CBD	– Central Business District
FHWA	– Federal Highway Administration
FBR	– Federal Bridge Replacement
FCTP	– Financially Constrained Transportation Plan
FTA	– Federal Transit Administration
HCM	– Highway Capacity Manual
IM	– Interstate Maintenance
ISTEA	– Intermodal Surface Transportation Efficiency Act of 1991
ITS	– Intelligent Transportation System
LA DOTD	– Louisiana Department of Transportation and Development
MPO	– Metropolitan Planning Organization
MTP	– Metropolitan Transportation Plan
NHS	– National Highway System
N-S	– Neel-Schaffer, Inc.
RAPC	– Rapides Area Planning Commission
STP	– Surface Transportation Program
TAC	– Technical Advisory Committee
TEA-21	– Transportation Equity Act for the 21^{st} Century
TIP	– Transportation Improvement Program
TPC	– Transportation Policy Committee
TRANPLAN	– Transportation Planning Computer Modeling Software
TransCAD	– Transportation Planning Computer Modeling Software
UTPS	– Urban Transportation Planning Software

CHAPTER 1: INTRODUCTION

1.1 Planning Area and Geographic Growth

The Alexandria/Pineville Metropolitan Area is located in Rapides Parish located on the Red River in Central Louisiana.

The metropolitan planning area is wholly within Rapides Parish with Alexandria serving as the seat of the Parish government. However the *urbanized area* of metropolitan Alexandria/Pineville has included the Town of Ball and the unincorporated community of Tioga. After the release of the data and using transportation criteria, the urban area was expanded so as to include transportation facilities that may have only been partially included in the metropolitan area to form the *2003 adjusted urbanized area.* Once the urban area was determined for the year 2000, then the estimated extents of the urbanized area in 2029 -- the ending date of the plan-- was mapped as the extents of the *2003 Transportation Study Area.* A map of this study area is included in this publication as Figure 1.

1.2 Historical Background

In response to the Federal Highway Act of 1962, the Comprehensive Transportation Plan for Alexandria/Pineville Area was completed in 1968. The improvement program provided a foundation for the development of the transportation system over the past forty years. The Plan was last revised fully in 1993[1].However; some of the improvements identified in the plan have not been implemented. The situation has placed severe constraints on significant portions of the street and highway network as it exists today.

The 1968 plan was prepared based on a mainframe computer-model called *Planpac.* This model was developed by the Federal Highway Administration (FHWA) and was subsequently replaced by the Urban Transportation Planning Software (UTPS) model. These models were very time-consuming and costly and required several weeks or months to prepare a traffic assignment. In the late 1980's, LA DOTD purchased a multi location license for the TRANPLAN Travel Demand Forecasting Model. At the time, it was the intent to update all of the urban plans in the State using the software package. In 1993 the Alexandria/Pineville Metropolitan Area Transportation Plan was completed using TRANPLAN.

Due to advances in computer technology in the late 1990's, LA DOTD decided to convert to the TransCAD Travel Demand Forecasting Model. The current plan is being modeled in version 4.7 by the MPO and the Neel-Schaffer, Inc.

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1 RBA Group (Baton Rouge, LA) and RAPC (Rapides Area Planning Commission Alexandria, LA), Alexandria/Pineville Metropolitan Area Transportation Plan, Final Report, 1993.

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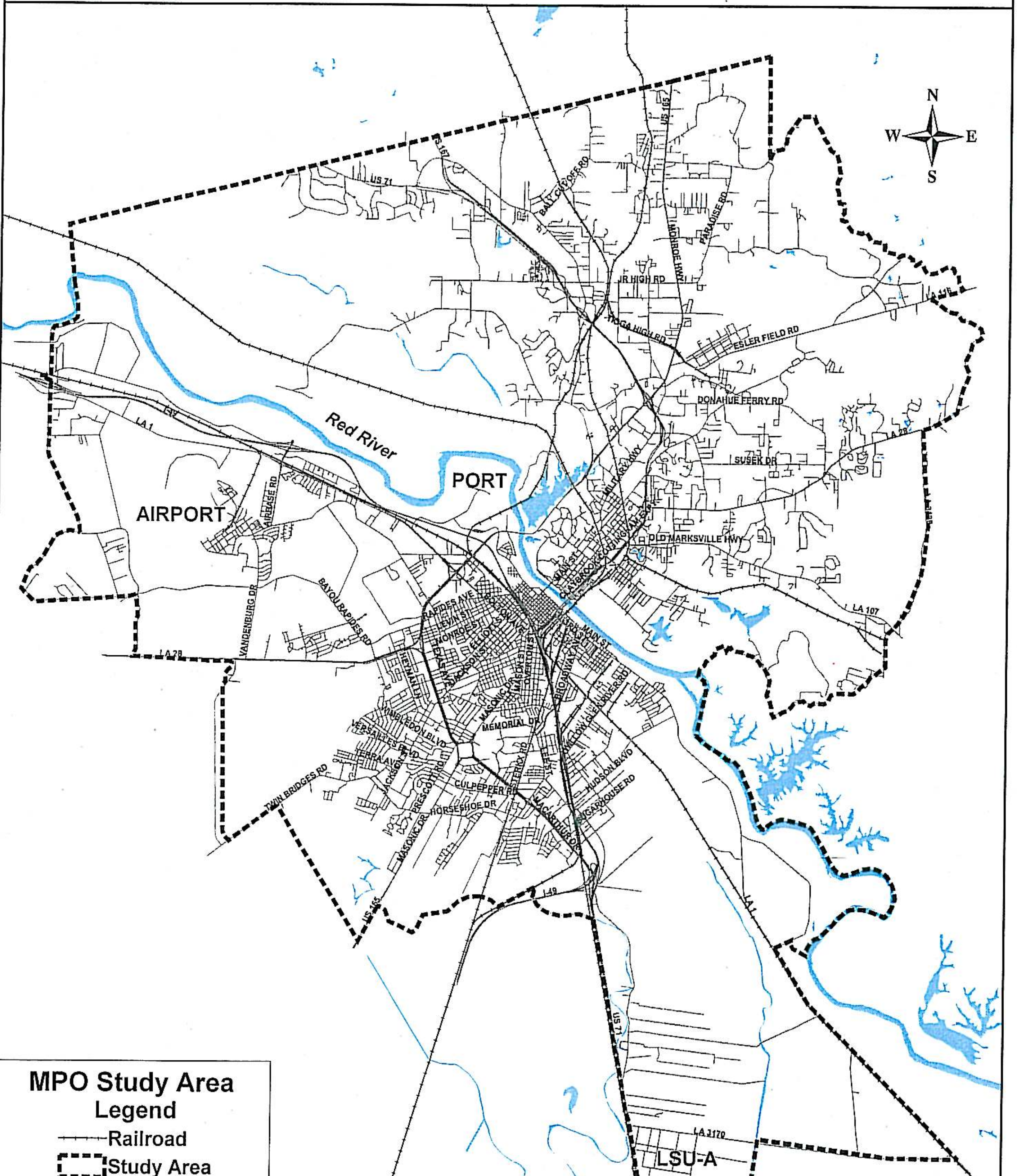

1.3 Purpose

The purpose of this study is twofold. The first is to update the Metropolitan Transportation Plan (MTP) for the Alexandria/Pineville Study Area as required by the Federal Highway Act of 1962 and its congressional revisions. The target years for this plan will be 2009 or the Short Range Stage, 2019 or the Intermediate Stage and 2029 or the Long Range Stage. The second purpose is to develop a PC-based travel demand computer model using the TransCAD software package.

1.4 Scope of Work

This study provides an update of area travel characteristics, an inventory and an evaluation of the existing transportation system. Potential improvements to the system will be developed and analyzed. A transportation plan and staged improvement program will be recommended. A computer travel demand model will be developed. Local planners and LA DOTD staff will be trained in the use of this model.

1.5 Consultant Team

The Consultant Team composed of Neel-Schaffer, Inc2. as Prime Consultant and Sub-Consultants consisting of, Pan American Engineers, Inc.3, Alliance Transportation Inc4.

The professionals of the Consultant Team are Jerry Trumps, Vice President, Neel-Schaffer, Inc.; L.P. Ledet, Senior Planner, Neel-Schaffer, Inc.; Raju Porandla, Planner, Neel-Schaffer, Inc.; J.D. Allen, Alliance Transportation, Inc.; Thomas David, PAE, Inc. and Adam Janet, PAE, Inc.

The Consultant Team reported to the two Metropolitan Planning Organization (MPO) committees: Technical Advisory Committee (TAC) and the Transportation Policy Committee (TPC).

The TAC provides review and evaluation of the technical aspects of planning activities and is made up of local, State and Federal transportation planners, engineers and other technically qualified persons with an interest in the transportation system.

[2]Neel-Schaffer, Inc. is a region transportation consultant with offices in Lafayette and Baton Rouge and throughout the Southeastern United States. Neel-Schaffer, Inc. provided the traffic modeling expertise for the project. See http://www.neel-schaffer.com/ for the internet webpage.

3 Pan American Engineers Inc., Alexandria, LA provided an analysis of local network streets.

[4] Alliance Transportation Group, Inc., Lake Charles, LA Austin, Texas conducted the External Station travel survey and prepared the Bicycle Pedestrian Element.

The TPC provides decision-making with regard to the approval and adoption of transportation plans and programs and is composed of the principal elected officials in the metropolitan area, as well as State and Federal representatives.

A listing of the current TAC and TPC membership is available at the Alexandria/Pineville MPO office.

Public participation in the preparation, consideration and adoption process is encouraged. The public participation effort is in compliance with all local, State, and Federal guidelines and requirements. Copies of the public participation policy and process can be secured at the MPO office.

1.6 TEA-21

The Transportation Equity Act for the 21st Century (TEA-21) continues the requirements for comprehensive transportation planning. It also requires that additional factors be considered in developing transportation plans and programs. These factors are:

1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2) Increase the safety and security of the transportation system for motorized and non-motorized users;
3) Increase the accessibility and mobility options available to people and for freight;
4) Protect and enhance the environment, promote energy conservation, and improve quality of life;
5) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
6) Promote efficient system management and operation; and
7) Emphasize the preservation of the existing transportation system.

All of these factors were considered in developing the recommendations for this MTP.

1.7 Goals and Objectives

One of the first tasks of the study is the formulation of a set of goals and objectives to provide a framework for the MTP and to maintain it as a viable document. The goals and objectives are also used as guidelines in preparing and evaluating potential improvements to the system.

The overall transportation goal is to develop a transportation system which will accommodate present and future needs for mobility of all people and goods traveling within and through the area. In addition, the transportation system must be safe, efficient, economically feasible, and in harmony with the character of the area.

To ensure that the recommended transportation plan meets the desires of the area, the following objectives have been established.

1.71 Transportation System Requirements

The transportation system should:

1) Meet the Alexandria/Pineville Metropolitan Area's long-range transportation needs.
2) Be planned as a unified system of roadways based on function and relative importance, providing a proper balance of freeways, arterials, collectors, and local streets.
3) Encourage and accommodate through traffic on the classified street system (i.e., freeways, expressways, and arterials) and discourage it on collectors and local neighborhood streets.
4) Provide access among all developed areas of the Alexandria/Pineville Metropolitan Area.
5) Improve overall accessibility to employment, education, public facilities, the central business district (CBD), and other major activity centers.
6) Make maximum use of existing highway and street facilities.
7) Provide for a high degree of safety for both motorists and pedestrians.
8) Provide for an orderly improvement and expansion of the roadway system at minimum cost as the need for improvement arises.
9) Minimize disruption of existing and planned developments and established community patterns.
10) Reduce air pollution, noise, and other environmental impacts associated with transportation improvements and new facility construction.

1.72 Metropolitan Transportation Plan

The MTP should:

1) Be viewed as a document that requires periodic updating and revision.
2) It should provide sufficient flexibility to accommodate changes in land use planning for the Alexandria/Pineville Metropolitan Area and other unforeseen changes and conditions.
3) Consider development potentials within and beyond the projected limits of the urbanized area to the year 2029.

1.73 Continuing Transportation Planning Activities

Continuing transportation planning activities should:

1) Be performed within the framework of comprehensive regional planning and support regional growth and development goals.
2) Provide continuity and coordination between jurisdictions

CHAPTER 2: EXISTING TRANSPORTATION NETWORK

2.0 Introduction

For the purpose of this project, the Alexandria/Pineville Metropolitan Study Area is that area expected to be urbanized by the year 2029. The general boundaries as established by the Rapides Area Planning Commission (RAPC) are the Grant Parish Line on the north, LA 3128 on the east, LA 3170 on the south, and the Diversion Channel and England Air Park on the west. The transportation study area is shown in Figure 1.

2.1 Federal and State Highways

Several Federal and State highways serve the study area. These facilities constitute the main network of roadways in the area. The most significant of the facilities are:

I-49	The existing I-49 Interstate connects Lafayette to Shreveport. Future I-49 extensions are underway to connect New Orleans to Kansas City, MO.
US 71&167	These Federal Highways traverse the study area from southeast to northwest. US 71 connects the Study Area via US 190 to Baton Rouge to the south and to Shreveport to the north. US 167 connects Lafayette to the south and Ruston to the north.
US 165	This Federal Highway crosses the study area from southwest to northeast. It connects to Lake Charles to the south and Monroe to the north.
LA 1	Prior to the construction of the Interstate Highway System, this State Highway was the major northwest/southeast route commencing at the Texas/Arkansas State Line and proceeding southeasterly to Grand Isle.
LA 28	This Highway commences in Leesville and proceeds easterly through the Alexandria/Pineville Study Area to Archie, LA.
State Highways	There are numerous State highways, which serve the Alexandria/Pineville Study Area and carry relatively high volumes of traffics. The major state highways include: LA 107, LA 3225, LA 3170 LA 496, LA 498, LA 488, LA 116, and LA 1208-3.

2.2 Existing Street and Highway Functional Classifications

The street and highway network developed for the project was based on the functional classification system prepared by the LA DOTD

The components of this network are freeways, principal arterials, minor arterials, and collectors. The distribution of mileage in these categories is as follows:

TABLE 2.1 – FUNCTIONAL CLASSIFICATIONS

Classification	Urban Miles	Percent Urban Miles	Rural Miles	Percent Rural Miles	Total Miles	Percent Total Miles
Freeway	13.8	5.4	1.9	5.4	15.7	5.4
Expressway	9.3	3.7	0.0	0.0	9.3	3.2
Major Arterial	70.5	27.8	0.8	2.3	71.3	24.7
Minor Arterial	67.7	26.7	22.2	62.9	89.9	31.2
Collector	92.2	36.4	10.4	29.5	102.6	35.5
Total	**253.5**	**100.0**	**35.3**	**100.0**	**288.8**	**100.0**

Source: N-S, 2005

Each type of facility provides separate and distinct traffic service functions and is best suited for accommodating particular demands. Their designs also vary in accordance with the characteristics of traffic to be served by the facility.

Freeways These facilities are divided highways with full control of access and grade separations at all intersections. The controlled access character of freeways results in high-lane capacities, which are three times greater than the individual lane capacities as urban arterial streets.

Expressways This type of facility provides for movement of large volumes of traffic at relatively high speed, and is primarily intended to serve long trips. Expressways have some grade-separated intersections while the majority of the intersections are widely spaced and may be signalized.

Arterials Arterial streets are important components of the total transportation system. They serve both as feeders to freeways and expressways, and as principal travel ways between major land use concentrations within the study area. Arterials are typically divided facilities with raised or flush medians (undivided where right-of-way limitations exist) with relatively high traffic volumes and traffic signals at major intersections. The primary function of arterials is moving traffic, and they are the main means of local travel. A secondary function of arterials is land access.

Collectors This type of facility provides both land service and traffic movement functions. Collectors serve as intermediate feeders between arterials and local streets and primarily accommodate short distance trips. Since collector streets are not intended to accommodate long through trips, they are generally not continuous for any great length.

Local Streets The intended sole function of a local street is to provide access to immediately adjacent land. Within the local street classification, three subclasses are established to indicate the type of area served: residential, industrial, and commercial. These streets are not included in the TransCAD modeling network.

The highway network functional classification used in this study is shown in Figure 2.

2.3 Existing Traffic Volume

Traffic volume as indicated by traffic counts at various locations on the street system is indicative of current travel patterns and how well the system is serving the travel demand. LA DOTD regularly conducts traffic counts we have the traffic data conducted in both year 1999 and 2002, after a brief evaluation of the data we have picked the right counts which provides a basis for determining the overall travel patterns in the study area. Existing Average Daily Traffic (ADT) counts during the period of 1999 through or 2002 on selected routes are shown in Figure 3. Traffic counts for locations not indicated may be obtained from Alexandria/Pineville MPO.

The highest traffic volumes are on Monroe Hwy (US 71) which runs from south to the north of the Study Area where ADT ranges from 15,000 to 30,000 vehicles per day. Other areas of significant traffic volume are Claybrook Cottingham Expressway, which runs in northwest-southeast direction (26,000 ADT), Jackson Street in northeast-southwest direction (24,125 ADT), Alexandria Pineville Expressway (24,495 ADT), Masonic Dr (15,954 ADT), Bolton Ave (14,179 ADT), LA 28 (21,418 ADT) and US 90 (22,943 ADT). Current traffic volumes on the major Red River crossings are shown in Table 2.2 below.

