2007

CONGESTION MANAGEMENT PROCESS (CMP) 2007 UPDATE

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION

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STUDY OBJECTIVES

The Columbus-Phenix City MPO Congestion Management Process (CMP) Plan will identify the overall level of congestion in the region, based on congestion and mobility measures, as well as other data sources, and will focus on potential improvement projects in the most congested areas. The primary purpose of the Congestion Management Process (CMP) Plan is to rate the performance of transportation facilities in the Columbus area and to recommend cost effective strategies to alleviate congestion.

In Spring 2003, the first initial Congestion Management Process Plan for the Columbus-Phenix City Metropolitan Organization (C-PCMPO) was developed; Figure 1-1 depicts the C-PCMPO planning area.

This study is the third update to the CMP plan, which was undertaken by the C-PCMPO staff in September and October of 2004, with subsequent updates in the Spring and Fall of 2005. As laid down in the previous CMP plans, congestion monitoring should occur on all "regionally significant" roadway and transit facilities, with data collected continuously to identify the location and extent of congestion on these facilities

STUDY TASKS

Activities undertaken during the development of the Congestion Management Process Study are broken down into five tasks, as follows:

1. Identify New Congested Corridors
2. Define Congestion Mitigation Strategies
3. Development of Congestion Related Performance Measures
4. Data Collection and Monitoring
5. Summary of Findings and Recommendations.

STUDY SCHEDULE

Data gathering for the Columbus-Phenix City MPO Congestion Management Process Plan Study was initially conducted in September and October of 2004, with subsequent updates in the Spring and Fall of 2005.

As a continuous process, this study was again conducted in February and March of 2007, with the report findings being released in mid Spring. The study will be subsequently repeated in the Fall of 2008 with the updated report being released in Winter, 2008.

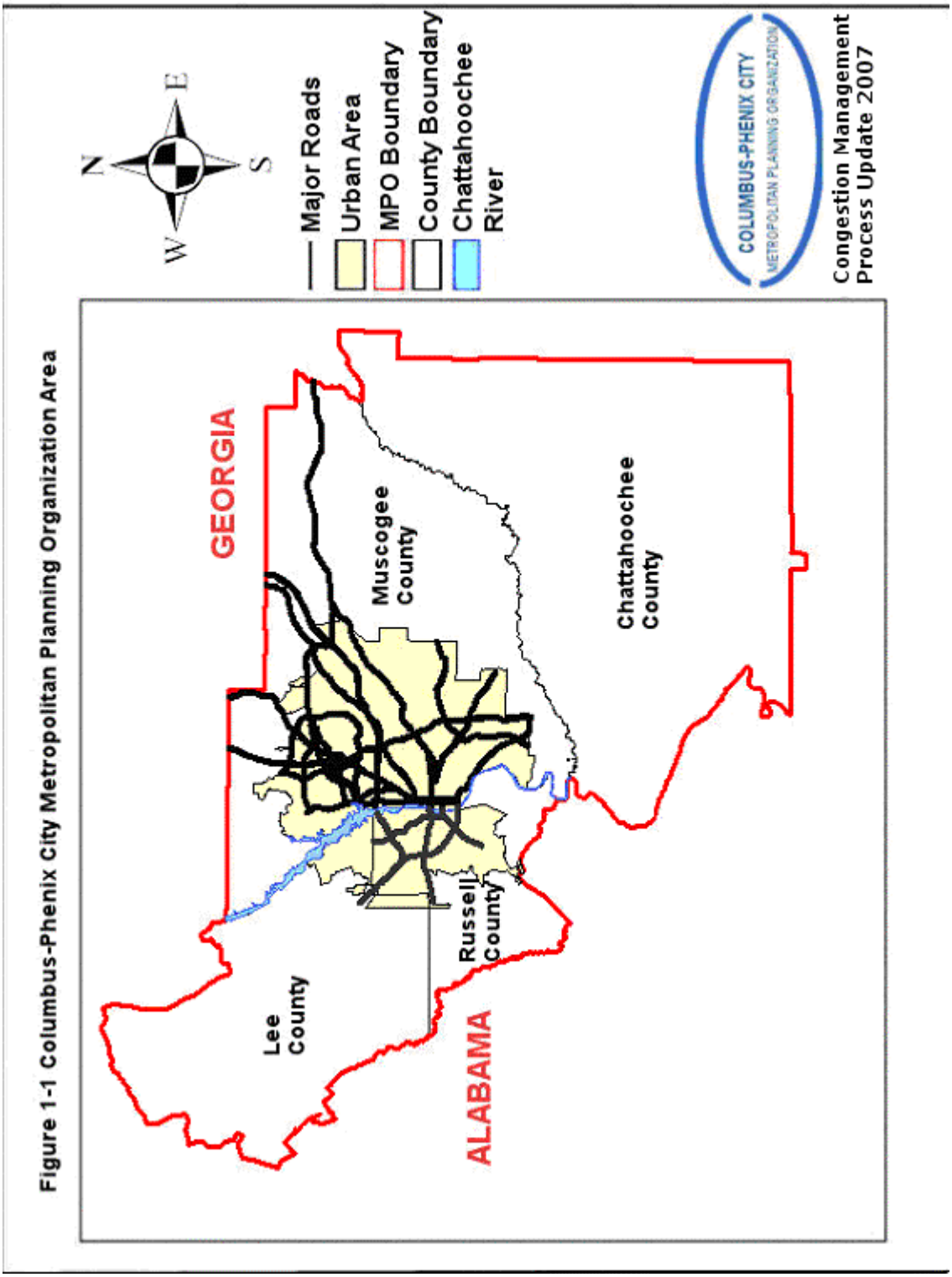


Figure 1-1 Columbus-Phenix City Metropolitan Planning Organization Area

BACKGROUND

Columbus, Georgia was founded in 1828 on the fall line of the Chattahoochee River, along the western-most border of the State of Georgia. Initially a mill town, Columbus was home to many cotton cloth mills that utilized the river to transport goods from Columbus to the Gulf of Mexico. During World War I, Columbus was home to the School of Musketry, which later became Fort Benning.

As the industrial age diminished, Columbus started to attract service and technology jobs. Today, Columbus is home to many insurance, bankcard processing, and medical jobs. With a strong local economy, and abundant cultural and entertainment resources Columbus is a desirable place to live, work and raise families.

In the coming years, Fort Benning will see its ranks grow as a result of the Army armor school being relocated there by a decision of the military Base Realignment Commission (BRAC). Over the next four years, this shift is expected to result in up to 45,000 new residents (military personnel, military contractor services and their family members) moving into the MPO region. If the full estimate of new residents is reached, it would be equivalent to a 20% jump in the regional population. The findings in this report will help guide policy makers in decision making on siting for new housing, zoning and funding transportation improvements to accommodate the increased population.

The Columbus-Phenix City Metropolitan Planning Organization (MPO) for the Columbus-Phenix City area is a bi-state organization -- the Georgia participants are: Columbus (Muscogee County), Chattahoochee County and Ft. Benning, while the Alabama participants are: Phenix City, and Lee and Russell Counties. Annually, the MPO prepares the Unified Work Program (UPWP), which identifies all transportation planning activities agreed upon to be performed by the MPO participants and funded by Federal Grants and State Contracts. The mission of the MPO is to facilitate multi-modal transportation planning and infrastructure improvements in a coordinated, comprehensive and continuous manner for the Columbus-Phenix City Metropolitan Area.

CURRENT IMPROVEMENT PROJECTS

The Columbus-Phenix City Metropolitan Planning Organization maintains a work program developed in accordance with Federal and State planning guidelines. This document, known as the Transportation Improvement Program (TIP), details the use of Federal, State and local dollars on transportation projects in the Metropolitan Planning Organization (MPO) study area. The TIP is a subset of the Long-Range Transportation Plan (LRTP), a planning document that investigates the transportation needs of the Columbus area and develops a plan to address those needs. The development of long range transportation plan must be accomplished utilizing a comprehensive, cooperative and continuing process.

A Congestion Management Process is a decision support tool in the development of the LRTP. The Congestion Management Process is especially helpful in identifying transportation deficiencies, transportation needs and priorities related to congestion within the MPO planning boundaries. Figure 1-2 depicts the locations of projects in the Columbus-Phenix City MPO area currently in progress or in the programming process.

CHAPTER 2
CONGESTION MANAGEMENT PROCESS

OVERALL INTENT

The intent of the Congestion Management Process is to protect the region's investment in, and improve the effectiveness of, the existing and future transportation networks. This is achieved by using the Congestion Management Process to provide decision makers with information about transportation system performance and alternative strategies to reduce congestion, and enhance the mobility of persons and goods. Recommendations on strategies considered most appropriate for congested locations in the Area will be developed during later tasks in the Study.

WHAT IS A CONGESTION MANAGEMENT PROCESS PLAN?

A Congestion Management Process is a continuous cycle of transportation planning activities designed to provide decision-makers with better information about transportation system performance and the effectiveness of alternative strategies to deal with congestion. A Congestion Management Process may be considered as consisting of four main components:

- Measurement and identification of congestion;
- A matrix of congestion mitigation strategies;
- Monitoring of effectiveness after implementation; and
- An orderly evaluation process.

The federal highway authorization bill known as Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires that congestion relief be considered in the selection of transportation improvement projects, and that all urbanized areas with populations in excess of 200,000 (termed Transportation Management Areas [TMAs]) develop and implement a Congestion Management Process (CMP). Further, Federal requirements state that in all TMAs, the CMP shall be developed and implemented as part of the metropolitan planning process

As shown in Figure 2-1 the components of Congestion Management Process form a continuous cycle of transportation planning activities. By monitoring the effectiveness of congestion mitigation strategies and evaluating their benefits in an orderly, consistent manner, planners and decision-makers can improve their ability, over time, to select the most cost-effective strategies appropriate to their specific local conditions and needs.

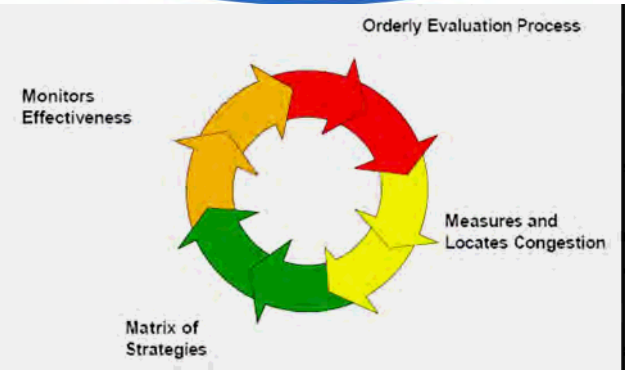


Figure 2-1
Congestion Management Process: A Cyclical Process

The Federal Highway Administration (FHWA) has issued guidelines on what constitutes a fully operational Congestion Management Process.[1] The guidelines are summarized under the following steps:

- System Monitoring and Identification of Congested Locations;
- Performance Measure Development;
- Identification of Congestion Causes;
- Identification and Ranking of Mitigation Strategies;
- Implementation of Strategies; and
- Monitoring of Effectiveness.

SYSTEM MONITORING

With respect to congestion management planning, system monitoring is an all inclusive term meant to encompass all the various activities that transportation planners engage in to collect data relevant to transportation system performance. System monitoring should occur on all "regionally significant" roadway and transit facilities, with data collected continuously to identify the location and extent of congestion on these facilities.

With respect to roadways, this would include facilities classified as arterial 1 23 CFR 500.109(b). or higher. System monitoring activities typically incorporate one or more of the following:

Floating Car Travel Time / Delay Collection:

This method of data collection involves recording the time and position of a vehicle "floating" within the traffic stream at control points along a roadway facility. The speed / time / delay data may be obtained via a tape recorder or stopwatch. However, maximum flexibility in data reduction and presentation can be achieved by using proven Global Positioning System (GPS) technology to simultaneously record and store the time and position of the floating vehicle at intervals of up to 1/10 second.

This method of data collection is currently used for Columbus-Phenix City MPO Congestion Management Process planning activities. We utilized Garmin ETrex GPS receivers connected to laptop computers running TS-PP Draft software under the Windows XP operating system. The TS-PP Draft software captured and organized the raw data from the receiver to show average vehicle speed over time as well as delays encountered.

Traffic Count Collection / Analysis:

Traffic count data was used from GDOT, ALDOT as well as Columbus Consolidated Government counters to monitor roadway system performance. Often, travel time / delay runs will highlight segments along a route, or at an intersection, where traffic counts may need to be collected. These “as-needed” counts are an important component of the system monitoring process.

Time / delay runs and traffic counts serve as integral inputs to the third mechanism to monitor system performance:

Regional Travel Demand Model:

The regional travel demand model can serve a two fold purpose with respect to monitoring system performance. First, it provides a method of determining speed and volume values on facilities not directly observed under either of the system monitoring processes described above. Second, it allows for the forecasting of future traffic congestion along broadly defined roadway corridors or activity center areas.

PERFORMANCE MEASURES

Performance measures (and associated threshold values) are used to identify congested conditions at individual locations, or within corridors and activity centers. These adopted measures are the primary means by which congestion information is communicated among transportation professionals and the general public. Therefore, care must be taken in the selection, organization and presentation of these measures so that they are:

- Clearly understood;
- Sensitive to all travel modes;
- Sensitive to time;
- Supported by data that are neither costly nor difficult to collect;
- Supported by data that may be forecast into the future and able to measure the effects of strategies meant to mitigate congestion.
- FHWA also suggests that selected performance measures be categorized as follows:

1. Those that measure congestion (facility-based measures, such as V/C ratios);
2. Those that measure mobility (travel time-based measures);
3. Those that measure accessibility (activity-based measures, such as the number of jobs within 35 minutes of a particular facility, or within ½ mile of a transit stop);
4. Those that measure system efficiency (measures that provide an overall assessment of system wide performance, such as the number of congested lane-miles, or VMT under congested conditions).

CAUSES OF CONGESTION

The causes of congestion at problem locations and within problem corridors or activity centers are identified. Sometimes the cause of congestion is not readily apparent from the collection and analysis of system performance data. In such cases, field visits to the congested site are necessary to make the determination.

MITIGATION STRATEGIES

Mitigation Strategies are identified through an evaluation process that addresses the identified cause of congestion at a particular location or area, giving the least priority to strategies that add single-occupant vehicle (SOV) capacity. The highest-ranking strategies that address congestion at a particular location are then incorporated within the TIP development process.

MONITORING OF EFFECTIVENESS

Finally, implemented strategies are then monitored for their effectiveness as part of ongoing system monitoring (transportation system performance data collection) activities.

CHAPTER 3
CONGESTION MITIGATION STRATEGIES

INTRODUCTION

A key task in the development of a Congestion Management Process is the identification and structuring of congestion mitigation strategies in a fashion that is easily understood by not only technical staff, but also the general public. This chapter provides a focused discussion of those strategies thought most applicable to the congestion problems identified in the Columbus-Phenix City MPO area during the course of this study.

STRATEGY CLASSES

Strategy classes represent broad groupings of individual strategies and improvement measures. The strategies in this discussion have been broken into the following twelve classes, as identified in the Federal Congestion Management Process Final Rule [2] for the Congestion Management Process:

1. Transportation demand management (TDM) measures
2. Traffic operations improvements
3. Measures to encourage high occupancy vehicle (HOV) use
4. Public transit capital improvements
5. Public transit operational improvements
6. Measures to encourage the use of non-motorized modes
7. Congestion pricing
8. Growth management
9. Access management
10. Incident management
11. Intelligent Transportation Systems (ITS)
12. General purpose capacity expansion

For each strategy class, groups of distinct strategies have been identified, as well as representative measures of effectiveness (MOEs) to assess the pre- or post implementation effectiveness of a given strategy group. It is important to note that Congestion Management Process guidelines do not specify that all possible strategies be analyzed for every location of congestion. Only those that could potentially mitigate congestion at the given location in a reasonable manner should be analyzed.

Table 3-1
Congestion Mitigation Strategy Classes and Groups

STRATEGY CLASS	STRATEGY GROUP	REPRESENTATIVE STRATEGIES
1. Transportation Demand Management	A. Ride sharing programs	Ride share matching, Marketing and promotion, Vanpool Operations.
	B. Alternative Work Arrangements	Telecommuting, Flextime or compressed workweeks, Staggered work hours.
	C. Transit/Carpool Incentives	Employer-paid transit passes, Subsidized vanpool
	D. Parking Management	Preferred carpool/vanpool parking, Carpool/Vanpool parking discounts, Increased parking fees
	E. Guaranteed Ride Home (GRH) Programs	Used in conjunction with vanpool or HOV programs to provide participants a ride home in event of emergency, thus alleviating their perception that they need to drive their personal vehicle daily as a contingency for such situations.
2. Traffic Operational Improvements	A. Improved signalization patterns	Signal retiming, coordinated systems, demand responsive systems
	B. Roadway geometry improvements	Turn lanes, channelization, acceleration/deceleration lanes, bus turnouts, lane widening, one-way couplets, grade separation.
	C. Time of Day Restrictions	Turning restrictions, parking restrictions, truck access restrictions

STRATEGY CLASS	STRATEGY GROUP	REPRESENTATIVE STRATEGIES
2. Traffic Operational Improvements (continued)	D. Ramp Metering	Localized ramp metering, coordinated ramp metering, demand responsive metering, HOV bypass metering.
	E. Commercial Vehicle Improvements	Commercial vehicle facilities, intermodal facilities, geometric improvements, truck routes
	F. Construction Management	Management plans, detour signing improvements, advance information of closures and alternate routes.
3. HOV Measures	HOV Priority Systems and Support Services	HOV priority lane, HOV ramps, transit signal priority, park and ride facilities.
4. Transit Capital Improvements	A. Exclusive Right of Way Facilities	Commuter rail rapid transit, light rail busways, bus lanes, bus bypass ramps.
	B. Fleet Improvements	Fleet expansion, vehicle replacement/upgrades, transit vehicle management systems, vehicle type changes.
	C. Transit support facilities	Park and ride facilities, transit centers, improved stations/stop facilities
5. Transit Operational Improvements	A. Transit Service Improvements	Increased frequency, add stops, modify operating hours, express routes, route modification
	B. Transit Marketing/Information	Marketing programs, agency coordination, transit information systems
	C. Fare Incentives	Fare reductions, fare packages
	D. Traffic Operations for Transit	Traffic signal priority, signal coordination, bus turnouts, railroad crossing coordination

STRATEGY CLASS	STRATEGY GROUP	REPRESENTATIVE STRATEGIES
6. Non-Motorized Modes	A. Bike/ped infrastructure improvements	Bike lanes, bike/ped paths, bike route marking, sidewalks
	B. Bike/ped support services	Bike rack/lockers, transit vehicle bike carriers, employer showers, bike/ped planning, bike maps
7. Congestion Pricing	A. Road user fees	Tolls, time of day pricing, HOV facility fees
	B. Parking fees	Surcharges, time of day pricing.
8. Growth Management	A. Compact development	Density standards
	B. Redevelopment/Plan	Site reclamation/reuse, incentives to develop in areas with existing infrastructure.
	C. Mixed use development	Zoning regulations
	D. Jobs/Housing balance	Zoning regulations
	E. Transit-Oriented Development	Density standards, bicycle/pedestrian access, design requirements
	F. Corridor land use & transportation coordination	Intergovernmental agreements
9. Access Management	A. Driveway management	Policies and standards, side street/alley access, shared access/common driveways
	B. Median management	Policies and standards, establishing medians, bi-directional turn lanes
	C. Frontage roads	

STRATEGY CLASS	STRATEGY GROUP	REPRESENTATIVE STRATEGIES
10. Incident Management	A. Incident Detection	Emergency traffic patrols, emergency monitoring, roadway detectors/surveillance.
	B. Incident response	Emergency vehicle priority, emergency traffic patrols, communication systems protocol.
	C. Incident clearance	Emergency response teams, service patrols
	D. Incident Information/routing	Highway advisory radio, alternative route planning, variable message signs.
11. Intelligent Transportation System	A. Advance Traffic Management Systems	Freeway management, traffic signal control, emergency management,
	B. Advance Traveler Information Systems	Multi-modal regional traveler information.
	C. Advance Public Transportation Systems	Vehicle management systems, automated vehicle location systems, electronic fare payment.
	D. Commercial Vehicle Control Systems	Weight-in-motion system, electronic credential checking.
	E. Advance Vehicle Control Systems	Collision avoidance system. Vehicle guidance system.
12. General Purpose Capacity Expansion	A. Expressway lanes,	Additional lane(s) built for existing facilities or construction of new facilities.
	B. Arterial lanes	

CHAPTER 4
PERFORMANCE MEASURES

INTRODUCTION

Performance measures provide the basis for evaluating transportation system operating conditions and for identifying the location and severity of congestion. Performance measures typically used in a Congestion Management Process Plan development are discussed in detail. The Chapter concludes with a discussion of measures appropriate to the current Columbus-Phenix City MPO Congestion Management Process Plan.

TYPICAL MOES FOR CONGESTION MANAGEMENT PROCESS

As noted in the previous chapter, Measures of Effectiveness (MOEs) typically considered in Congestion Management Process plans include:

- Travel Time Measures (Vehicle Hours Traveled by Mode, Delay and Speed);
- Volume-to-Capacity Ratios;
- Annual Traffic Counts;
- Intersection Level of Service;
- Percentage of Households and Employment within “X” miles of a Bus Route;
- Percentage of Households and Employment within “X” miles of an Interchange;
- Transit System Measures (ridership, reserve capacity, etc.);
- Vehicle Occupancy; and
- Incident Measures.

Of these MOEs, Travel Time Measures are often used as the primary MOE for use in Congestion Management Process Plan development. Volume-to-Capacity Ratios are also often used as a secondary MOE. MOEs are frequently selected based upon consideration of the following factors:

- Availability of data from existing sources;
- Ease of data collection and processing;
- Applicability of those measures in quantifying system performance; and
- Ability of the performance measure to help forecast future system deficiencies.

The following pages go on to describe the various measures used in the development of the current study.

DESCRIPTIONS OF CONGESTION MANAGEMENT PROCESS PERFORMANCE MEASURES

CONGESTION MEASURES

Volume-to-Capacity (V/C) Ratio [3]

Due to the wide availability of volume and capacity figures, as well as the straight forward nature of the measure, Volume-to-Capacity (V/C) ratios are widely used as general measures of congestion in transportation planning. The Transportation Research Board's (TRB) Highway Capacity Manual (HCM) has established relationships between V/C ratio and traffic operation, and is a standard guide in the field.

V/C ratios are typically available from regional travel demand models and/or traffic count program, and may be analyzed at the link and corridor levels of analysis.

Travel Time and Travel Speed [4]

Travel time and travel speed are closely related measures that can be used to illustrate the reduction in mobility people experience during congestion. Travel time and speed experienced under congested conditions can be compared to those found in free flow operating conditions to assess the magnitude of congestion. The speed reduction index is an example of using travel time/speed data in this fashion. The duration of congestion can also be determined by measuring the reduced travel speeds over a period of time.

Travel time and speed are relatively easily obtained from model forecast data, and may also be directly observed through "floating car" travel time runs. Some surveillance detectors (occupancy loop or video detection), or signal control detectors can also provide speed data.

This data may be summarized at any analysis level desired: link, corridor or region-wide.

SYSTEM EFFICIENCY MEASURES [4]

Vehicle Miles under Congested Conditions

Vehicle miles traveled is defined as the number of miles traveled by a vehicle in each trip and is a direct output of regional travel demand models. VMT can be reported for a link, corridor, major activity center or region wide. In this process, we compared the number of miles of roadway found to be congested during our study to the cumulative system mileage of all roadways subject to the study. VMT is a good indicator of travel demand, as well as air quality emissions. VMT projections readily allow for comparisons between various alternatives of a given scenario, and can also report the frequency of travel between two defined areas. While VMT can report travel by different modes, the measure cannot be used to make comparisons between various modes. As a measure of performance, VMT is best used when:

- Comparing similar links, corridors, and areas;
- Comparing system scenarios in different planning years; and
- Evaluating highway-related project alternatives.

INCIDENT (NON-RECURRING CONGESTION) MEASURES [5]

- Accident Location and Frequency
- Incident-Related Delay
- Incident Duration
- Incident measures differ from the other performance measures, which all attempt to measure recurring congestion. An attempt should be made to measure incident congestion, which accounts for much of the congestion experienced in Columbus.

Due to the nature of incidents (which include accidents or special events), this information is very difficult to obtain in a systematic way.

[3] Secondary measure selected for the Columbus Area Congestion Management Process
[4] Primary measure selected for the Columbus Area Congestion Management Process
[5] 2000 Highway Capacity Manual, Special Report 209, Transportation Research Board, National Research Council, Washington, DC.

CHAPTER 5
DATA COLLECTION

INTRODUCTION

This chapter describes the data collection activities undertaken for the Columbus-Phenix City MPO Congestion Management Process. It covers new data collected by the study team, such as travel time surveys, the use of existing data and other data such as additional traffic counts, obtained from other government agencies. The processing of these data and the generation of Measures of Effectiveness (MOEs) are also described.

TRAVEL TIME SURVEYS

Travel Time Surveys were conducted along arterial routes throughout the Columbus-Phenix City Metropolitan area. Surveyed routes were determined in joint consultation with the Columbus-Phenix City MPO and the consultant. The surveys were conducted between September and November 2004.

Objectives

The purpose of the surveys was to measure travel speed during the peak travel periods, namely the AM peak period (approximately 6:30am to 8:30am), off peak period (10am to 3pm) and the PM peak period (approximately 4:30pm to 6:30pm).

Delays caused by traffic signals or other traffic conditions were also recorded. The travel time surveys were designated to provide MOEs that measure both congestion levels, such as delays and speed reduction ratios, and mobility, such as travel times.

Routes Surveyed

Travel Time Surveys were conducted along a total of 21 routes, as shown in Table 5-1.

MPO Staff members identified the critical time of day and conducted surveys in both directions along each route. The 21 routes covered a total of 135 miles of roadway, 9 of which are major arterials in the Columbus-Phenix City Metropolitan area.

Individual routes ranged in length from 1.65 miles to 14.45 miles. In total, 270 miles of roadway were surveyed (both directions) during the 8-week period of data collection

Table 5-1
Columbus Congestion Management Process – Data Collection

Road Segment	Road Length (miles)	Sample Size	From:	To:
2nd Avenue	3.71	6	Fourth Ave.	Manchester Expwy
St. Mary's Road	3.54	6	Robin Road	Fort Benning Boundary
Whitesville Road	3.77	6	Airport Thruway	Williams Road
Whittlesey Blvd.	1.50	6	Bradley Park (west)	Veterans Parkway
River Road	4.48	6	Veterans Parkway	Double Churches Road
Williams Road & Moon Road	4.71	6	Whitesville Road	Miller Road
US Hwy 280	8.62	6	Lee Road	Veterans Parkway
Forest Road	4.22	6	Macon Road	Schatulga Road
Double Churches Rd.	2.98	6	River Road	Veterans Parkway
Fort Benning Road/Brennan Road	3.30	6	Saint Marys Road	Victory Drive
Buena Vista Road	7.11	6	Macon Road	Schatulga Road
J.R. Allen Parkway (US Hwy 80)	8.01	6	US 280	Flat Rock Road
Victory Drive	6.5	6	Veterans Parkway	Interstate 185
Bradley Park Drive	1.65	6	River Road	Whitesville Road
Lee - Summerville Road	10.91	6	US 280	Fifth Avenue South
Macon Road	9.72	6	10th Avenue	US 80
U.S. Hwy 80 & 13th Street	14.45	6	SR-169	Macon Road
Veterans Parkway	12.13	6	Wooldridge Road	Victory Drive
Manchester Expressway	6.86	6	Second Avenue	Miller Road
Warm Springs Road	11.42	6	Veterans Parkway	County Line Road
54th St. & Airport Thruway	6.15	6	River Road	Miller Road

METHODOLOGY

Travel time and speed data was collected via Global Positioning System (GPS) technology, in conjunction with TS/PP Draft, transportation planning software which can read the current position and speed of the vehicle. This information is used to record trip logs and generate comparative travel time and delay reports.