TABLE 2.2 – AVERAGE DAILY TRAFFIC COUNTS – RED RIVER CROSSINGS

Route	Traffic Volumes
Shreveport Hwy (US 71)	20,550 ADT
Claybrook Cottingham Expressway (US 167)	52,100 ADT
Jackson St	10,356 ADT

Source: LA DOTD, 2000

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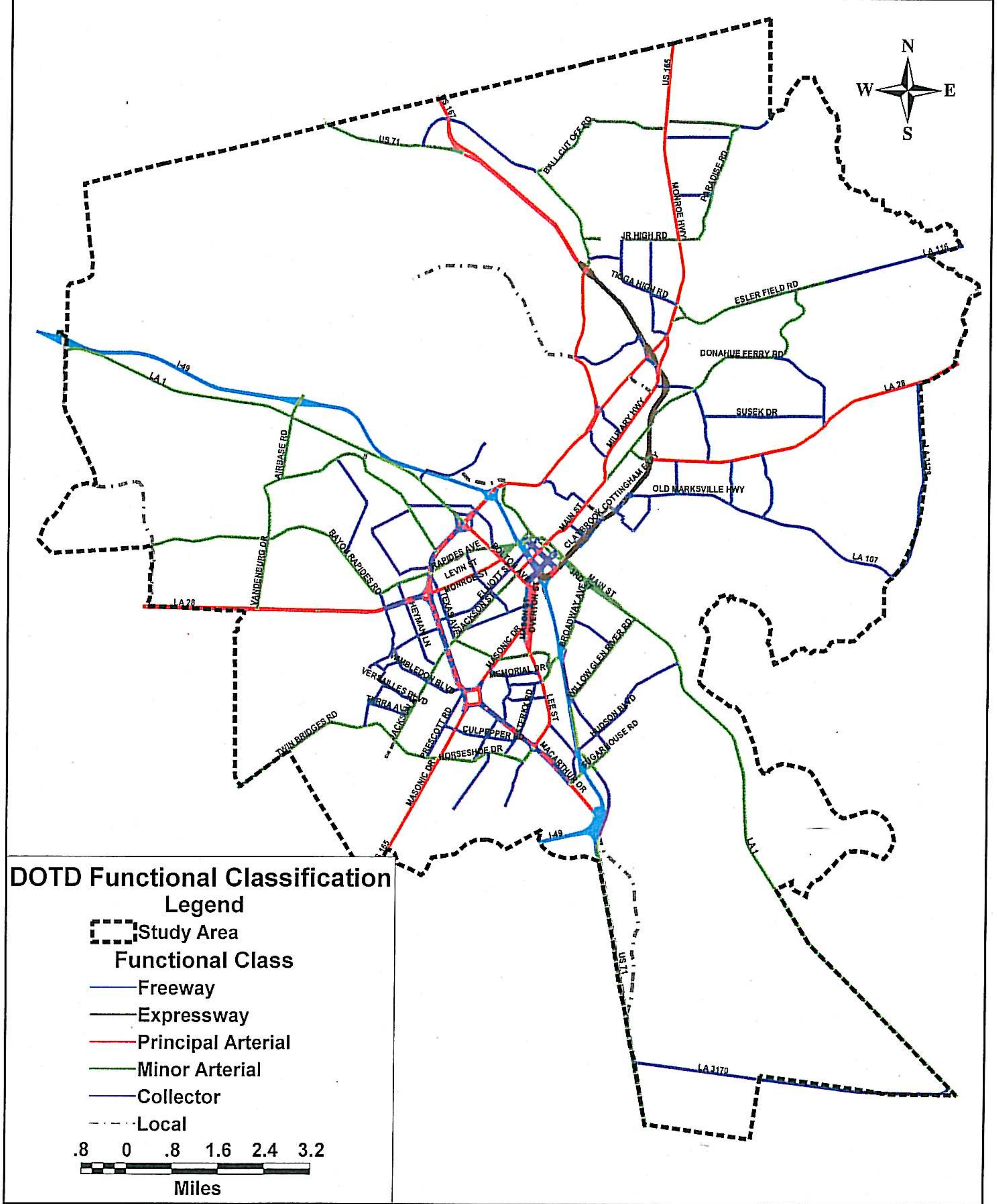

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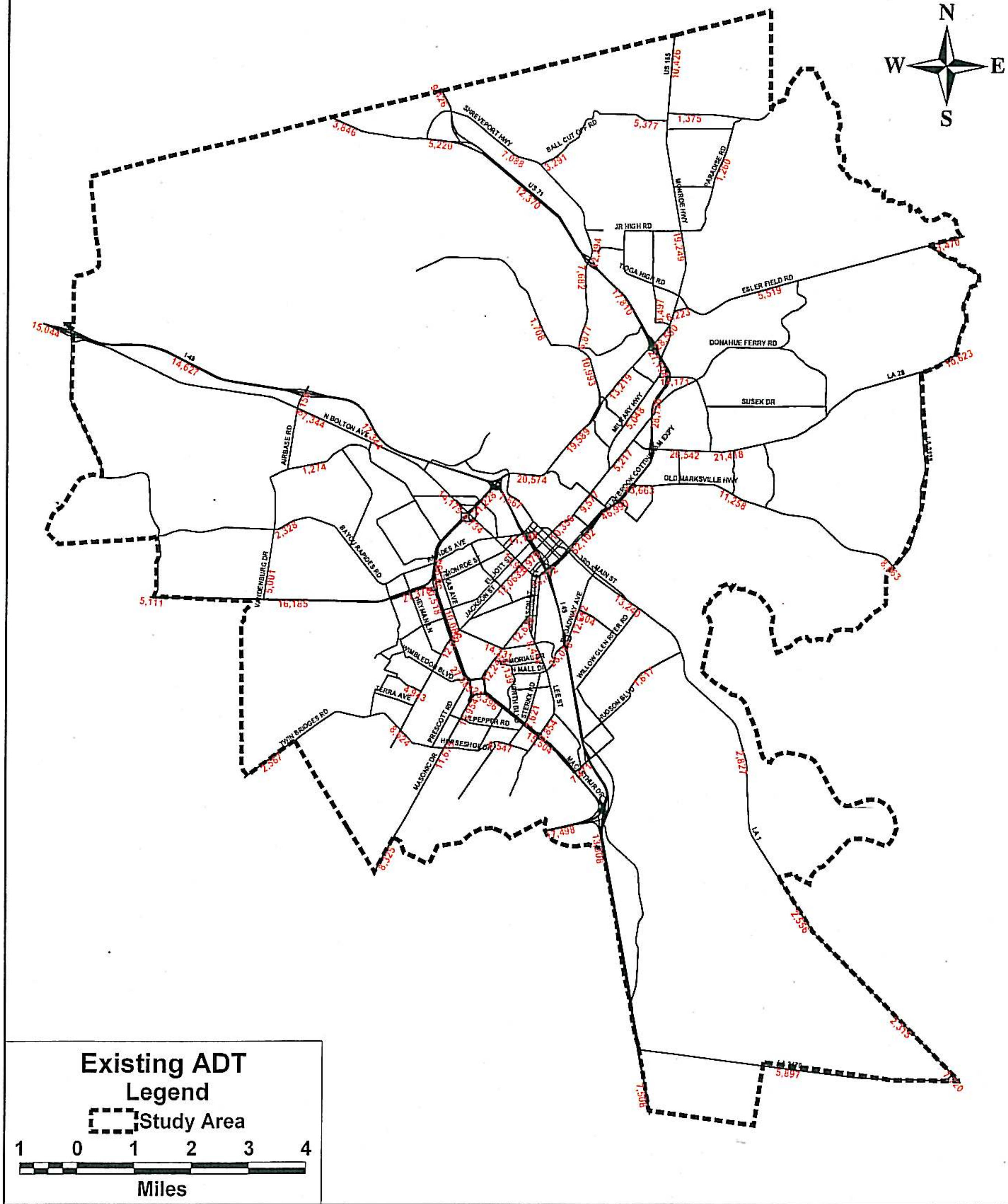

Figure 3

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2.4 Level of Service

As defined in the Highway Capacity Manual (HCM), the concept of levels of service is a qualitative measure describing operational conditions within a traffic stream for a specific time period. These conditions generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience and safety.

Six levels of service were defined for each type of facility for which analysis procedures were available. They were given letter designations from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst.

The various levels of service were defined as follows for uninterrupted flow facilities:

- "**A**" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.
- "**B**" is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable.
- "**C**" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- "**D**" represents high-density, but still stable, flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- "**E**" represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult.
- "**F**" is used to define forced or breakdown flows. This condition exists wherever the amount of traffic approaching a point exceeds the amount, which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable.

For urban areas such as the Alexandria/Pineville Metropolitan Area, the goal of LA DOTD and local governments is to reach an overall level of service C. However, level of service D is acceptable during peak periods in urban conditions at certain localities.

The generalized estimated 24-hour capacities of the facilities included in the area network are shown in Table 2.3. These volumes were calculated by determining the average design hour capacity by classification and lane configuration. Then, assuming a peak hour volume of 10%, the average design hour figure was divided by 0.10.

TABLE 2.3 – GENERALIZED ROADWAY CAPACITIES

FACILITY TYPE	**24 HOUR CAPACITY** (vehicles per day)
FREEWAY	
4 lane	68,000
6 lane	102,000
ARTERIAL	
2 lane (without left turn lanes)	11,000
2 lane (with left turn lanes)	15,000
4 lane Undivided	23,000
4 lane Divided	27,000
6 lane Divided	39,000
8 lane Divided	51,000
COLLECTOR	
2 lane (without left turn lanes)	10,000
2 lane (with left turn lanes)	12,000
4 lane Undivided	20,000
4 lane Divided	24,000
ONE WAY STREETS	
2 lane Arterial	12,500
3 lane Arterial	20,000
2 lane Collector	10,000
3 lane Collector	18,000

Source: N-S, 1997, derived from *Highway Capacity Manual*

2.5 Network Definition

The simulation of travel patterns in a computer model requires a representation of the street and highway system in digital format. The TransCAD model creates such a network from a geographic line layer.

The line layer data view records contain descriptive information including distance, posted speed, number of travel lanes, functional classification, and capacity. Turn prohibitions were then coded into the network at locations where certain movements are not allowed or physically cannot be made. A listing of the codes used for number of lanes and functional classification as well as other network attributes is included in the Appendix as standardized coding guides.

Following verification of the attribute information for all links, the resulting file contained the 2000 Base Year Network to be used as the initial input for model calibration.

CHAPTER 3: PLANNING DATA

3.0 Introduction

Travel demand is greatly influenced by the pattern of development or land use in the study area. Changes in land use and or intensity will create new travel demand or modify existing patterns. A definite relationship exists between trip making, land use and demographic data such as population, number of housing units, employment, and school attendance. This data was compiled from several sources: population and housing from the 2000 Census, employment from the Louisiana Department of Labor, and school attendance from the Alexandria/Pineville Parish School Board and individual private schools.

The accuracy necessary for generating trips from planning data requires that the data be aggregated by small geographic areas called Traffic Analysis Zones (TAZ's). These TAZ's are generally homogeneous areas and were delineated based on factors such as population, land use, census tracts, physical landmarks, and governmental jurisdictions.

Throughout this report, there may be slight differences in the totals for this data. These apparent discrepancies are due to mathematical rounding, which takes place as a result of during calculations by the computer modeling software.

The Alexandria/Pineville Study Area was divided into TAZ's and data assimilated accordingly.

Figure 4 depicts the TAZ's in the Alexandria/Pineville Metropolitan Study Area.

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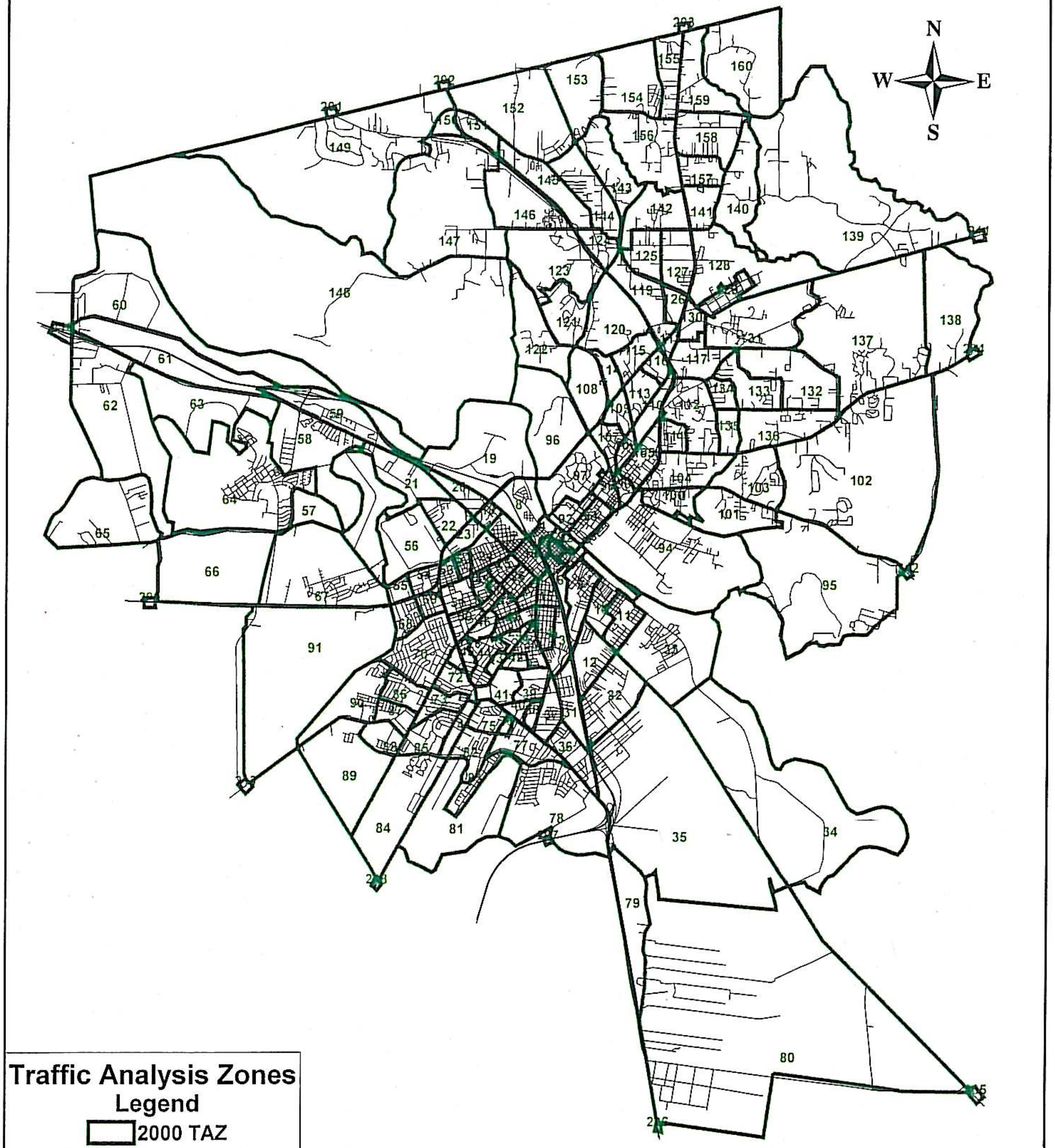

Figure 4

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3.1 Base Year (2000) Planning Data

The demographic data required as input into the trip generation programs can be subdivided into five major categories: occupied dwelling units, population, total employment, retail employment, and school attendance. These variables may be further described such as:

Dwelling Units:

The largest single type of developed land use in the study area is residential land. The number of dwelling units plays a major role in trip generation since many trips have an origin and/or destination in residential areas. There are 37,073 total dwelling units located in the study area. Of that total, 33,581 (90.5%) were occupied in 2000; however, that number is not static. Occupied dwelling units are allocated to Household Size Groups of 1-2 persons, 3-4 persons, and 5+ persons based on the average population per dwelling unit in each TAZ.

Population:

Population enters the trip generation equation in terms of calculating population per occupied dwelling unit by zone, which allows the distribution of units into household size categories. In 2000 for modeling purposes, the population of the study area was established as 89,380 persons.

Employment:

The location of employment centers has a major impact on travel in the area, particularly home-based work trips. Total employment in the study area in 2000 was 48,337 with 9,646 being in retail. For modeling purposes, employment variables were differentiated into total employment, retail employment and other employment.

School Attendance:

School attendance figures include public and private elementary, middle and high schools; colleges; universities; vocational and business schools. Total school attendance in the study area in 2000 was 17,798 students. For modeling purposes, the school attendance is measure by the number of students attending a school in a traffic zone and *not* by the number of students residing in a traffic zone.

3.2 Demographic Data Forecast

To adequately forecast future transportation needs, future projections of these demographic variables are needed. In order to accomplish this effort, data from the US Census and other demographic studies were analyzed to determine future growth trends.

The 2000 TAZ's were updated to include demographic changes since the 1990 TAZ's were compiled, and then compared to the 1990 TAZ's. These comparisons were sorted into these five categories: rapid growth, growth, stable, decline, and rapid decline. The resulting groupings assisted in determining the location, and timing of future growth within the planning area.

Table 3.1 presents the forecast demographic data for the study area. A complete listing of all the demographic variables by TAZ for each forecast year is included in the Appendix.

TABLE 3.1 – DEMOGRAPHIC DATA FORECAST (2000 -2029)

Year	Population	Dwell Units	Total Employment	Retail Employment	School Attendance
2000	89,380	33,581	48,337	9,646	17,798
2009	93,482	35,010	53,470	9,960	18,696
2019	96,360	35,929	56,172	10,359	19,272
2029	99,337	36,821	60,695	11,011	20,484

Source: N-S, 2005

CHAPTER 4: DEVELOPMENT OF BASE YEAR MODEL

4.0 Introduction

This section includes a description of the procedures used in developing travel estimates, the relationship between planning data and trip making, and the calibration and testing of the models used in this study. The general relationships between the models and their inputs and outputs are presented in a schematic drawing in Figure 5. When calibrating a model, the process contains several review and adjustment loops, which are not shown for the sake of clarity.

4.1 External Travel Model

External travel consists of two types of trips: external-internal (EI) trips and external-external (EE) trips. EI trips have one end of the trip inside the study area and the other outside. EE trips pass through the study area having no origin or destination within the study area.

4.2 Travel Surveys

In order to build EI and EE trip tables, travel behavior data needed to be collected for trips originating within and destined outside of the local MPO boundary. One means of ensuring that an effective model will be developed is to compile a sound database comprised of relevant observed data. A reliable method of collecting pertinent data on travel behavior, specific trip making characteristics and regional traffic patterns is to conduct travel surveys. Alliance Transportation Group (ATG) conducted a roadside travel survey and obtained 24 hour vehicle classification counts at designated sites. The surveys were conducted and traffic counts obtained during the month of October, 2002.

The details explaining the design and execution of the roadside surveys and the vehicle classification counts, as well as, all summary data is contained in Louisiana Department of Transportation and Development Alexandria/Pineville External Station Travel Survey, which is made a part of this report by reference. The External Station Travel Survey Report is available at the Alexandria/Pineville MPO office.

4.3 Calculation of External-Internal and External and External Trips

The travel patterns and magnitude of EI and EE trips were determined through the survey data. While expanding the survey data up to the actual ground counts, the external trips were separated into EI and EE trips. The breakdown of trips at each external station is shown in Table 4.1.

The external trip table obtained from the expanded survey data was used to develop a multiple linear regression model for EI attractions. This regression analysis established a relationship between a dependent variable (trip attractions) and one or more independent variables (planning data).

The equation developed for estimating EI trips from the planning data produced a multiple correlation (R^2) value of 0.39. The coefficient measures the predictability of one random variable (EI trips) given knowledge of other random variables (planning data). The value of R^2 ranges from 0 to 1. The closer to 1, the more predictable the trips are, while the closer to 0, the more unpredictable they are. The EI equation used in the model is:

EI Attractions = 0.438 (OCCDU) + 1.067 (RETEMP) + 0.523 (NONRET) + 200.1

Where: OCCDU = Occupied Dwelling Units
RETEMP = Retail Employment
NONRET = Non Retail Employment

TABLE 4.1 – SUMMARY OF EXTERNAL TRIPS

Station	Highway	Total Counts	External to External(EE)	EE%	External to Internal (EI)	EI%
201	US 71 N	3,846	574	14.9%	3,272	85.1%
202	US 167 N	9,426	1,124	11.9%	8,302	88.1%
203	US 165 N	10,426	1,442	13.8%	8,984	86.2%
204	LA 28 E	10,623	1,350	12.7%	9,273	87.3%
205	LA 1 S	7,720	1,040	13.5%	6,680	86.5%
206	US 71 S	6,508	1,680	25.8%	4,828	74.2%
207	I-49 S	15,884	5,166	32.6%	10,678	67.4%
208	US 165 S	8,325	930	11.2%	7,395	88.8%
209	LA 28 W	10,222	892	8.7%	9,330	91.3%
210	I-49 N	15,043	5,490	36.5%	9,553	63.5%
211	LA 116	3,470	0	0%	3,470	100%
212	LA 107	8,063	0	0%	8,063	100%
213	LA 488	2,567	0	0%	2,567	100%
TOTALS		**112,083**	**19,688**	**17.6%**	**92,395**	**82.4%**

<u>Source:</u> ATG, 2004

4.4 Three Step Modeling Process

The development of the models for estimating and predicting the internal-internal trips includes three steps: trip generation, trip distribution, and traffic assignment. The trip generation model determines how many trips are being made in the study area. The trip distribution model allocates the trips between origins and destinations. The final step is the traffic assignment process, which routes the trips through the network. Because of the low frequency of transit trips5 , pedestrian, and bicycle trip in the modeling area, the traditional third step -- *mode split* -- was not performed.

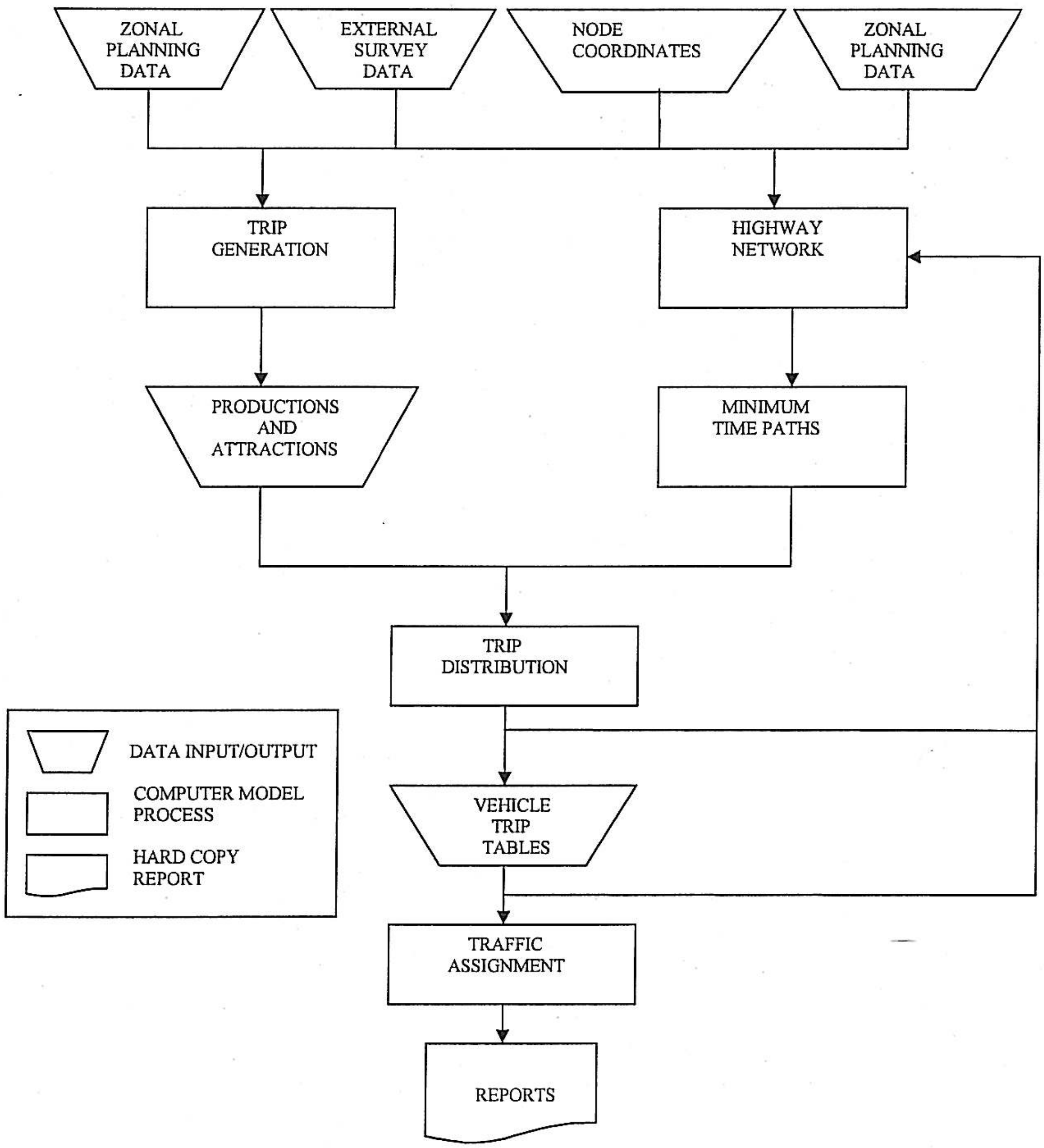
4.5 Trip Generation

This section describes the procedures used to determine the number of trips that begin or end in a given traffic zone. The identification of the other end of the trips occurs in the trip distribution models to be discussed in the next section. The TransCAD model generated trips for five purposes: home based work (HBW), home based other (HBO), non-home based (NHB), truck (CMVEH) and external/internal (EI). For the home-based trips, the productions refer to the home end and the attractions refer to the non-home end of the trip. For non-home based and commercial vehicle trips, productions and attractions refer to origin and destination respectively.

Existing planning data including population, dwelling units by household size groups, total employment, retail employment, and school attendance are used as input variables for each TAZ.

5 Previous studies indicate that less than ½ of 1% of all trips in the study area use mass transit.

FIGURE 5: MODELING PROCESS



4.51 Productions

A cross-classification method was then used to determine trips by purpose for the three household size groups for HBW, HBO and NHB purposes. A multiple regression equation was used to estimate truck productions (CMVEH). It is described later in the section on Attractions.

The application of the model required that the occupied dwelling units in each TAZ be allocated to household size categories of 1-2 persons, 3-4 persons and 5+ persons. This allocation was made by aggregating the 2000 census into household size groups from the 2000 Census. The resulting categories used in this model are as follows in the Table 4.2.

TABLE 4.2 – HOUSEHOLD SIZE GROUPS

Household Size	No of Units	Percent per HHS Category
HHS 1-2	20,077	59.7%
HHS 3-4	10,266	30.5%
HHS 5+	3,288	9.7%
Total	33,631	**100%**

Source: U.S. Census 2000

HHS = Household Size

The appropriate production rates for each purpose were then applied to the units in each group producing the breakdown of total trips by purpose and household size.

The initial Trip Production rates and rates from other areas are shown in Table 4.3. Total trips produced by purpose and household size for the Alexandria/Pineville area and rates for other urban areas are presented in Table 4.4 and Table 4.6.

TABLE 4.3 – TRIP PRODUCTION RATES PER HOUSEHOLD.

Trip Purpose	HHS 1-2	HHS 3-4	HHS 5+	Weighted Avg trips/HH
Home Based Work	1.250	1.800	2.163	1.610
Home Based Other	2.800	4.500	5.550	3.870
Non-Home Based	1.679	2.857	3.516	2.400
Total Trips	**5.729**	**9.157**	**11.229**	**7.890**

Source: N-S, 2005

HHS = Household Size

TABLE 4.4 – TRIP RATES PER HOUSEHOLD FOR OTHER URBAN AREAS

Total Trip Rate Area	Year	Population	All HHS
Lake Charles, LA	2001	158,969	7.7
Alexandria, LA	1993	97,012	7.9
Baton Rouge, LA	1992	427,520	6.2
Duluth, MN	1970	157,000	8.2
El Paso, TX	1970	362,800	7.7
Fresno, CA	1972	295,000	6.8
Greensboro, NC	1970	182,000	5.9
Huntington, W.VA	1972	215,000	8.3

Source: Calibration and Adjustment of System Planning Models, FHWA, 1990

HHS = Household Size

TABLE 4.5 – TOTAL TRIPS BY PURPOSE & HOUSEHOLD SIZE

HHS Trip Purpose	HHS 1-2	HHS 3-4	HHS 5+	ALL	%
Home Based Work	25,096	18,479	7,112	50,687	20.6
Home Based Other	56,216	46,197	18,248	120,661	49.1
Non-Home Based	33,709	29,330	11,561	74,600	30.3
Total Trips	**115,021**	**94,006**	**36,921**	**245,948**	**100.0**

Source: N-S, 2005

HHS = Household Size

TABLE 4.6 – TOTAL TRIPS BY PURPOSE FOR OTHER URBAN AREAS

Area	Year	Population	Home Based Work	Home Based Other	Non-Home Based
Lake Charles, A	2001	158,969	18.8	50.0	31.2
Alexandria, LA	1993	97,012	20.4	49.1	30.5
Baton Rouge, LA	1992	427,520	20.0	49.6	30.4
El Paso, TX	1970	362,800	19.7	55.9	24.4
Evansville, IN	1978	N/A	19.1	46.9	34.0
Louisville, KY	1975	N/A	26.6	54.1	19.3
Pensacola, FL	1970	N/A	14.8	59.2	26.0

Source: N-S, 2005: FHWA, 1990

4.52 Attractions

The attractions functionality within TransCAD program computes trip attractions by traffic zone by running a series of multiple linear regression equations based on the zone planning data. Since an origin-destination survey was not conducted for the internal-internal trips, equations were borrowed from surveys in other urban areas using comparable planning data. Trip attractions were developed from the planning data file for four purposes: HBW, HBO, NHB, and CMVEH. The equations for these four purposes are shown in Table 4.7.

TABLE 4.7 – TRIP ATTRACTION EQUATIONS (INTERNAL – INTERNAL)

Home Based Work	1.00 (TOTEMP)
Home Based Other	0.403 (OCCDU) + 1.45 (RETEMP) + 0.469 (OTHEMP) + 0.276 (SCHATT) + 0.5
Non-Home Based Work	0.719 (OCCDU) + 4.48 (RETEMP) + 0.862 (OTHEMP) + 0.137 (SCHATT) + 0.5
CMVEH	0.450 (OCCDU) + 0.860 (RETEMP) + 0.270 (OTHEMP) + 0.5

Source: Studies from other areas.

Independent Variables Entering the Equations

TOTEMP =	Total Employment
OCCDU =	Occupied Dwelling Units
RETEMP =	Retail Employment
OTHEMP =	Other Employment
SCHATT =	School Attendance
CMVEH =	Commercial Vehicles

The external-internal attractions equation enters into the attraction model at this point as a fifth purpose. The equation for the external-internal trip attraction/production is given by:

EXT-INT = 0.438 * OCCDU + 1.067 * RETEMP + 0.523 * OTHEMP +200.1.

4.6 Trip Distribution

The next step in travel demand modeling is the trip distribution process. This function determines where the trips produced in the generation model want to go and conversely, where the attracted trips originated. Many models are available for this process. The one used for this effort was the Gravity Model.

This model employs two relationships, the first of which is indirect.

> The shorter the travel time to the destination zone, the greater the number of trips will be distributed to it from the origin zone.

The second relationship is a direct one:

> The more attractions there are in a destination zone, the more trips will be distributed to it from the origin zone.

The generalized equation for this model is:

$$T_{ij} = (P_i) \frac{(A_j)(F_{ij})}{\sum_{j=1}^{n} (A_j)(F_{ij})}$$

Where:

- T_{ij} = Trips distributed between zones i and j
- P_i = Trips produced at zone i
- A_j = Trips attracted to zone j
- F_{ij} = Relative distribution rate (friction factors) reflecting travel time between zone i and zone j
- n = Total number of zones in study area

In a model of this type, friction factors determine the effect that spatial separation has on trip distribution between zones. These factors measure the probability of trip- making at one-minute increments of travel time. The initial friction factors for Home Based Work, Home Based Other, Non Home Based, and Commercial Vehicle trips were developed from various sources. The alpha, beta and gamma functions for these factors are shown in Table 4.8.

TABLE 4.8 – FRICTION FACTORS

Purpose	A	B	C	Source
HBW	1000	0.88	0.02	CTPP 2000
HBO	2000	1.25	0.1	NCHRP 365
NHB	2500	1.35	0.1	NCHRP 365
CMVEH	4000	0.7	0.1	Lafayette Model
EXTINT	9.7642	0.3	0.1	Alexandria Survey

HBW Home Based Work
HBO Home Based Other
NHB Non Home Based
CMVEH Commercial Vehicles
EXTINT External-Internal

CHAPTER 5: MODEL CALIBRATION

5.1 Model Calibration and Adjustment

Over the years since the original urban transportation studies were conducted, some standard practices have evolved. Today, planners have come to rely on census data, default values, and experience from similar areas for trip generation and distribution rates to update transportation studies. The process of calibration is undertaken in order to have the base model reproduce existing conditions as closely and as reasonably as possible.

Travel demand models are run to predict link volumes which are then compared to actual traffic counts at selected locations along screenlines and cutlines. Screenlines are established to intercept major traffic flows through a study area and are usually located along a physical barrier such as a river or railroad. Cutlines are shorter than screenlines and measure traffic volumes in a corridor. A review of the Preliminary Street and Highway Network for the study area determined that comparisons of model assignments to ground counts would be made along the study area boundary, two screen lines, and five cutlines. The screenlines are the Red River and the Union Pacific railroad. The cutlines are described as follows:

CUTLINE "A" measures traffic moving northeast/southwest west of MacArthur Drive between LA 28 and Masonic Drive.

CUTLINE "B" measures traffic moving northwest/southeast north of Jackson Street between the Red River and MacArthur Drive.

CUTLINE "C" measures traffic moving northwest/southeast east of Willow Glen River Road from LA 1 to MacArthur Drive.

CUTLINE "D" is measures traffic moving north/south north of Pineville Central Business District.

CUTLINE "E" measures traffic moving west/east east of the Alexandria/Pineville Expressway from Melrose Street to Esler Field Road.

The locations of these screenlines and cutlines are shown in Figure 6.

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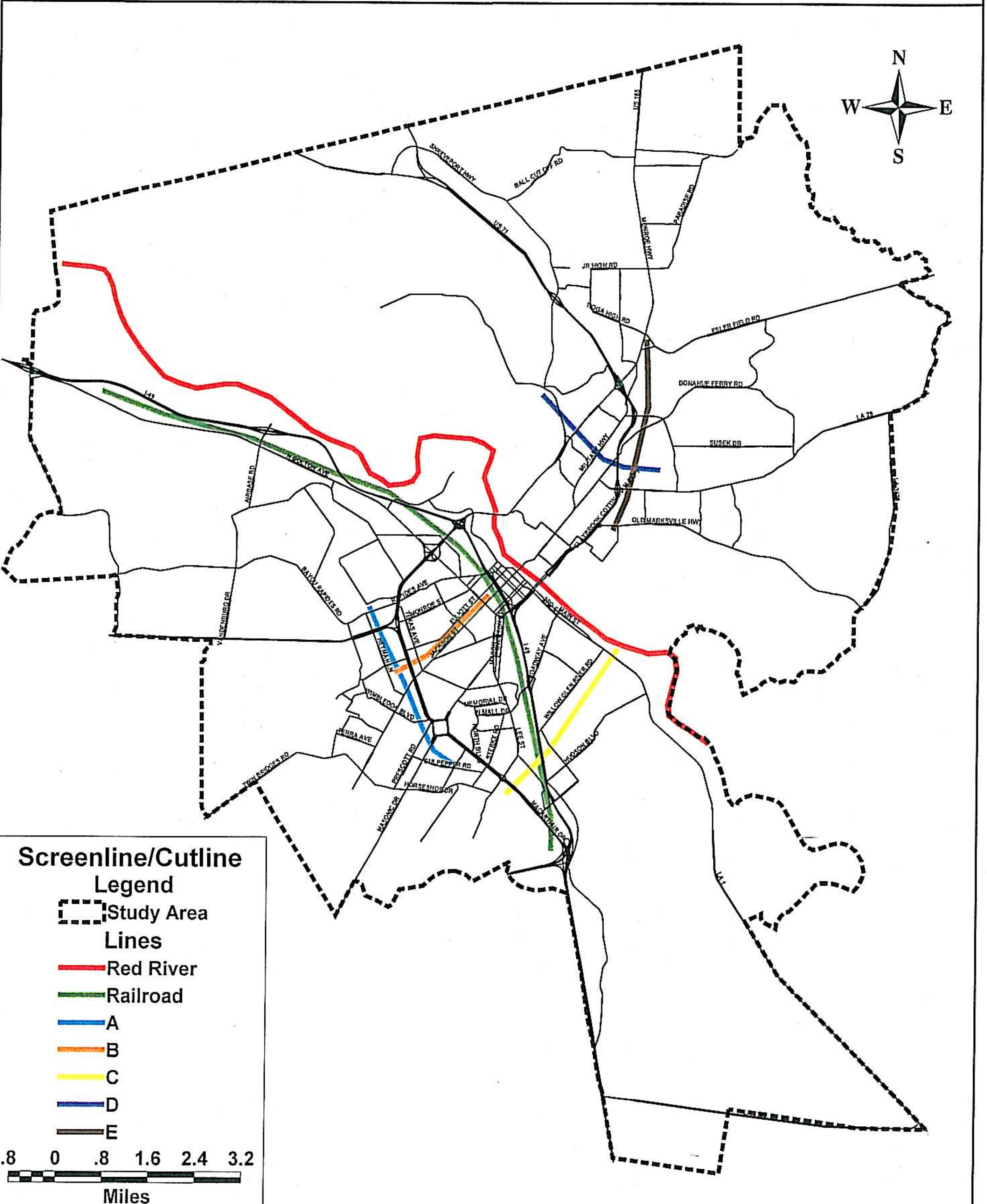

Figure 6

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If there are significant differences between actual ground counts and assigned volumes, the model parameters are carefully adjusted until the model produces assignments within a specified degree of accuracy relative to the actual counts. However, when making modifications to the parameters, it is important to keep the values reasonable and not have the end justifying the means. This project calls for the ground count/model assignment error to be within ± 10% for each screenline and cutline.

After evaluating the results of each assignment test, the link volumes can then be raised or lowered by examining and changing one or more of the following parameters:

1. Planning Data - if it is determined that the values used were in error
2. Trip Generation Rates - by household size and trip purpose
3. Centroid Connectors - location and number
4. Intrazonal Times - to increase or decrease trips loaded on the network
5. Intersection Penalties - to reflect actual conditions
6. Trip Distribution Parameters (friction factors) - to adjust average trip lengths
7. Roadway Capacities - with consistency among functional classifications or cross-sections
8. Roadway Speeds - with consistency among functional classifications or areas
9. Network Configuration - with consistency related to functional classification

Using this standard procedure, the travel demand forecasting models for the Alexandria/Pineville Metropolitan Area were applied to the existing network and planning data.

5.2 Key Adjustments

Initial runs indicated that an insufficient number of trips were being produced for the size of the area. Trip rates by household size and purpose were adjusted upward until an appropriate number of trips were generated. It was then noted that too many trips were crossing the Red River. A time penalty was assessed to all river crossings to account for these physical and psychological barriers.

When the totals for the screenlines and cutlines were within appropriate ranges, "fine tuning" changes were made to adjust individual link assignments. These changes included moving centroid locations to realistically replicate the entrances and exits for zones and minor speed changes to various facilities.

5.3 Performance Indicators

When all of the reasonable adjustments and factors were included in the models, a final assignment run was made. As stated previously, the ground count / model assignment error was to be within ± 10% for all screenlines and cutlines. A comparison of the ground counts and the final model assignments for the screenlines, cutlines, and cordon lines are shown in Table 5.1.