The survey vehicles, standard passenger cars, were operated by C-PCMPO staff members. During peak data collection weeks, three cars were in operation. The driver used the floating car technique to ensure the vehicle traveled at a speed representative of the typical vehicle for that time of day and specific route travel.

A GPS unit was attached to a computer and set up in the vehicle to record GPS current location and travel speed. Some of the recorded data included:

- GPS location of a predetermined checkpoint along the route, such as a signalized intersection;
- Distance from one segment on the route to the next (segments divided by check points);
- Stopped time at a signalized or sign controlled intersection; and
- Delay along each segment, based on user-specified parameters (segment distance and free flow speed)

A GPS card within the laptop computer used signals from a series of earth-orbiting satellites to continuously monitor the location of the survey vehicle. For each run, a file of GPS data was created with both spatial and temporal information, including the location and time of each of the recorded events.

DATA PROCESSING

GPS data files were processed and imported into Excel® spreadsheets. The predetermined checkpoints along the route were used to divide each route into manageable segments. The number of segments on a particular route varied from 3 (Whittlesey Road) to 21 (Veterans Parkway).

Based upon the location of each checkpoint, the survey vehicle's progress along each segment was recorded in terms of travel time along each segment, distance between checkpoints, and delay in travel time from previous node (checkpoint) based on user specified design speed. These readings are just a few of the data collected by the TP/SS Draft software.

At a minimum, three runs per direction were taken along each route during the AM and PM peak periods, while at least one run per direction was taken during the off-peak period. From this data, the average speed of travel along each segment and for the whole route was calculated. Travel delay times were also computed from the free flow speed, distance between segments and the average segment travel speed.

CONGESTION CATEGORIES

Each section on the route was assigned one of five congestion categories. The principal criterion used was the percentage of free flow speed observed during the travel time survey. This percentage was calculated as:

Percentage of free flow speed (FFS) = Observed speed
Free-flow speed

The free-flow speed was taken to be the speed limit on that segment of the route. The levels of congestion were described as follows:

- *Serious* - percent FFS < 40%
- *Congested* - percent FFS ≥ 40% and < 50%
- *Marginal* - percent FFS ≥ 50% and < 65%
- *OK* - percent FFS ≥ 65%
- *Good* - percent FFS ≥ 80%

Other factors

(a) Free-flow speeds for the routes in Muscogee County were determined based on data from the road characteristic database provided by the Georgia Department of Transportation (GDOT). Free-flow speeds were assigned as follows:

- 26 – 35 mph = 30 mph
- 46 – 55 mph = 50 mph
- 36 – 45 mph = 40 mph
- 56 – 65 mph = 60 mph

(b) Free-flow speeds for routes in Lee and Russell Counties were based on the posted speed limits, using the same speed intervals noted above.

Sample Results:

Table 5-2
PM Peak Run Along Manchester Expressway

	Eastbound			Westbound		
	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
River Road	49	21.4	MARGINAL	22	27.5	OK
Veterans Pkwy.	67	19.2	CONGESTED	67	20.7	CONGESTED
Woodruff Road	90	17.2	SERIOUS	105	15.2	SERIOUS
Armour Road	112	21.9	CONGESTED	19	30.9	OK
I-185	4	36.2	OK	21	20.9	CONGESTED
Warm Springs Road	87	24.1	CONGESTED	49	30.1	MARGINAL
Miller Road	8	60.3	OK	32	53.4	GOOD

Table 5-2 shows sample results from the travel time surveys. The results of the PM peak period speed runs along Manchester Expressway are shown. The route surveyed begins on the west at 2nd Avenue and runs 6.86 miles to the Miller Road exit. Starting from 2nd Avenue heading eastward:

- the segment is 0.46 miles in length.
- the free-flow speed (Free Flow) is 40 mph.
- free-flow time (FF Time) is 0.70 minutes.

TRAFFIC COUNTS

Traffic count data was obtained from Columbus Consolidated Government, GDOT and ALDOT. Figure 5-2 illustrates the free-flow speeds along the survey routes. Figure 5-3 shows the estimated 2005 AADT values at these locations.

The actual level of service or degree of congestion experienced on a particular roadway is dependent upon many more variables than the number of lanes and functional class. These variables include signal timing and coordination, proportion of turning vehicles, frequency of driveways and median cuts, directional distributions and peak-hour factors to mention a few. The impact of these factors is reflected in the average travel speeds measured during the travel time surveys.

For this reason, the percent reduction in free flow speed was selected as the primary MOE for the Columbus Congestion Management Process study.

VOLUME / CAPACITY RATIOS

Table 5-3 – Multilane Highway Capacities (Adapted from Table 21-2 of the Highway Capacity Manual)

Free Flow Speed	Capacity/Lane	4 Lane Divided	6 Lane Divided
60+ mph	2200	8800	13200
55 mph	2100	8400	12600
50 mph	2000	8000	12000
45 mph	1900	7600	11400

Table 5-4 - Divided and Undivided Roadway Capacities (Adapted from Chapter 20 of the Highway Capacity Manual)

	Undivided Roadways					Divided Roadways	
Free Flow Speed	Capacity/ Lane	2 Lane	3 Lane	4 Lane	5 Lane	4 Lane	6 Lane
30 mph	1200	2200	2400	4300	4800	4800	6000
35 mph	1300	2400	2600	4700	5200	5200	6500
40 mph	1400	2600	2800	5100	5600	5600	7000
45 mph	1500	2800	3000	5500	6000	6000	7500
50 mph	1600	3000	3200	5900	6400	6400	8000
55 mph	1700	3200	3400	6300	6800	6800	8500

Volume to Capacity (V/C) ratios were calculated for each of the count stations located on the survey routes. Nominal 24-hour capacities were developed from standard roadway ADT capacities, using the Highway Capacity Manual as a guide. These capacities are comparable to those used in many transportation-planning models for urban areas. The two-way capacities that were utilized for this analysis are shown in Tables 5-3 and 5-4. These capacities are a function of the roadway's Functional Classification and number of lanes.

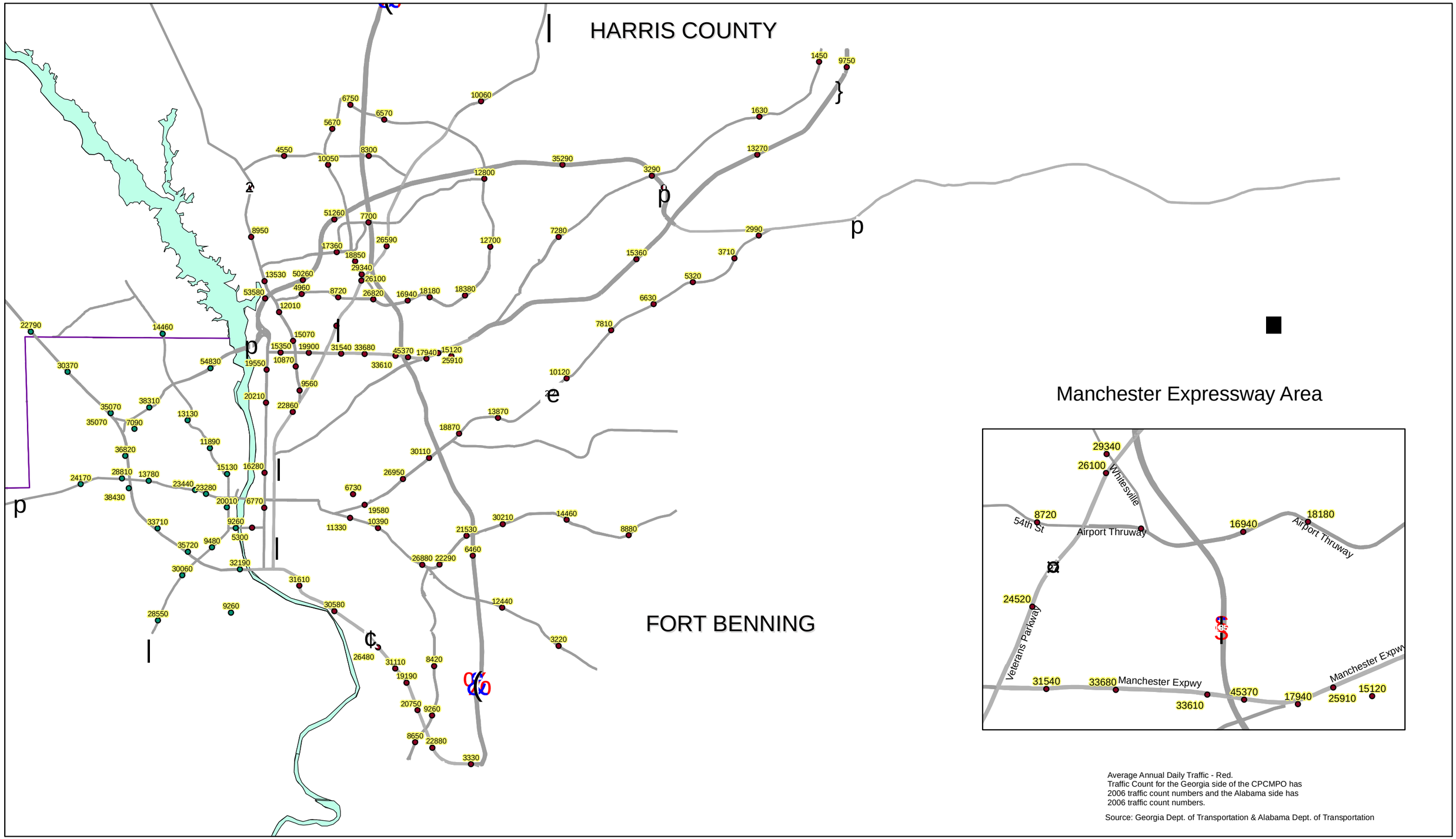
V/C ratios have been estimated as a secondary MOE to assist in prioritizing improvements at locations found to be congested based on reductions in free flow speeds. Within a group of locations with similar levels of congestion and causes, those with higher V/C ratios should be tackled first.

An additional reason for selecting V/C ratios as a secondary MOE is that it may easily be projected to future years. The traffic volume and corresponding capacities may be run for future year conditions to identify locations with high or rapidly increasing V/C ratios. This information, combined with existing travel time survey results can be used to identify locations where improvements will be required in the future or where more frequent monitoring of congestion is warranted.

V/C estimates, based on the capacities shown in the tables above are shown in Figure 5-4. As noted above, V/C ratios are not necessarily a precise indication of congestion, but it is instructive to review those locations with V/C > 0.7.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 5-2: AVERAGE DAILY TRAFFIC

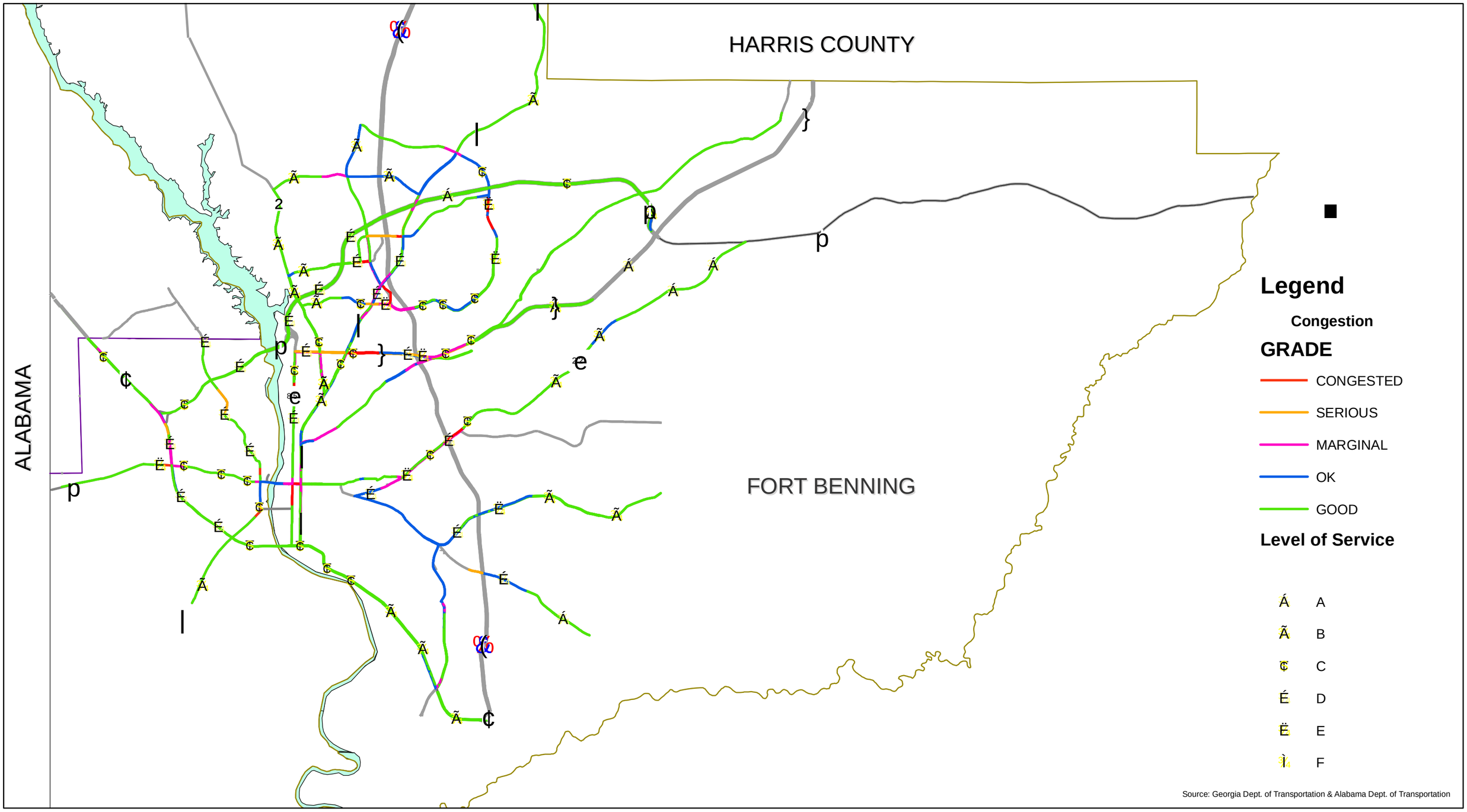


Average Annual Daily Traffic - Red.
Traffic Count for the Georgia side of the CPCMPO has 2006 traffic count numbers and the Alabama side has 2006 traffic count numbers.

Source: Georgia Dept. of Transportation & Alabama Dept. of Transportation

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 5-3: MEASURED SPEED AND LEVEL OF SERVICE (2006)



CHAPTER 6
CONGESTION IN THE MPO STUDY AREA

INTRODUCTION

The Columbus Consolidated Government with its first Congestion Management Process provided an opportunity to develop a routine system evaluation program to collect performance data at structured congestion management planning.

For this assessment, congested corridors in the Columbus-Phenix City area have been identified through different components. It is important to look at congestion based on different sources of data, such as comparing calculated V/C ratios with data obtained from travel time surveys. The components used in determining the highlighted congested corridors were:

- Travel Time Surveys;
- . V/C ratios;
- Average Daily Traffic Volume;
- Top 50 Accident Locations; and
- Meeting with Columbus-Phenix City MPO officials.
- In this Chapter, the results of the Travel Time Surveys showing congested locations are listed, together with potential causes of congestion.
- Mitigation strategies and their associated impact on Congestion Management Process performance measures are also noted.

OVERVIEW OF THE RESULTS

Travel Time Surveys were conducted during three different time periods (AM, OFF, and PM Peak). Each segment of the roadway was allotted one of five congestion categories. These categories, in order of increasing congestion are:

- Good
- OK
- Marginal
- Congested
- Serious

As discussed in Chapter 5, the congestion levels were developed based on the ratio of observed travel speed to free flow speed. The following figures show congestion categories for each roadway as well as other details, such as the top 50 accident locations. The buffered areas in Figure 6-5 highlight some select corridor segments based on congestion levels as well as isolated locations, which should be the area of focus for relieving congestion.

- Figure 6-1 – Peak Hour Congestion Levels
- Figure 6-2 – Frequency of Accidents at Locations (1999-2004)
- Figure 6-3 – Top 50 Accident Locations (2004)
- Figure 6-4 – Peak Hour Congestion Levels, Accident Locations & V/C Ratios
- Figure 6-5 – Areas of Focus on Selected Routes

As can be seen from Figure 6-1, the overall level of congestion for the Columbus-Phenix City Metro Area can be categorized as OK. The majority of the roadways record a 'Good or OK' level of congestion. However, there are roadway segments, which have levels of congestion listed as 'Serious' or 'Congested'. Some of them, for example, Whittlesey Road, can be attributed to the rapid increase in new retail activity ahead of the addition of road capacity to support it.

Other areas that were highlighted include Manchester Expressway, from River Road to Miller Road. Some of the delays along Manchester Expressway can be attributed to the spacing and lane shifts between signalized intersections, coupled with the long queues that are formed during peak travel periods.

In addition, 2nd Avenue between 8th and 15th Streets, Whitesville Road between Airport Thruway and Bradley Park Drive, Macon Road between Boxwood Blvd and Forest Road, Veterans Parkway between Airport Thruway and the US 80 Ramps, Whittlesey Road between Whitesville Road and Veterans Parkway, Warm Springs Road between Hilton Avenue and Warm Springs Connector, US 280 between the ramps for the J.R. Allen Parkway and Crawford Road are segments with either serious or congested conditions.

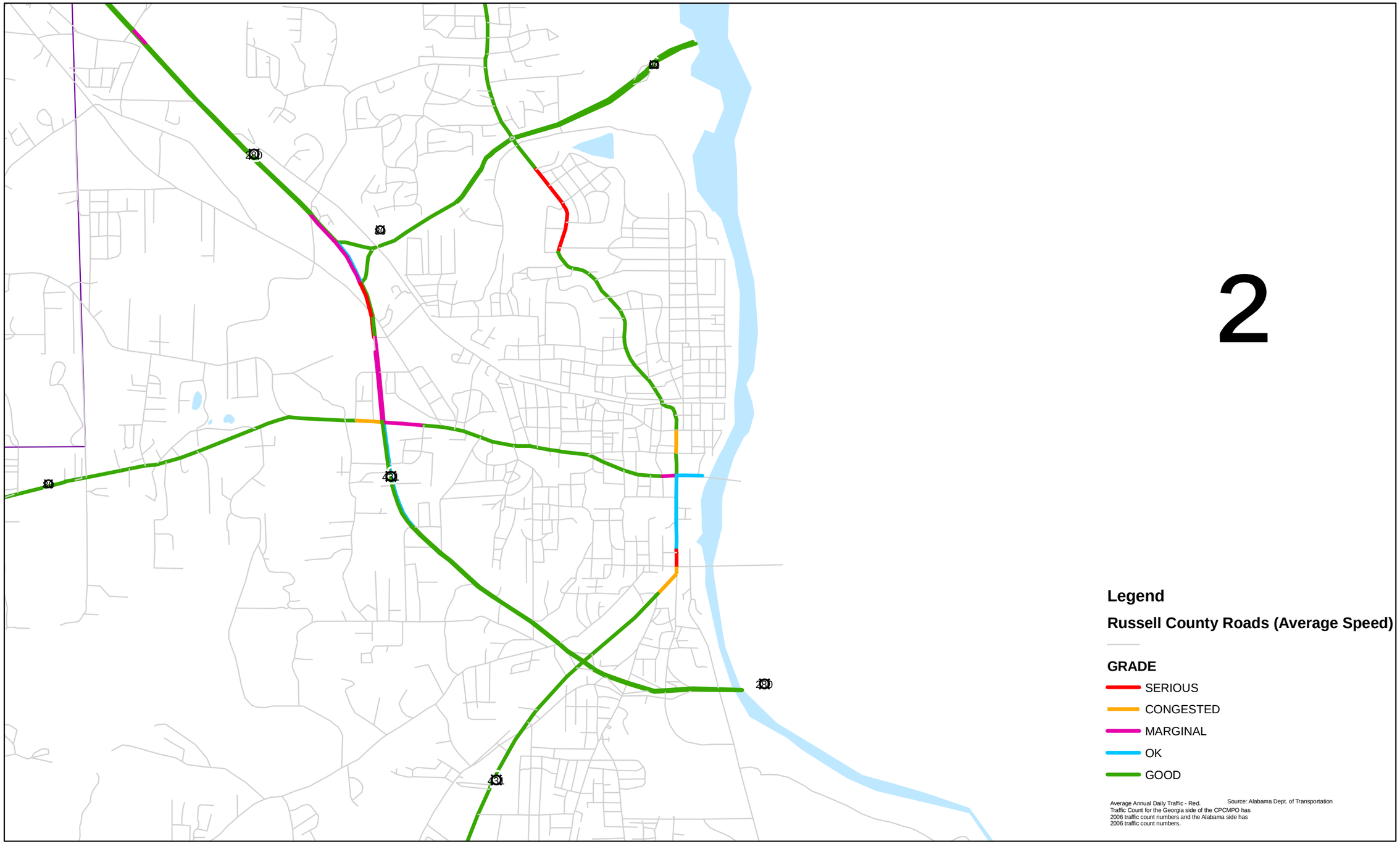
RESULTS BY ROUTE

The remainder of this Chapter provides a summary of the results of Travel Time Surveys along all 20 routes. All the routes were reviewed for level of congestions, number of accident locations and high V/C ratios. Results are summarized, potential causes of congestion are identified and mitigation strategies and their associated impact on Congestion Management Process performance measures are noted.

The graphical representations on Chart 5-7 shows congestion levels for PM peak period.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

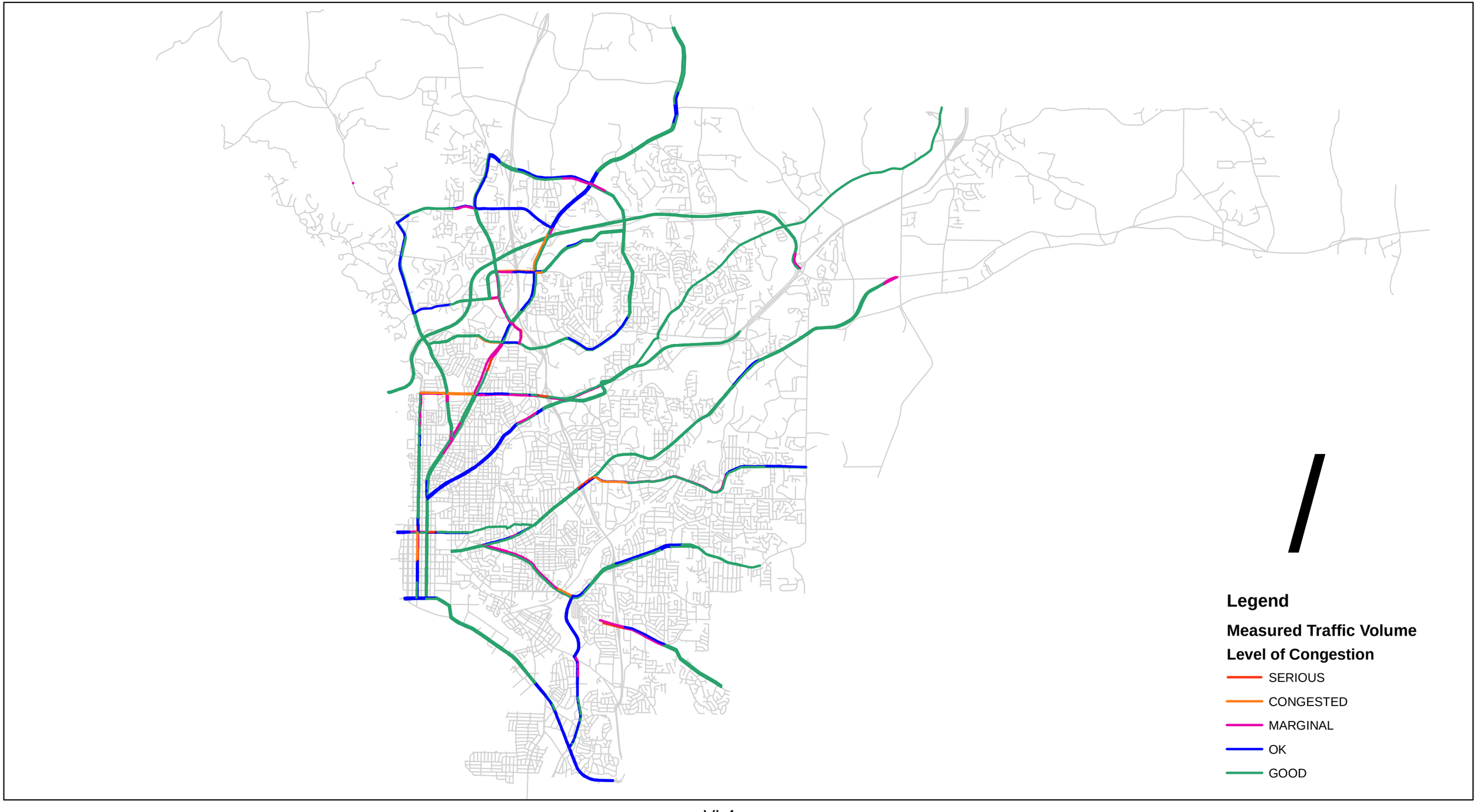
COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 6-1: PEAK HOUR CONGESTION - PHENIX CITY AREA