TABLE 5.1 – SCREENLINE/CUTLINE COMPARISON

HIGHWAY/STREET	MODEL VOLUME	2000 ADT	DIFF	% DIFF
SCREENLINE 1				
US 71	22,201	20,574	1,627	7.9%
JACKSON STREET BRG	9,731	10,356	-625	-6.0%
CLAYBROOK COTTINGHAM EXPRESSWAY	55,194	52,102	3,092	5.9%
SCREENLINE 1 TOTAL	**87,125**	**83,032**	**4,093**	**4.9%**
SCREENLINE 2				
AIRBASE ROAD	8,316	8,156	160	203%
US 71	28,663	31,228	-2,565	-8.2%
RAPIDES AVENUE	9,341	11,148	-1,807	-16.2%
JACKSON STREET	8,464	8,979	-515	-5.7%
CASSON STREET	11,080	8,386	2,694	32.1%
WINN STREET	9,611	8,386	1,225	14.6%
BROADWAY AVENUE	25,525	28,018	-2,493	-8.9%
SUGAR HOUSE ROAD	10,348	9,719	629	6.5%
SCREENLINE 2 TOTAL	**11,1349**	**11,4020**	**-2,671**	**-2.3%**
CUTLINE A				
LA 28	22,269	21,378	891	4.2%
CASTLE ROAD	3,233	2,981	252	8.5%
JACKSON STREET	23,671	24,125	-454	-1.9%
MASONIC DRIVE	15,089	15,954	-865	-5.4%
CUTLINE A TOTAL	**64,263**	**64,438**	**-175**	**-0.3%**

TABLE 5.1 – SCREENLINE/CUTLINE COMPARISON

HIGHWAY/STREET	MODEL VOLUME	2000 ADT	DIFF	% DIFF
CUTLINE B				
4TH STREET	5,040	5,013	27	0.5%
MAIN STREET	4,322	5,013	-691	-13.8%
BOLTON AVENUE	12,650	11,899	751	6.3%
CHESTER STREET	4,387	4,610	-223	-4.8%
TEXAS STREET	9,848	10,085	-237	-2.3%
CUTLINE B TOTAL	**36,247**	**36,620**	**-373**	**-1.0%**
CUTLINE C				
3RD STREET	11,111	12,237	-1,126	-9.2%
LINCOLN ROAD	2,468	1,681	787	46.8%
JEFFERSON HIGHWAY	17,998	15,504	2,494	16.1%
CUTLINE C TOTAL	**31,577**	**29,422**	**2,155**	**7.3%**
CUTLINE D				
DONAHUE FERRY ROAD	3,821	3,297	524	15.9%
CLAYBROOK COTTINGHAM EXPRESSWAY	30,369	28,726	1,643	5.7%
MILITARY HIGHWAY	5,977	5,048	929	118.4%
MONROE HIGHWAY	15,713	13,219	2,494	18.9%
SHREVEPORT HIGHWAY	1,115	10,993	162	1.5%
CUTLINE D TOTAL	**67,035**	**61,283**	**5,752**	**9.4%**
CUTLINE E				
ESLER FIELDS	5,866	6,223	-357	-5.7%
EDGEWOOD DRIVE	15,837	14,171	1666	11.8%
LA 28	23,837	26,050	-2213	-8.5%
MELROSE STREET	12,669	13,663	-994	-7.3%
CUTLINE E TOTAL	**58,209**	**60,107**	**-1,898**	**-3.2%**
GRAND TOTAL OF ALL LINES	**45,5804**	**44,8922**	**6,882**	**1.5%**

Source: N-S, 2005

The final assignment was also compared to the following performance measures based on national averages from studies of other urban areas:

Region-Wide Percent Error:

The total difference of the ground counts compared to the total of the model assignments for all of the screenline, cutline, and cordon line links should not be more than 5%. The error for the Alexandria/Pineville Model is 1.5%.

Functional Classification Percent Error:

This indicator checks on whether or not the model is loading trips among the functional classifications in a reasonable manner. The suggested error limits and the error for the Alexandria/Pineville Model are as follows:

TABLE 5.2 – VALIDATION BY FUNCTIONAL CLASS

FUNCTIONAL CLASS	MODEL VOLUME	COUNT	DIFF	%DIFF	GUIDE
EXPRESSWAY	80,828	85,562	4,734	5.9%	0.0%
PRINCIPAL ARTERIAL	207,954	214,439	6,485	3.1%	7.0%
MINOR ARTERIAL	112,949	107,361	5,588	-4.9%	10.0%
COLLECTOR	47,191	48,442	1,251	2.7%	20.0%

Source: N-S, 2005

Volume Group Percent Error:

This indicator checks on whether or not the model volumes loaded among certain ranges in a reasonable manner. The suggested error limits and the error for the Alexandria /Pineville Model are as follows:

TABLE 5.3 – VALIDATION BY VOLUME GROUP

VOLUME GROUP	MODEL VOLUME	COUNT	DIFF	%DIFF	GUIDE
1000-5000	12,569	13,909	1,340	10.7%	50.0%
5000-10000	91,575	96,363	4,788	5.2%	25.0%
10000-25000	238,608	240,976	2,368	1.0%	20.0%
25000-40000	106,170	104,556	-1,614	-1.5%	15.0%

Source: N-S, 2005

Correlation Coefficient:

The correlation coefficient, **R**, is calculated from a simple linear regression on the pairs of assigned and counted volumes. Typically this **R** value will be greater than 0.88. The **R** value for the Alexandria/Pineville Model is 0.908.

5.4 Vehicle Miles Traveled (VMT) Measures

• VMT by Functional Classification for Alexandria/Pineville Model is:

TABLE 5.4 – THE DISTRIBUTION OF 2000 VMT

Functional Class	VMT	%VMT
Freeway	339,909	15.6%
Expressway	240,141	11.0%
Principal Arterial	754,019	34.5%
Minor Arterial	476,126	21.8%
Collector	373,284	17.1%
Total VMT	2,183,481	

Source: N-S, 2005

• VMT by V/C ratio

TABLE 5.5 – THE DISTRIBUTION OF 2000 VMT BY V/C RATIO

	VMT	%VMT
V/C>1.2	62,723	2.9%
V/C 1-1.2	294,682	13.5%
V/C 0.5-1.0	1,017,497	46.6%
V/C<0.5	808,578	37.0%
TOTAL VMT	2,183,481	

Source: N-S, 2005

• VMT per Person

The 2000 VMT per person calculated for Alexandria/Pineville Model is 24.4 miles. The average range is: for large urban areas – 20 to 24 miles, and for small urban areas – 15 to 18 miles.

• VMT per Occupied Dwelling Unit

The average ranges for this measure are 60 to 65 miles for large urban areas, and 40 to 43 miles for small urban areas. The calculated value for Alexandria/Pineville is 65.0 miles.

5.5 Summary

The quality of the calibration effort, as indicated by the screenline / cutline assignments, various performance measures, and the fact that adjustments were reasonable and consistent with actual traffic operations will prove meaningful when the model is ultimately applied to future conditions. Therefore, it is concluded that the model for the Alexandria/Pineville Study Area is properly calibrated for use in forecasting future travel demand.

CHAPTER 6: TRAVEL DEMAND FORECAST

6.0 Introduction

The first step in determining the transportation needs of the Study Area was the assignment of the target year trips to the Existing Plus Committed (E+C) Network. These estimates of future trips came from two sources. The External Trip Forecast was predicted from growth factors developed for each external station while the Internal Trip Forecast was predicted from the forecast of the Planning Data.

6.1 Existing Plus Committed Network

Once the Base Year Network was calibrated, the E+C Network was developed. The Base Year Network was defined as the street and highway system in 2000. Projects defined as committed were those improvements for which construction was either completed or begun since 2000, a contract for construction has been awarded, or projects for which funding has been dedicated such as through Legislative approval of the Proposed Construction Program. The Committed Projects are listed in Table 6.1 and shown in Figure 7.

TABLE 6.1 – COMMITTED PROJECTS

PROJECT NAME	LOCATION	IMPROVEMENT
MacArthur Drive (US 71)	Red River	Bridge Replacement W/Approaches 4 Lanes
Hickory Hill Ext (LA 623)	LA 3225 to US 165	New RR Overpass, Continuous Turn Lane
Susek Drive	Edgewood Drive to Pinehurst Drive	Continuous Turn Lane
Jackson Street LA (1208-3)	Windsor Place to MacArthur Drive	Continuous Turn Lane
Dorchester Drive	Parliament Drive to Jackson Street	Continuous Turn Lane
Horseshoe Drive	@Masonic Drive	Left Turn Lanes
LA 28	Claybrook Cottingham Expressway to Edgewood Drive	Restripe to five Lanes

Source: N-S, 2005, RAPC

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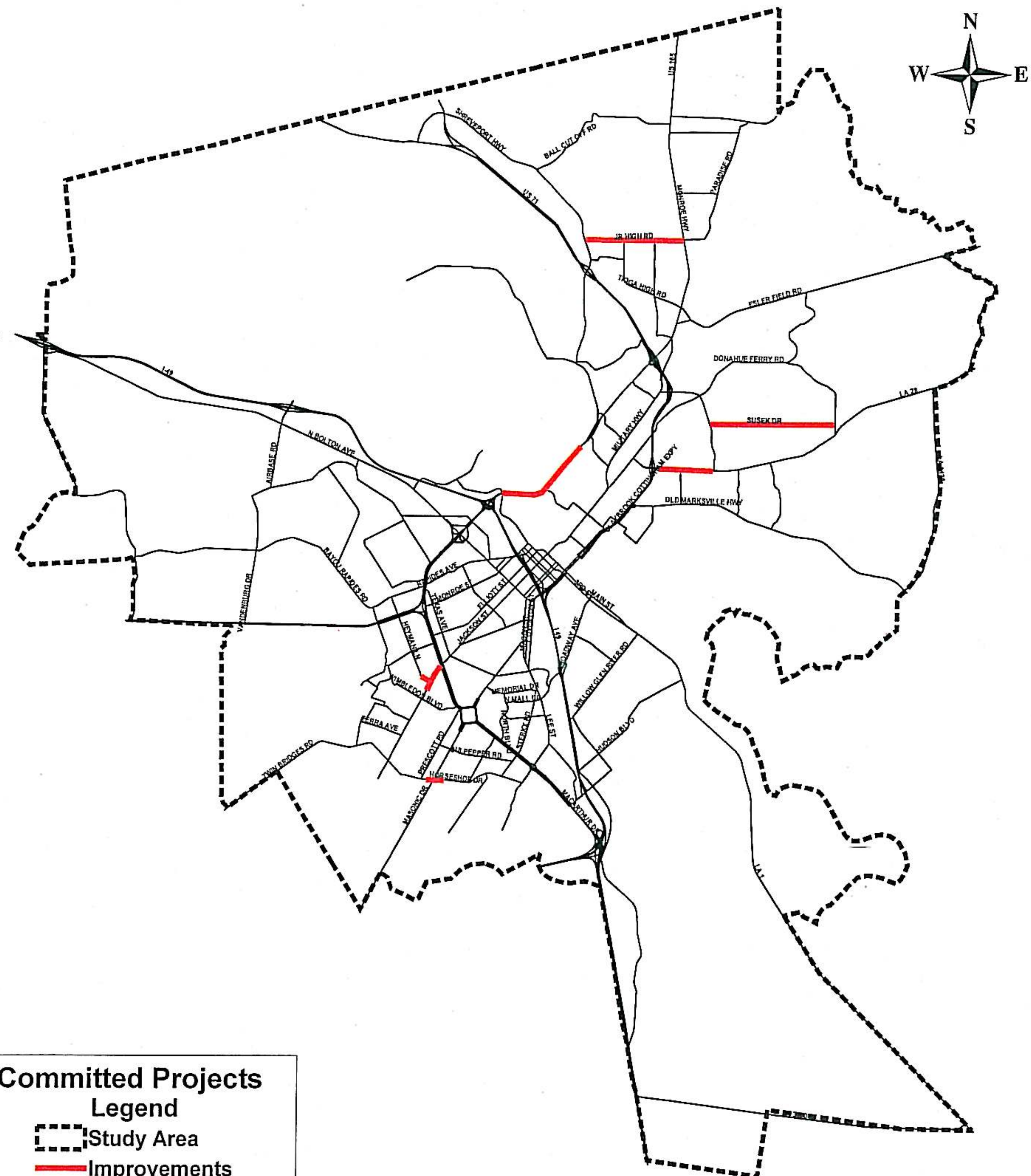

Committed Projects
Legend

Study Area

Improvements

1 0 1 2 3 4

Miles

Figure 7

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6.12 Future Travel Demand

Using the travel demand estimation models developed during the base year calibration process, the forecast planning data, external trip forecasts and the E+C Network were used as input to predict link traffic volumes for the years 2009, 2019 and 2029.

6.13 External Trip Forecast

As described in Chapter 4, there are two types of external trips, External-Internal (EI) and External-External (EE). The base year traffic counts at each external station were forecast to 2009, 2019 and 2029 by developing a growth factor based on a 10 year history of counts at the locations. The total traffic at each station was then divided into EI and EE trips with the assumption that there would not be a significant change in the distribution from the base year. The traffic forecast for each external station is shown in Table 6.2.

TABLE 6.2 – TRAFFIC FORECAST FOR EXTERNAL STATIONS

STA #	HIGHWAY	2009 VOLUME	EI	EE	2019 VOLUME	EI	EE	2029 VOLUME	EI	EE
201	US 71 N	4,751	4,041	710	5,714	4,862	852	6,678	5,682	996
202	US 167 N	11,054	9,736	1,318	12,919	11,379	1,540	14,784	13,022	1762
203	US 165 N	12,112	10,436	1,676	14,483	12,479	2,004	16,854	14,522	2,332
204	LA 28 E	11,720	10,230	1,490	14,207	12,401	1,806	16,695	14,573	2122
205	LA 1 S	9,786	8,468	1,318	12,618	10,918	1,700	15,449	13,367	2,082
206	US 71 S	7,145	5,301	1,844	8,637	6,407	2,230	9,928	7,366	2,562
207	I-49 S	21,937	14,785	7,152	30,981	20,879	10,102	40,024	26,974	13,050
208	US 165 S	9,940	8,830	1,110	12,252	10,884	1,368	14,565	12,937	1,628
209	LA 28 W	14,179	12,941	1,238	17,318	15,806	1,512	20,458	18,672	1,786
210	I-49 N	16,943	10,759	6,184	19,739	12,535	7,204	22,536	14,312	8,224
211	LA 116	4,650	4,650	0	5,914	5,914	0	7,178	7,178	0
212	LA 107	9,648	9,648	0	10,609	10,609	0	11,569	11,569	0
213	LA 488	2,998	2,998	0	3,494	3,494	0	3,991	3,991	0

Source: N-S, 2005

EE External to External
EI External to Internal
STA Station Number

6.14 Internal Trip Forecast

The trip generation program was run using the 2009, 2019 and 2029 data files. These programs calculated the productions and attractions by traffic zone. The comparison of trip productions by purpose for the base year and target years is shown in Table 6.3.

TABLE 6.3 – FORECAST TRIP PRODUCTION

Trip Purpose	2000	2009	2019	2029
Home Based Work	50,687	52,795	54,193	55,551
Home Based Other	120,661	125,701	129,040	132,286
Non Home Based	74,600	77,723	79,791	81,802
Commercial Vehicles	33,776	36,431	38,177	39,896
EI	92,395	112,823	138,567	164,165

Source: N-S, 2005

The Gravity Model then distributed the trips between zone pairs. The equilibrium traffic assignment model loaded the trips on the network based on minimum time paths. The assigned volumes on each link were compared to the capacity of the links and volume/capacity (v/c) ratios were calculated. The resulting forecast traffic volume for each link was compared to the capacity of the respective link to determine areas of forecast capacity deficiency.

6.2 Projected Deficiencies

It is recommended that those facilities which show a projected v/c ratio of greater than 1.00 should be considered deficient. It is also recommended that emphasis be placed on those areas where the v/c ratio is greater that 1.20 or in terms of Level of Service (LOS), any facilities which has a LOS of E and higher based on those ratios. The facilities estimated to be deficient by 2009, 2019 and 2029 are shown in Figures 8, 9 and 10.