2

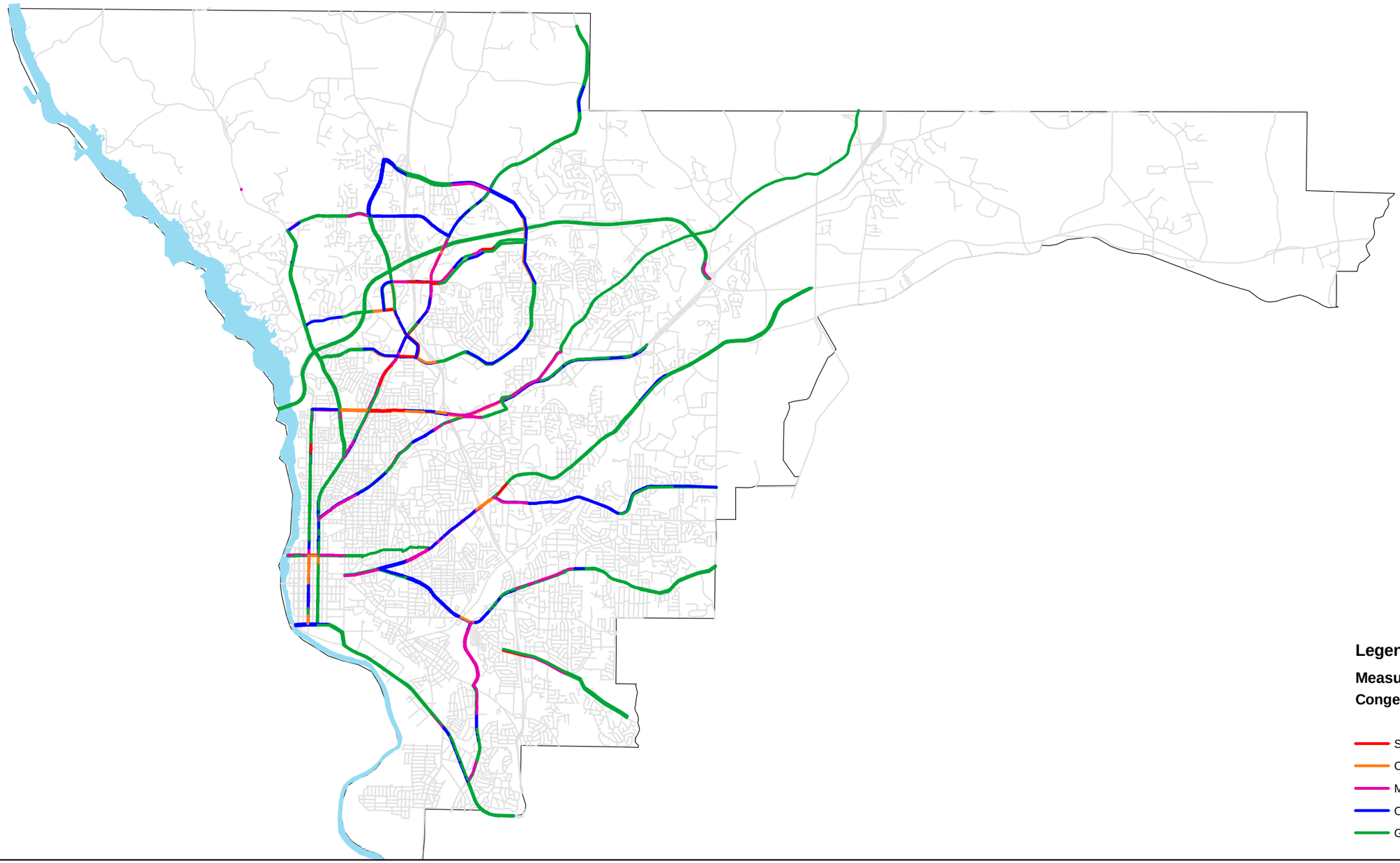
COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 6-2 AM PEAK TRAFFIC CONGESTION



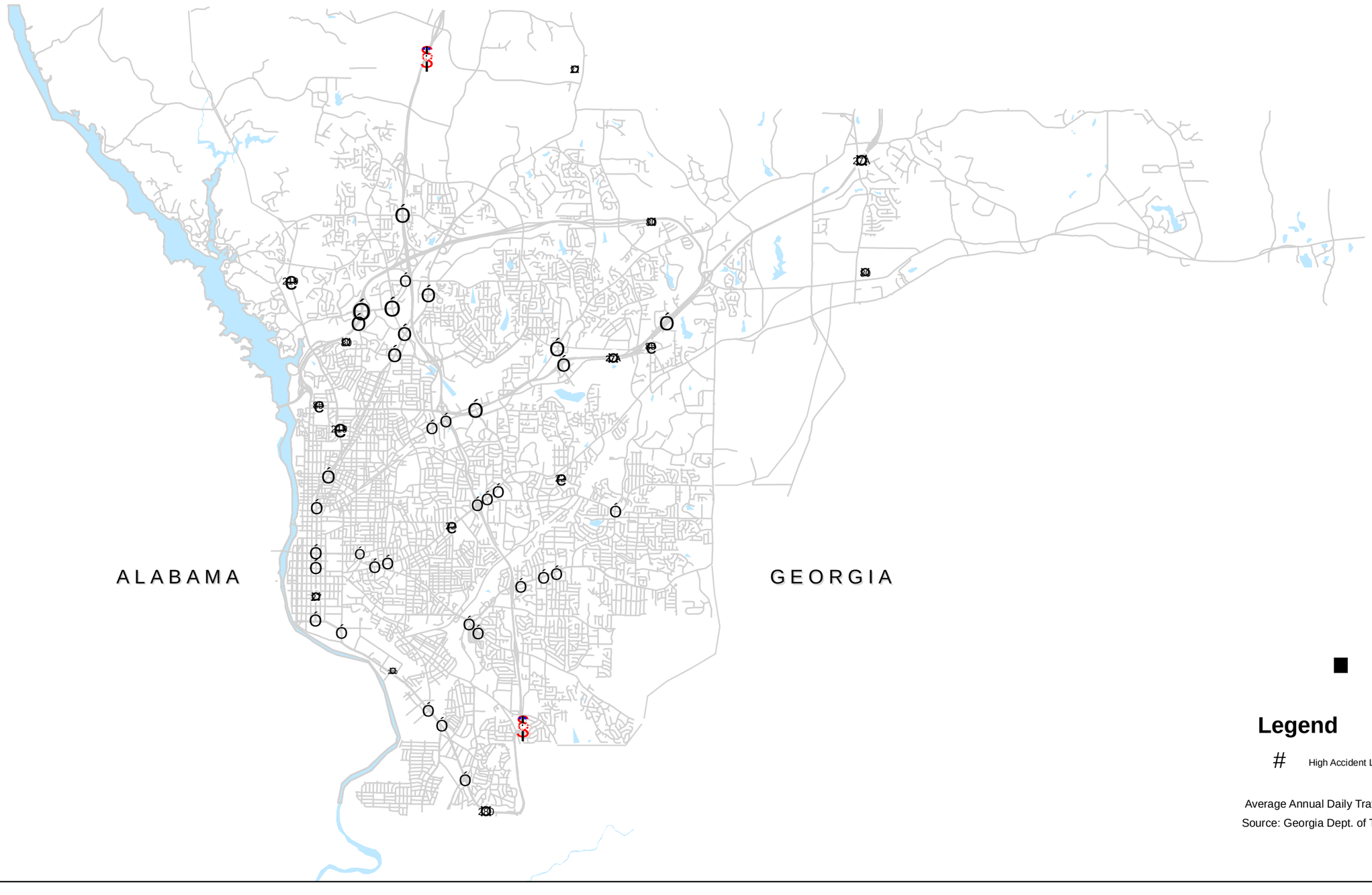
COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 6-3: PM PEAK TRAFFIC CONGESTION



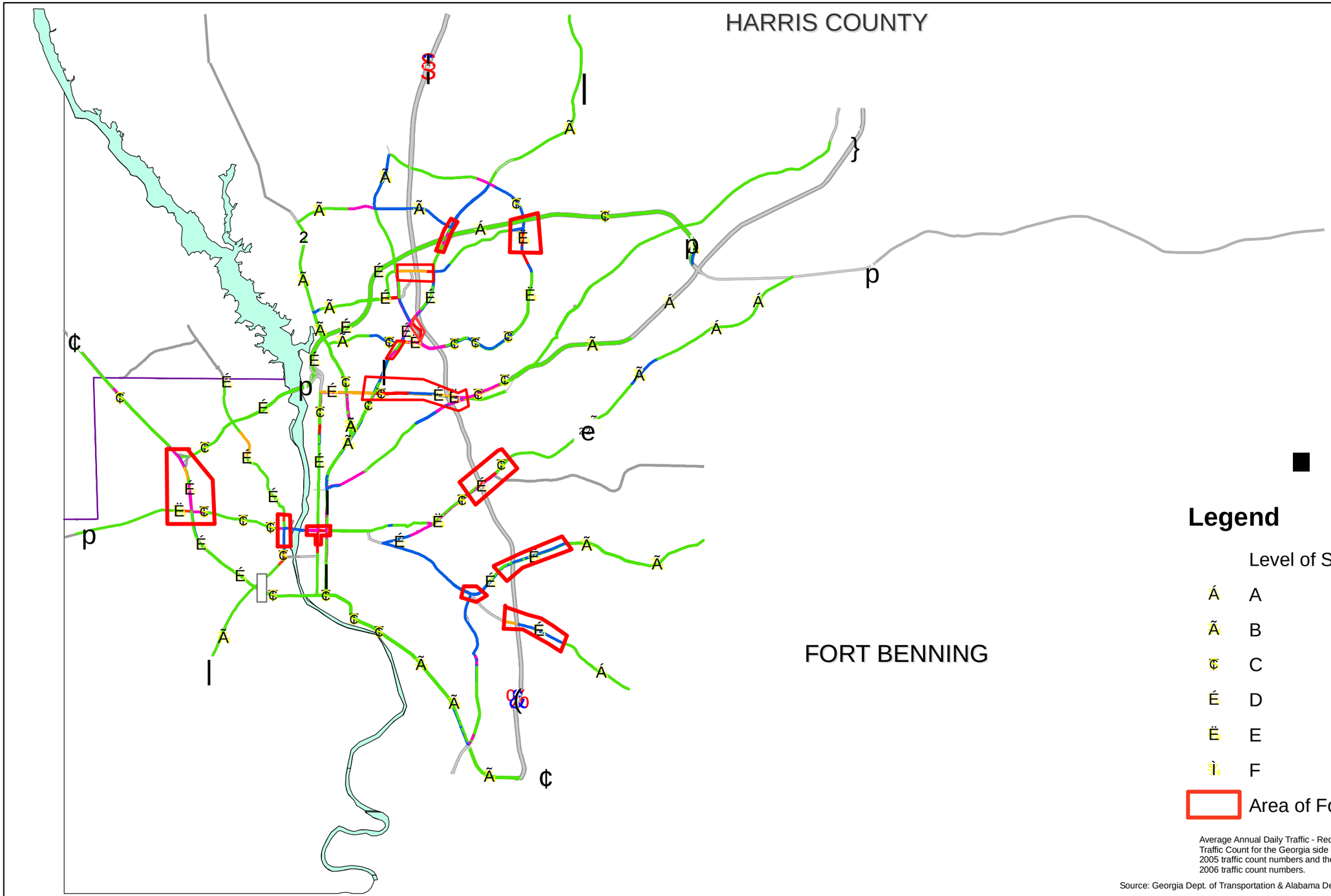
COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 6-4: TOP 50 ACCIDENT LOCATIONS IN MUSCOGEE COUNTY BETWEEN 2000-2004



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION
CONGESTION MANAGEMENT PROCESS 2007 UPDATE
FIGURE 6-5: AREAS OF FOCUS



Legend

Level of Service Rating

- A
- B
- C
- D
- E
- F
- Area of Focus

Average Annual Daily Traffic - Red.
Traffic Count for the Georgia side of the CPCMPO has 2005 traffic count numbers and the Alabama side has 2006 traffic count numbers.

Source: Georgia Dept. of Transportation & Alabama Dept. of Transportation

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

2nd AVENUE

CMP STUDY—SPRING 2007
VICTORY DRIVE TO
MANCHESTER EXPRESSWAY

CONGESTION LEVELS

- Serious
- Congested
- Marginal
- Okay
- Good

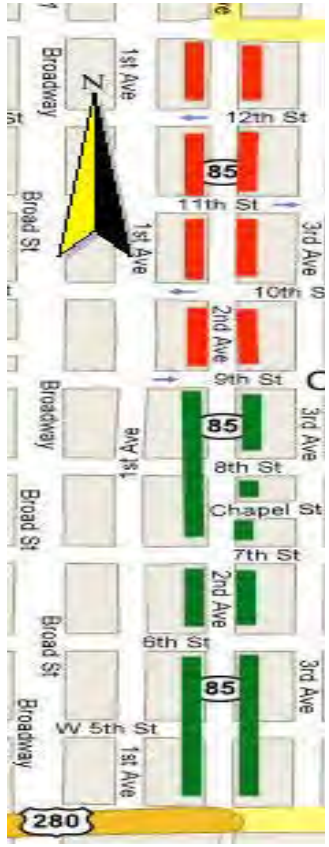
Level of Service
A-F letter grades

Accident Locations

	Distance	Southbound	Northbound
4th St.	0.23	GOOD	
6th St.	0.39	GOOD	MARGINAL
9th St.	0.26	GOOD	MARGINAL
11th St.	0.27	GOOD	MARGINAL
13th St.	0.13	GOOD	SERIOUS
14th St.	0.41	GOOD	MARGINAL
17th St.	0.50	GOOD	GOOD
23rd St.	0.29	OK	GOOD
28th St.	0.26	CONGESTED	GOOD
32nd St.	0.20	CONGESTED	GOOD
35th St.	0.17	CONGESTED	GOOD
38th St.	0.31	OK	OK
42nd St.	0.26	CONGESTED	GOOD
Manchester			MARGINAL

Northern
Manchester Expwy. to 27th

Middle
27th to 14th St.



Southern
14th St. to Victory

Potential Causes for Congestion:

- AM and PM Traffic in and out of downtown leading to congestion especially between 8th and 23rd Sts.
- Street parking and pedestrian crossings causes travel delay and increases incident risk.
- Inconsistency in the number of lanes (drop from 4 to 2 lanes) along the route causes hindrance in the free-flow of traffic
- Signal Co-ordination improvements are (drop from 4 to 2 lanes) along the route needed in the down-town portion of the route.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

2nd AVENUE
CMP STUDY—SPRING 2007
VICTORY DRIVE
TO MANCHESTER EXPWY.

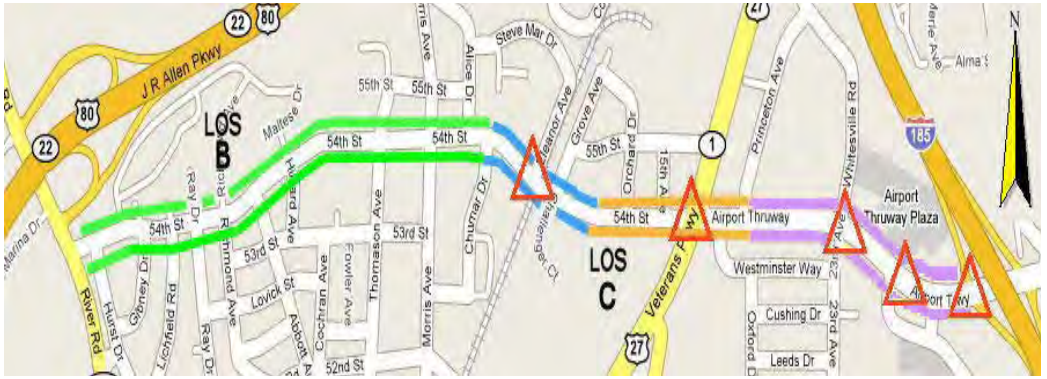
Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	**V/C Ratio**	**Arterial Intersection LOS**	**Transit System Measures**	Incident Management
2nd Avenue					
TDM Measures	▶	▶	▶	▶	▶
Traffic Operations Imp.	▲	▲	▲	▶	▶
Growth Management	▶	▶	▲	▶	▶
Access Management	▶	▲	▲	▶	▲
Intelligent Transportation	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

54TH STREET & AIRPORT THRUWAY

CMP STUDY—SPRING 2007
RIVER ROAD TO WARM SPRINGS ROAD



Above: Western half of 54th Street—River Road to I-185
Below: Eastern half from I-185 to Miller Road

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

	Distance	Eastbound	Westbound
River Road			Good
Morris Ave.	0.86	Good	Ok
Veterans Pkwy.	0.61	Congested	Congested
Armour Rd	0.84	Marginal	Good
W. Britt David	0.43	Good	Good
Windsor Dr.	1.32	Good	Ok
Warm Springs Rd.	0.74	Good	

Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▶	▶	▶	▶	▶
Traffic Oper. Imp.	▲	▲	▲	▶	▶
Growth Management	▶	▶	▲	▶	▶
Access Maangement	▶	▲	▲	▶	▲
Intelligent Transportation	▲	▶	▲	▶	▶

Potential Causes for Congestion:

- Heavy traffic volume in the vicinity of Veterans Parkway and I-185.
- Intersection geometry anomalies such as the heavy left turn volume onto Veterans Parkway from WB Airport Thruway causes traffic backup along the route.
- High accident locations at intersections along Airport Thruway between Veterans Parkway and I-185.
- Numerous businesses along Airport Thruway leads to issues with accessing businesses.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BRADLEY PARK DRIVE

CMP STUDY—SPRING 2007
RIVER ROAD TO WHITESVILLE ROAD

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

	MILEAGE	WESTBOUND	EASTBOUND
River Road		MARGINAL	
Brookstone Parkway	0.68	GOOD	OK
Belfast Avenue	0.6	GOOD	GOOD
Whittlesey Road	0.13	SERIOUS	MARGINAL
Whitesville Road	0.18		SERIOUS

Potential Causes for Congestion

- Congestion occurring in proximity to Whitesville Road and Whittlesey Road due to high volumes of retail activity.
- High turning volumes at Bradley Park/Green Island Road and River Road intersection, causing delays on side roads and southbound River Road.

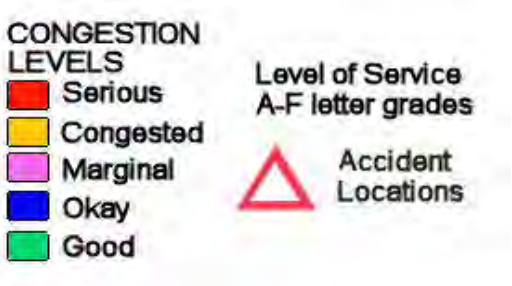
Mitigation Strategies and Associated Impact on CMP Performance

Btadley Park Drive	Travel Time	V/C Ratio	Arterial Intersection LOS	Transit System Measures	Incident Mgmt.
TDM Measures	►	►	▲	►	►
Traffic Operational Imp.	▲	▲	▲	►	►
Growth Management	►	►	▲	►	►
Access Management	►	▲	▲	►	▲
Intelligent Transportation	▲	►	▲	►	►

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BUENA VISTA ROAD

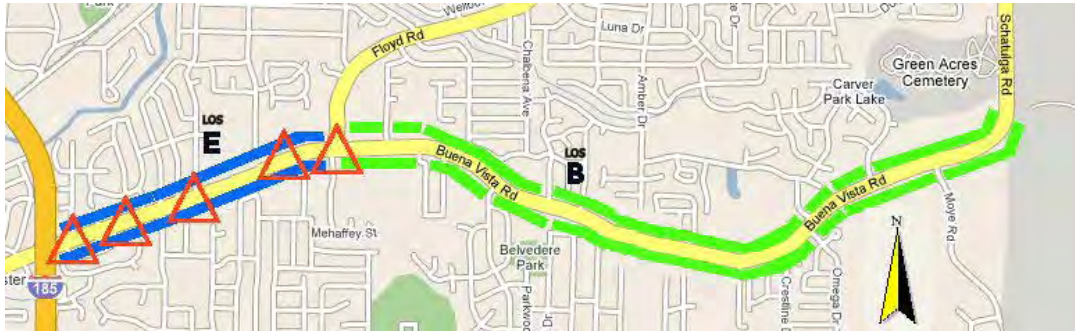
CMP STUDY—SPRING 2007
FROM WYNNTON ROAD
TO SCHATULGA ROAD



Potential Causes For Congestion:

- Two schools along the route add to traffic delays.
- High number of turning vehicles into retail areas near I-185.
- Absence of two-way (center) turn lanes along the 2-lane segment of the route.
- Regular train stoppages at railroad crossing at Buena Vista/Andrews/St. Marys/Brennan Road back up traffic significantly and disrupt traffic flow

Above: Western side of Buena Vista Road



Above: Eastern side of Buena Vista Road: I-185 interchange to Schatulga Road.

	Distance (miles)	Eastbound	Westbound
Wynnton Road	—	—	GOOD
Brown Avenue	0.55	GOOD	MARGINAL
Andrews Road	1.18	OK	GOOD
Saint Marys Road	0.17	OK	OK
Steam Mill Road	0.45	MARGINAL	CONGESTED
I-185 interchange	0.55	OK	OK
McBride Drive	1.10	GOOD	OK
Schatulga Road	2.60	GOOD	—

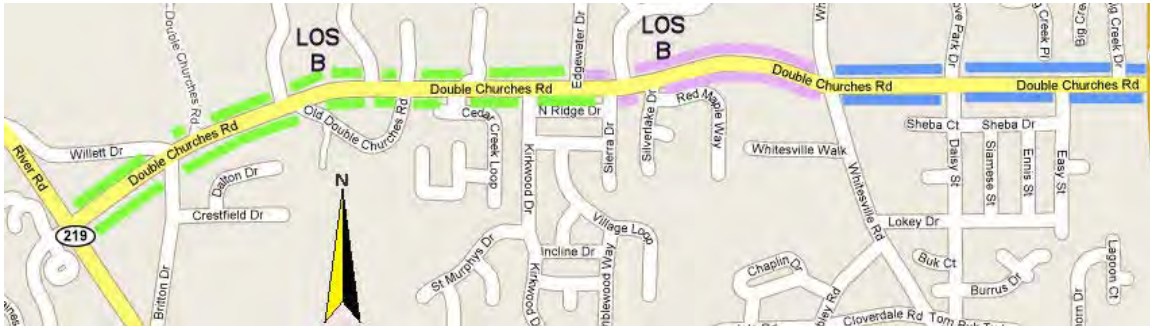
Mitigation Strategies and Associated Impact on CMP Performance Measures

Buena Vista Road	Travel Time	V/C Ratio	Arterial/Intersection LOS LOS	Transit System Measures	Incident Management
TDM Measures	▶	▶	▶	▶	▶
Traffic Oper. Imp.	▲	▶	▲	▶	▲
Transit Oper. Imp	▲	▶	▲	▲	▲
Access Management	▲	▶	▲	▶	▲
Capacity Expansion	▲	▲	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

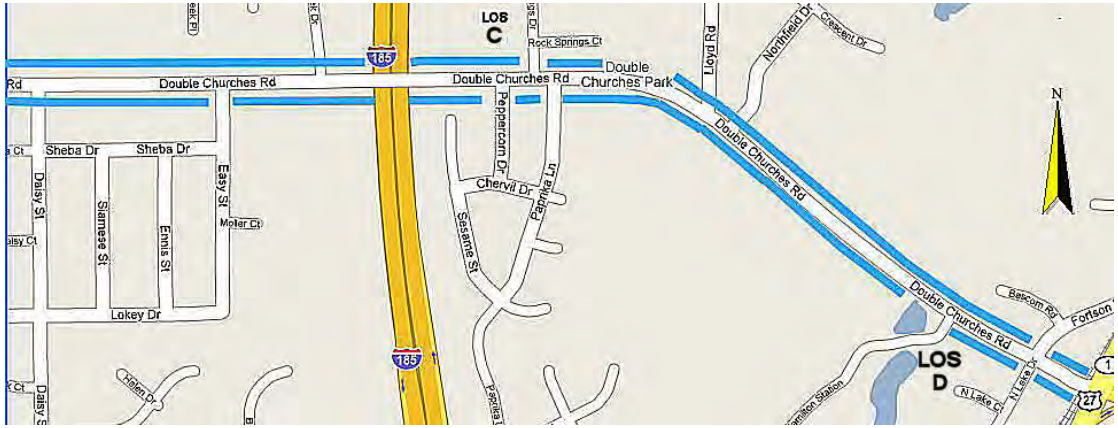
DOUBLE CHURCHES ROAD

CMP STUDY—SPRING 2007
RIVER ROAD to FORTSON ROAD



Above: Western half of Double Churches (River Road to I-185 overpass)

Below: Eastern half of Double Churches (I-185 to Veterans Parkway)



CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

Potential causes of congestion:

- School zone speed limits around intersection of Double Churches and Whitesville affects overall level of service for roadways when activated.
- New commercial and residential development around intersections with Fortson Road and Whitesville is resulting in more volume.

	Distance (Miles)	Eastbound	Westbound
River Road	—	--	MARGINAL
Britton Drive	0.23	OK	GOOD
Edgewater Dr	0.78	GOOD	GOOD
Whitesville Road	0.49	MARGINAL	OK
Fortson Road	1.42	OK	—

Mitigation Strategies and Associated Impact on CMP Performance Measures

Double Churches Road	Travel Time	V/C Ratio	Arterial LOS	Transit System Measures	Incident Mgt.
TDM Measures	▲	▶	▲	▶	▶
Traffic Operational Imp.	▲	▶	▲	▶	▶
Non Motorized Modes	▲	▶	▲	▶	▶
Access Management	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FOREST ROAD

CMP STUDY—SPRING 2007
MACON ROAD TO SCHATULGA ROAD

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

Potential causes for congestion:

- Two schools along the route add volume to roadway as well as utilize reduced speed limits.
- High number of turning vehicles into adjacent residential streets and houses.
- Reduced capacity at locations where 4 lanes transition into 2 lanes.
- Absence of left turn lanes along the two lane segment of the route.

	Distance (miles)	Eastbound	Westbound
Schatulga Road		GOOD	
Woodruff Farm	1.98	OK	OK
Elm Drive	1.6	MARGINAL	MARGINAL
Macon Road	0.65		OK

Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▶	▶	▶
Traffic Operational Imp.	▲	▲	▲	▶	▲
Access Management	▲	▲	▶	▶	▲
Capacity Expansion	▲	▲	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FORT BENNING ROAD & BRENNAN ROAD

CMP STUDY—SPRING 2007
BUENA VISTA ROAD TO VICTORY DRIVE

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

Potential Causes of Congestion:

- High number of turning vehicles into adjacent residential streets and houses and commercial properties.
- Reduced capacity as 4 lanes get converted into 2 lanes.
- Lack of center turn lanes along the 2-lane route.
- Volume to Capacity issues along the route on both eastbound and westbound lanes.

	Distance (mi.)	SOUTHBOUND	NORTHBOUND
Buena Vista Road			MARGINAL
Brennan Road	0.01	MARGINAL	MARGINAL
Old Cusseta	0.40	OK	MARGINAL
Baker Plaza	0.36	GOOD	OKAY
Albian Way	0.46	OK	GOOD
Levy Road	0.42	GOOD	GOOD
Victory Drive	0.08	MARGINAL	

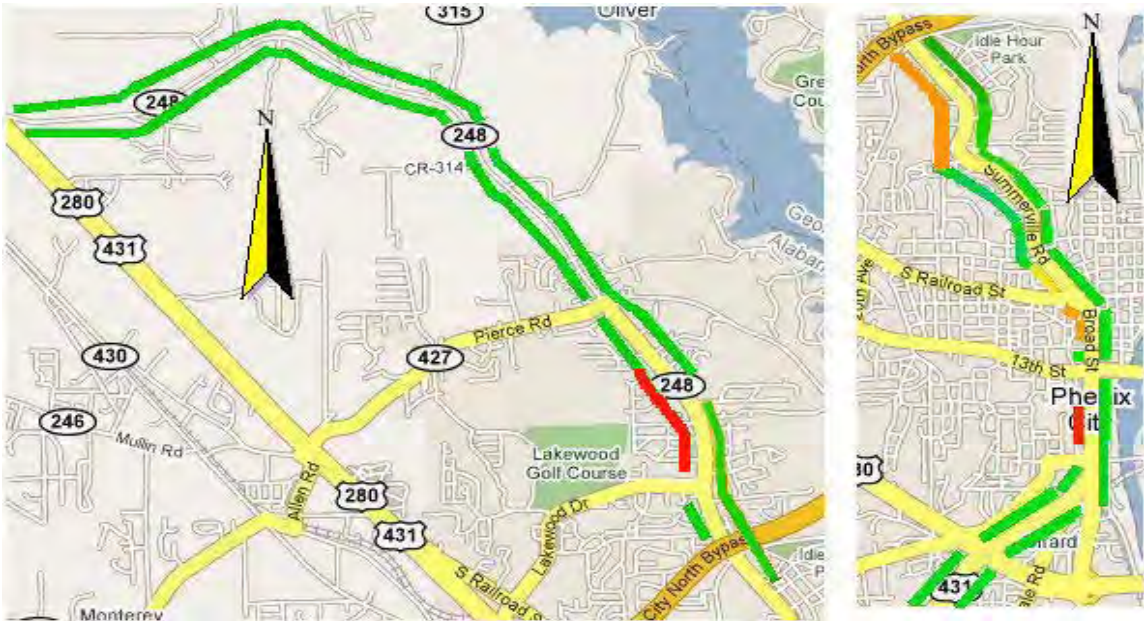
Mitigation Strategies and Associated Impact Upon CMP Performance Measures

Ft. Benning/Brennan Roads	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▶	▶	▶
Traffic Operation Imp.	▲	▲	▲	▲	▲
Access Management	▲	▲	▶	▶	▲
Capacity Expansion	▲	▲	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

LEE ROAD/SUMMERVILLE ROAD
MARTIN LUTHER KING JR. DRIVE

CMP STUDY—SPRING 2007
RIVER ROAD TO WHITESVILLE ROAD



	Distance (miles)	Southbound	Northbound
3rd Street South	0.41	GOOD	GOOD
US 280	1.10	GOOD	GOOD
Broad Street	1.11	GOOD	GOOD
Dillingham Street	0.08	SERIOUS	GOOD
13th Street	0.53	GOOD	GOOD
14th Street	0.13	CONGESTED	GOOD
North Railroad St	0.34	OK	GOOD
21st Street	0.31	GOOD	GOOD
25th Street	0.35	GOOD	GOOD
30th Street	0.50	GOOD	OK
US 80 (underpass)	0.80	GOOD	CONGESTED
44th Street	0.36	GOOD	GOOD
Fletcher Street	0.47	GOOD	SERIOUS
Pierce Road	0.77	GOOD	GOOD
Lee Road 318	1.98	GOOD	GOOD
US 280	2.13	GOOD	GOOD

Left Above: Segment from US 280 at Smith Station to US 80 Bypass
Right Above: Segment from US 80 bypass to US 280

Potential Causes for Congestion

- One school along the route adds to the traffic volume. The absence of turn lanes into the school creates travel time delays.
- Reduced capacity as 4 lanes are reduced into 2 lanes.
- Absence of center turn lanes along the 2-lane segments.
- Poorly planned curb cuts.
- Heavy turning volume onto US80 from Stadium Drive.
- Heavy traffic volume between North Railroad Street and 13th Street.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

LEE ROAD/SUMMERVILLE ROAD/
MARTIN LUTHER KING JR. DRIVE
CMP STUDY—SPRING 2007
SOUTHBOUND TRAFFIC

Mitigation Strategies and Associated Impact on CMP Performance Measures

Lee Summerville MLK	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▲	▶	▶
Traffic Operational Imp.	▲	▲	▲	▶	▶
Non Motorized Modes	▲	▲	▶	▶	▲
Growth Management	▲	▲	▲	▶	▶
Access Management	▲	▲	▲	▶	▶
Intelligent Transportation	▲	▲	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MACON ROAD

CMP STUDY—SPRING 2007

TENTH STREET TO FLAT ROCK ROAD

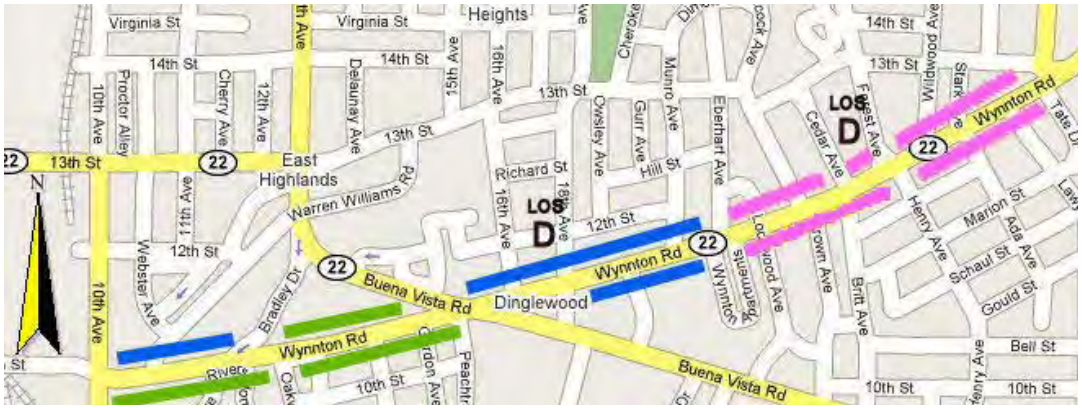
CONGESTION LEVELS

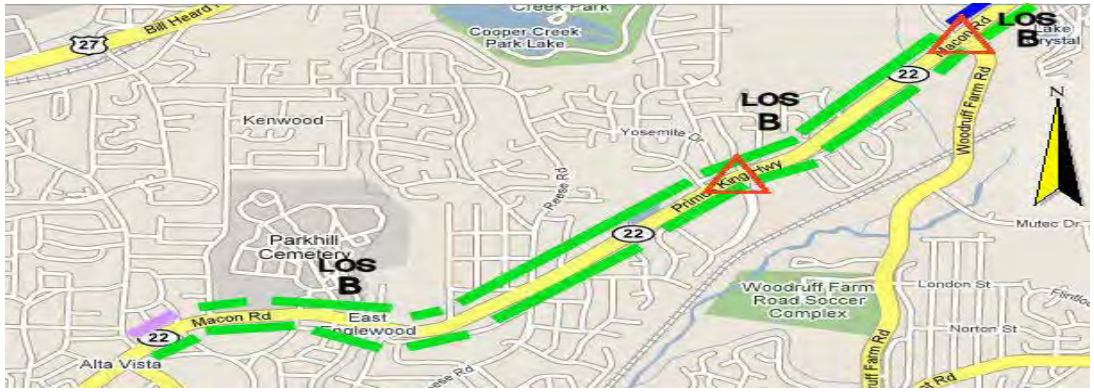
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

	Distance (mi)	Eastbound	Westbound
10th St.			GOOD
Buena Vista	0.59	MARGINAL	OK
Peacock Ave	0.53	OK	GOOD
13th St	0.44	MARGINAL	GOOD
I-185	1.15	MARGINAL	GOOD
Forest Road	0.28	CONGESTED	CONGESTED
Elm Drive	0.35	SERIOUS	OK
Reese Road	1.24	GOOD	MARGINAL
Woodruff Farm	1.69	GOOD	OK
Miller Road	0.65	OK	GOOD
Flat Rock Rd.	1.02	GOOD	





MACON ROAD

CMP STUDY—SPRING 2007
TENTH STREET TO FLAT ROCK ROAD

Mitigation Strategies and Associated Impact on CMP Performance Measures

Macon Road	Travel Time	V/C Ratio	Arterial Intersection/LOS	Transit System Measures	Incident Management
TDM Measures	▶	▶	▶	▶	▶
Traffic Operations Imp.	▲	▲	▲	▶	▶
Growth Management	▶	▶	▲	▶	▶
Access Management	▶	▲	▲	▶	▲
Intelligent Transportation	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MANCHESTER EXPRESSWAY

CMP STUDY—SPRING 2007
SECOND AVENUE TO MILLER ROAD

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

Potential causes of congestion:

- Heavy traffic volume in the vicinity of I-185.
- 3 of the top 10 accident locations are along this route.
- AM and PM traffic volume is high, particularly between Veterans Parkway and I-185.
- Heavy cross traffic turning volumes due to numerous job sites in area.

Above: Second Avenue to Woodruff section.

Above: Woodruff to Warm Springs section. Below: Warm Springs to Miller Road section.

	Distance Traveled	Eastbound	Westbound
Second Avenue			GOOD
River Road	0.47	MARGINAL	MARGINAL
Veterans Pkwy.	0.51	CONGESTED	CONGESTED
Woodruff Road	0.62	MARGINAL	OK
Armour Road	0.53	MARGINAL	CONGESTED
I-185	0.20	GOOD	SERIOUS
Warm Springs	1.02	MARGINAL	OK
Miller Road	2.70	GOOD	

Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial Intersection/LOS	Transit System Measures	Incident Management
Manchester Expressway					
Traffic Operations Imp	▲	▶	▲	▶	▶
Access Management	▲	▶	▲	▶	▶
Intelligent Transportation	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MOON ROAD

CMP STUDY—SPRING 2007
VETERANS PARKWAY TO MILLER ROAD

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

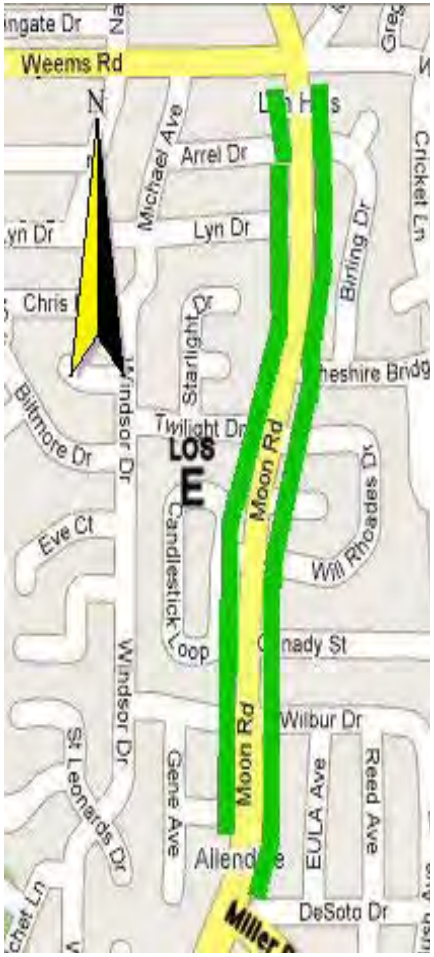
	Distance	Northbound	Southbound
Veterans Parkway	0.72	OK	MARGINAL
US 80	0.97	OK	GOOD
Weems Road	0.97	GOOD	GOOD
Miller Road	0.82		GOOD

Potential Causes for Congestion:

- Area between I-185 and Fortson Road experiences the largest average delays across the typical day.
- The largest overall delay was the southbound direction between US 80 and Weems Road in the PM Rush Hour
- Lack of center turn lanes along route.
- Lack of bicycle/pedestrian facilities in the residential areas.
- Volume to capacity issues along route.

Left: Veterans Parkway to Whittlesey Boulevard segment.

Below: Whittlesey Boulevard to Miller Rd segment



Mitigation Strategies and Associated Impact on CMP Performance Measures

Moon Road	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
Traffic Operational Imp.	▲	▶	▲	▶	▲
Growth Management	▲	▲	▲	▶	▲
Non Motorized Modes	▲	▶	▲	▶	▲

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

RIVER ROAD

CMP STUDY—SPRING 2007
DOUBLE CHURCHES ROAD
TO VETERANS PARKWAY

	Distance (miles)	Southbound	Northbound
Double Churches	—	--	GOOD
Mobley Road	0.65	OK	MARGINAL
Bradley Park	1.09	OK	GOOD
Manchester Expwy	0.96	GOOD	GOOD
39th Street	0.49	GOOD	GOOD
Veterans Pkwy	0.36	MARGINAL	—

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

Mitigation Strategies and Associated Impacts

River Road	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System Measures	Incident Management
Traffic Operational Improvements	▲	▶	▲	▶	▶
Access Management	▲	▶	▲	▶	▶
Non Motorized Modes	▲	▶	▲	▶	▶

Potential Causes of Congestion:

- Left turn lane on southbound River Road at intersection with Bradley Park Drive is too short to properly attract and facilitate left turn demand during peak AM hour.
- Right turns from southbound River Road onto Veterans Parkway are unnecessarily delayed by early activation of red right turn arrow at intersection, which does not protect nor conflict with any other legal movement at intersection.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

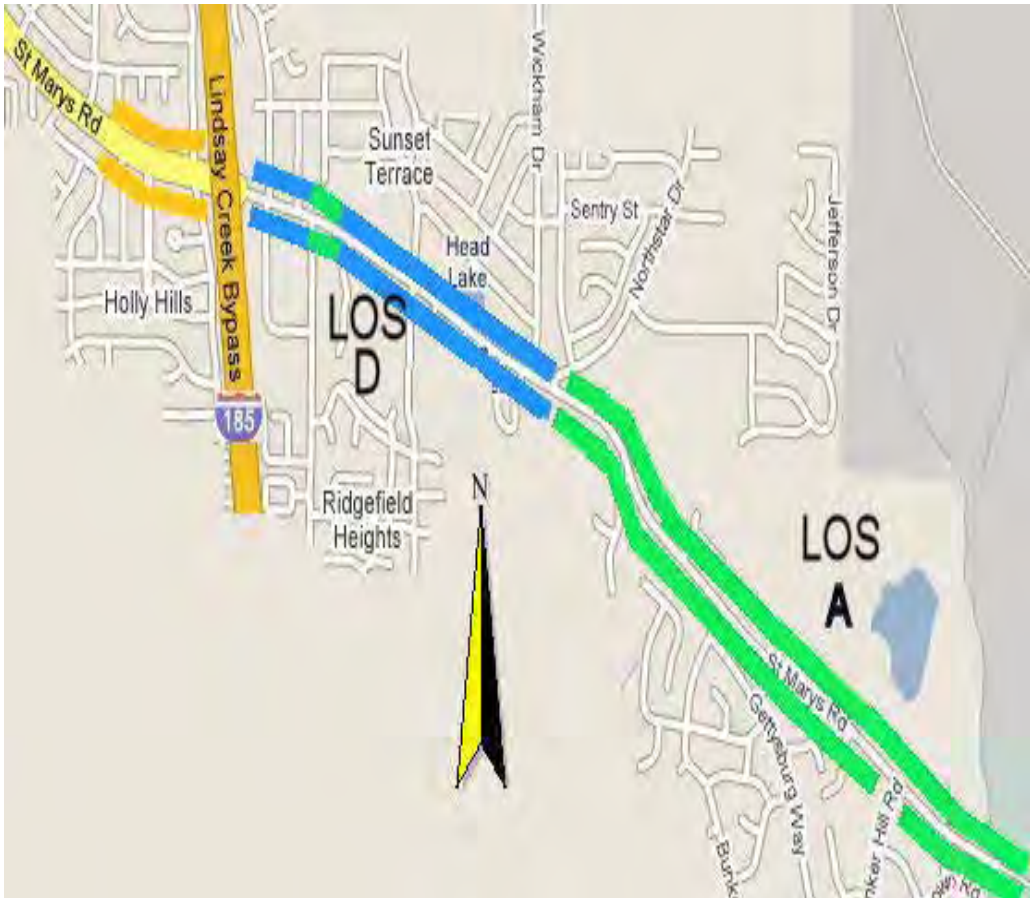
SAINT MARYS ROAD

CMP STUDY—SPRING 2007
ROBIN RD
TO FORT BENNING BOUNDARY

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations



Potential Causes of Congestion:

- Congestion is regularly occurring eastbound along the route due to increased residential development.
- The absence of a center turn lane results in left turning traffic stopping in eastbound travel lane waiting for gaps in oncoming traffic, which causes queues to quickly form behind them.
- Transportation improvement is programmed for this corridor.

Mitigation Strategies and Associated Impact on CMP Performance Measures

- Construction is underway between Brennan Road and Robin Road to widen road from two to four lanes.
- Project s to increase capacity in the segment from Robin Road to North Star Drive is currently under study.

		Eastbound	Westbound
Robin Road		-	GOOD
I-185	**0.35**	CONGESTED	GOOD
Wickham	**0.9**	MARGINAL	GOOD
End of Road	**1.6**	GOOD	-

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

US 80—THIRTEENTH STREET

CMP STUDY—SPRING 2007
JOWERS ROAD TO MACON ROAD

Above: Western segment—from Jowers Road to Broad St.

Above: Middle section from Front St. to 18th St.
Below: From 18th St. to Macon Road

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

		EASTBOUND	WESTBOUND
Jowers Road	2.51	—	GOOD
Lee Road 212	2.99	GOOD	GOOD
Woodland Drive	0.63	GOOD	GOOD
Winston Drive	1.54	GOOD	GOOD
36th Avenue	1.06	SERIOUS	GOOD
Auburn Avenue	0.12	MARGINAL	GOOD
US 280 Bypass	0.53	MARGINAL	MARGINAL
Opelika Road	0.35	GOOD	OK
17th Avenue	0.50	GOOD	GOOD
10th Avenue	0.60	GOOD	GOOD
Broad Street	0.32	MARGINAL	MARGINAL
Broadway	0.43	GOOD	OK
2nd Avenue	0.17	GOOD	GOOD
Veterans Pkwy	0.21	GOOD	MARGINAL
10th Avenue	0.41	GOOD	GOOD
13th Avenue	0.31	GOOD	OK
18th Avenue	0.44	GOOD	GOOD
Macon Road	0.73	GOOD	—

Potential causes for congestion:

- Heavy traffic headed in and out of downtown, with the heaviest concentration between Second Avenue in Columbus and Broad Street in Phenix City.
- Heavy traffic volume at the intersection of US 80 and US 280. There are also issues with volume to capacity as well.
- Heavy turning volumes because of retail and other commercial establishments along the route.
- Blocks in between Veterans Parkway and Broadway are too short for queuing volumes of vehicles on roadway at peak hours, causing added delay.

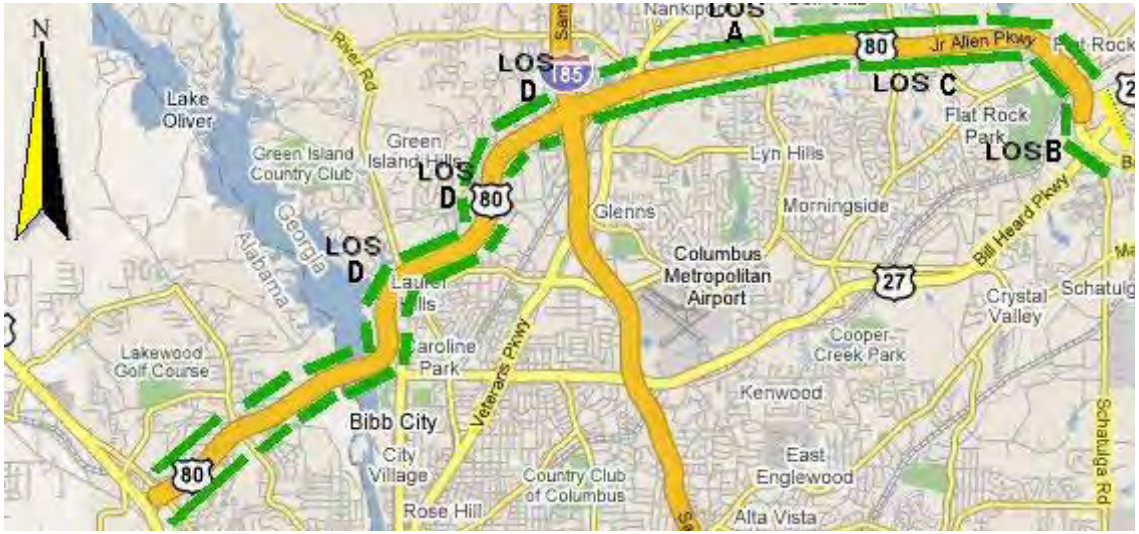
Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measurements	Incident Management
TDM Measures	▲	▶	▲	▶	▶
Traffic Operations Imp.	▲	▲	▲	▶	▶
Access Management	▲	▶	▲	▶	▲

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

US 80 - J.R. ALLEN PARKWAY

CMP STUDY—SPRING 2007
FROM US 280 to BEAVER RUN ROAD



CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

	Distance (miles)	Eastbound	Westbound
US 280			GOOD
Summerville Road	1.24	MARGINAL	GOOD
2nd Ave. (south)	1.81	GOOD	GOOD
River Road	0.33	GOOD	GOOD
Bradley Park Drive	1.57	GOOD	GOOD
I-185	1.32	GOOD	GOOD
Veterans Pkwy	0.64	GOOD	GOOD
Moon Road	1.46	GOOD	GOOD
Blackmon Rd	1.68	GOOD	GOOD
Flat Rock Rd/ Swift Mill	1.91	GOOD	GOOD
Flat Rock Rd/ Beaver Run	0.09	GOOD	

Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System Measures	Incident Mgmt.
TDM Measures	▶	▲	▶	▶	▲
Growth Management	▲	▶	▲	▶	▶
Access Management	▲	▲	▲	▶	▲
Intelligent Transportation	▲	▶	▲	▶	▲

Potential causes for congestion:

- Top accident location along ramps at Second Avenue interchange.
- Heavy traffic volume crossing between Georgia and Alabama.
- Level of service is dropping in some segments due to high volume of traffic.

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

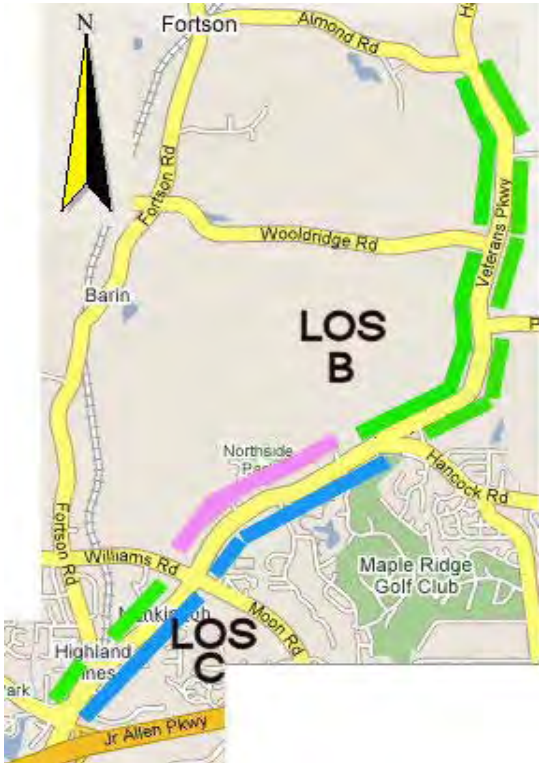
VETERANS PARKWAY

CMP STUDY—SPRING 2007
WOOLDRIDGE ROAD TO VICTORY DRIVE

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations



Above: Double Churches Rd to Wooldridge Rd.

Above: W. Britt David Rd. to Double Churches Rd.

		Southbound	Northbound
Almond Road			GOOD
Wooldridge Road	1	GOOD	GOOD
Pierce Chapel Road	0.61	GOOD	GOOD
Hancock Road	0.99	GOOD	OK
Williams Road	1.26	OK	MARGINAL
Double Churches Road	1.09	OK	GOOD
US 80 Southbound Ramp	0.32	GOOD	GOOD
Whittlesey Road	0.55	CONGESTED	MARGINAL

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

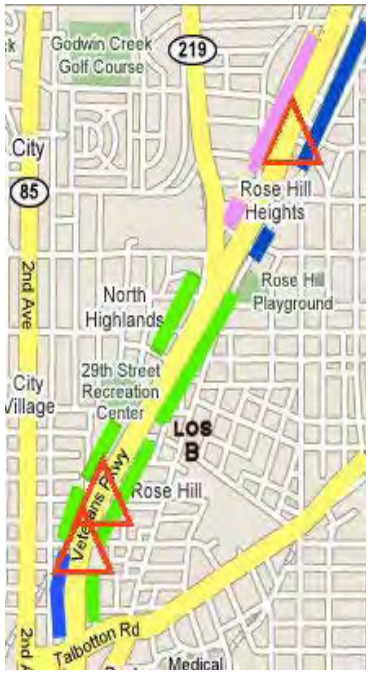
CMP STUDY—SPRING 2007
WOOLDRIDGE ROAD
TO VICTORY DRIVE

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service
A-F letter grades

Accident Locations

Above: W. Britt David to 50th St.



Above: 50th St. to Talbotton
Right: Talbotton to Victory Dr.

	Mileage	Southbound	Northbound
W. Britt David	0.75	GOOD	GOOD
Whitesville Road	0.25	MARGINAL	GOOD
Airport Thruway	0.46	MARGINAL	MARGINAL
50th Street	0.66	GOOD	GOOD
Manchester Expwy.	0.39	OK	GOOD
Neil Drive	0.63	GOOD	OK
River Road	0.32	MARGINAL	OK
29th Street	0.38	GOOD	GOOD
23rd Street	0.35	GOOD	GOOD
19th Street	0.16	OK	GOOD
16th Street	0.65	GOOD	OK
13th Street	0.27	MARGINAL	MARGINAL
9th Street	0.52	GOOD	GOOD
Victory Drive	0.66	GOOD	—

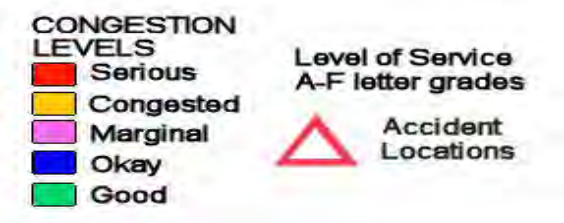
Mitigation Strategies and Associated Impact on CMP Performance Measures

Veterans Parkway	**Travel Time**	**V/C Ratios**	**Arterial/Intersection LOS**	**Transit System Measures**	**Incident Management**
TDM Measures	▲	▲	▲	▶	▶
Traffic Oper. Imprv.	▲	▶	▲	▶	▶
Non-Motorized Modes	▲	▶	▲	▶	▶
Access Management	▲	▲	▲	▶	▲
Intelligent Transportation	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VICTORY DRIVE

CMP STUDY—SPRING 2007
VETERANS PARKWAY TO I-185



Above: Veterans Parkway to North Lumpkin Road;
Below: North Lumpkin Road to I-185

	Distance (miles)	Eastbound	Westbound
I-185	—	GOOD	—
Ft. Benning Rd.	1.47	GOOD	GOOD
South Lumpkin Rd.	1.03	OK	GOOD
North Lumpkin Rd.	0.28	OK	GOOD
10th Avenue	2.18	GOOD	GOOD
Veterans Pkwy.	0.50	—	GOOD

Potential Causes for Congestion:

- Heavy peak volumes, especially between North Lumpkin Road and Fort Benning Road.
- Top accident locations along the route leading to incident delays.
- Intersection and roadway geometric issues.