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MTP 2029

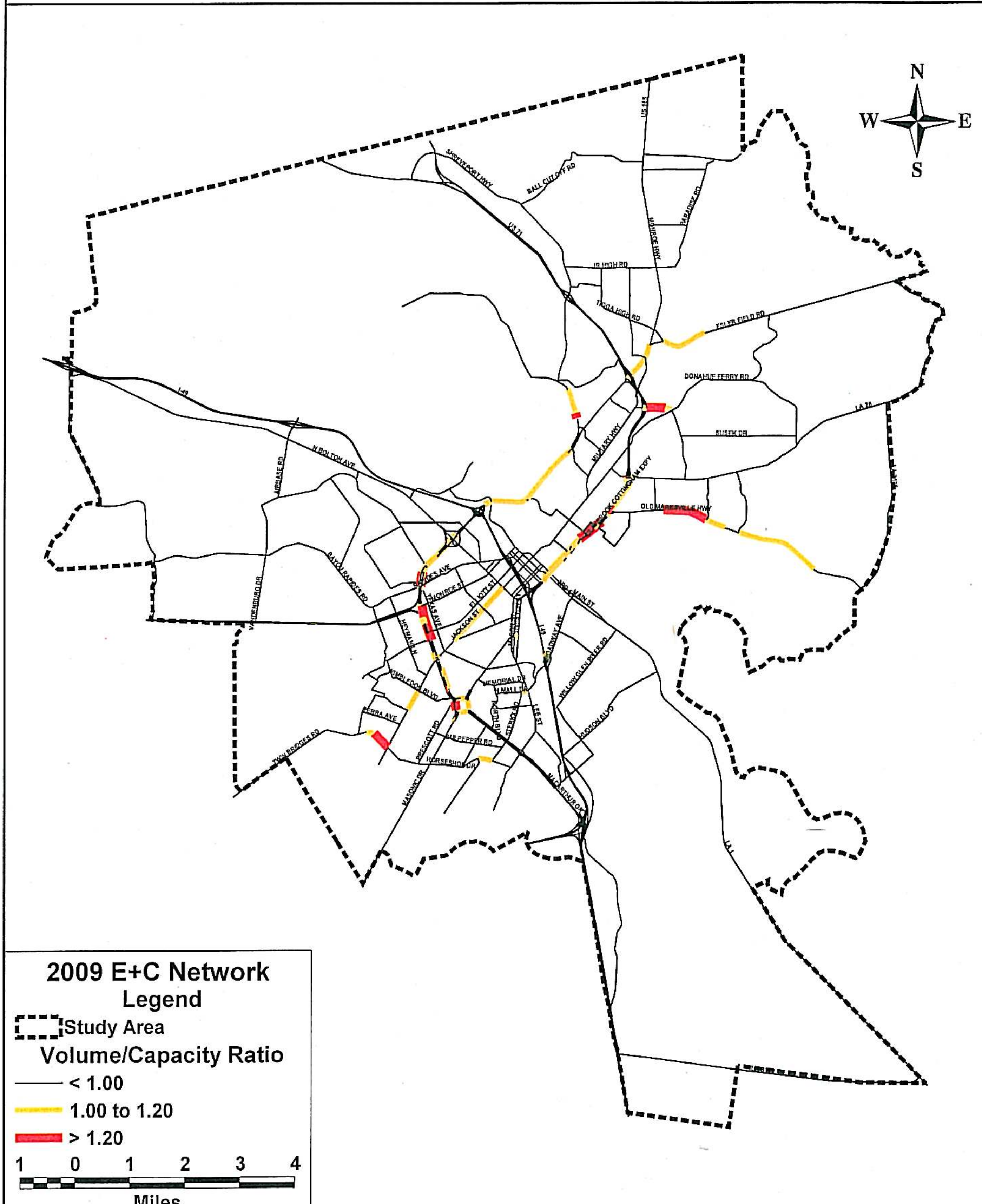


Figure 8	38	NEEL-SCHAFFER

ALEXANDRIA/PINEVILLE
MTP 2029

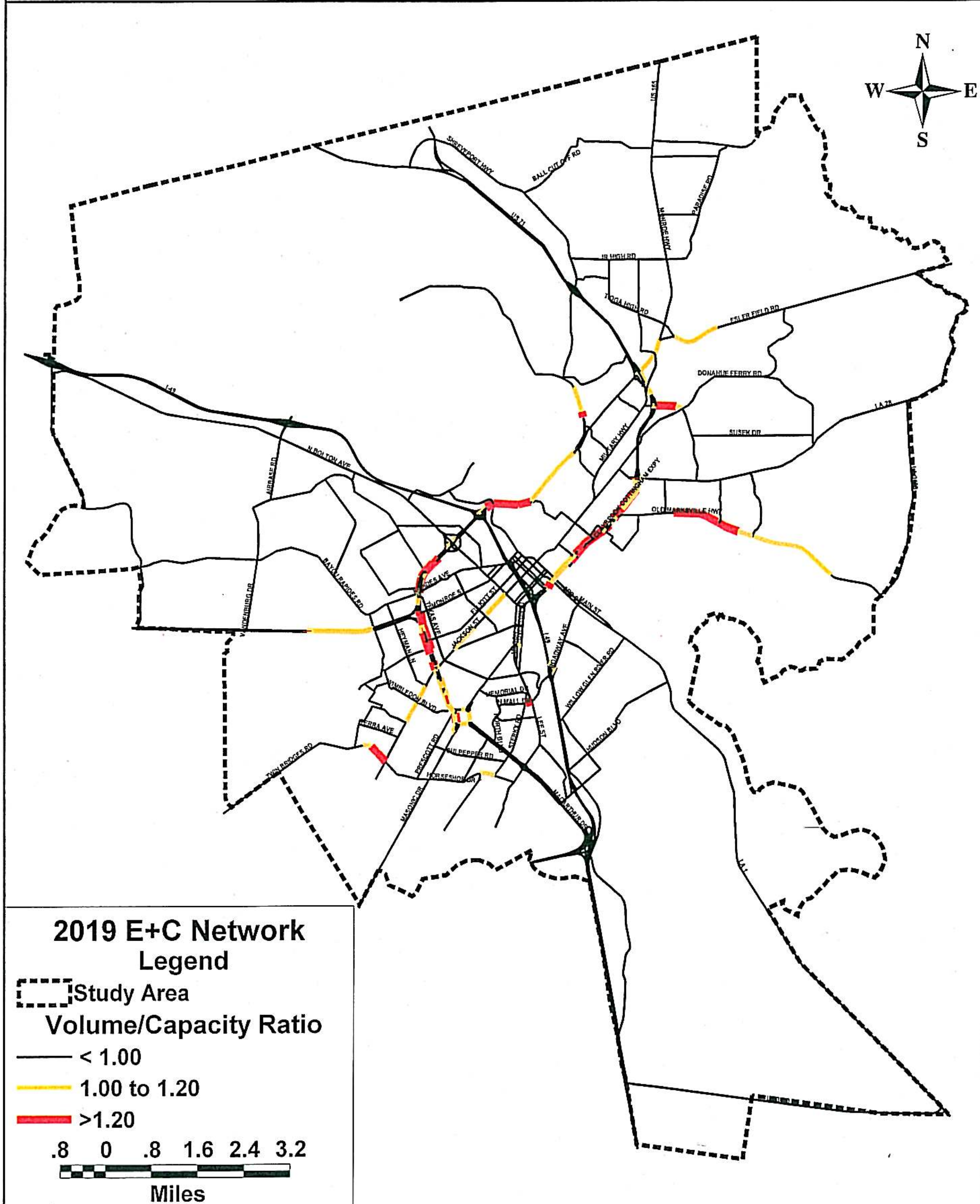
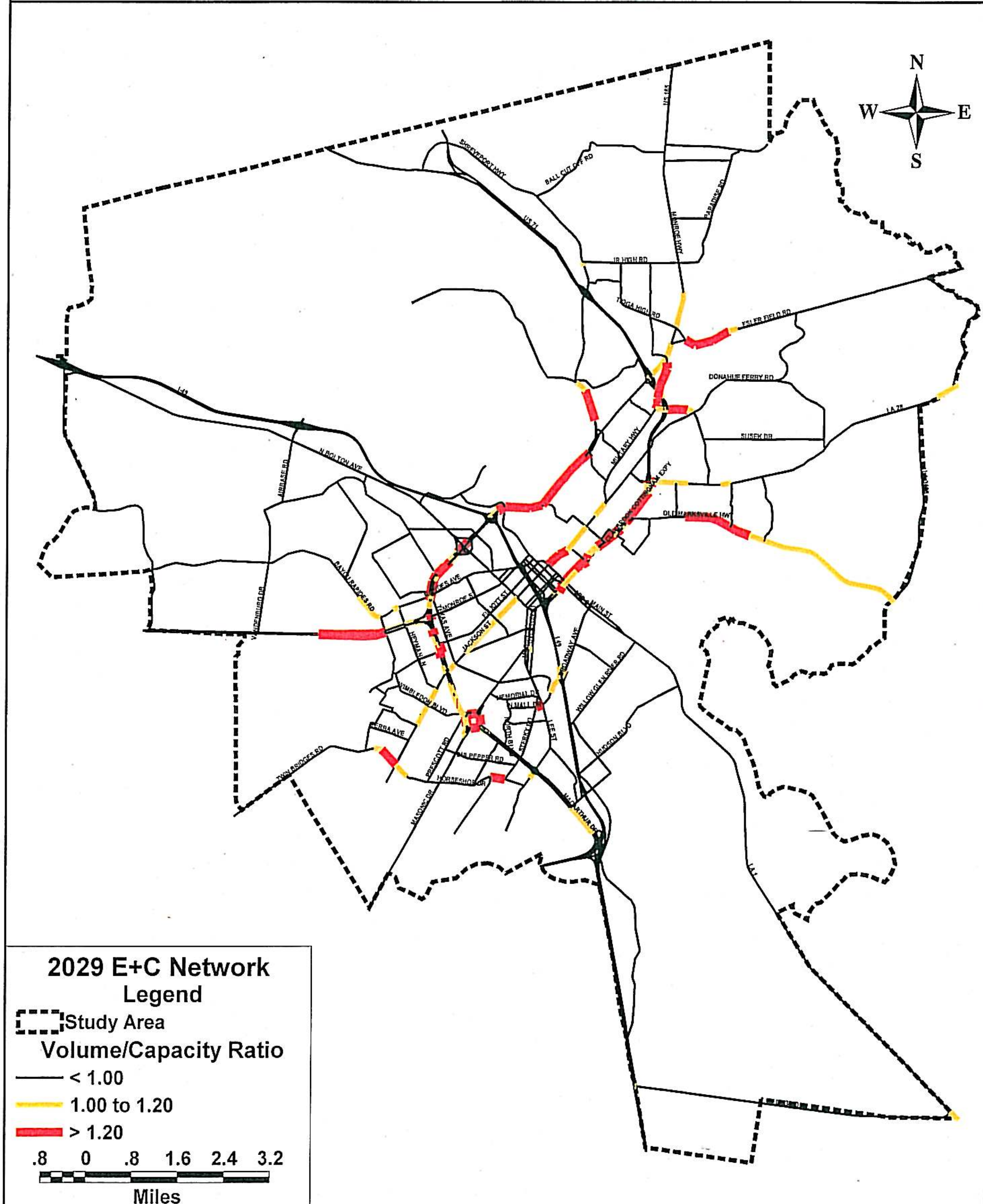


Figure 9

NEEL-SCHAFFER

ALEXANDRIA/PINEVILLE
MTP 2029



CHAPTER 7: RECOMMENDED PLAN

7.1 Potential Improvements

Once all improvements have been identified, they must be tested in the transportation model to determine their effect on alleviating capacity deficiencies throughout the network. These tests will determine if the planned improvement is sufficient to attain the desired result and/or determine the priority of a planned improvement and/or determine if additional or alternate improvements are equally effective. As testing of all planned improvements would be too time consuming, selected improvements are grouped and tested for certain areas of the network.

These model tests will demonstrate if the deficiency presently being experienced will be corrected by the planned improvement and/or the consequences of not implementing the planned improvement. The model test also forecast future deficiencies based upon existing conditions and expected growth patterns. The model tests assist in determining the timing of planned improvements as well which assists in the establishment of the various implementation stages.

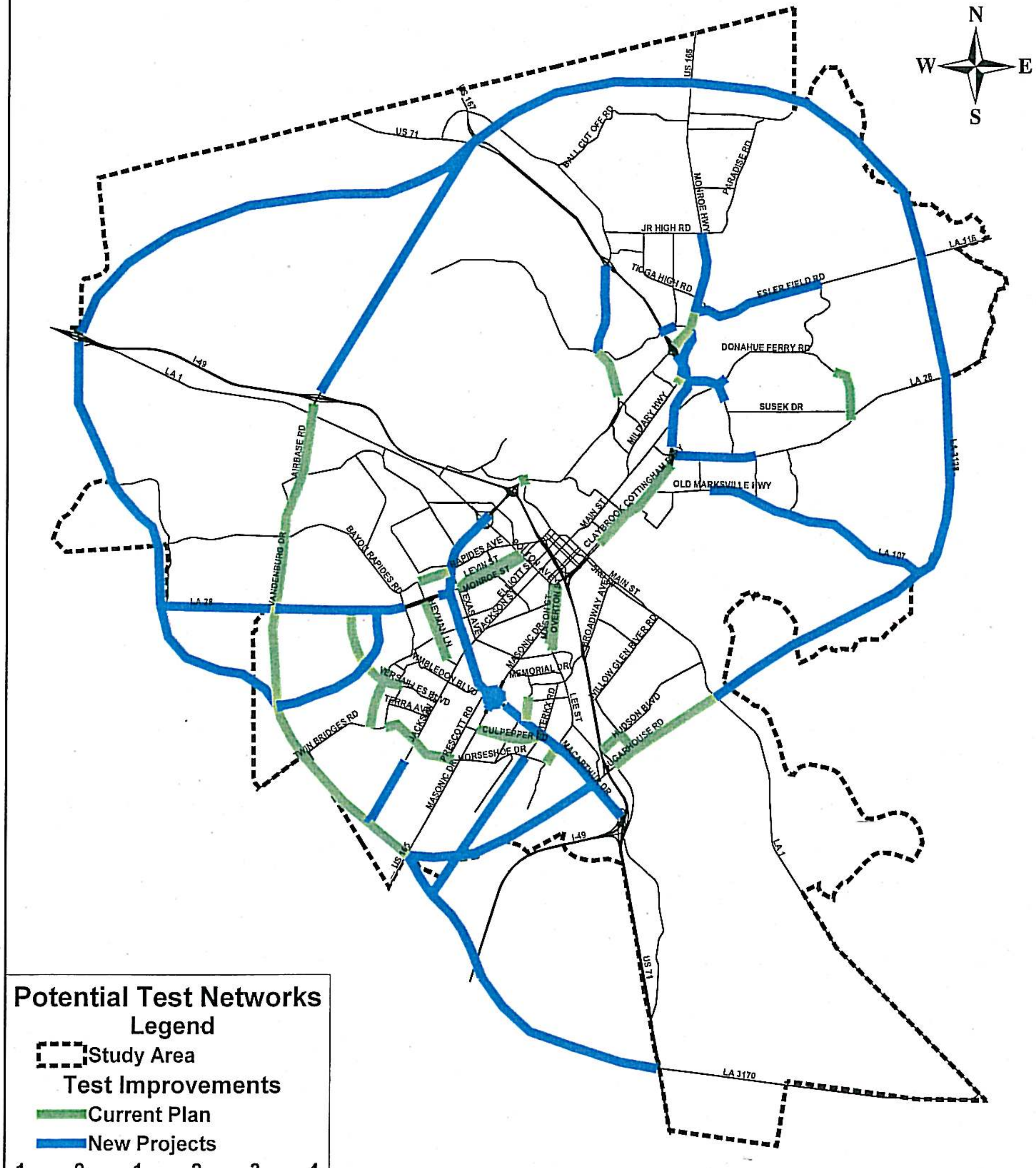
7.2 Analysis/Modifications of Tests

As the selected planned improvements are tested, their results are analyzed to determine their ability to attain the intended result. For example, a deficient two lane road may have been planned for improvement to a three lane road and tested accordingly in the model. Although the model indicates the planned improvement is effective for a short term period, the model further indicates that the road will be deficient in five years unless additional improvements are implemented. Therefore, the MPO is now better equipped to address their transportation needs now and in the future. Just as critical to the actual testing of selected planned improvements is the analysis that follows the testing, as the analysis demonstrates the effectiveness of the planned improvements individually and collectively. This testing and analysis process, albeit time consuming is a tremendous asset to the MPO in assessing the effectiveness of planned improvements, prioritizing them and finally funding the planned improvements. All of the projects include in these tests are shown in Figure 11.

7.21 Final Improvements Test

Once all selected planned improvements have been tested, analyzed, and modified, the overall effectiveness of the entire program is tested. The final test is to insure that collectively all improvements are attaining the desired results within acceptable budgetary and time constraints. The final improvement test results in the Recommended Transportation Plan. The recommended plan projects are shown in Figure 12.

ALEXANDRIA/PINEVILLE
MTP 2029



Potential Test Networks

Legend

Study Area

Test Improvements

Current Plan

New Projects

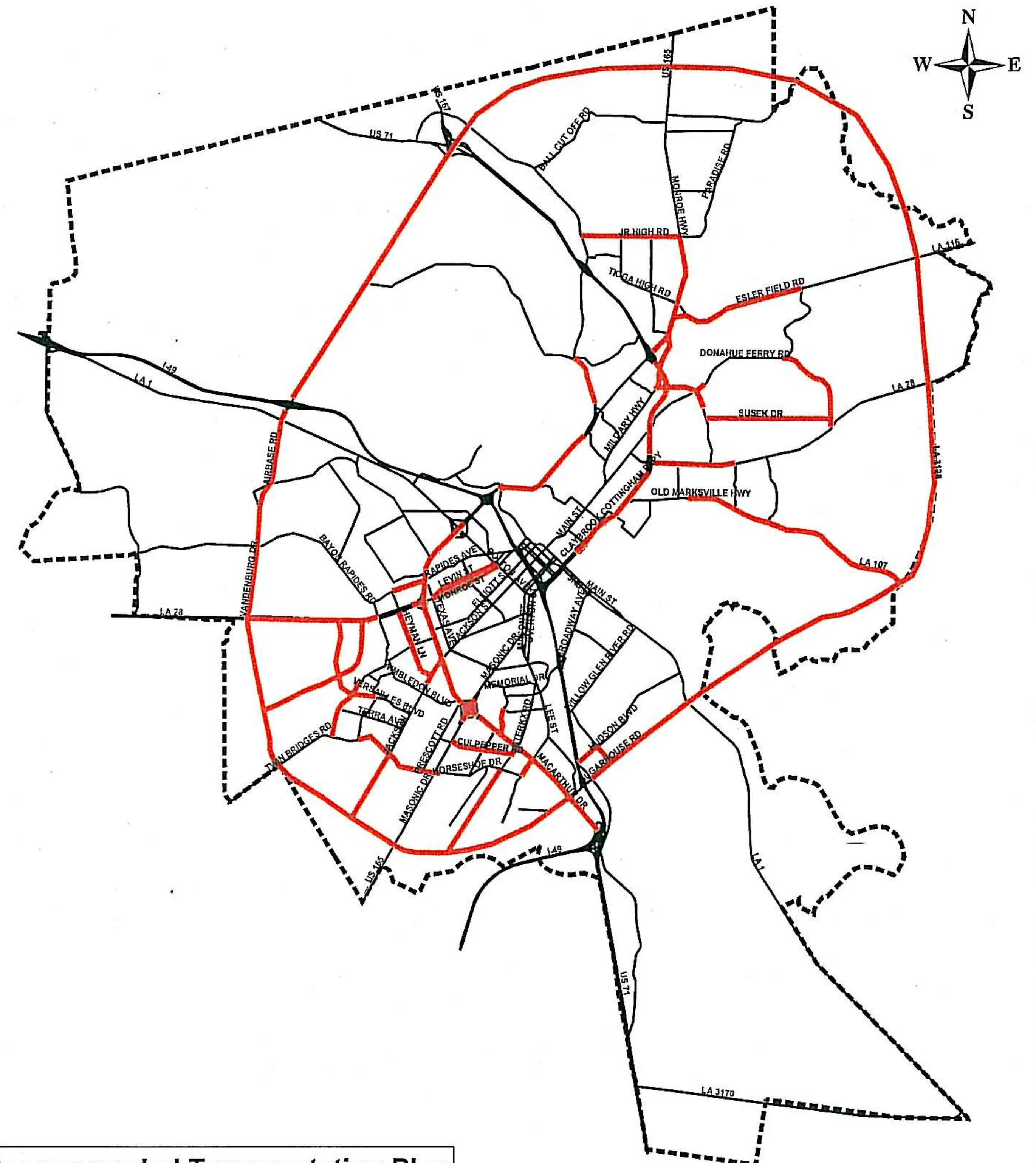
1 0 1 2 3 4

Miles

Figure 11

NEEL-SCHAFFER

ALEXANDRIA/PINEVILLE
MTP 2029



Recommended Transportation Plan

1 0 1 2 3 4

Miles

7.22 Recommended Transportation Plan

The recommended transportation plan consists of all planned improvements for all network deficiencies until 2029.

The recommended transportation plan was separated into three stages based upon need, impact, funding, and timing. All planned improvements are included in these three stages and are addressed later in the report.

7.3 Funding Sources

The implementation of a financially constrained plan for the Alexandria/Pineville Metropolitan Area will necessarily involve several sources of funding. These sources include various programs at the local, state, and federal levels. Since many of the improvement projects are located on the State and Federal Highway System, substantial financial assistance could be obtained through funding programs of the LA DOTD, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Several of these funding programs are listed below.

7.31 Potential Funding Sources – Federal/State

TEA- 21

The Transportation Equity Act for the 21st Century (TEA – 21) did provide total funding of $198 billion nationally for fiscal years 1998-2003, and is being reauthorized by Congress. This legislation includes several categories of funding, under which many of the projects in the financially constrained plan will be eligible for Federal funding assistance. These categories are:

National Highway System (NHS)

This category covers all Interstate routes and a large percentage of urban principal arterials. The Federal/Local funding ratio for arterial routes is 80/20. The Interstate System, although a part of NHS, will retain its separate identity and will receive separate funding at a 90/10 ratio.