Mitigation Strategies and Associated Impact on CMP Performance Measures

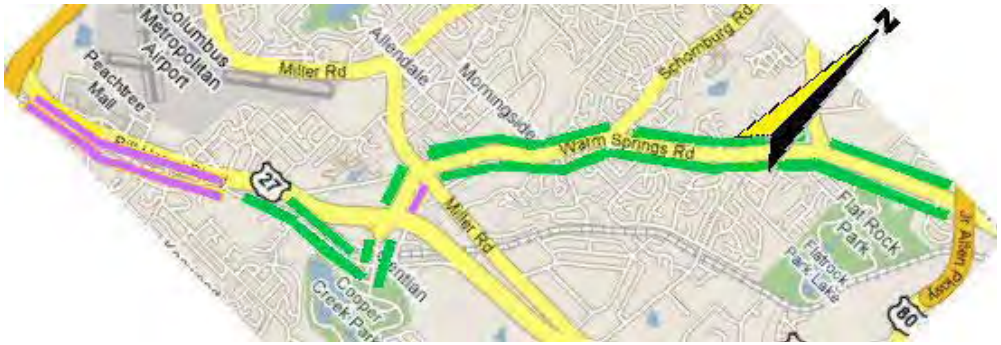
Victory Drive	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▶	▶	▶
Traffic Oper. Imp.	▲	▶	▲	▶	▶
Growth Management	▲	▶	▲	▶	▲
Access Management	▶	▲	▲	▶	▲
Non Motorized Modes	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

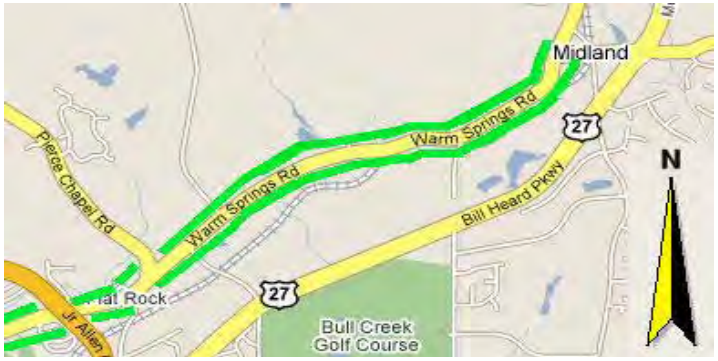
WARM SPRINGS ROAD

CMP STUDY—SPRING 2007
VETERANS PARKWAY TO COUNTY LINE ROAD

WEST SECTION from Veterans Parkway to I-185



MIDDLE SECTION from I-185 to US 80 (above),
EASTERN SECTION from US 80 to County Line Road (below)



CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service
A-F letter grades

Accident Locations

Potential Causes of Congestion

- Heavy traffic to/from the Central Business District.
- Roadway geometrics, multiple changes in lane widths from 2 to 4 lanes disrupt traffic flow.
- Lack of turn lanes create backups as delivery and industrial trucks pull in and out of businesses.
- School in vicinity add to the traffic causing delays.

	Distance	Westbound	Eastbound
to 12th Avenue	0.78	OK	MARGINAL
to 17th Avenue	0.68	GOOD	OK
to Hilton Avenue	0.61	MARGINAL	GOOD
to Armour Road	0.45	OK	OK
to I-185 (overpass)	0.29	MARGINAL	MARGINAL
to Manchester Expressway	1.15	GOOD	MARGINAL
to Manchester Expressway	1.01	GOOD	GOOD
to Miller Rd.	1.11	GOOD	MARGINAL
to Blackmon Rd.	1.08	GOOD	GOOD
to Schomburg Rd.	1.17	GOOD	GOOD
to US 80	0.86	GOOD	GOOD
to Pierce Chapel Rd.	0.51	GOOD	GOOD
to Lynch Rd.	2.02	GOOD	GOOD
to County Line Rd.	0.70	GOOD	GOOD

Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
Warm Springs Road					
Traffic Oper. Imprv.	▲	▶	▲	▶	▲
Non-Motorized Modes	▲	▲	▶	▶	▶
Access Management	▶	▲	▲	▶	▲
Intelligent Transportation	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITESVILLE ROAD

CMP STUDY—SPRING 2007
WILLIAMS ROAD TO AIRPORT THRUWAY

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

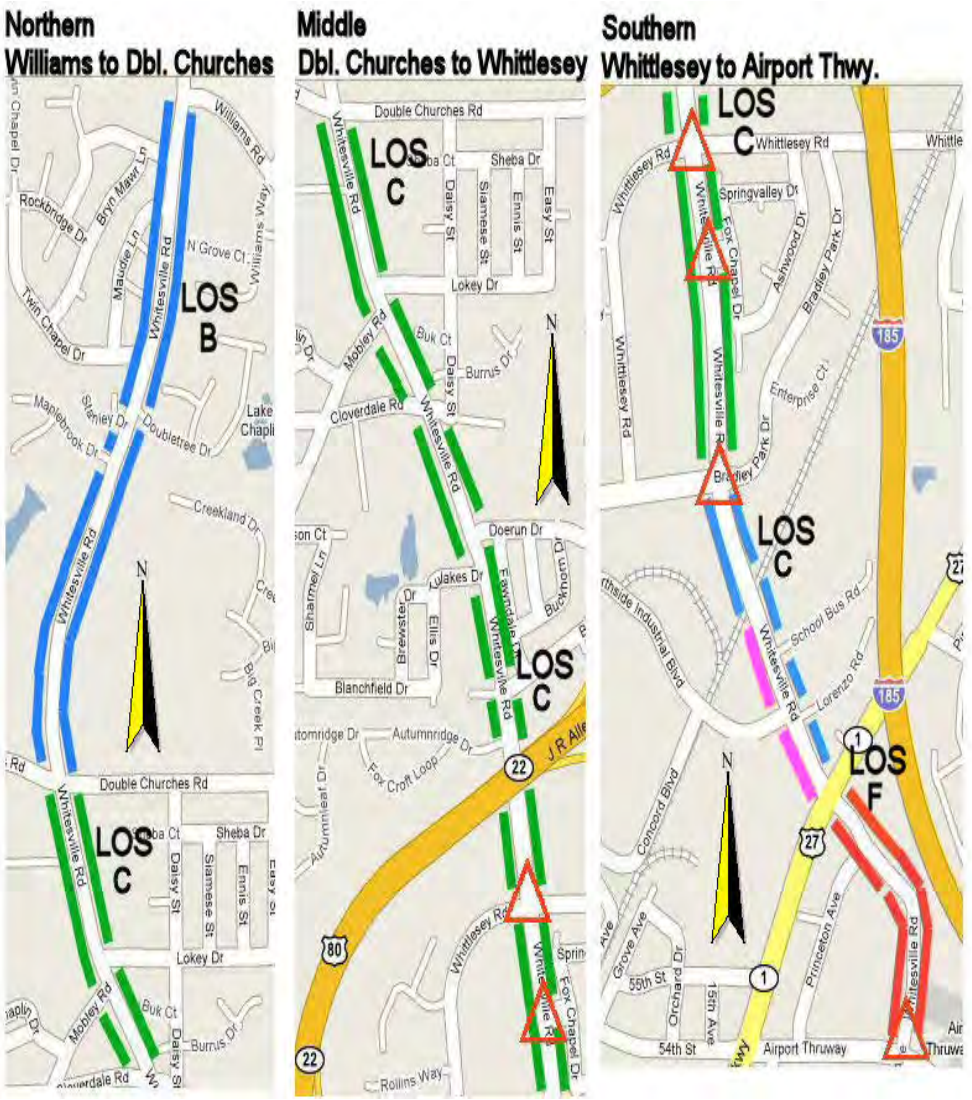
Level of Service A-F letter grades

Accident Locations

	Distance	Southbound	Northbound
	(miles)		
Whitesville Rd			GOOD
Dbl. Churches	1.04	OK	GOOD
US 80	0.99	GOOD	GOOD
Whittlesey Rd	0.22	OK	GOOD
Bradley Park Dr	0.48	MARGINAL	OK
Veterans Pkwy	0.51	CONGESTED	SERIOUS
Airport Thrwy	0.45	OK	

Potential Causes of Congestion:

- Heavy peak volumes, especially between Airport Thruway and US 80.
- Top accident locations in area along this route, leading to accident related delays.
- Heavy turning volumes because of retail and other commercial establishments along the route.
- Heavy turn volumes to and from Veterans Parkway.



Mitigation Strategies and Associated Impacts on CMP Performance Measures:

Whitesville Road	Travel Time	V/C Ratio	Arterial LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▲	▶	▶
Traffic Operational Imp.	▲	▶	▲	▶	▶
Non Motorized Modes	▲	▶	▲	▶	▶
Access Management	▲	▶	▲	▶	▶
Intelligent Transportation	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY ROAD

CMP STUDY—SPRING 2007
BRADLEY PARK DRIVE
TO VETERANS PARKWAY

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service
A-F letter grades

Accident Locations

Potential causes for congestion:

- Higher volumes of traffic using road due to opening of Columbus Park Crossing shopping center.
- Left turn lane is inadequate for volumes for eastbound traffic at Veterans Parkway and westbound traffic at Bradley Park east.
- Roadway is scheduled for widening to four lanes with

Intersecting Road	Distance (miles)	Eastbound	Westbound
Bradley Park	0.2	—	OKAY
Whitesville Rd	0.6	GOOD	OKAY
Bradley Park	0.28	OK	CONGESTED
Veterans	0.41	SERIOUS	—

Mitigation Strategies and Associated Impact On CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/Intersection LOS	Transit System Measures	Incident Management
Whittlesey Road					
Capacity Expansion	▲	▶	▲	▶	▲
Access Management	▲	▶	▲	▶	▶
Traffic Operational Improvement	▲	▲	▲	▶	▶
Non-Motorized Modes	▶	▲	▶	▲	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WILLIAMS ROAD

CMP STUDY—SPRING 2007
RIVER ROAD TO WHITESVILLE ROAD

CONGESTION LEVEL

- SERIOUS
- CONGESTED
- MARGINAL
- OKAY
- GOOD

Letters "A" - "F" = Levels of Service

△ = ACCIDENT LOCATION

	Distance	Northbound	Southbound
Whitesville Road		OK	—
I-185	0.48	GOOD	OK
Fortson Road	0.79	OK	GOOD
Veterans Pkwy.	0.72	OK	MARGINAL

Potential Causes of Congestion

- Area between I-185 and Fortson Road experiences the most delay during peak hours. Area with heavier concentration of residential development along the road.
- Lack of center turn lanes at strategic locations along this route.
- Lack of bike/pedestrian walkways, especially in the residential areas.

Mitigation Strategies and Associated Impact on CMP Performance Measures

	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System	Incident Mgmt
Traffic Operational Imp.	▲	▶	▲	▶	▲
Growth Management	▲	▲	▲	▶	▲
Non Motorized Modes	▲	▶	▲	▶	▲

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

US 280—ALABAMA

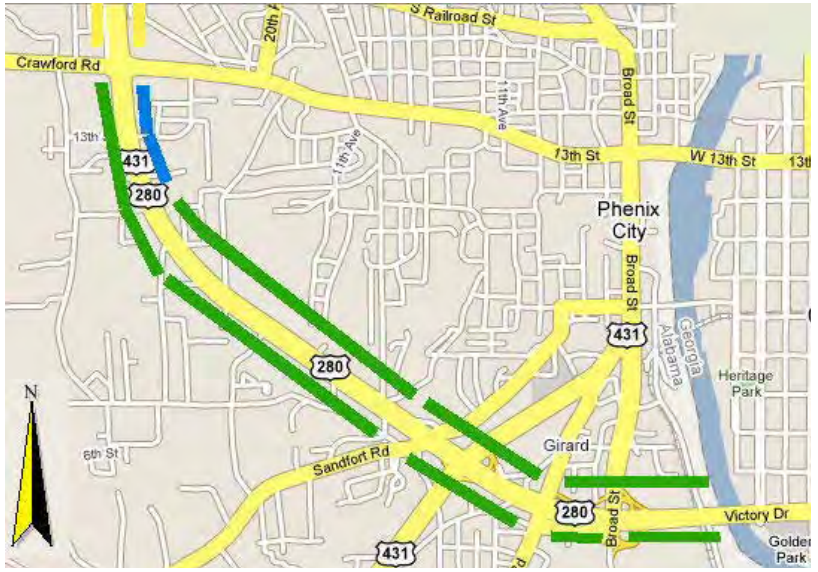
CMP STUDY—SPRING 2007
VETERANS PARKWAY TO LEE ROAD
VETERANS PARKWAY TO I-185

CONGESTION LEVELS
- Serious
- Congested
- Marginal
- Okay
- Good

Level of Service A-F letter grades

Accident Locations

Above: Crawford Road north to Lee Road
Below: Crawford Road to Veterans Pkwy



	Distance	Westbound	Eastbound
Veterans		—	GOOD
Broad Street	0.30	GOOD	GOOD
Brickyard Road	0.53	GOOD	GOOD
Crawford Road	2.42	OK	MARGINAL
Stadium Drive	0.62	MARGINAL	CONGESTED
US 80 North	0.16	GOOD	GOOD
US 80 South	0.28	OK	MARGINAL
Pierce Road	1.68	MARGINAL	GOOD
Lee Road	2.64	GOOD	—

Potential Causes for Congestion:

- Heavy traffic volume at the intersection of US 80 and US 280.
- Heavy turning volume onto US 80 from US 280.
- Heavy turning volumes because of retail and other commercial establishments along the route.

Mitigation Strategies and Associated Impact on CMP Performance Measures

Victory Drive	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▶	▶	▶
Traffic Oper. Imp.	▲	▶	▲	▶	▶
Growth Management	▲	▶	▲	▶	▲
Access Management	▶	▲	▲	▶	▲
Non Motorized Modes	▲	▶	▲	▶	▶

CHAPTER 7
SUMMARY OF FINDINGS AND RECOMMENDATIONS

INTRODUCTION

The congestion management process study has categorized the extent of congestion for the individual sections of roadway along 20 routes in the Columbus area. Of the surveyed route miles 6% in the AM peak hours and 10% in the PM peak hours experiences a “congested” or “serious” rating. Table 7-1 below shows distribution of congestion categories for all the 20 routes.

RECOMMENDED STRATEGIES

Recommended strategies to address the congestion found in the Columbus area were identified in Chapter 6. These recommendations, based on local knowledge and engineering judgment, are intended to highlight those strategies considered to be most appropriate to the location and situation were congestion was identified. All recommendations will require further study and evaluation before programming and implementation. The recommended strategies are not intended to limit the scope of further studies.

The recommended strategies are summarized in Table 7-2, according to the strategy classes and strategy groups described in Chapter 5.

TRAFFIC OPERATIONAL IMPROVEMENTS

The strategy recommended most frequently is that of traffic operation improvements. This strategy group consists of:

a) traffic signal improvements
b) roadway geometric improvements
c) time-of-day restrictions
d) ramp metering
e) commercial vehicle improvements; and
f) construction management.

This strategy is generally more efficient utilizing a combination of strategies along specific corridors. For example, in the Manchester Expressway corridor, west of I-185, a combination of signal timing / coordination enhancements coupled with geometric improvements could potentially greatly improve both accessibility and mobility.

Table 7-2:
Summary of Recommended Congestion Mitigation Strategies

ROUTES	Transportation Demand Management	Transportation Operational Improvements	Transit Operational Improvements	Non-Motorized Modes	Growth Management	Access Management	Intelligent Transportation Systems	Capacity Expansion
2nd Avenue	x	x		x		x		
54th St./Airport Thruway	x	x			x	x	x	
Bradley Park Drive	x	x			x	x	x	
Buena Vista Road	x	x	x			x		x
Double Churches	x	x			x	x		x
Forest Road	x	x				x		x
Fort Benning/Brennan	x	x				x		x
Lee/Summerville	x	x		x	x	x		x
Macon Road	x	x		x	x	x		x
Manchester Expwy		x				x	x	
River Road		x		x		x		
St. Marys Road		x	x			x		x
US 280	x	x			x	x	x	
US 80 (13th St.)	x	x				x		
US 80 (J.R. Allen Pkwy)	x				x	x	x	
Veterans Parkway	x	x		x		x	x	
Victory Drive	x	x		x	x	x		
Warm Springs		x		x		x	x	
Whitesville Road	x	x		x		x	x	
Whittlesey Road/Blvd.	x			x	x			

ACCESS MANAGEMENT

Access management is the second most recommended strategy group. This strategy encompasses such recommendations as shared access and inter-parcel connectivity. Access management techniques strive to preserve the functionality of a facility by controlling movement onto and off a facility to specified locations, and provide inter-parcel access without compelling motorists to re-enter the primary roadway facility.

TRAVEL DEMAND MANAGEMENT

Travel Demand Management (TDM) is another highly recommended group of strategies. TDM generally consist of strategies aimed at moving trip making form the peak hour by offering alternate work schedules, telecommuting options and transit and/or carpooling incentives.

TRANSIT OPERATIONAL IMPROVEMENTS

Transit operational improvements are recommended in the Veterans Parkway and Buena Vista road corridors and would consist of service related improvements and traffic operations for transit services.

NON-MOTORIZED MODE

Bicycle and pedestrian infrastructure improvement were recommended in five corridors and include the addition of sidewalks and/or bicycle lanes as well as signals for bicyclists and pedestrians.

GROWTH MANAGEMENT

Growth management is an appropriate strategy in developing areas. Techniques such as land use and corridor transportation coordination could potential address future congested locations.

INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent Transportation System (ITS) strategies are designed to inform motorist of traffic and travel conditions prior to arriving in congested conditions. The availability of this information could potential result in travel route changes that would avoid congested facilities. Other ITS strategies focus on non-reoccurring congestion such as incident management and incident response. The Columbus Consolidated Government will be constructing their ITS control center at the Government Annex building in late 2007, which will give the city the capability to observe developing congestion problems, take action by which to resolve it and alert motorists of the situation.

CAPACITY EXPANSION

Widening of the segment of Whittlesey Road between Whitesville Road and Veterans Parkway is planned to occur following the completion of right of way acquisition in approximately eighteen months. Additionally, we recommend further consideration of placing additional lanes along segments of Buena Vista Road in Columbus and Lee/Summerville Road in Phenix City.

APPENDIX A
TIME TRAVEL SURVEY RESULTS

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

2nd AVENUE

CMP STUDY—SPRING 2007

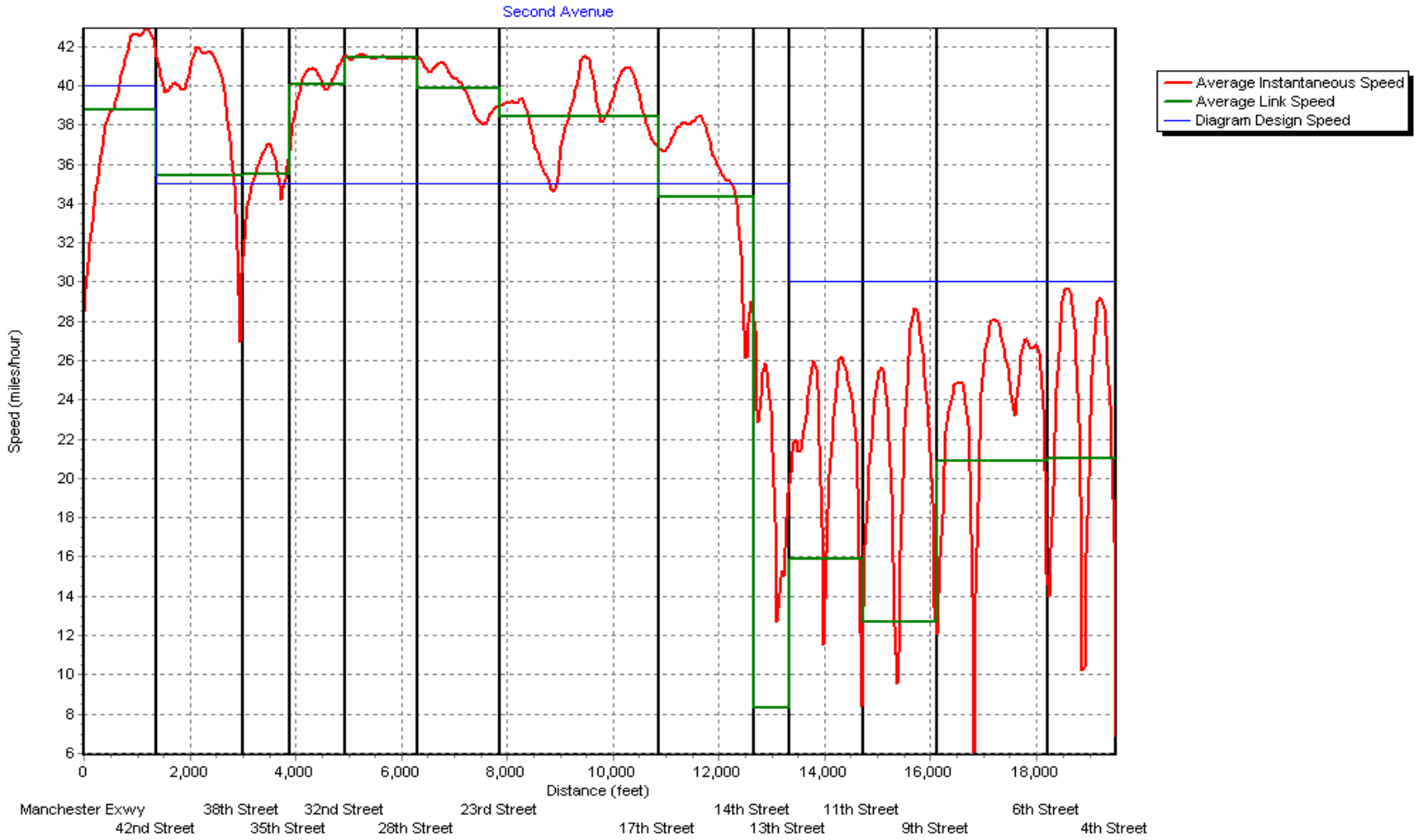
4TH AVENUE TO MANCHESTER EXPRESSWAY

			AM Peak Period			Off Peak Period			PM Peak Period		
			Southbound			Southbound			Southbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
42nd Street	0.26	35	3	35.8	GOOD	7	31.4	OK	6	32.2	GOOD
38th Street	0.31	35	6	32.1	GOOD	-3	38.8	GOOD	1	35.4	GOOD
35th Street	0.17	35	0	35.7	GOOD	5	31.2	GOOD	1	34.5	GOOD
32nd Street	0.2	35	-1	37.7	GOOD	-1	37.8	GOOD	-1	37.5	GOOD
28th Street	0.26	35	-3	39.6	GOOD	-3	38.7	GOOD	-2	37.2	GOOD
23rd Street	0.29	35	-3	38.5	GOOD	-2	37.2	GOOD	-1	36.7	GOOD
17th Street	0.5	35	2	34.8	GOOD	-4	37.7	GOOD	15	29	GOOD
14th Street	0.41	35	14	28.3	GOOD	-1	36.1	GOOD	19	26.7	OK
13th Street	0.13	35	50	7.9	SERIOUS	21	19.1	MARGINAL	23	16.4	CONGESTED
11th Street	0.27	35	39	14.1	CONGESTED	11	23.3	OK	33	15.3	CONGESTED
9th Street	0.26	35	42	13.7	CONGESTED	36	15.1	MARGINAL	43	13	CONGESTED
6th Street	0.39	35	28	19.6	MARGINAL	30	18.6	MARGINAL	26	19.4	OK
4th Street	0.23	35	12	20.9	OK	17	18.5	MARGINAL	34	14.1	CONGESTED
			AM Peak Period			Off Peak Period			PM Peak Period		
			Northbound			Northbound			Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
4th Street	0.23	35	1197	19.8	OK	20	17.9	MARGINAL	24	17.3	MARGINAL
6th Street	0.39	35	2077	20	OK	41	17.3	MARGINAL	29	19.2	MARGINAL
9th Street	0.26	35	1383	17.4	MARGINAL	29	16.9	MARGINAL	18	20	OK
11th Street	0.27	35	1423	11.1	SERIOUS	54	12.1	SERIOUS	58	11	SERIOUS
13th Street	0.13	35	672	18.6	MARGINAL	12	22.5	MARGINAL	11	21.5	MARGINAL
14th Street	0.41	35	2152	27.6	OK	4	33.2	GOOD	9	29	GOOD
17th Street	0.50	35	2654	28.4	GOOD	5	33.2	GOOD	12	29.8	GOOD
23rd Street	0.29	35	1553	37.3	GOOD	-3	39.1	GOOD	-3	38.8	GOOD
28th Street	0.26	35	1371	37.6	GOOD	-2	38.3	GOOD	-2	37.8	GOOD
32nd Street	0.20	35	1056	35	GOOD	1	34.5	GOOD	9	27.8	OK
35th Street	0.17	35	878	23.7	OK	1	34.2	GOOD	42	11.6	SERIOUS
38th Street	0.31	35	1621	37.2	GOOD	-4	40.2	GOOD	0	34.9	GOOD
42nd Street	0.26	35	1372	22.4	MARGINAL	8	27	OK	30	19.5	MARGINAL

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

2nd AVENUE

CMP STUDY—SPRING 2007
AM PEAK CONGESTION



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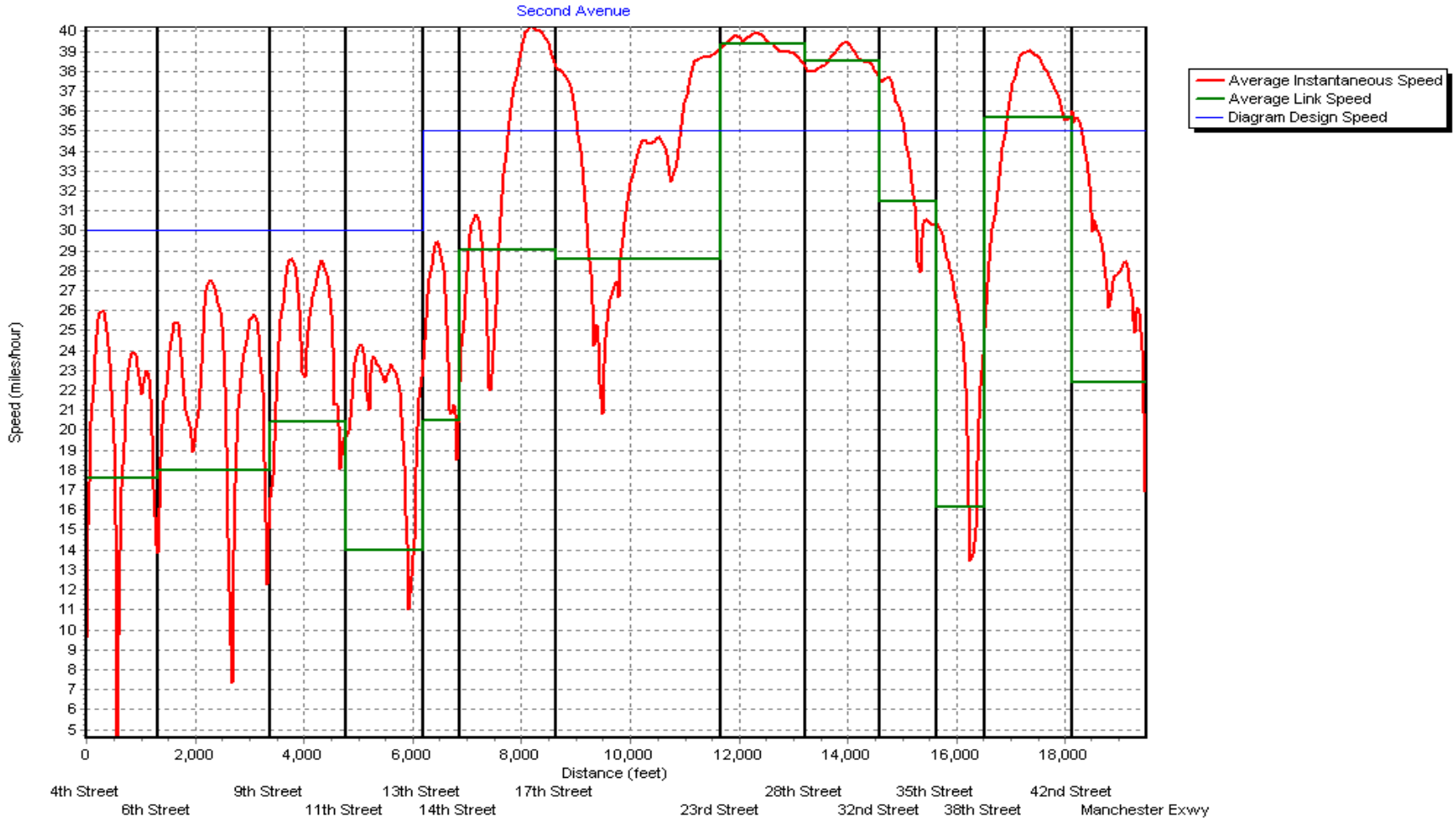
COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

2nd AVENUE

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

54TH STREET AND AIRPORT THRUWAY

CMP STUDY—SPRING 2007
RIVER ROAD TO WARM SPRINGS ROAD

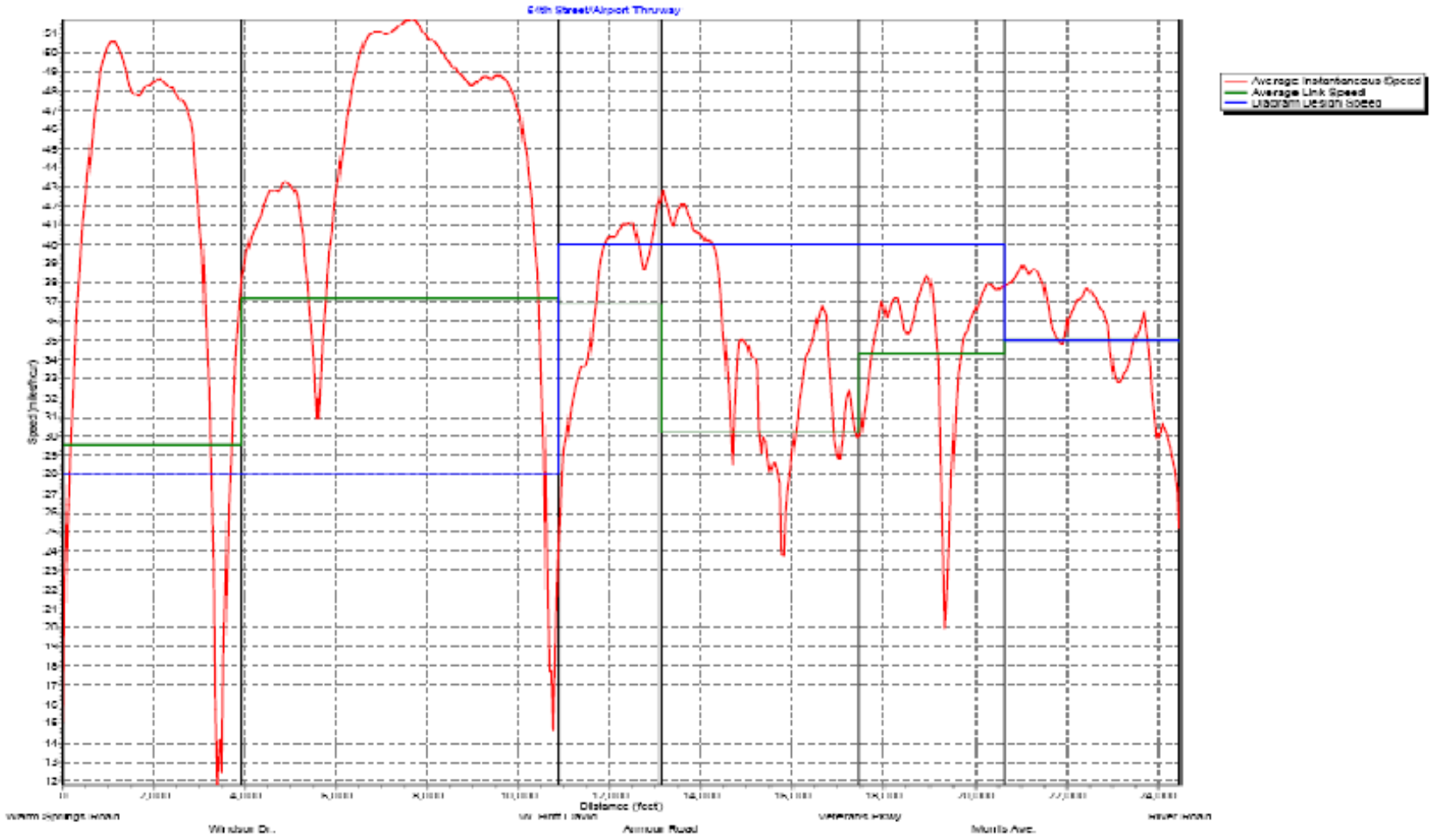
	AM Peak Hour			Off Peak Hours			PM Peak Hour		
	Eastbound			Eastbound			Eastbound		
Node	Delay (seconds)	Speed (mph)	CONGESTION	Delay (seconds)	Speed (mph)	CONGESTION	Delay (seconds)	Speed (mph)	CONGESTION
Morris Ave.	9	31.9	GOOD	3	33.6	GOOD	2	34.3	GOOD
Veterans Pkwy.	66	16.8	CONGESTED	44	21.2	MARGINAL	86	15.3	CONGESTED
Armour Rd	42	24.1	GOOD	60	21.5	MARGINAL	61	22.2	MARGINAL
W. Britt David	23	25.1	GOOD	5	37.2	GOOD	14	30.2	OK
Windsor Dr.	-8	43.1	GOOD	-6	42.4	GOOD	1	41.4	GOOD
Warm Springs Rd.	-1	31.3	GOOD	11	25	GOOD	28	22.2	OK

	AM Peak Hour			Off Peak Hours			PM Peak Hour		
	Westbound			Westbound			Westbound		
Node	Delay (seconds)	Speed (mph)	CONGESTION	Delay (seconds)	Speed (mph)	CONGESTION	Delay (seconds)	Speed (mph)	CONGESTION
Windsor Dr.	-2	29.6	OK	4	27.6	OK	51	19.1	OK
W. Britt David	-39	37.1	GOOD	-52	41.1	GOOD	-15	32.2	GOOD
Armour Road	4	36.9	GOOD	3	37.3	GOOD	65	18.7	CONGESTED
Veterans Pkwy.	28	30.2	OK	89	19.5	CONGESTED	144	14.3	SERIOUS
Morris Ave.	8	34.3	GOOD	24	27.8	OK	25	27.3	OK
River Road	2	35	GOOD	0	34.8	GOOD	6	32.7	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

54TH STREET AND AIRPORT THRUWAY

CMP STUDY—SPRING 2007
WARM SPRINGS ROAD TO RIVER ROAD
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

54TH STREET AND AIRPORT THRUWAY

CMP STUDY—SPRING 2007
RIVER ROAD TO WARM SPRINGS ROAD
PM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BRADLEY PARK DRIVE

CMP STUDY—SPRING 2007

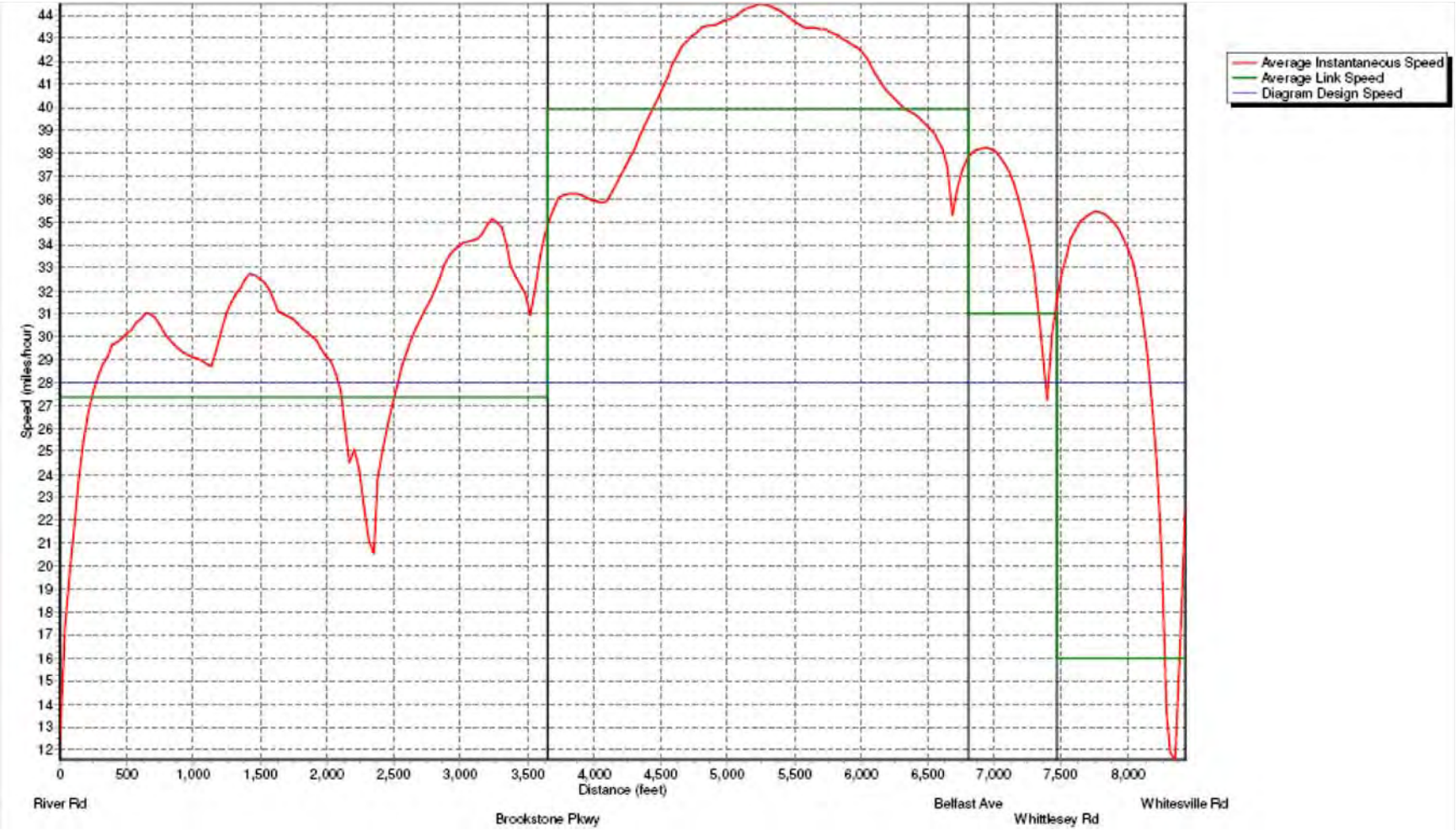
			AM Peak Period Eastbound			Off Peak Period Eastbound			PM Peak Period Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (sec)	Speed (mph)	Congestion	Delay (sec)	Speed (mph)	Congestion	Delay (sec)	Speed (mph)	Congestion
Brookstone Parkway	0.68	35	8	27.4	OK	7	26.8	OK	-18	36.3	GOOD
Belfast Avenue	0.6	35	1	39.9	GOOD	13	33.4	GOOD	18	32.7	GOOD
Whittlesey Road	0.13	35	6	31	GOOD	18	19.7	MARGINAL	19	19.8	CONGESTED
Whitesville Road	0.18	35	34	17	CONGESTED	35	16.2	CONGESTED	45	10.8	SERIOUS

			AM Peak Period Westbound			Off Peak Period Westbound			PM Peak Period Westbound		
	Distance (miles)	Free Flow (mph)	Delay (sec)	Speed (mph)	Congestion	Delay (sec)	Speed (mph)	Congestion	Delay (sec)	Speed (mph)	Congestion
Whittlesey Road	0.18	35	23	20.7	MARGINAL	7	28.7	GOOD	0.38	15.2	SERIOUS
Belfast Avenue	0.13	35	2	34.1	GOOD	10	27.3	OK	0.44	17.5	CONGESTED
Brookstone Parkway	0.6	35	6	37.7	GOOD	9	35.5	GOOD	0.88	35.2	GOOD
River Road	0.68	35	59	18	OK	26	22.3	MARGINAL	0.94	26.2	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BRADLEY PARK DRIVE

CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BRADLEY PARK DRIVE

CMP STUDY—SPRING 2007
PM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BUENA VISTA ROAD

CMP STUDY—SPRING 2007

FROM WYNNTON ROAD TO SCHATULGA ROAD

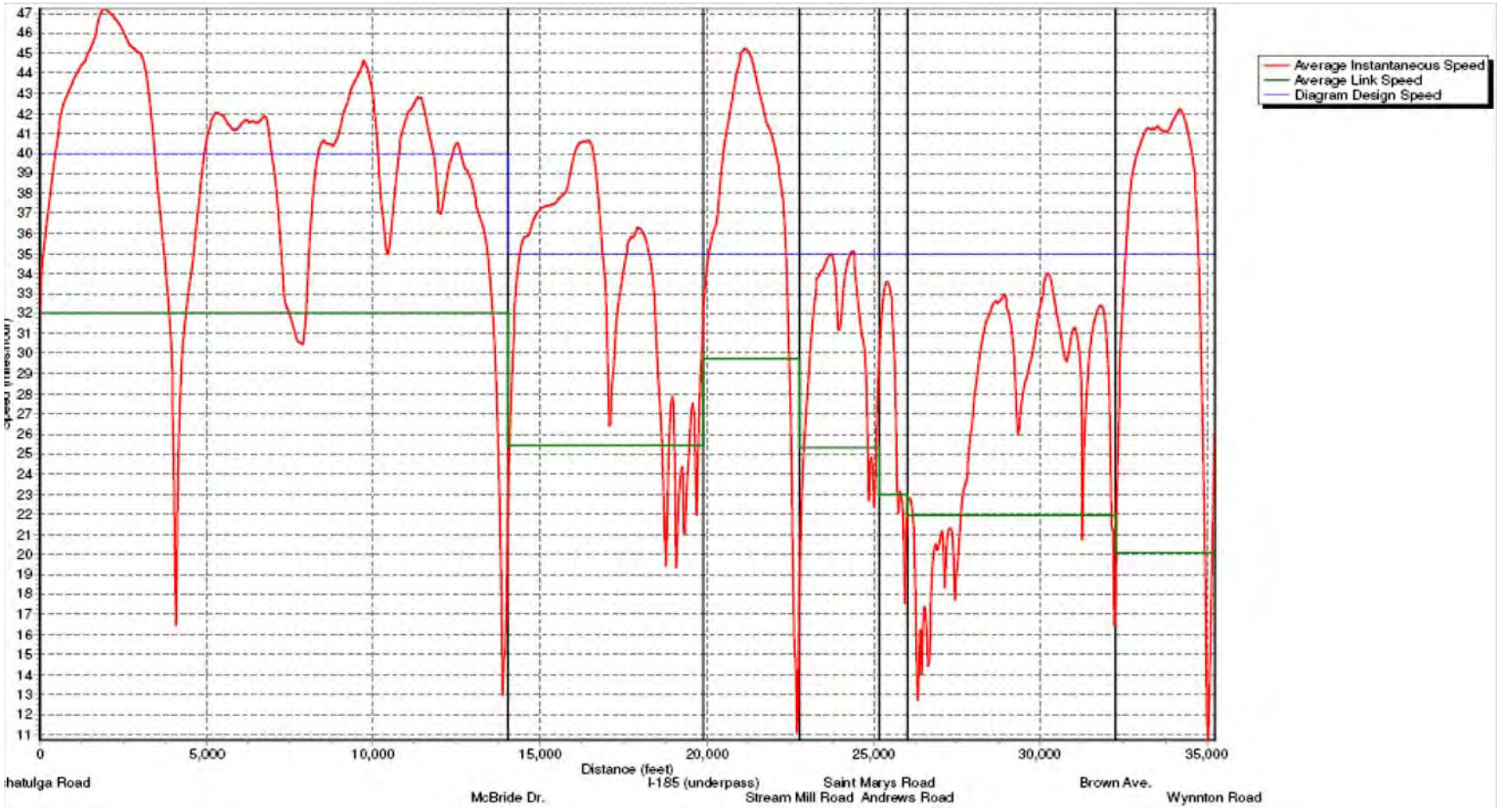
			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Wynnton Road											
Brown Avenue	0.56	35	3	33.8	GOOD	-5	38.9	GOOD	14	29	GOOD
Andrews Road	1.18	35	76	21.6	GOOD	10	33	GOOD	34	28.1	OK
Saint Marys Road	0.17	35	27	21.3	GOOD	18	23.5	OK	5	27	OK
Steam Mill Road	0.45	35	3	33.5	GOOD	1	34.7	GOOD	29	22.9	MARGINAL
I-185 interchange	0.55	35	27	27.4	GOOD	40	21.4	MARGINAL	19	26.9	OK
McBride Drive	1.10	35	72	22.5	OK	35	27.3	OK	19	31.6	GOOD
Schatulga Road	2.64	35	-19	37.7	GOOD	-57	44.3	GOOD	-54	43.7	GOOD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Schatulga Road											
McBride Drive	2.64	35	68	32	OK	12	38	OK	38	7	GOOD
I-185 interchange	1.10	35	71	25.4	OK	18	30.3	OK	30.3	68	MARGINAL
Steam Mill Road	0.55	35	10	29.7	GOOD	5	33	OK	33	-3	GOOD
Saint Marys Road	0.45	35	20	25.3	OK	22	27	GOOD	27	30	OK
Andrews Road	0.17	35	10	22.9	MARGINAL	17	26.2	GOOD	26.2	245	CONGESTED
Brown Avenue	1.18	35	93	21.9	MARGINAL	56	25.4	GOOD	25.4	60	OK
Wynnton Road	0.56	35	45	20.1	MARGINAL	31	28.6	GOOD	28.6	29	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BUENA VISTA ROAD

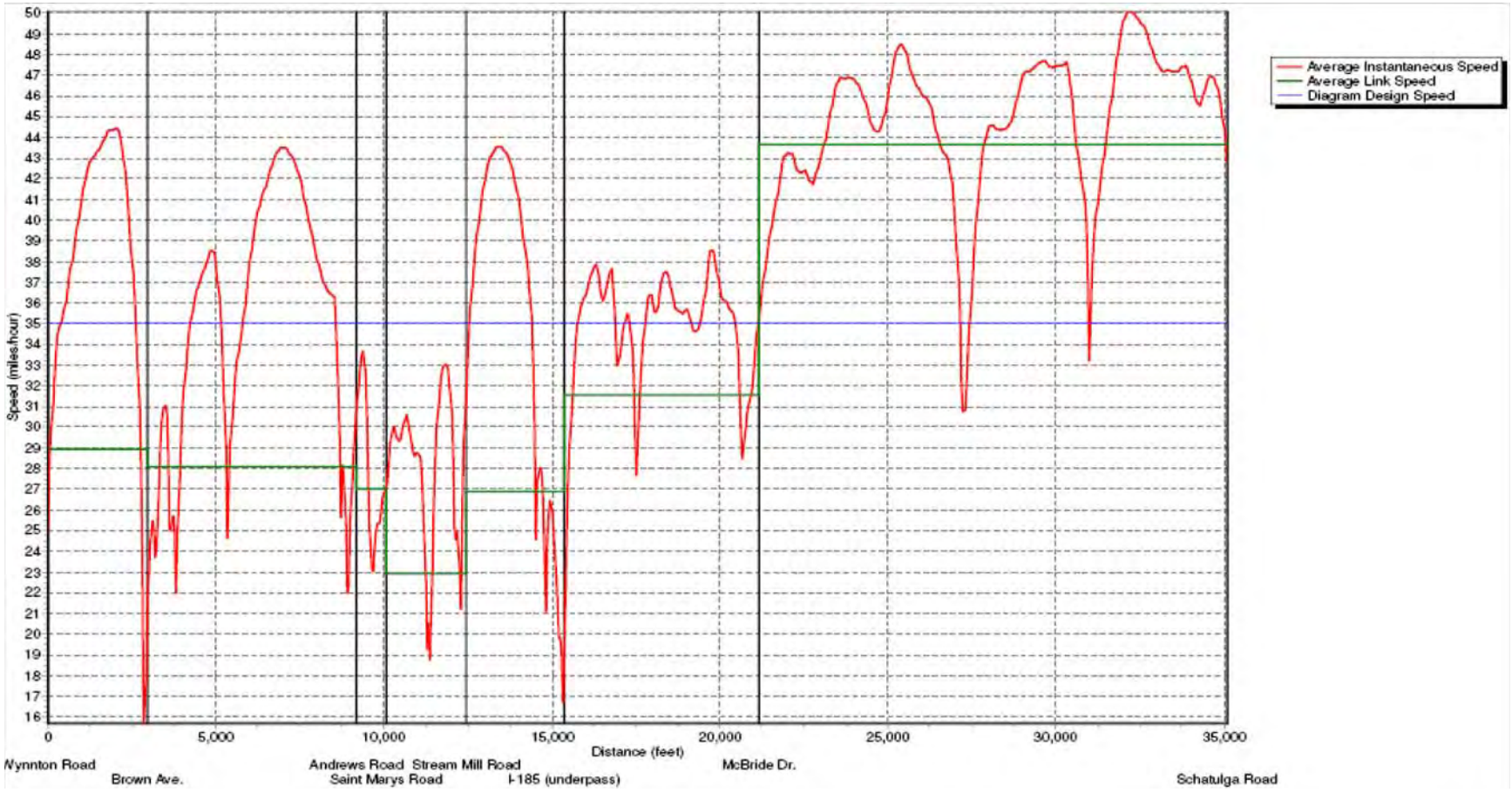
CMP STUDY—SPRING 2007
FROM WYNNTON ROAD TO SCHATULGA ROAD
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

BUENA VISTA ROAD

CMP STUDY—SPRING 2007
FROM WYNNTON ROAD TO SCHATULGA ROAD
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

DOUBLE CHURCHES ROAD

CMP STUDY—SPRING 2007
RIVER ROAD TO VETERANS PARKWAY

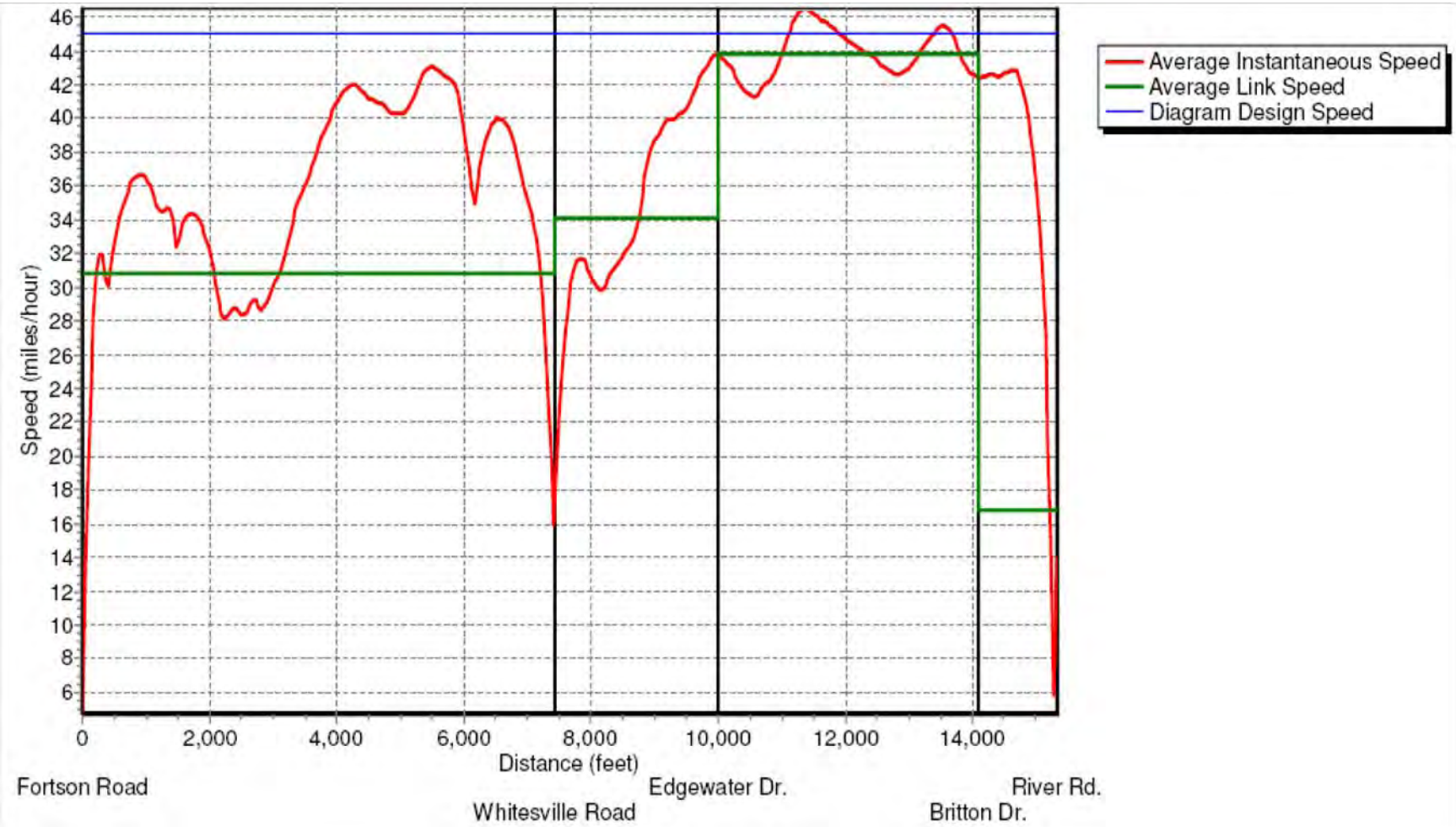
			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
River Road											
Britton Drive	0.23	35	5	35.7	OK	4	37.1	GOOD	5	35.3	OK
Edgewater Dr	0.78	35	2	44.3	GOOD	0	46.1	GOOD	2	44.3	GOOD
Whitesville Road	0.49	35	35	26.1	MARGINAL	36	24.7	MARGINAL	44	23.5	MARGINAL
Fortson Road	1.42	35	38	34.9	OK	19	40.2	GOOD	48	33.3	OK

			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Fortson Road											
Whitesville Road	1.42	35	61	30.8	OK	44	33.9	OK	68	29.7	OK
Edgewater Dr	0.49	35	13	34.2	OK	7	39	GOOD	9	37	GOOD
Britton Drive	0.78	35	3	43.8	GOOD	2	44.4	GOOD	6	42.1	GOOD
River Road	0.23	35	33	16.8	SERIOUS	12	27.4	MARGINAL	19	24.7	MARGINAL