Surface Transportation Program (STP)

The STP is a block grant funding program with subcategories for the States and Urban Areas. These funds can be used far any road (including NHS) that is not functionally classified as a local road or rural minor collector. The State portion can be used on roads within an urbanized area and the urban portion can only be used on roads within an urbanized area.

Subcategories of the STP funds are:

STP greater than 200,000 population
STP less than 200,000 population
STP Flexible, Hazard Elimination, and Enhancement.

The funding ratio is 80/20.

Federal Transit Administration (FTA)

FTA funding is provided for annual operation and maintenance cost of the transit system. Funding levels may vary dependent upon variables such as fare revenue and annual federal appropriations. Generally, approximately 50% of the annual cost of operation has been provided by this funding.

Capital funding for equipment and other capital improvements are provided on a funding ratio of 80/20.

Bridge Replacement and Rehabilitation Program

These funds can be used to replace or repair any bridge on a public road. The funding ratio is 80/20.

7.32 Potential Funding Sources - Local

Any costs not covered by Federal and State programs will be the responsibility of the local governmental jurisdictions. Local funding can come from a variety of sources including property taxes, sales taxes, user fees, special assessments and impact fees. Each of these potential sources is important and warrants further discussion.

Property Taxes

Property taxation has historically been the primary source of revenue for local units of government in the United States. More than 80 percent of all tax revenues at this level come from this tax. Property is not subject to Federal government taxation, and state governments have in recent years shown an increasing willingness to leave this important source of funding to local governments.

General Sales Taxes

The general sales tax is also an important revenue source for local governments. The most commonly known form of the general sales tax is the retail sales tax. The retail sales tax is imposed on a wide range of commodities, and the rate is usually a uniform percentage of the selling price. The current sales tax varies from 7% in the Unincorporated Area to 9% in the City of Alexandria.

User Fees

User fees are fees which are collected from those who utilize a service or facility. The fees are collected for the purpose of paying for the cost of a facility, financing the cost of operations and/or generating revenue for other uses. Water and sewer services are the most commonly known public improvements for which a user fee is charged. This method of generating revenue to finance public improvements has also been employed to finance the cost of public parks, transit systems and solid waste facilities. The theory behind the user fee is that those who directly benefit from the public improvement pay for the cost of the public improvement.

Special Assessments

Special assessment is a method of generating funds for public improvements, whereby the cost of a public improvement is collected from those who directly benefit from the improvement. In many instances, new streets are financed by special assessment. The owners of property located adjacent to the new streets are assessed a portion of the cost of the new streets, based on the amount of footage they own adjacent to the new streets. Special assessments have also been used to generate funds for general improvements within special districts, such as central business districts. In some cases, these assessments are paid over a period of time, rather than as a lump sum payment.

Impact Fees

Development impact fees have been generally well received in other states and municipalities in the United States. New developments create increased traffic volumes on the streets around them. Development impact fees are a way of attempting to place a portion of the burden of funding improvements on developers who are creating or adding to the need for improvements.

Bond Issues

Property tax and sales tax funds can be used on a pay-as-you go basis, or the revenues from them can be used to pay off general obligation or revenue bonds. These bonds are issued by local governments upon approval of the voting public.

7.33 System Maintenance and Operation

The maintenance and operation of the transportation system was considered in the development of the plan and staged program. Typically, maintenance costs are applicable to the system as a whole. Where possible, maintenance projects are identified individually. However, it is not possible to develop project specific maintenance schedules for other than the near term. The maintenance costs identified in this plan are the responsibility of various governmental jurisdictions.

The balancing act of meeting identified transportation improvement needs and maintaining the present transportation system will continue to place local decision makers and revenue forecasts somewhat at odds. The conservative recommendations made by this plan fully considered the impact of maintenance costs in the determination of available funding. Some of the existing programs for highway and bridge infrastructure are listed below.

Interstate Maintenance Program (IM)

This federal funding category is intended to "rehabilitate, restore, and resurface" the Federal Interstate system. One (1) eligible federal interstate highway lies within the Alexandria/Pineville Urbanized Area, Interstate 49. $23.8 billion is authorized nationwide for the 6 years of the TEA-21 for this category. Approximately $78 million is available to the State of Louisiana annually for this program

Federal Bridge Replacement Program (FBR)

This federal funding category is intended to provide funding to any bridge on a public road. Funding under this program amounted to $20.4 billion for fiscal years 1998 through 2003. Statewide, approximately $92 million per year was available through 2003.

State of Louisiana Overlay, Maintenance and Operations Program

A variety of both federal and state funds are used to implement the statewide overlay, maintenance and operations program including Surface Transportation Funds, National Highway System Funds, General Louisiana Trust Fund monies, and State of Louisiana general funds.

7.4 Implementation Costs

The estimate of costs to implement the Financially Constrained Transportation plan for the Alexandria/Pineville Area is based on historical data collected from LA DOTD and local agencies. This data included actual contract amounts for completed projects and projects currently under construction, and programmed amounts from State and local proposed construction programs. Order-of-magnitude cost estimates, in 2004 dollars, for projects not included in any of the above categories were developed based upon discussions with the LA DOTD Roadway Design Section and local public works officials, and an average cost per improvement type listed below:

IMPROVMENT TYPE	AVERAGE COST
Widening (two additional lanes)	$ 3,000,000/mile
New two lane road	$ 1,700,000/mile
New four lane road	$4,800,000/mile
Continuous turn lane	$ 1,700,000/mile
Reconstruction	$ 775,000/mile
New Interchange	$18,000,000/each
Traffic Signals	$ 100,000/signal
Right-of-way (rural)	$ 200,000/mile
Right-of-way (urban)	$ 750,000/mile

7.5 Financial Feasibility

The financial feasibility of the Financially Constrained Transportation Plan (FCTP) can be determined by comparing the estimated cost of the programmed improvements to the projected funds which could be available from the various funding sources referenced earlier. The projection of funding was made by analyzing historical data on expenditures for street and highway construction in Louisiana and the Alexandria/Pineville area.

Historical information obtained from LA DOTD indicates that, on the average, contracts totaling almost $11.4 million per year, in 2004 dollars, have been let for construction and maintenance of the transportation infrastructure within the Alexandria/Pineville Study Area over the past twenty-four (24) years.

From 1986 through 1996, however, a significant amount of funding was spent on building new Interstate facilities. Since those funding programs are no longer in existence it was deemed inappropriate to use those values to project future funding levels. Removing the new Interstate projects from the historic project list results in an annual average, in 2004 dollars, of approximately $11.4million to be available for implementing projects in the financially constrained plan.

During the last twenty-five (25) years capacity projects average $3,124,035, in 2004 dollars, annually. Table 7.1 shows the historic State and Federal funding in the Alexandria/Pineville Study Area.

TABLE 7.1 – HISTORIC STATE/FEDERAL FUNDING (1984-2004)

YEAR	REAL DOLLARS	2004 DOLLARS
TOTAL	$434,650,247	$614,395,357
Annual Average	$18,110,427	$25,599,807
Without Interstate	$204,041,570	$274,126,578
Annual Average	$8,501,732	$11,421,941
Capacity Improvements Annual Average	$2,113,305	$3,124,035

Source: LA DOTD

To determine the appropriate level of funding to be used for the financially constrained plan, the $11.4 million average projected over the 25 year Plan Period indicates that $285 million of State and Federal projects can be programmed with approximately $78 million of that in capacity improvements.

7.6 Staged Improvement Program

As the Alexandria/Pineville MTP 2029 can not be implemented at once because of fiscal constraints, it is planned to be implemented in three stages: Stage I (2005-2009), Stage II (2009-2019), and Stage III (2019-2029). Annual reviews of the progress of the Alexandria/Pineville MTP 2029 insure that changes in the Plan can be addressed and added or deleted based upon external factors that affect the timing of the individual infrastructure improvements in the Plan.

7.61 Stage I (2005-2009)

Stage I is planned for improvement in the years 2005 to 2009 and consists of projects as shown in Table 7.2. These projects are funded with local, State, and Federal funds; and, then some are funded by all three sources with local dollars serving as a match to State and Federal funding. The planned improvements in Stage I are projected to cost $131,702,000 and represent improvements consisting of new construction of 0.8 mile, road widening of 1.8 miles, new road construction of 2.6 miles, intersection improvements, overlays , bridge replacements, safety improvements, hazard elimination, lighting, signing and striping.

TABLE 7.2 – ALEXANDRIA/PINEVILLE MTP STAGE I (2005-2009)				
PROJECT	**LOCATION**	**IMPROVEMENT**	**PHASE**	**COST(000's)**
Hickory Hill Ext (LA 623)	LA 3225 to Wall Lane	RR Overpass	C	$4,500
US 165 B	Edgewood Drive	Intersection Improvement	C	$37
US 71/US 165	South Traffic Circle	Signage	C	$350
US 71/US 165	South Traffic Circle	Overlay	C	$904
Broadway Drive	Chatlin Lake Canal	Bridge Replacement	C	$750
Sugarhouse Road	LA 1208-1 to Hynson Bayou	New Extension	RW	$1,400
Heyman Lane	Castle Road to Parliament Drive	Reconstruction	RW,U	$1,000
OK Allen Bridge US 71	Red River	Bridge Replacement with 4 Lane Approaches	RW,C	$81,000
LA 1203	Rigolette	Bridge Replacement	RW,U,C	$445
Heyman Lane	Coliseum Boulevard to Castle Road	Reconstruction	C	$5,100
US 165	Horseshoe Drive	Overlay	C	$1,087
Susek Drive	Edgewood Drive to Pinehurst Drive	Reconstruction	C	$5,000
US 165	Horseshoe Drive	Intersection Improvement	RW,C	$970
Jackson Street (LA 1208-3)	Horseshoe Drive	Intersection Improvement	RW	$250
US 71 & US 165	OK Allen Bridge to KCS RR Overpass	Overlay	C	$284
Versailles Boulevard	Coliseum Boulevard to Bluebird	New 2 Lane Roadway	RW	$150

TABLE 7.2 – ALEXANDRIA/PINEVILLE MTP STAGE I (2005-2009)				
PROJECT	**LOCATION**	**IMPROVEMENT**	**PHASE**	**COST(000's)**
Horseshoe Drive	Grove Road to MacArthur Drive	Reconstruction	RW	$150
Horseshoe Drive	Jackson Street to Masonic Drive	Reconstruction	RW	$200
Culpepper Road	Masonic Drive to North Boulevard	Reconstruction	RW	$300
Dorchester Drive	Parliament Drive Jackson Street	Reconstruction	RW	$350
Culpepper Road	Lacassine Drive to MacArthur Drive	Reconstruction	RW	$175
Hickory Hill Ext (LA 623)	Wall Lane to US 165	Reconstruction	RW	$200
Line Items	Various Locations	Bridge Replacements	C	$4,250
Line Items	Various Locations	Safety Improvements	C	$500
Line Items	Various Locations	Erosion Control	C	$3,641
Line Items	Various Locations	Signing & Striping	C	$125
Line Items	Various Locations	Enhancements	C	$1,834
Line Items	Various Locations	Hazard Elimination	C	$375
Line Items	Various Locations	Bridge Painting	C	$125
Line Items	Various Locations	Lighting	C	$125
Line Items	Various Locations	Overlays	C	$15,000
Line Items	Various Locations	Maintenance	C	$500
Line Items	Various Locations	RR Crossings	C	$625
STAGE I TOTAL COST				**$131,702**
CAPACITY PROJECTS				**$87,050**

Source: N-S, RAPC, LA DOTD, 2005

Stage II (2010-2019)

Stage II is planned for improvement in the years 2009 to 2019 and consists of twenty four (24) projects as shown in Table 7.3. These projects are funded with local, State, and Federal funds; and, then some are funded by all three sources with local dollars serving as a match to State and Federal funding. The planned improvements in Stage II are projected to cost $140,200,000 and represent improvements consisting of 4.7 miles of new roadways, 7.0 miles of reconstruction, 2.8 miles of road widening, 1.2 miles of couplet, intersection improvements, new interchanges, bridge replacements, signage improvements, overlays, safety improvements, hazard eliminations, lighting, signing and striping, and lighting.

TABLE 7.3 – ALEXANDRIA/PINEVILLE MTP STAGE II (2010-2019)

PROJECT	LOCATION	IMPROVEMENT	PHASE	COST(000's)
Bayou Rapides Road.	Heyman Lane to MacArthur Drive	Reconstruction	RW,U,C	$3,250
Horseshoe Road	Grove Road to MacArthur Drive	Reconstruction	RW,U,C	$2,700
Jackson Street	Horseshoe Drive to Bayou Robert	New Roadway	RW,U,C	$2,200
Pinehurst Drive	LA 28 to Donahue Ferry Road	Reconstruction	RW,C	$3,300
Twin Bridge Road	Jackson Street to Bruyninckx Road	Reconstruction	RW,U,C	$4,000
Dorchester Drive/ Jackson Street	Parliament Drive to Jackson Street	Reconstruction	U,C	$5,500
Culpepper Road	Masonic Drive to North Boulevard	Reconstruction	U,C	$4,200
Versailles Boulevard	Coliseum Boulevard to Bluebird Drive	New 2 Lane Roadway	C	$5,500
Heyman Lane	Castle Road to Parliament Drive	Reconstruction	C	$2,400
North Boulevard	MacArthur Drive to South Mall Drive	Widen (Add 2 Lane) Bridge Replacement	RW,U,C	$4,600
Culpepper Road	Lacassine Drive to MacArthur Drive	Reconstruction	U,C	$4,600

TABLE 7.3 – ALEXANDRIA/PINEVILLE MTP STAGE II (2010-2019)				
PROJECT	**LOCATION**	**IMPROVEMENT**	**PHASE**	**COST(000's)**
Lincoln Road	Hudson Boulevard to Sugarhouse Road	Reconstruction	RW,C	$3,000
Sugarhouse Road (LA 1208-3)	Eddie Williams Avenue to LA 1	New 2 Lane Roadway	RW,C	$6,000
Hudson Boulevard	Eddie Williams Avenue to Lincoln Road	Reconstruction	RW,C	$1,600
Jackson Street	Horseshoe Drive	Intersection Improvement	C	$1,600
LA 28	Vandenburg Drive	Intersection Improvement	C	$500
MacArthur Drive	South Circle	New Interchange	C	$18,000
Shreveport Highway (US 71)	US 165 to Maryhill Road	Widen to 3 Lanes	C	$3,000
Hickory Hill Ext. (LA 623)	Wall Lane to US 165	Widen to 3 Lanes	C	$3,500
Windmere Boulevard	Highpoint Drive to Twin Bridges Road	New 2 Lanes	RW,C	$5,000
Levin Street/ Monroe Street	Bolton Avenue to Texas Avenue	One Way Couplet	C	$6,000
US 165	Claybrook/Cottingham Expressway to LA 116	Widen to 6 Lanes	C	$4,000
Line Items	Various Locations	Bridge Replacements	C	$8,500
Line Items	Various Locations	Safety Improvements	C	$1,000
Line Items	Various Locations	Signing & Striping	C	$250
Line Items	Various Locations	Enhancements	C	$2,500
Line Items	Various Locations	Hazard Elimination	C	$750
Line Items	Various Locations	Bridge Painting	C	$250
Line Items	Various Locations	Lighting	C	$250
Line Items	Various Locations	Overlays	C	$30,000

TABLE 7.3 – ALEXANDRIA/PINEVILLE MTP STAGE II (2010-2019)				
PROJECT	**LOCATION**	**IMPROVEMENT**	**PHASE**	**COST(000's)**
Line Items	Various Locations	Maintenance	C	$1,000
Line Items	Various Locations	RR Crossings	C	$1,250
STAGE II TOTAL COST				**$140,200**
CAPACITY PROJECTS				**$39,800**

Source: N-S, RAPC, LA DOTD, 2005

Stage III (2020-2029)

Stage III is planned for improvement in the years 2020 to 2029 and consists of projects as shown in Table 7.4. These projects are funded with local, State, and Federal funds; and, then some are funded by all three sources with local dollars serving as a match to State and Federal funding. The planned improvements in Stage III are projected to cost $109,250,000 and represent improvements consisting of 7.3 miles of new roadways, 1.5 miles of widening, new interchanges, bridge replacements, safety improvements, hazard eliminations, lighting, signing and striping.

TABLE 7.4 – ALEXANDRIA/PINEVILLE MTP STAGE III (2020-2029)				
PROJECT	**LOCATION**	**IMPROVEMENT**	**PHASE**	**COST**
MacArthur Drive (US 71)	North 3rd Street	Partial Interchange	C	$10,000
Claybrook Cottingham Expressway	Red River to LA 28	Widen to 6 Lanes	C	$10,000
MacArthur Drive (US 71)	LA 28	New Interchange	C	$15,000
West Beltway	LA 28 to Masonic Drive	New 2 Lane	RW, C	$25,000
New Collector Street	LA 28 to West Beltway	New 2 Lane	C	$3,500
Line Items	Various Locations	Bridge Replacements	C	$8,500
Line Items	Various Locations	Safety Improvements	C	$1,000
Line Items	Various Locations	Signing & Striping	C	$250

TABLE 7.4 – ALEXANDRIA/PINEVILLE MTP STAGE III (2020-2029)				
PROJECT	**LOCATION**	**IMPROVEMENT**	**PHASE**	**COST**
Line Items	Various Locations	Enhancements	C	$2,500
Line Items	Various Locations	Hazard Elimination	C	$750
Line Items	Various Locations	Bridge Painting	C	$250
Line Items	Various Locations	Lighting	C	$250
Line Items	Various Locations	Overlays	C	$30,000
Line Items	Various Locations	Maintenance	C	$1,000
Line Items	Various Locations	RR Crossings	C	$1,250
STAGE III TOTAL COST				**$109,250**
CAPACITY PROJECTS				**$38,500**

Source: N-S, RAPC, 2005

7.62 Vision Plan

Previous sections have addressed Stages I, II and III planned transportation improvements which are funded and included in the FCTP, however, a great many other transportation improvements are needed. The Vision Plan identifies those necessary but unfunded transportation improvements.

Whereas, the Alexandria/Pineville MTP 2029 identifies all the future needed transportation improvements and the FCTP identifies all the financially feasible future needed transportation improvements, the Vision Plan identifies the remaining unfunded transportation projects. The FCTP represents the best combination of transportation improvements within available funding to address existing transportation deficiencies. The remaining unfunded transportation improvements are not any less important or effective, they just can not commence at this point in time.

All of the projects in the Vision Plan are important to the future efficiency of the transportation network, but remain unfunded for various reasons. Delayed funding for a transportation improvement project may be the result of the projects' size, its cost, its design complexity, acquisition difficulties, jurisdictional concerns, and/or environmental concerns. A project may be delayed because its efficiency is minimized until other projects are completed or it does not alleviate existing transportation deficiencies that will only exacerbate over time.

There are 15 projects identified in the Vision plan which would increase the efficiency of the existing transportation network. The improvements consist of 18 miles of new road ways, 40.3 miles of road widening and 5.9 miles of street upgrades to expressway classification including 2 interchanges.