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

DOUBLE CHURCHES ROAD

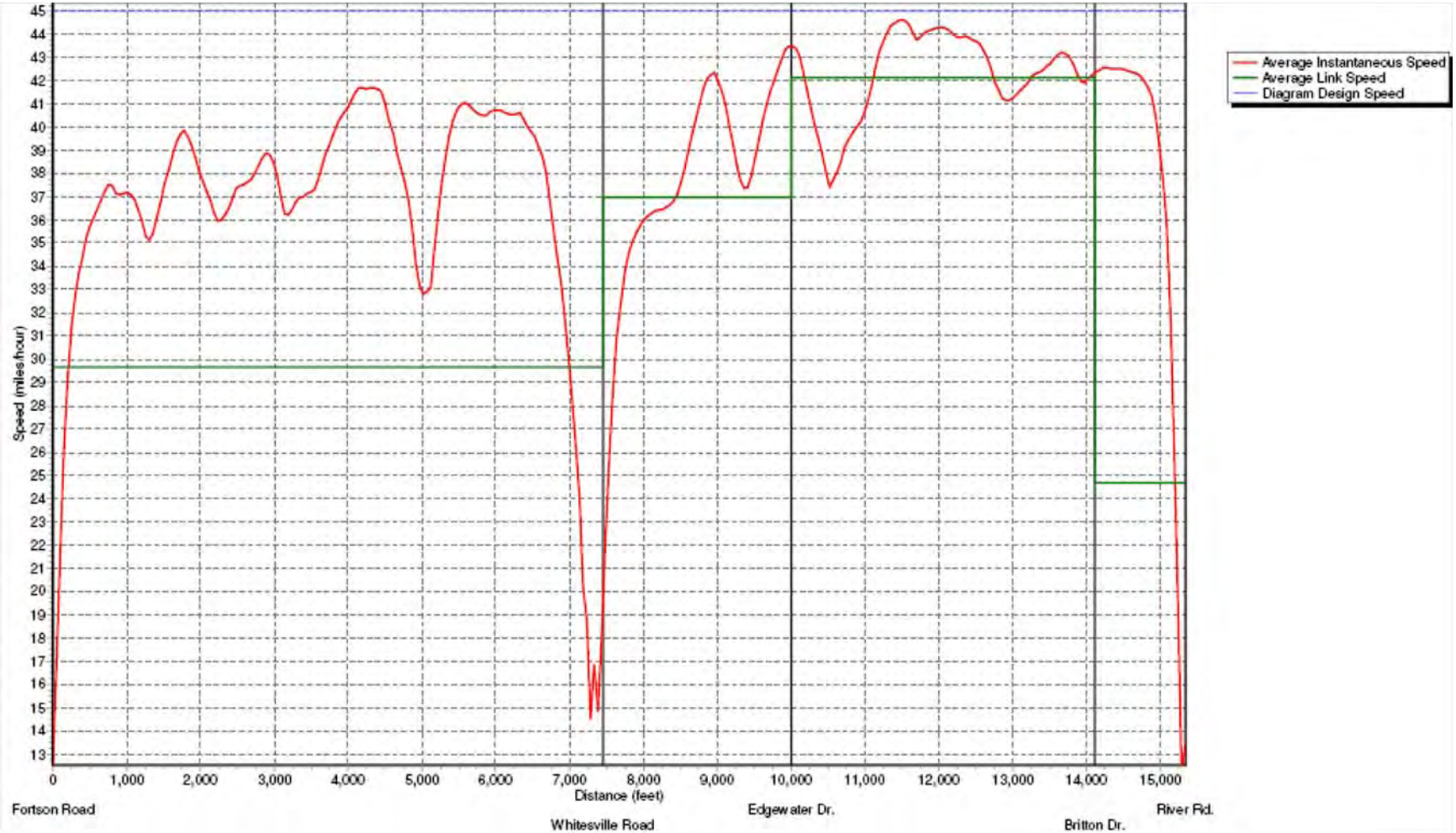
CMP STUDY—SPRING 2007
RIVER ROAD TO VETERANS PARKWAY
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

DOUBLE CHURCHES ROAD

CMP STUDY—SPRING 2007
RIVER ROAD TO VETERANS PARKWAY
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FOREST ROAD

CMP STUDY—SPRING 2007
MACON ROAD TO SCHATULGA ROAD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Woodruff Farm	0.65	35	70	16.4	CON-GESTED	11	29.3	GOOD	45	20.5	MARGINAL
Elm Drive	1.98	35	25	30.6	GOOD	66	24.9	OK	53	27.3	OK
Schatulga	1.6	35	81	29.2	OK	33	36.8	GOOD	35	36.5	GOOD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			West-bound			Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Elm Drive	1.6	35	86	28.9	OK	79	29.6	OK	74	30.7	OK
Woodruff Farm	1.98	35	86	25.5	MARGINAL	43	31	OK	54	29.1	OK
Macon Road	0.65	35	35	23.2	OK	5	31.7	GOOD	36	23.8	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

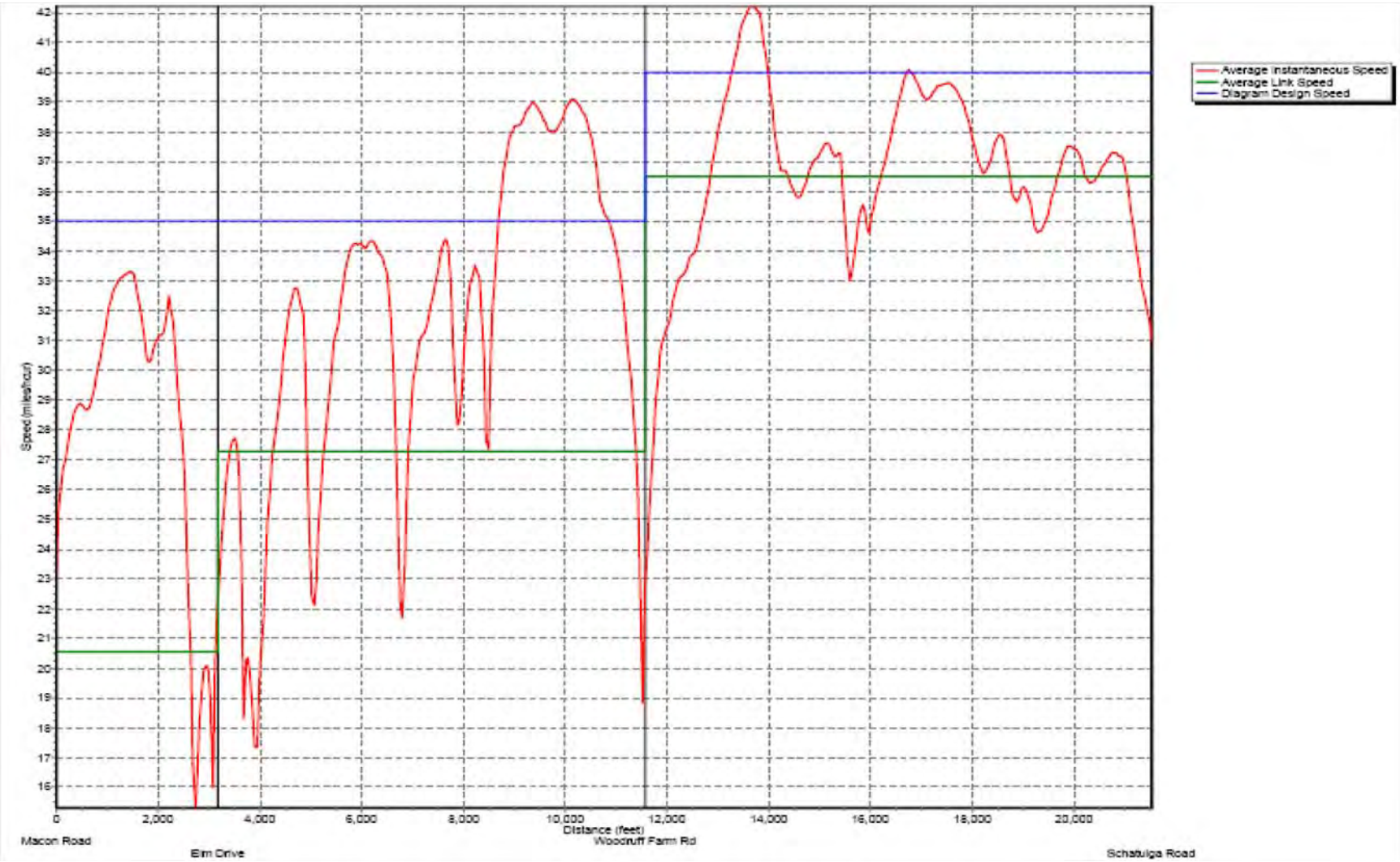
FOREST ROAD

CMP STUDY—SPRING 2007
MACON ROAD TO SCHATULGA ROAD
AM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FOREST ROAD

CMP STUDY—SPRING 2007
MACON ROAD TO SCHATULGA ROAD
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FORT BENNING/BRENNAN ROADS

BUENA VISTA ROAD TO VICTORY DRIVE
CMP STUDY—SPRING 2007

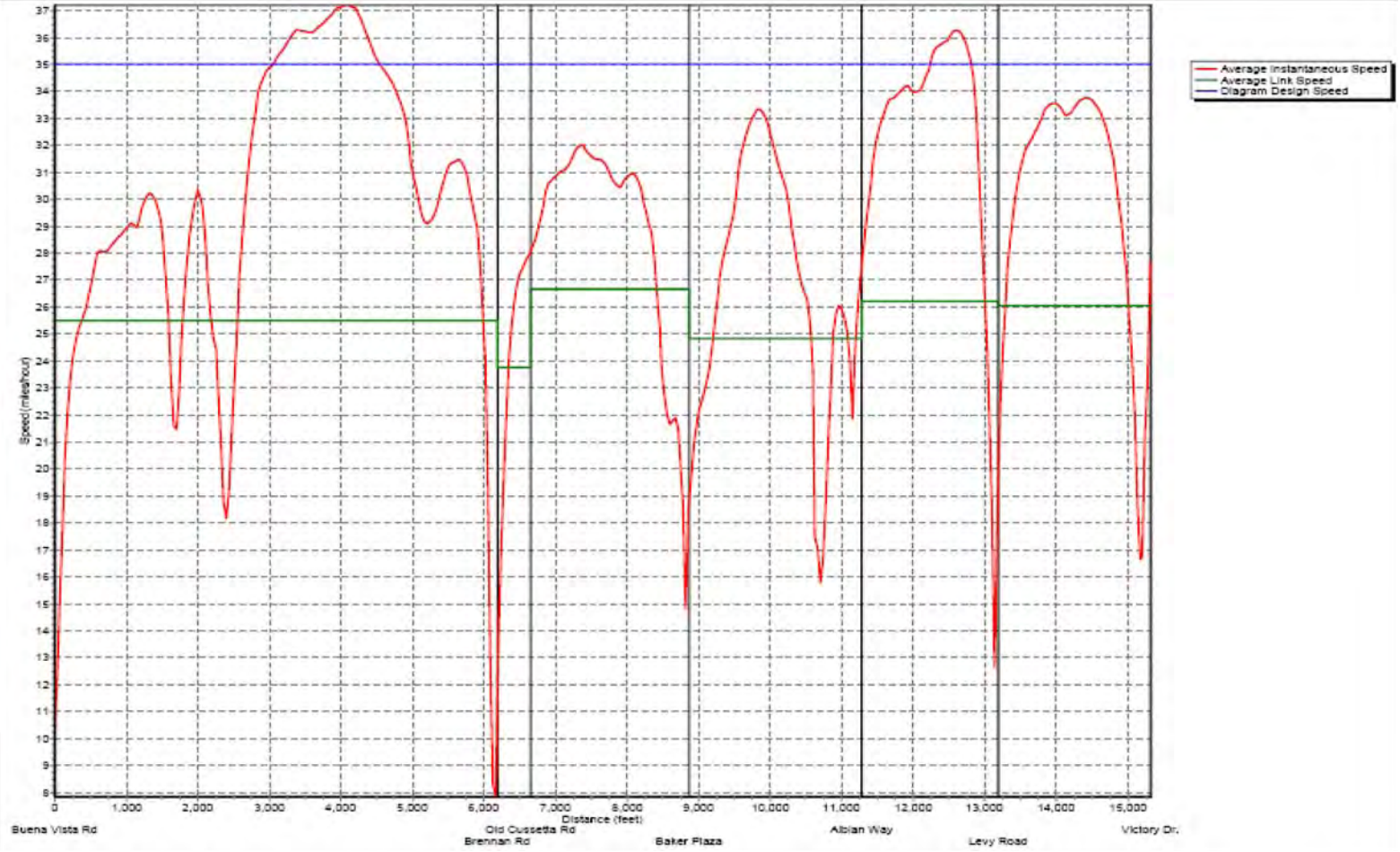
			AM Peak Period			Off Peak Period			PM Peak Period		
			Southbound			Southbound			Southbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Brennan Road	0.01	35	45	25.5	OK	38	26.7	OK	81	21.3	MARGINAL
Old Cusseta	0.40	35	4	23.8	OK	5	23.3	OK	5	23.7	OK
Baker Plaza	0.36	35	14	26.7	OK	12	27.4	OK	4	32	GOOD
Albian Way	0.46	35	20	24.8	OK	9	29.5	GOOD	25	23	OK
Levy Road	0.42	35	13	26.2	OK	0	35.3	GOOD	6	30.5	GOOD
Victory Drive	0.08	35	17	26	OK	41	17.8	MARGINAL	26	21.5	MARGINAL

			AM Peak Period			Off Peak Period			PM Peak Period		
			Northbound			Northbound			Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Levy Road	0.40	35	1	34.4	GOOD	2	33.5	GOOD	1	34.3	GOOD
Albian Way	0.36	35	1	34.6	GOOD	6	31	GOOD	0	34.8	GOOD
Baker Plaza	0.46	35	11	28.4	GOOD	13	27.9	GOOD	20	24.8	OK
Old Cusseta	0.42	35	27	22.5	MARGINAL	33	20.5	MARGINAL	42	18.4	MARGINAL
Brennan Road	0.08	35	4	23.1	OK	6	21.4	MARGINAL	6	21.2	MARGINAL

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FORT BENNING/BRENNAN ROADS

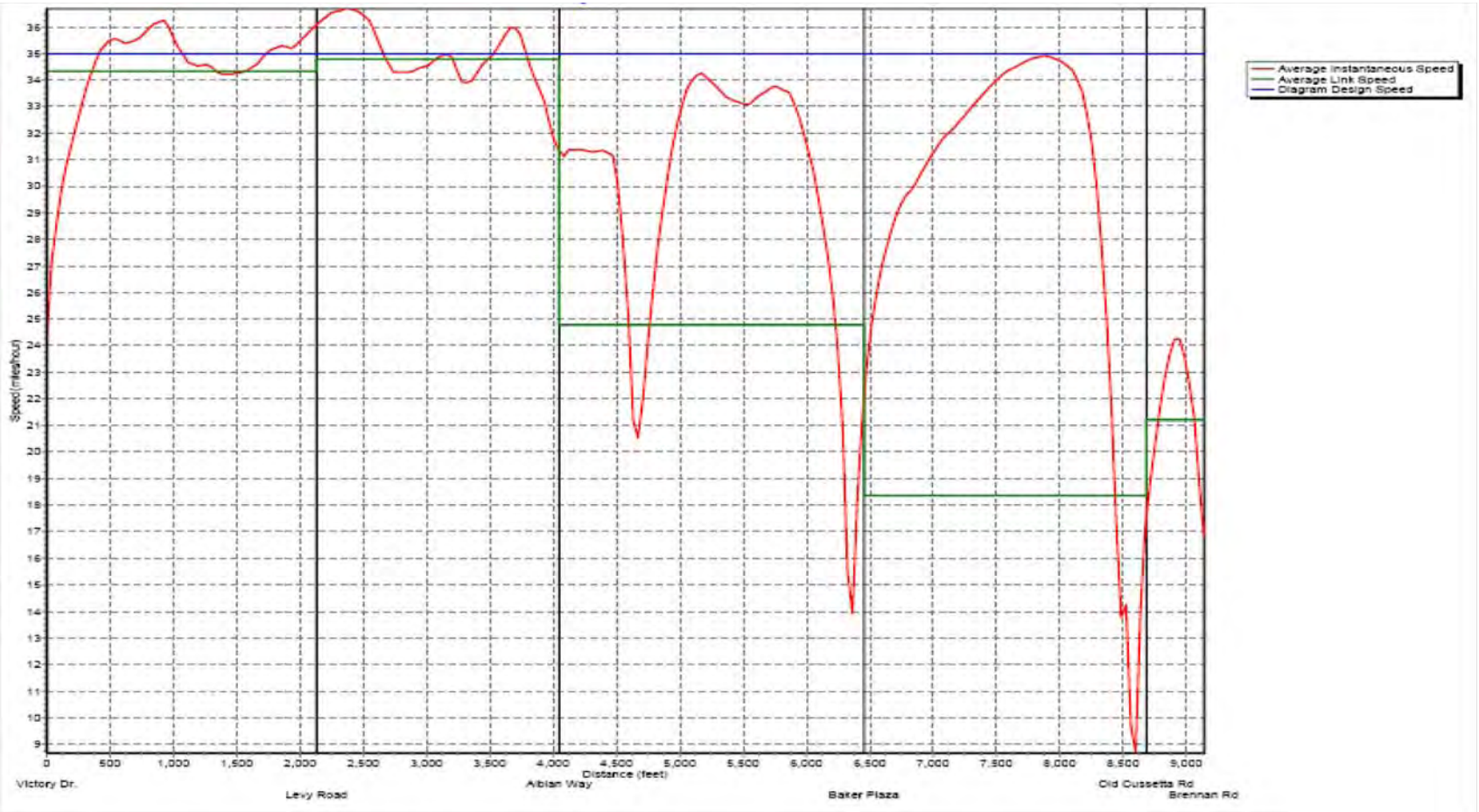
CMP STUDY—SPRING 2007
BUENA VISTA ROAD TO VICTORY DRIVE
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

FORT BENNING/BRENNAN ROADS

CMP STUDY—SPRING 2007
BUENA VISTA ROAD TO VICTORY DRIVE
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

LEE ROAD/SUMMERVILLE ROAD/ MARTIN LUTHER KING JR. DRIVE

CMP STUDY—SPRING 2007
NORTHBOUND TRAFFIC
5TH STREET TO US 280

			AM Peak Period			Off Peak Period			PM Peak Period		
			Northbound			Northbound			Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
3rd Street South	0.41	55	-27	58.2	GOOD	-31	60.1	GOOD	-30	58.7	GOOD
US 280	1.10	55	-75	59.8	GOOD	-76	61.2	GOOD	-74	59.2	GOOD
Broad Street	1.11	35	-77	41.3	GOOD	-38	48.4	GOOD	-23	41.2	GOOD
Dillingham Street	0.08	35	41	13	SERIOUS	12	19.1	MARGINAL	63	8.4	SERIOUS
13th Street	0.53	30	13	27.2	GOOD	15	25.5	GOOD	30	20.5	OK
14th Street	0.13	30	8	22.2	OK	27	12.6	CONGESTED	19	17.4	CONGESTED
North Railroad St	0.34	30	8	24.5	GOOD	15	22.1	OK	16	21.5	OK
21st Street	0.31	30	-8	40.3	GOOD	-6	33.9	GOOD	-4	32.6	GOOD
25th Street	0.35	30	-16	35.1	GOOD	-6	32.8	GOOD	-7	33.3	GOOD
30th Street	0.50	30	-13	35.7	GOOD	-12	34.4	GOOD	-11	34.1	GOOD
US 80 (interchange)	0.80	30	3	29.4	GOOD	-4	30.5	GOOD	2	28.2	GOOD
44th Street	0.36	35	-8	35.5	GOOD	-5	32.2	GOOD	3	28.8	GOOD
Fletcher Street	0.47	35	-16	38.7	GOOD	-17	39.3	GOOD	-6	32	OK
Pierce Road	0.77	40	-21	37	GOOD	-27	39.3	GOOD	-12	33.1	GOOD
Lee Road 318	1.98	45	-93	44.9	GOOD	-103	47.3	GOOD	-100	46.4	GOOD
US 280	2.13	45	-104	45.9	GOOD	-97	51.2	GOOD	-88	48	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

LEE ROAD/SUMMERVILLE ROAD/ MARTIN LUTHER KING JR. DRIVE

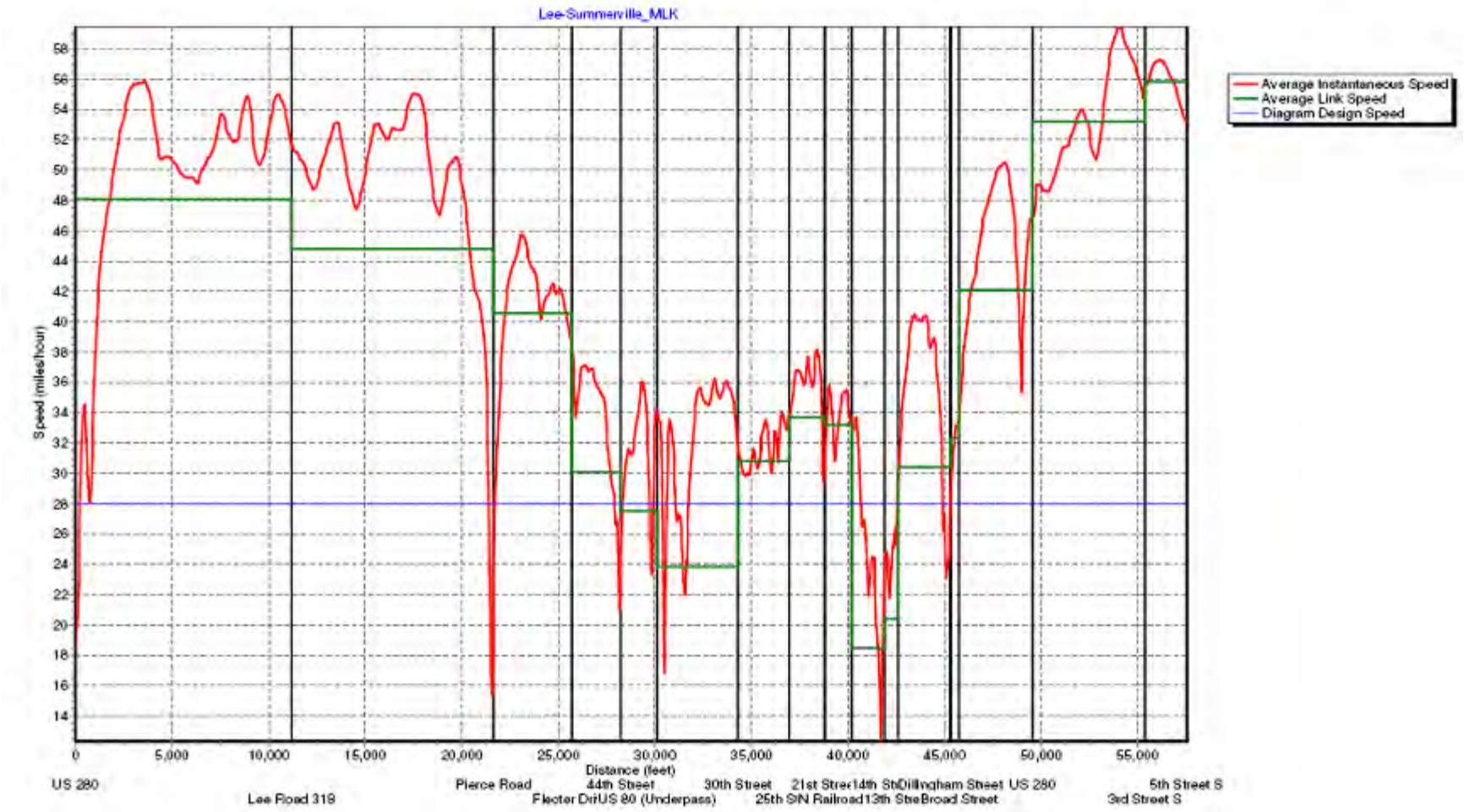
CMP STUDY—SPRING 2007
SOUTHBOUND TRAFFIC
US 280 TO FIFTH STREET

			AM Peak Period Southbound			Off Peak Period Southbound			PM Peak Period Southbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Lee Road 318	2.13	45	-27	58.2	GOOD	-31	60.1	GOOD	-30	58.7	GOOD
Pierce Road	1.98	45	-75	59.8	GOOD	-76	61.2	GOOD	-74	59.2	GOOD
Fletcher St	0.77	40	-77	41.3	GOOD	-38	48.4	GOOD	-23	41.2	GOOD
44th Street	0.47	35	41	13	SERIOUS	12	19.1	MARGINAL	63	8.4	SERIOUS
US 80 (interchange)	0.36	35	13	27.2	GOOD	15	25.5	GOOD	30	20.5	OK
30th Street	0.8	30	8	22.2	OK	27	12.6	CONGESTED	19	17.4	CONGESTED
25th Street	0.5	30	8	24.5	GOOD	15	22.1	OK	16	21.5	OK
21st Street	0.35	30	-8	40.3	GOOD	-6	33.9	GOOD	-4	32.6	GOOD
North Railroad Street	0.31	30	-16	35.1	GOOD	-6	32.8	GOOD	-7	33.3	GOOD
14th Street	0.34	30	-13	35.7	GOOD	-12	34.4	GOOD	-11	34.1	GOOD
13th Street	0.13	30	3	29.4	GOOD	-4	30.5	GOOD	2	28.2	GOOD
Dillingham Street	0.53	30	-8	35.5	GOOD	-5	32.2	GOOD	3	28.8	GOOD
Broad Street	0.08	35	-16	38.7	GOOD	-17	39.3	GOOD	-6	32	OK
US 280	1.11	35	-21	37	GOOD	-27	39.3	GOOD	-12	33.1	GOOD
3rd Street South	1.1	55	-93	44.9	GOOD	-103	47.3	GOOD	-100	46.4	GOOD
5th Street	0.41	55	-104	45.9	GOOD	-97	51.2	GOOD	-88	48	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

LEE ROAD/SUMMERVILLE ROAD/ MARTIN LUTHER KING JR. DRIVE

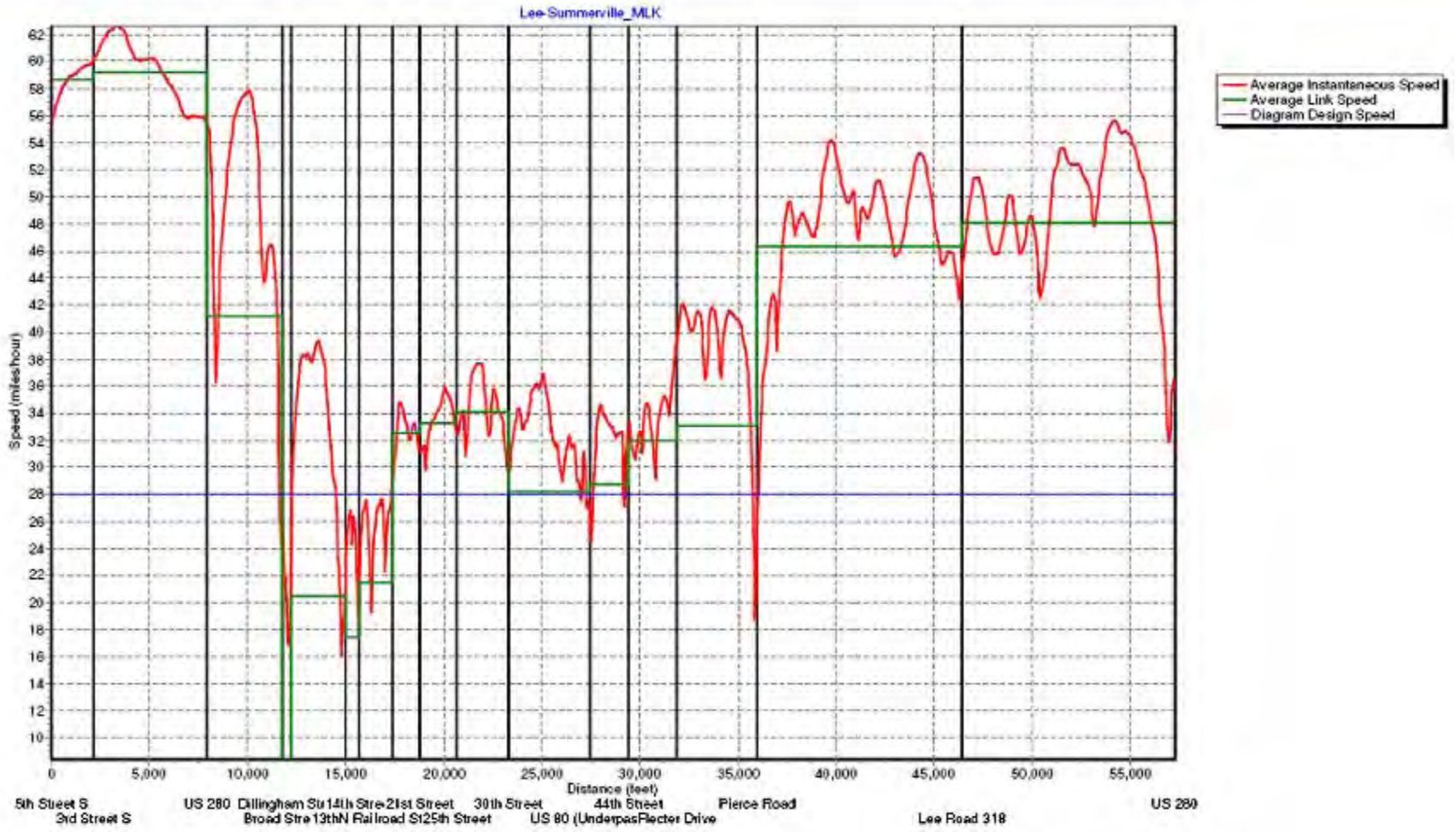
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