The remaining unfunded transportation improvements are included in the Vision Plan so that they can be a constant reminder of future needs, and annually be re-analyzed to determine if adjustments or changes are needed. The extent and distribution of the network improvements included in the Vision Plan are shown in Table 7.5. Funding and implementation of the Vision Plan will have tremendous impact on the transportation network of the community. As the community continues to grow and re-define itself, regular and routine review of the Vision Plan is necessary to be responsive to changes.

TABLE 7.5 – ALEXANDRIA/PINEVILLE MTP VISION PLAN

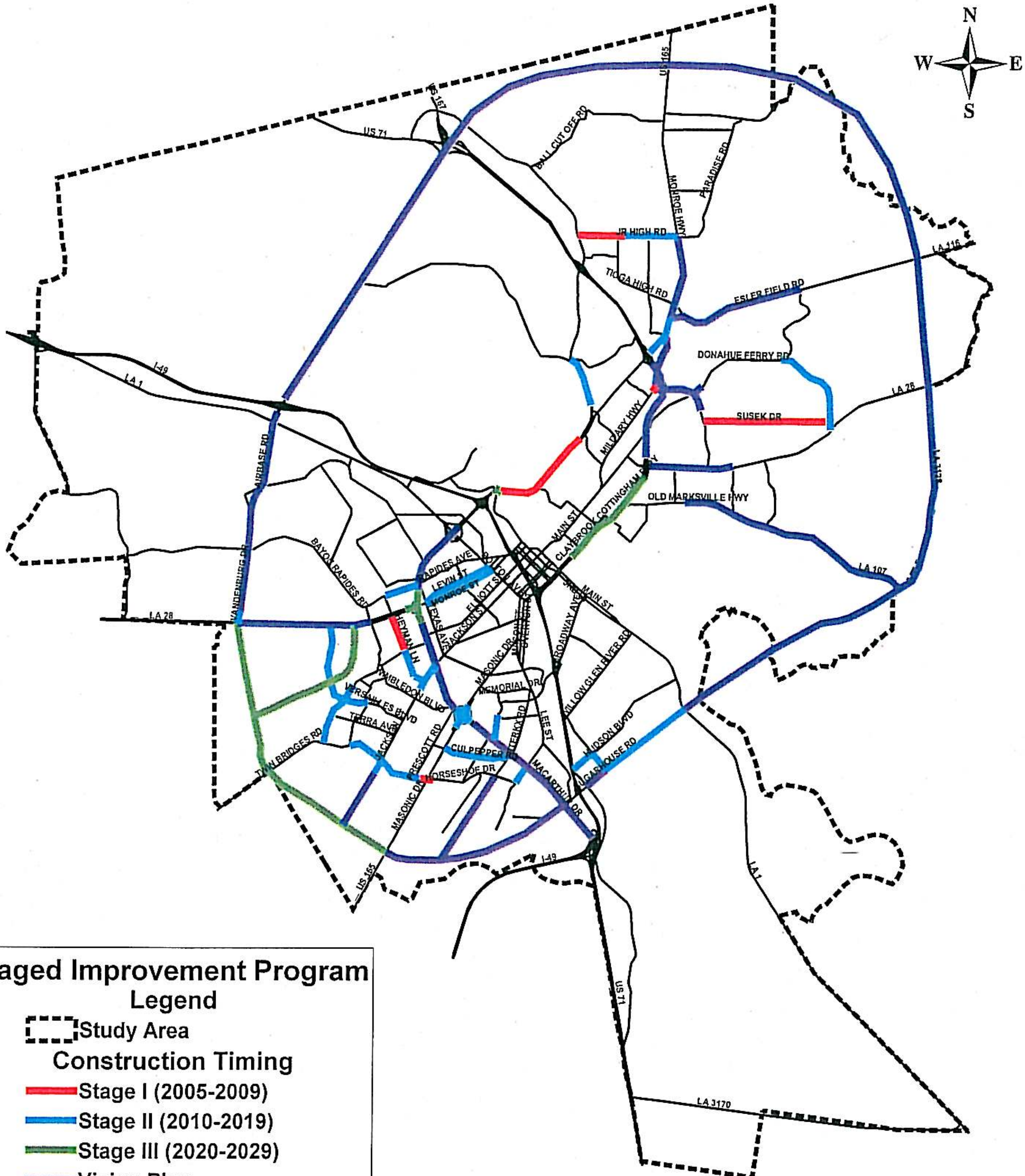
PROJECTS	LOCATION	IMPROVEMENT
LA 28	Calvert Drive to Vandenburg Drive	New Frontage Roads
MacArthur Drive	LA 1 to I-49	Upgrade to Expressway
MacArthur Drive	at Lee Street	New Interchange
MacArthur Drive	at Sugarhouse Road	New Interchange
LA 28	Claybrook Cottingham Expressway to Highland Drive	Widen to 6 Lanes
Claybrook Cottingham Expressway	LA 28 to US 165	Widen to 6 Lanes
Military Highway	Edgewood Drive to US 165	Widen to 4 Lanes
Edgewood Drive	Military Highway to Donahue Ferry Road	Widen to 4 Lanes
US 165	LA 116 to Junior High Road	Widen to 3 Lanes
LA 116	US 165 to Donahue Ferry Road	Widen to 3 Lanes
LA 107	Pinegrove Road to LA 3128	Widen to 4 Lanes
Alexandria/Pineville Loop	Around Urbanized Area	New 4 Lane/Widen to 4 Lanes

TABLE 7.5 – ALEXANDRIA/PINEVILLE MTP VISION PLAN		
PROJECTS	**LOCATION**	**IMPROVEMENT**
Jackson Street	Horseshoe Drive to Loop	New 2 Lane
Sterkx Road	Horseshoe Drive to Loop	New 2 Lane

Source: N-S, RAPC, 2005

The MTP 2029 indicating the projects included in Stage I, Stage II, Stage III, and the Vision Plan is shown in Figure 13. Should all the projects in the Alexandria/Pineville MTP 2029 be implemented, the resulting 2029 volume/capacity ratios on the street and highway network are shown in Figure 14.

ALEXANDRIA/PINEVILLE
MTP 2029



Staged Improvement Program
Legend

Study Area

Construction Timing

- Stage I (2005-2009)
- Stage II (2010-2019)
- Stage III (2020-2029)
- Vision Plan

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Miles

Figure 13

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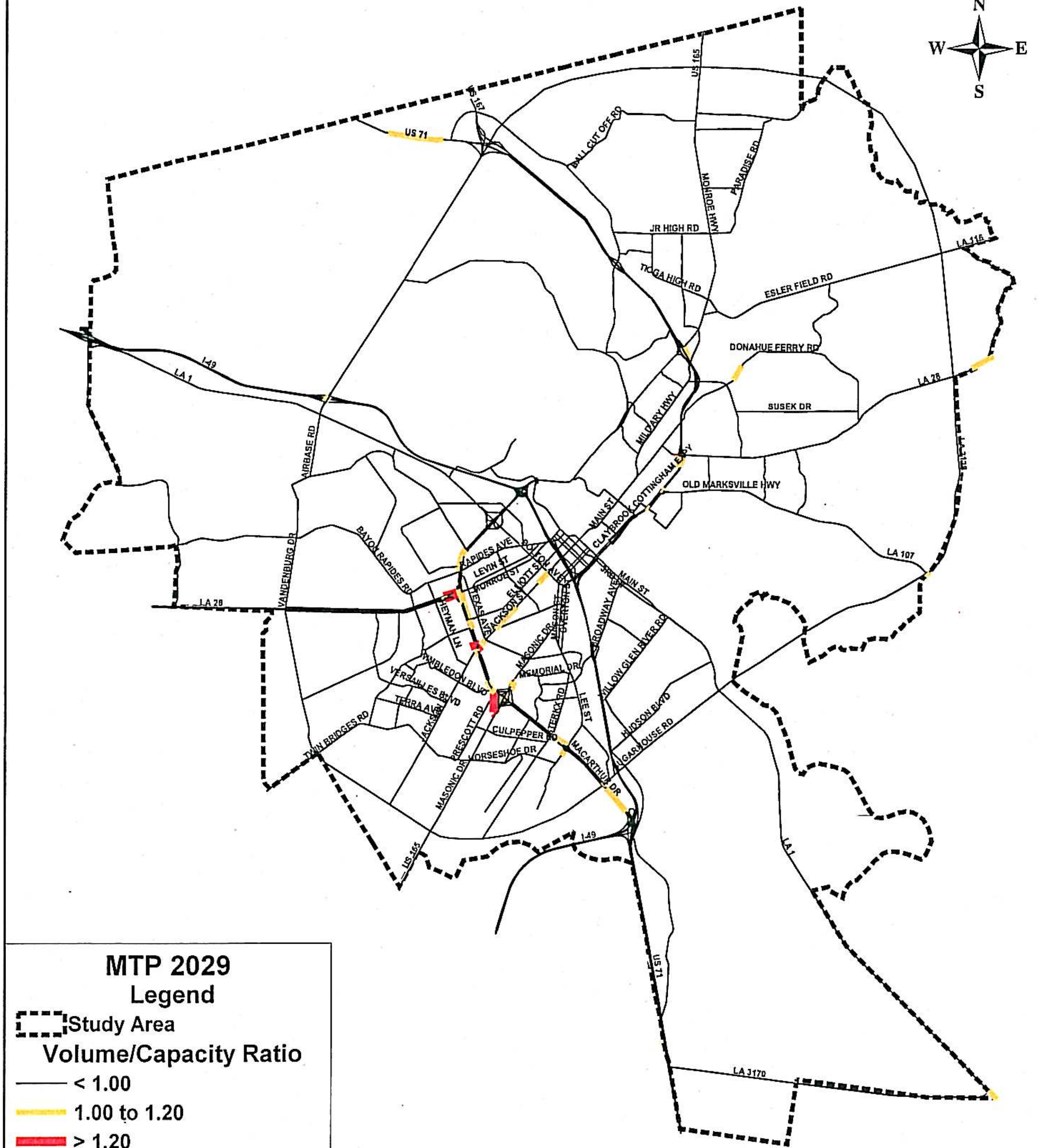
ALEXANDRIA/PINEVILLE
MTP 2029



MTP 2029
Legend

Study Area

Volume/Capacity Ratio

- < 1.00
- 1.00 to 1.20
- > 1.20

1 0 1 2 3 4
Miles

Figure 14

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7.7 Additional Transportation Considerations

Following is a brief overview of the status of other transportation related activities which were considered in the preparation of this Plan.

7.71 Mass Transportation

ATRANS is an eleven fleet system with an average fleet age of 5.6 years. Eight buses provide regular daily service along eight local fixed routes within the urbanized area. Seven of the routes provide service to the City of Alexandria while the remaining route provides service to the City of Pineville. All routes interlock at a common downtown transfer terminal, located at the corner of Main and Murray Streets in Alexandria. All of the routes operate on sixty-minute headway. ATRANS hours of operation are Monday-Saturday, 6:15 AM – 6:45 PM with an average yearly ridership of 577,000. The City of Alexandria has developed and submitted to the Federal Transit Administration an Americans with Disabilities Act compliance plan. Wheelchair lifts for the transportation of the mobile impaired and paratransit service are available. Four vans provide regular daily service with an average fleet age of one year. The hours of operation are the same as the fixed route and the demand system has yearly rider ship of 16,000.

The five year transit portion of the TIP will help support the continued development of new transit routes, the modification of existing transit routes, and marketing strategies to increase ridership and the overall efficiency of the system. However, the cost benefit ratio of expanding fixed routes within the metropolitan area is considered prohibitive. The plan also makes provisions for preventive maintenance, vehicle replacement, and equipment purchases.

7.72 Bicycle and Pedestrian Element

The supplemental report containing the Bicycle and Pedestrian Element are available at the MPO office.

This element develops a policy for the development and maintenance of non-motorized modes of transportation in the Plan area. This element provides a balanced and comprehensive approach that meets all citizen needs and assists in the health and well being of the citizenry.

The Bicycle and Pedestrian Element is an integral component of the MTP.

7.73 Continuing Transportation Plan

The Alexandria/Pineville MPO has had a long history of active transportation planning which will continue with the Alexandria/Pineville MTP 2029. A continuing transportation planning process is an important part of overall planning. It is also an essential requirement to ensure that the transportation system is serving the travel demand in an efficient and effective manner. In addition an annual evaluation is required by the 3-C Planning Process. The MPO is responsible for conducting continuing transportation planning which is coordinated with other local, State, and Federal planning activities.

The Alexandria/Pineville MTP 2029 will also be used in the annual budget preparation processes as it so greatly affects capital improvement programs. The MPO does receive and will continue to receive periodic status reports on the progress of infrastructure improvement projects. This information assists the MPO in evaluating its progress and future planning activities.

7.8 Conclusion

The Alexandria/Pineville Metropolitan Area Metropolitan Planning Organization recommends that the Alexandria/Pineville MTP 2029 be accepted, adopted, and implemented. This plan provides the necessary data and direction to meet the growing transportation needs of the metropolitan area well into the future.

The transportation needs of today and tomorrow can only be met if the Alexandria/Pineville MTP 2029 is utilized on a daily basis. The plan needs to be consulted when new development is proposed; it needs to be consulted annually during the budget adoption process; it needs to be consulted as new public facilities such as parks and recreation areas are planned; it needs to be consulted as new educational facilities are planned; and the plan needs to be reassessed on a regular basis to measure the community's effectiveness in implementation and to adjust to land use changes throughout the metropolitan planning area.

APPENDIX

Appendix 1.0: Coding Guide

Standardized coding procedures are developed for coding both existing and future networks. These procedures will be developed into a "Coding Guide" for MPO staff for future use.

The following attributes were reviewed for applicability, accuracy, and connectivity for each network link. Additional data fields were added/edited if model parameters warrant their change.

Appendix 1.1: Demographic Variables

There are ten transportation modeling variables as listed below. The first six variables (Number 1 to 6) are standard demographic figures taken from the 2000 Census. The next three variables (Number 7-9) were derived from a survey using Louisiana Department of Labor records from the first quarter of 2000. The final variable (Number 10) was derived using telephone surveys of surrounding area schools.

All the ten demographic variables are listed below:

1) Population
2) Household Size 1-2 persons
3) Household Size 3-4 person
4) Household Size five plus persons
5) Total Dwelling Units
6) Occupied Dwelling Units
7) Retail Employment
8) Other Employment
9) Total Employment
10) School Attendance

Key demographic variables used in the preparation of the model are listed in this Appendix for each TAZ.

Appendix 1.2: Network Segment Coding

The network-coding guide for network segment coding is included in this section of the Appendix. For each segment attribute, a brief definition and a complete list of ranges of numeric codes are presented enabling a user to code network links using a replicable methodology.

1. Number of Lanes

Code	*Description*
02	centroid connectors
11	one lane, one way
12	one lane (each. dir.), two way
14	one lane (each. dir.), two way with left turn lanes, median or boulevard
16	one lane (each. dir.), two way with center turn lane
21	two lanes, one way
22	two way (each. dir.), two way
24	two lanes (each. dir.), two way with left turn lanes, median or boulevard
26	two lanes (each. dir.), two way with center turn lane
31	three lanes, one way
32	three lanes (each. dir.), two way

2. DOTD Functional Class

Code	*Description*
01	Rural Interstate
02	Rural Principal Arterial
06	Rural Minor Arterial
07	Rural Major Collector
08	Rural Minor Collector
09	Rural Local
11	Urban Interstate
12	Urban Expressway
14	Urban Principal Arterial
16	Urban Minor Arterial
17	Urban Collector
19	Urban Local

3. Speed

xx Posted Speed Limit

Appendix 1.3: Metropolitan Planning Factors

Transportation Equity Act for the 21st Century (TEA-21)

1. *Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.*

   The Alexandria/Pineville Urban Area is located on I-49 with junctions of other major highways (LA 28, US 167, and US 165). I-49 is a major north-south route in Louisiana, currently existing between Shreveport and Lafayette. There are plans to extend this interstate route north to Kansas City and south to New Orleans. Improvements to these facilities and the routes that interchange with them will allow better access to trade routes making land in the area more attractive to development.

2. *Increase the safety and security of the transportation system for motorized and non-motorized users.*

   Intersection improvements will include cross section and geometric design to improve safety. Signal systems will increase safety not only for vehicles but for bicycles and pedestrians. Widening improvements will often replace substandard two lane roads with minimal or no shoulders.

3. *Increase the accessibility and mobility options available to people and for freight.*

   Many of the improvements in the Plan will provide greater accessibility to the Alexandria International Airport.

   Many of the improvements in the Plan would allow greater accessibility for the buses of the Alexandria Transit System. This would enhance their ability to move people throughout the service area, especially to and from public facilities.

   Many of the recommendations of the Plan are aimed at "catching up" with development which has already occurred. The likely effect of most projects which add additional lanes will be to allow for the continued use of existing properties and for in-fill development which may have been postponed or made not financially viable due to limited access.

4. *Protect and enhance the environment, promote energy conservation, and improve quality of life.*

   The plan was prepared with the objective of reducing VMT, VHT, and vehicle delay which reduces energy consumption. The Plan also reduces congestion which can be a substantial improvement in the quality of life.

5. *Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.*

   The plan recommendations were chosen to greatly enhance (indirectly and directly) the connectivity between the Alexandria International Airport, the Alexandria Transit System, the Regional Port Authority and bus stops. The improvements to routes interchanging with I-49 will greatly improve the flow of freight to and from distribution terminals.

6. *Promote efficient system management and operation.*

   The TransCAD Model used in analysis and preparation of the MTP 2029 was calibrated to accurately indicate areas of know congestion. The traffic assignment to the future years could then reasonably be expected to represent congested areas in those years. Alternative improvements were then tested to determine their impact on the expected congestion. The ultimate project mix selected for inclusion in the MTP includes those projects which had the greatest affect on system management and operation.

7. *Emphasize the preservation of the existing transportation system.*

   Of the 38 projects recommended in FCTP, four involve widening to add travel lanes. Seven create new roadways or extensions. A majority of the improvements (27) are reconstructions, overlays, intersection improvements, bridge replacements and re-striping which are aimed at preserving the exiting system.

   The Vision plan includes 15 additional transportation network improvements that, albeit necessary, remain unfunded at this time.

Appendix 1.4: 2000 Demographic Data

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2000 DEMOGRAPHIC DATA					
TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
1	0	0	376	6	0
2	0	0	286	20	0
3	0	0	609	67	0
4	32	7	2143	5	0
5	265	8	956	0	0
6	7	3	48	0	0
7	97	32	56	1	0
8	466	189	395	17	0
9	883	342	344	8	389
10	1166	462	168	8	1447
11	1473	589	13	3	0
12	732	263	716	75	0
13	687	271	239	19	0
14	1218	454	121	27	0
15	534	200	393	27	172
16	835	280	856	52	0
17	594	189	272	44	535
18	342	144	310	0	0
19	0	0	298	0	0
20	404	150	246	11	0
21	496	199	123	3	0
22	774	268	297	4	0
23	202	105	129	56	0
24	1876	594	129	48	0
25	650	221	253	14	844
26	913	429	529	46	0
27	556	228	49	35	0
28	967	378	96	0	708
29	0	0	120	18	0
30	850	345	342	10	0
31	176	65	183	14	0
32	890	326	256	0	1045
33	2480	829	408	4	337
34	116	47	43	40	0
35	598	228	9	0	0
36	1087	446	351	37	0
37	399	155	734	146	0
38	136	69	174	24	0
39	294	112	1006	666	0
40	8	5	239	226	0
41	0	0	2050	1449	0
42	381	19	633	161	233

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029
2000 DEMOGRAPHIC DATA

TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
43	218	115	1749	7	291
44	946	420	519	9	0
45	184	87	327	133	0
46	256	132	301	1	0
47	742	336	58	0	360
48	424	192	8	0	0
49	906	306	34	0	0
50	385	191	630	262	0
51	688	292	393	211	1092
52	546	199	0	0	0
53	631	232	140	19	0
54	276	124	698	299	0
55	390	147	259	0	0
56	674	208	225	86	0
57	197	77	0	0	0
58	1622	611	85	3	299
59	607	202	234	177	0
60	189	65	0	0	0
61	154	59	0	0	0
62	696	268	7	0	0
63	187	14	39	0	0
64	669	292	531	110	67
65	168	61	62	0	0
66	61	26	78	19	0
67	2221	580	897	192	472
68	897	450	237	74	0
69	433	194	325	196	0
70	2656	1122	987	177	584
71	0	0	522	330	0
72	384	216	1858	680	0
73	1091	523	234	5	0
74	187	83	42	12	0
75	977	354	482	202	0
76	8	4	213	160	0
77	794	298	797	78	361
78	2521	994	436	2	279
79	77	30	8	0	0
80	288	96	341	13	2400
81	37	8	470	33	0
82	909	349	26	4	0
83	931	326	0	0	0
84	724	250	154	33	0
85	1054	428	106	0	551
86	992	357	340	52	0
87	634	237	408	22	1011
88	704	307	18	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2000 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
89	628	264	18	0	0
90	1376	503	28	5	0
91	385	83	902	36	592
92	357	149	779	43	0
93	906	365	1077	40	0
94	2064	747	281	4	346
95	184	71	360	0	0
96	0	0	60	0	302
97	379	48	223	0	0
98	674	288	498	17	0
99	481	6	457	0	1085
100	563	193	65	0	0
101	344	147	6	2	0
102	1863	711	73	28	0
103	1260	546	93	55	0
104	866	355	354	167	0
105	923	428	725	222	395
106	431	203	11	7	0
107	498	228	215	89	1060
108	102	47	1077	13	0
109	142	67	22	17	0
110	79	35	316	203	0
111	646	279	27	14	0
112	1080	497	844	85	567
113	144	59	36	8	0
114	448	162	0	0	0
115	227	113	53	22	0
116	71	29	5	0	0
117	318	141	40	0	0
118	30	18	66	63	0
119	44	24	517	9	0
120	315	135	12	0	0
121	435	155	8	0	0
122	259	86	8	0	0
123	307	105	39	0	0
124	226	82	405	26	0
125	309	128	135	0	546
126	2	2	515	111	0
127	293	122	199	38	419
128	884	163	77	38	0
129	107	44	665	0	0
130	34	32	650	611	0
131	704	13	1948	0	0
132	508	201	72	58	0
133	679	240	16	2	0
134	242	95	28	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2000 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
135	180	26	290	222	0
136	476	173	133	31	518
137	1458	516	172	7	0
138	195	75	66	30	0
139	797	296	56	16	0
140	185	70	0	0	0
141	282	99	71	0	392
142	349	138	96	0	918
143	378	135	16	0	0
144	741	284	25	6	0
145	751	257	126	37	0
146	124	45	3	0	0
147	1178	412	6	0	0
148	249	101	20	0	0
149	997	344	39	18	0
150	13	6	435	4	0
151	255	102	98	73	0
152	522	201	54	0	329
153	257	91	0	0	0
154	799	287	16	0	0
155	350	162	6	0	0
156	690	274	89	3	0
157	314	129	106	31	0
158	709	277	141	1	337
159	243	93	15	0	0
160	152	66	0	0	0
Total	**89380**	**33581**	**48360**	**9504**	**21283**

Appendix 1.5: 2009 Demographic Data

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2009 DEMOGRAPHIC DATA					
TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
1	0	0	376	8	0
2	0	0	266	21	0
3	0	0	609	67	0
4	32	7	2443	7	0
5	265	8	1256	0	0
6	7	3	48	0	0
7	97	32	56	1	0
8	466	189	395	16	0
9	883	342	344	7	389
10	1166	462	180	9	1447
11	1473	589	20	5	0
12	732	263	716	72	0
13	687	271	245	20	0
14	1218	454	130	29	0
15	534	200	393	28	172
16	835	280	856	51	0
17	594	189	272	44	535
18	342	144	310	0	0
19	0	0	350	0	0
20	404	150	128	5	0
21	496	199	150	3	0
22	774	268	350	4	0
23	202	105	200	86	0
24	1876	594	129	48	0
25	650	221	253	15	844
26	913	429	529	48	0
27	556	228	50	36	0
28	967	378	100	0	708
29	0	0	120	18	0
30	850	345	340	10	0
31	176	65	183	15	0
32	890	326	256	0	1045
33	2480	829	400	4	337
34	175	71	43	40	0
35	598	228	100	0	0
36	1087	446	350	39	0
37	399	155	800	160	0
38	136	69	254	36	0
39	294	112	1200	792	0
40	8	5	319	303	0
41	0	0	2130	1512	0
42	381	19	717	179	233

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029
2009 DEMOGRAPHIC DATA

TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
43	218	115	1749	10	291
44	946	420	519	10	0
45	184	87	327	134	0
46	256	132	301	1	0
47	742	336	65	0	360
48	424	192	10	0	0
49	906	306	35	0	0
50	385	191	690	290	0
51	688	292	400	216	1092
52	546	199	5	0	0
53	631	232	145	20	0
54	276	124	750	323	0
55	390	147	270	0	0
56	674	208	250	95	0
57	250	98	0	0	0
58	1622	611	500	20	325
59	607	202	250	190	0
60	206	71	0	0	0
61	200	77	0	0	0
62	700	270	7	0	0
63	223	17	50	0	0
64	675	295	600	126	100
65	170	62	62	0	0
66	70	30	78	19	0
67	3000	783	1000	210	600
68	897	450	300	93	0
69	433	194	332	199	0
70	2656	1122	1000	180	584
71	0	0	600	378	0
72	384	216	2250	833	0
73	1091	523	240	5	0
74	187	83	48	14	0
75	977	354	484	203	0
76	8	4	216	162	0
77	794	298	800	80	361
78	2521	994	450	4	279
79	77	30	10	0	0
80	300	100	350	14	3500
81	37	8	500	35	0
82	977	375	50	8	0
83	931	326	0	0	0
84	950	328	168	35	0
85	1054	428	112	0	700
86	992	357	340	51	0
87	634	237	410	21	1011
88	1204	525	20	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2009 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
89	850	357	32	0	0
90	1776	649	30	5	0
91	585	126	1500	60	700
92	357	149	800	48	0
93	906	365	350	14	0
94	2064	747	300	3	346
95	184	71	350	0	0
96	0	0	60	0	302
97	379	48	1000	0	0
98	674	288	500	15	0
99	481	6	500	0	1200
100	563	193	75	0	0
101	344	147	10	3	0
102	1863	711	100	38	0
103	1260	546	100	59	0
104	866	355	400	188	0
105	923	428	750	233	395
106	431	203	13	8	0
107	498	228	215	88	1060
108	102	47	1100	11	0
109	142	67	22	17	0
110	79	35	336	215	0
111	646	279	30	16	0
112	1080	497	845	85	567
113	144	59	39	9	0
114	448	162	0	0	0
115	227	113	100	42	0
116	71	29	250	0	0
117	318	141	50	0	0
118	30	18	75	74	0
119	44	24	700	14	0
120	315	135	50	0	0
121	435	155	10	0	0
122	259	86	10	0	0
123	307	105	40	0	0
124	226	82	500	30	0
125	309	128	145	0	546
126	2	2	600	132	0
127	293	122	205	39	419
128	884	163	81	40	0
129	107	44	669	0	0
130	34	32	800	700	0
131	750	14	2000	0	0
132	1028	407	75	61	0
133	1230	435	19	2	0
134	242	95	31	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2009 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
135	180	26	360	277	0
136	476	173	140	32	650
137	1458	516	178	7	0
138	195	75	72	32	0
139	850	316	100	29	0
140	185	70	0	0	0
141	282	99	108	0	450
142	349	138	100	0	988
143	378	135	18	0	0
144	741	284	32	8	0
145	751	257	300	87	0
146	150	54	50	0	0
147	1178	412	6	0	0
148	249	101	20	0	0
149	997	344	39	18	0
150	13	6	450	5	0
151	255	102	100	74	0
152	522	201	50	0	329
153	257	91	0	0	0
154	799	287	18	0	0
155	350	162	12	0	0
156	750	298	100	3	0
157	350	144	108	31	0
158	800	313	108	1	450
159	275	105	25	0	0
160	200	87	0	0	0
Total	**93482**	**35013**	**53470**	**10570**	**23315**

Appendix 1.6: 2019 Demographic Data

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2019 DEMOGRAPHIC DATA					
TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
1	0	0	350	7	0
2	0	0	225	18	0
3	0	0	609	67	0
4	32	7	2743	0	0
5	265	8	1556	0	0
6	7	3	48	0	0
7	97	32	56	1	0
8	466	189	395	16	0
9	883	342	344	7	389
10	1166	462	180	9	1447
11	1473	589	20	5	0
12	732	263	716	72	0
13	687	271	245	20	0
14	1218	454	130	29	0
15	534	200	393	28	172
16	835	280	856	51	0
17	594	189	272	44	535
18	342	144	310	0	0
19	0	0	425	0	0
20	404	150	128	5	0
21	496	199	200	4	0
22	774	268	400	4	0
23	202	105	250	108	0
24	1876	594	129	48	0
25	650	221	253	15	844
26	913	429	529	48	0
27	556	228	50	36	0
28	967	378	100	0	708
29	0	0	120	18	0
30	850	345	340	10	0
31	176	65	183	15	0
32	890	326	256	0	1045
33	2480	829	400	4	337
34	200	81	43	40	0
35	598	228	200	0	0
36	1087	446	350	39	0
37	399	155	900	180	0
38	136	69	304	43	0
39	294	112	1250	825	0
40	8	5	369	351	0
41	0	0	2180	1548	0
42	381	19	767	192	233

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2019 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
43	218	115	1800	0	291
44	946	420	550	11	0
45	184	87	400	164	0
46	256	132	301	0	0
47	742	336	65	0	360
48	424	192	10	0	0
49	906	306	35	0	0
50	385	191	690	290	0
51	688	292	400	216	1092
52	546	199	5	0	0
53	631	232	145	20	0
54	276	124	750	323	0
55	390	147	270	0	0
56	674	208	250	95	0
57	300	117	0	0	0
58	1622	611	625	25	325
59	607	202	300	228	0
60	256	88	0	0	0
61	250	96	0	0	0
62	725	279	7	0	0
63	273	20	50	0	0
64	700	306	750	158	100
65	170	62	62	0	0
66	75	32	78	19	0
67	3500	914	1000	210	750
68	897	450	350	109	0
69	433	194	344	206	0
70	2656	1122	1000	180	584
71	0	0	600	378	0
72	384	216	2350	870	0
73	1091	523	240	5	0
74	187	83	48	14	0
75	977	354	495	208	0
76	8	4	230	173	0
77	794	298	800	80	361
78	2521	994	450	0	279
79	77	30	10	0	0
80	325	108	350	14	4500
81	37	8	500	35	0
82	1017	390	50	8	0
83	931	326	0	0	0
84	1200	414	168	35	0
85	1054	428	112	0	750
86	992	357	390	59	0
87	634	237	460	23	1200
88	1250	545	70	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2019 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
89	1100	462	32	0	0
90	1800	658	80	14	0
91	1170	252	2000	80	800
92	357	149	800	48	0
93	906	365	350	14	0
94	2064	747	300	3	346
95	184	71	350	0	0
96	0	0	60	0	302
97	379	48	1000	0	0
98	674	288	500	15	0
99	481	6	500	0	1500
100	563	193	75	0	0
101	344	147	10	3	0
102	1863	711	100	38	0
103	1260	546	150	89	0
104	866	355	400	188	0
105	923	428	750	233	395
106	431	203	13	8	0
107	498	228	215	88	1060
108	102	47	1100	11	0
109	142	67	22	17	0
110	79	35	336	215	0
111	646	279	80	42	0
112	1080	497	920	92	567
113	144	59	39	9	0
114	448	162	0	0	0
115	227	113	100	42	0
116	71	29	300	0	0
117	318	141	75	0	0
118	30	18	75	74	0
119	44	24	1000	20	0
120	315	135	100	0	0
121	435	155	10	0	0
122	259	86	10	0	0
123	307	105	40	0	0
124	226	82	500	30	0
125	309	128	145	0	546
126	2	2	600	132	0
127	293	122	205	39	419
128	884	163	81	40	0
129	107	44	669	0	0
130	34	32	850	750	0
131	775	14	2000	0	0
132	1278	506	75	61	0
133	1480	523	19	2	0
134	242	95	31	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2019 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
135	180	26	410	316	0
136	476	173	190	44	725
137	1458	516	203	8	0
138	195	75	97	44	0
139	900	334	100	29	0
140	185	70	0	0	0
141	300	105	117	0	450
142	349	138	100	0	918
143	378	135	18	0	0
144	741	284	32	8	0
145	751	257	400	116	0
146	175	64	100	0	0
147	1178	412	6	0	0
148	249	101	20	0	0
149	997	344	39	18	0
150	13	6	450	5	0
151	255	102	125	93	0
152	522	201	50	0	333
153	257	91	0	0	0
154	799	287	18	0	0
155	350	162	12	0	0
156	800	318	125	4	0
157	400	164	117	34	0
158	900	352	117	1	525
159	310	119	25	0	0
160	225	98	0	0	0
Total	**96360**	**35928**	**57072**	**11180**	**25188**

Appendix 1.7: 2029 Demographic Data

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2029 DEMOGRAPHIC DATA					
TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
1	0	0	325	7	0
2	0	0	200	16	0
3	0	0	609	67	0
4	32	7	3043	0	0
5	265	8	1856	0	0
6	7	3	48	0	0
7	97	32	56	1	0
8	466	189	395	16	0
9	883	342	344	7	389
10	1166	462	180	9	1447
11	1473	589	20	5	0
12	732	263	716	72	0
13	687	271	245	20	0
14	1218	454	130	29	0
15	534	200	393	28	172
16	835	280	856	51	0
17	594	189	272	44	535
18	342	144	310	0	0
19	0	0	500	0	0
20	404	150	128	5	0
21	496	199	250	5	0
22	774	268	475	5	0
23	202	105	250	108	0
24	1876	594	129	48	0
25	650	221	253	15	844
26	913	429	529	48	0
27	556	228	50	36	0
28	967	378	100	0	708
29	0	0	120	18	0
30	850	345	340	10	0
31	176	65	183	15	0
32	890	326	256	0	1045
33	2480	829	400	4	337
34	200	81	43	40	0
35	598	228	300	0	0
36	1087	446	350	39	0
37	399	155	1000	200	0
38	136	69	354	50	0
39	294	112	1300	858	0
40	8	5	419	398	0
41	0	0	2230	1583	0
42	381	19	817	204	233

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2029 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
43	218	115	1875	0	291
44	946	420	650	13	0
45	184	87	475	195	0
46	256	132	301	0	0
47	742	336	65	0	360
48	424	192	10	0	0
49	906	306	35	0	0
50	385	191	690	290	0
51	688	292	400	216	1092
52	546	199	5	0	0
53	631	232	145	20	0
54	276	124	750	323	0
55	390	147	270	0	0
56	674	208	250	95	0
57	357	140	0	0	0
58	1622	611	800	32	325
59	607	202	325	247	0
60	506	174	0	0	0
61	500	192	0	0	0
62	725	279	7	0	0
63	523	39	50	0	0
64	700	306	1000	210	350
65	175	64	62	0	0
66	75	32	78	19	0
67	4000	1045	1000	210	750
68	897	450	400	124	0
69	433	194	369	221	0
70	2656	1122	1000	180	584
71	0	0	600	378	0
72	384	216	2350	870	0
73	1091	523	240	5	0
74	187	83	48	14	0
75	977	354	495	208	0
76	8	4	230	173	0
77	794	298	800	80	361
78	2521	994	450	0	279
79	77	30	10	0	0
80	350	117	350	14	6000
81	37	8	500	35	0
82	1037	398	50	8	0
83	931	326	0	0	0
84	1300	449	168	35	0
85	1054	428	112	0	825
86	992	357	440	66	0
87	634	237	510	26	1200
88	1250	545	120	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029
2029 DEMOGRAPHIC DATA

TAZ	Population	Occupied Dwelling Units	Total Employment	Retail Employment	School Attendance
89	1200	504	32	0	0
90	1800	658	130	23	0
91	1500	323	2500	100	800
92	357	149	800	48	0
93	906	365	350	14	0
94	2064	747	300	3	346
95	184	71	350	0	0
96	0	0	60	0	302
97	379	48	1000	0	0
98	674	288	500	15	0
99	481	6	500	0	1800
100	563	193	75	0	0
101	344	147	10	3	0
102	1863	711	100	38	0
103	1260	546	200	118	0
104	866	355	400	188	0
105	923	428	750	233	395
106	431	203	13	8	0
107	498	228	215	88	1060
108	102	47	1100	11	0
109	142	67	22	17	0
110	79	35	336	215	0
111	646	279	80	42	0
112	1080	497	920	92	567
113	144	59	39	9	0
114	448	162	0	0	0
115	227	113	100	42	0
116	71	29	300	0	0
117	318	141	100	0	0
118	30	18	75	74	0
119	44	24	1500	30	0
120	315	135	150	0	0
121	435	155	10	0	0
122	259	86	10	0	0
123	307	105	40	0	0
124	226	82	500	30	0
125	309	128	145	0	546
126	2	2	600	132	0
127	293	122	205	39	419
128	884	163	81	40	0
129	107	44	669	0	0
130	34	32	850	850	0
131	900	17	2000	0	0
132	1528	605	75	61	0
133	1730	611	19	2	0
134	242	95	31	0	0

ALEXANDRIA/PINEVILLE TRANSPORTATION AREA MTP 2029 2029 DEMOGRAPHIC DATA					
TAZ	**Population**	**Occupied Dwelling Units**	**Total Employment**	**Retail Employment**	**School Attendance**
135	180	26	460	354	0
136	476	173	240	55	793
137	1458	516	228	9	0
138	195	75	122	55	0
139	950	353	100	29	0
140	185	70	0	0	0
141	300	105	133	0	525
142	349	138	100	0	918
143	378	135	18	0	0
144	741	284	32	8	0
145	751	257	450	131	0
146	200	73	125	0	0
147	1178	412	6	0	0
148	249	101	20	0	0
149	997	344	39	18	0
150	13	6	450	5	0
151	255	102	150	111	0
152	522	201	50	0	333
153	257	91	0	0	0
154	799	287	18	0	0
155	350	162	12	0	0
156	950	377	150	5	0
157	450	185	133	39	0
158	1000	391	133	1	650
159	350	134	25	0	0
160	275	119	0	0	0
Total	**99337**	**36823**	**60695**	**11753**	**27581**