LEE RD/SUMMERVILLE RD/
MARTIN LUTHER KING JR. DRIVE

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MACON ROAD

CMP STUDY—SPRING 2007

TENTH STREET TO FLAT ROCK ROAD

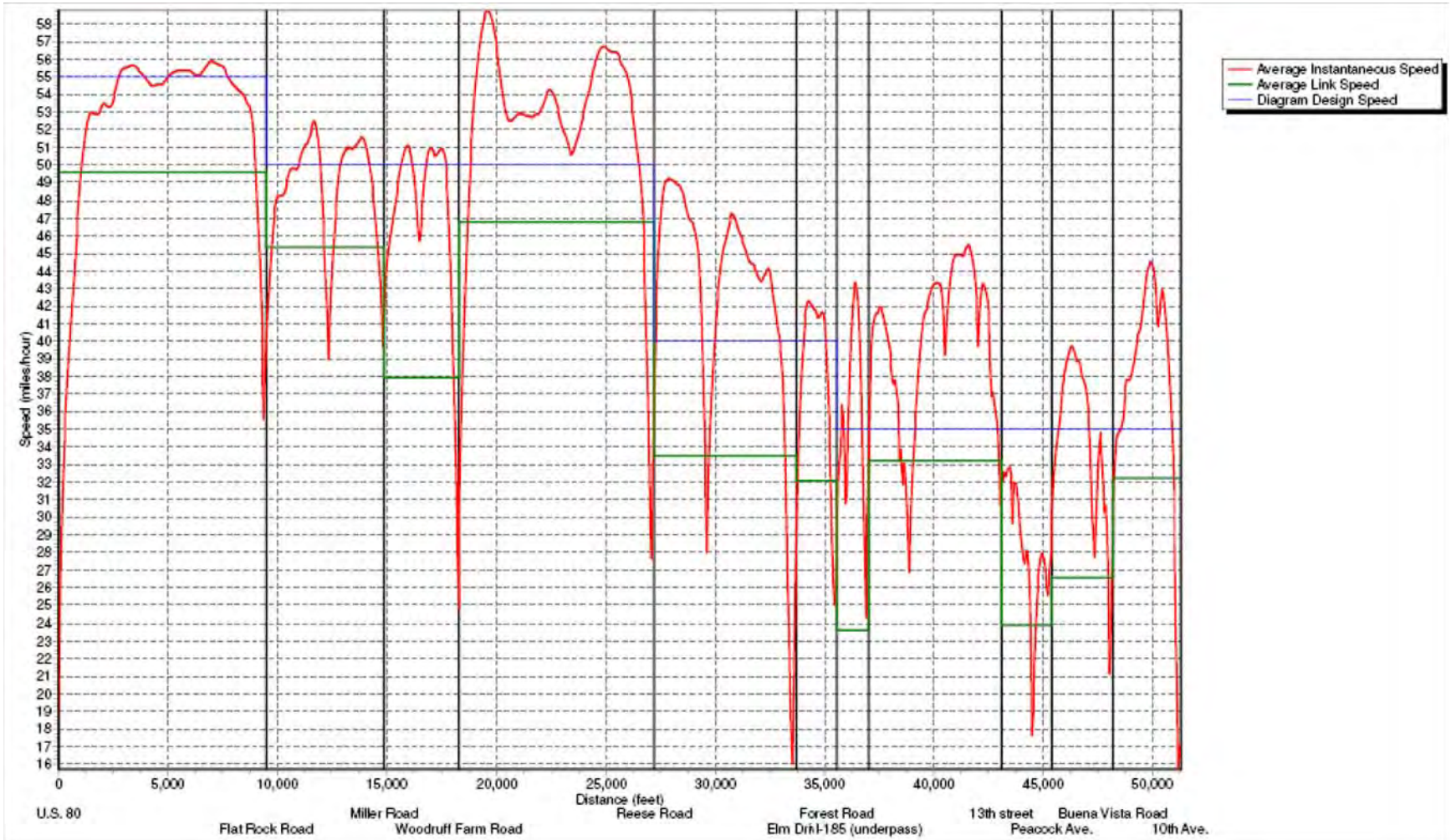
			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Buena Vista	0.59	30	13	28.6	GOOD	2	32.2	GOOD	54	18.7	MARGINAL
Peacock Ave	0.53	30	6	31.8	GOOD	21	27	MARGINAL	21	27.9	OK
13th St	0.44	30	12	29.5	GOOD	38	21.5	OK	26	22.3	MARGINAL
I-185	1.15	30	-5	36.8	GOOD	46	26.6	MARGINAL	82	20.9	MARGINAL
Forest Road	0.28	30	29	23.4	OK	14	30.1	GOOD	56	16.5	CONGESTED
Elm Drive	0.35	40	4	36.4	GOOD	16	28.8	GOOD	75	12.6	SERIOUS
Reese Road	1.24	40	0	39.9	GOOD	19	34.4	GOOD	10	38.5	GOOD
Woodruff Farm	1.69	40	-30	49.8	GOOD	-11	43.8	GOOD	-7	42.7	GOOD
Miller Road	0.65	50	7	44.1	GOOD	23	34.6	OK	18	39.8	OK
Flat Rock Rd.	1.02	50	41	32.1	MARGINAL	15	42.5	GOOD	10	44.7	GOOD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Westbound		
Miller Rd.	1.02	50	15	41.8	GOOD	17	41.2	GOOD	11	46.4	GOOD
Woodruff Farm	0.65	50	33	30.6	OK	19	37.4	MARGINAL	29	34	OK
Reese Rd.	1.69	40	13	45.3	GOOD	3	49.1	GOOD	8	47.2	GOOD
Elm Drive	1.25	40	24	34	GOOD	23	33.8	GOOD	23	35.9	GOOD
Forest Road	0.34	40	9	33.8	GOOD	2	37.7	GOOD	4	37.4	GOOD
I-185	0.28	30	8	35.3	SERIOUS	57	12.4	GOOD	56	14.2	CONGESTED
13th St.	1.15	30	21	29.7	GOOD	11	32	GOOD	63	23.2	OK
Peacock Ave	0.44	30	37	21.9	MARGINAL	31	20.9	MARGINAL	30	22.3	MARGINAL
Buena Vista	0.53	30	11	32.1	OK	23	25.6	GOOD	26	24.7	OK
10th Street	0.58	30	17	28.4	GOOD	12	29.7	GOOD	14	29.3	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MACON ROAD

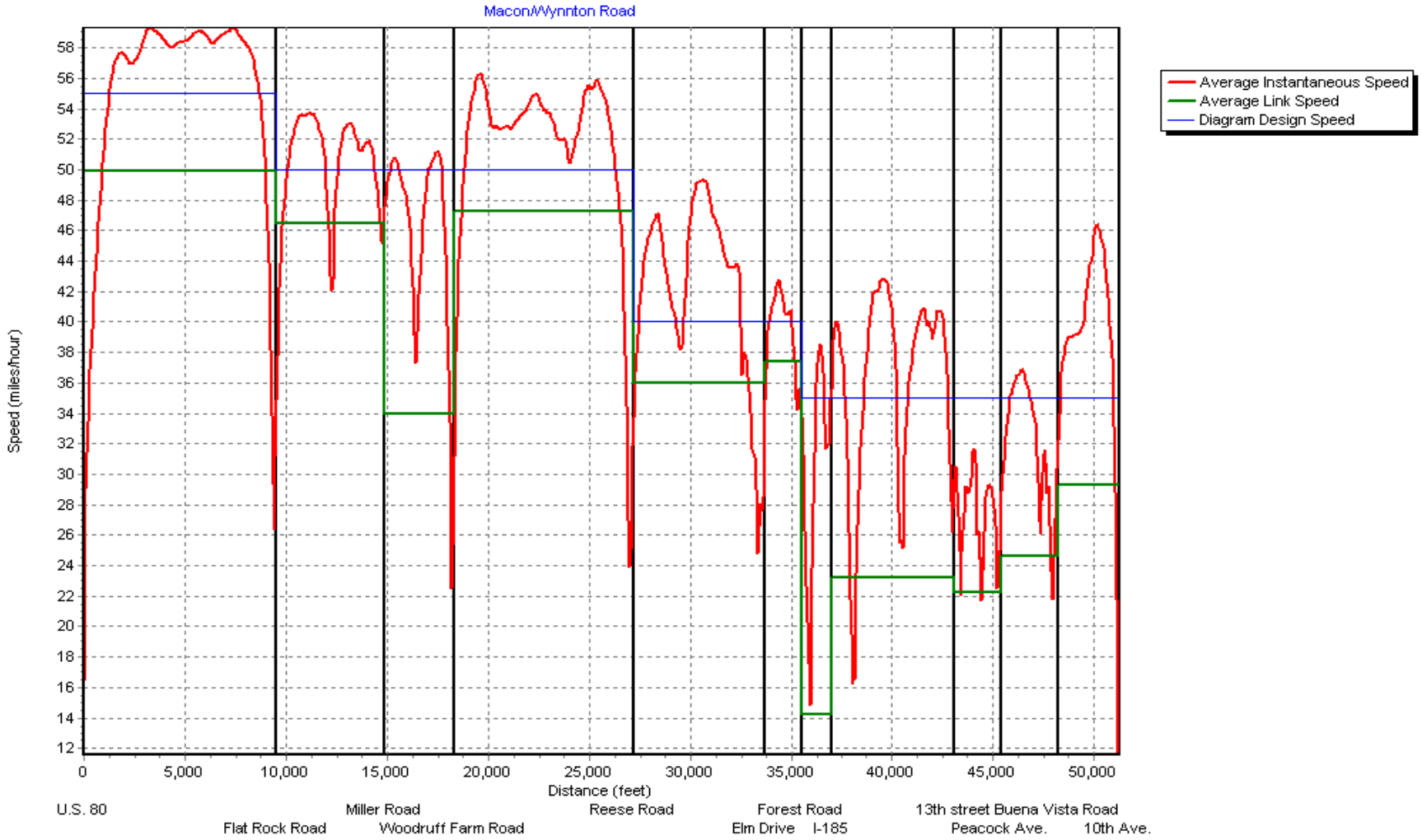
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MACON ROAD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MANCHESTER EXPRESSWAY

CMP STUDY—SPRING 2007

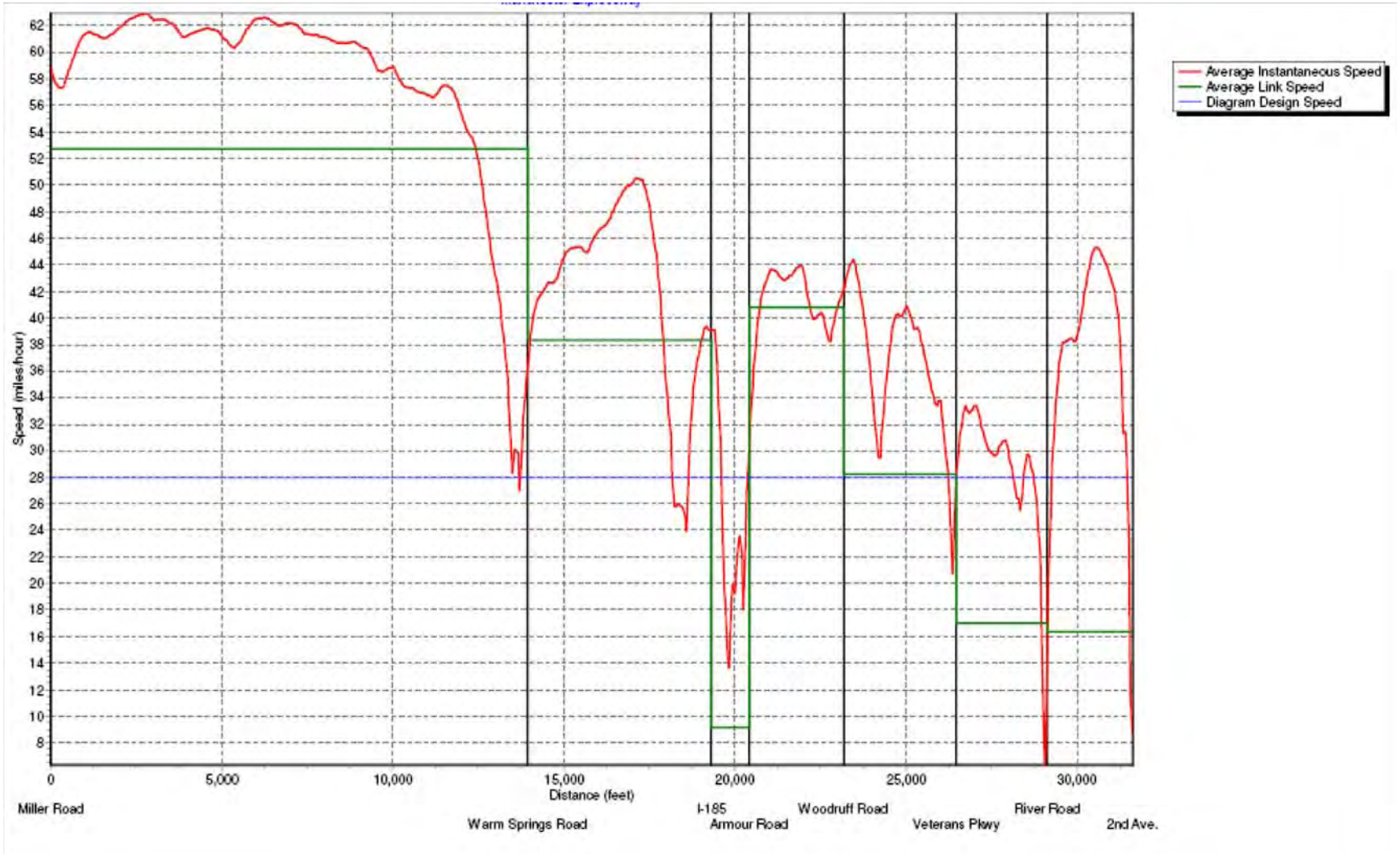
SECOND AVENUE TO MILLER ROAD

			AM Peak Period Eastbound			Off Peak Period Eastbound			PM Peak Period Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
River Rd.	0.47	40	16	30.4	OK	38	25.8	MARGINAL	49	21.4	MARGINAL
Veterans Pkwy.	0.51	45	74	19.7	CONGESTED	51	20.5	CONGESTED	67	19.2	CONGESTED
Woodruff Road	0.62	45	33	28.9	MARGINAL	58	23.2	MARGINAL	90	17.2	SERIOUS
Armour Road	0.53	45	37	25	MARGINAL	14	35.1	OK	112	21.9	CONGESTED
I-185	0.20	45	4	36.6	GOOD	3	38.6	GOOD	4	36.2	OK
Warm Springs Rd	1.02	50	47	31.2	MARGINAL	43	32.5	MARGINAL	87	24.1	CONGESTED
Miller Road	2.70	65	16	57.6	GOOD	9	60.3	GOOD	8	60.3	OK
			AM Peak Period Westbound			Off Peak Period Westbound			PM Peak Period Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (Mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Warm Springs Rd.	2.70	65	31	53	GOOD	11	59.5	GOOD	32	53.4	GOOD
I-185	1.02	50	17	41.2	GOOD	55	28.8	MARGINAL	49	30.1	MARGINAL
Armour Road	0.20	45	73	8.3	SERIOUS	19	22.6	CONGESTED	21	20.9	CONGESTED
Woodruff Road	0.53	45	5	40.8	GOOD	11	36.1	OK	19	30.9	OK
Veterans Pkwy.	0.62	45	37	31.8	OK	58	22.2	CONGESTED	105	15.2	SERIOUS
River Rd.	0.51	45	87	14.4	SERIOUS	69	17.2	SERIOUS	67	20.7	CONGESTED
Second Ave.	0.47	40	65	16.1	CONGESTED	25	28	OK	22	27.5	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MANCHESTER EXPRESSWAY

CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

MANCHESTER EXPRESSWAY

CMP STUDY—SPRING 2007
PM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

RIVER ROAD

CMP STUDY—SPRING 2007

DOUBLE CHURCHES ROAD TO VETERANS PARKWAY

			AM Peak Period Southbound			Off Peak Period Southbound			PM Peak Period Southbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Double Churches											
Mobley Road	0.65	35	15	37.3	OK	8	42.3	GOOD	18	37.3	GOOD
Bradley Park	1.09	35	41	35.8	OK	29	37.2	OK	17	41.3	GOOD
Manchester Expwy	0.96	35	63	32.8	GOOD	65	32.6	OK	70	32.2	GOOD
39th Street	0.49	35	4	37.9	GOOD	7	35.1	GOOD	8	35	GOOD
Veterans Pkwy	0.36	35	36	22	MARGINAL	20	28.4	OK	11	34.5	GOOD

			AM Peak Period Northbound			Off Peak Period Northbound			PM Peak Period Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Veterans Pkwy											
39th Street	0.35	35	7	34.2	GOOD	3	36.8	GOOD	7	34.1	GOOD
Manchester Expwy	0.48	35	34	25.2	MARGINAL	20	30.8	OK	42	21.8	MARGINAL
Bradley Park	0.63	35	2	32.9	GOOD	-17	36.6	GOOD	-14	36.1	GOOD
Mobley Road	1.09	35	19	41	GOOD	9	45.4	GOOD	9	45	GOOD
Double Churches	0.65	35	8	41.9	GOOD	4	45.2	GOOD	4	44.7	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

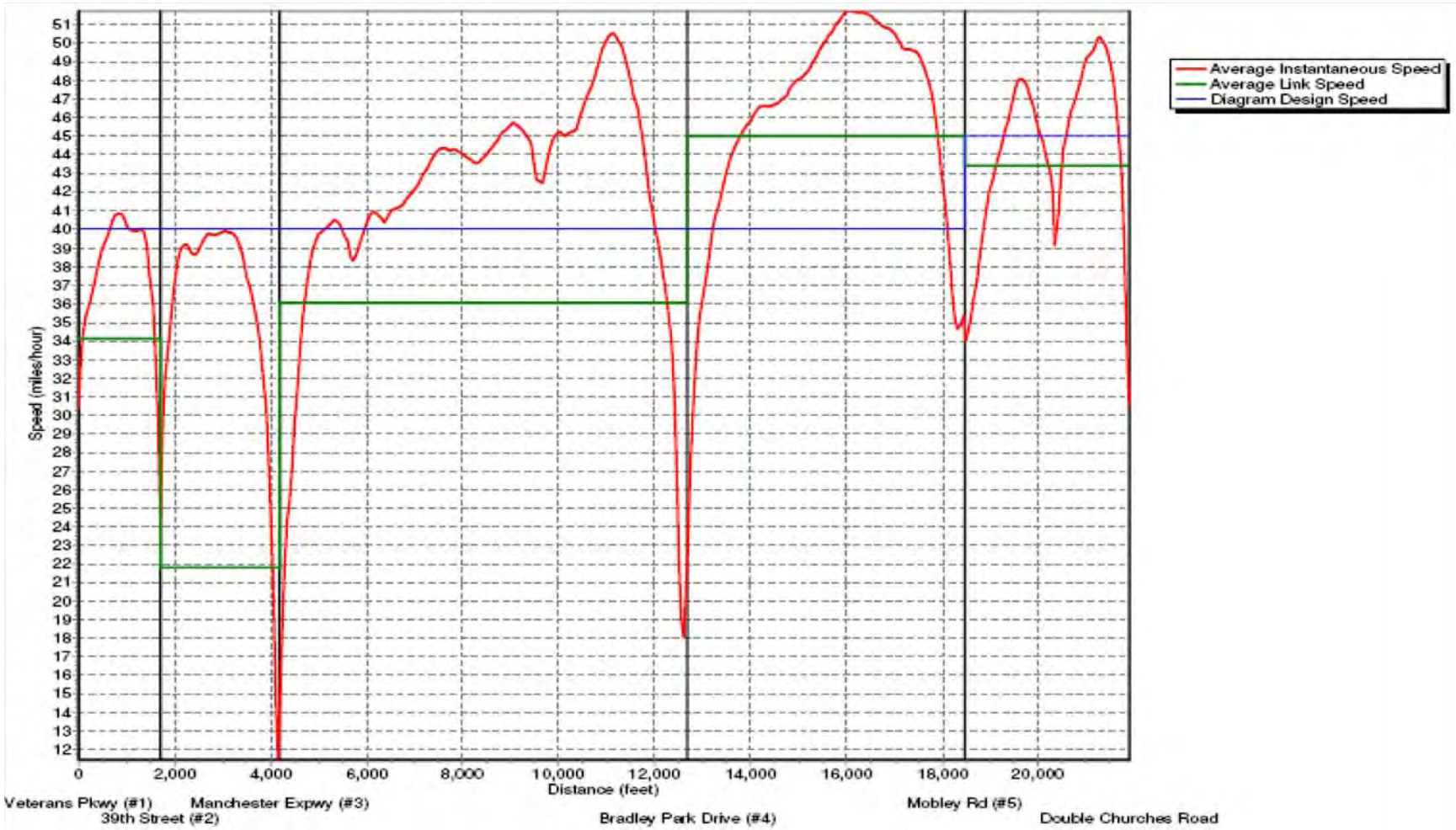
RIVER ROAD

CMP STUDY—SPRING 2007
AM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

RIVER ROAD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

SAINT MARYS ROAD

CMP STUDY—SPRING 2007

ROBIN ROAD TO FT. BENNING BOUNDARY

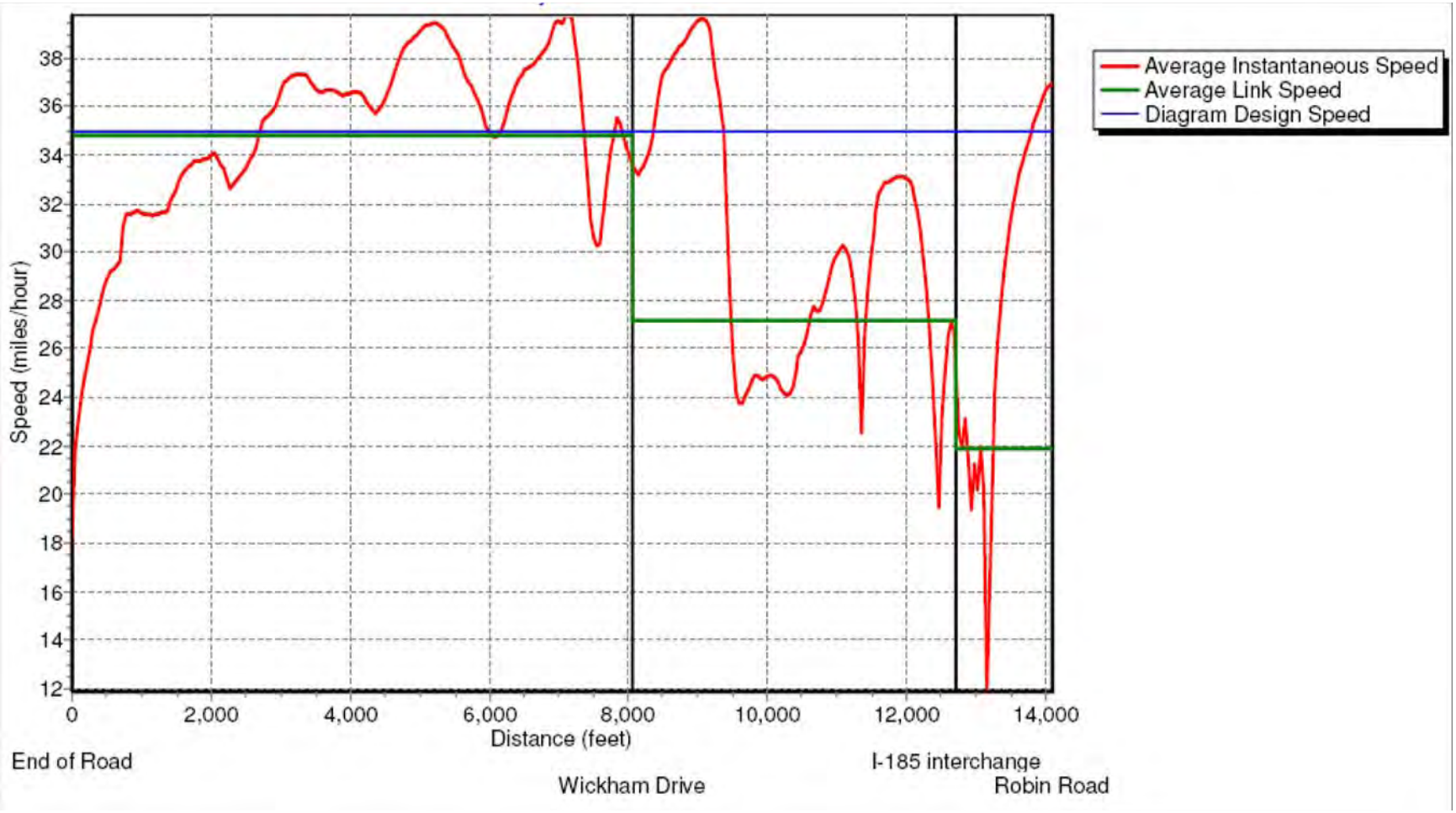
			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
From End of Road											
Wickham Drive	1.53	35	1	34.8	GOOD	-4	35.7	GOOD	1	34.7	GOOD
Interstate 185	0.88	35	27	27.1	OK	11	32.5	GOOD	15	30.4	GOOD
Robin Road	0.26	35	20	21.8	MARGINAL	24	22.1	MARGINAL	3	31.7	GOOD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
From Robin Road											
Interstate 185	0.26	35	47	17.4	CONGESTED	42	14.4	CONGESTED	56	11.7	CONGESTED
Wickham Drive	0.88	35	72	19.6	MARGINAL	27	27.3	OK	80	19.2	MARGINAL
End of Road/Ft. Benning	1.53	35	-3	35.6	GOOD	-9	37.2	GOOD	4	34.1	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

SAINT MARYS ROAD

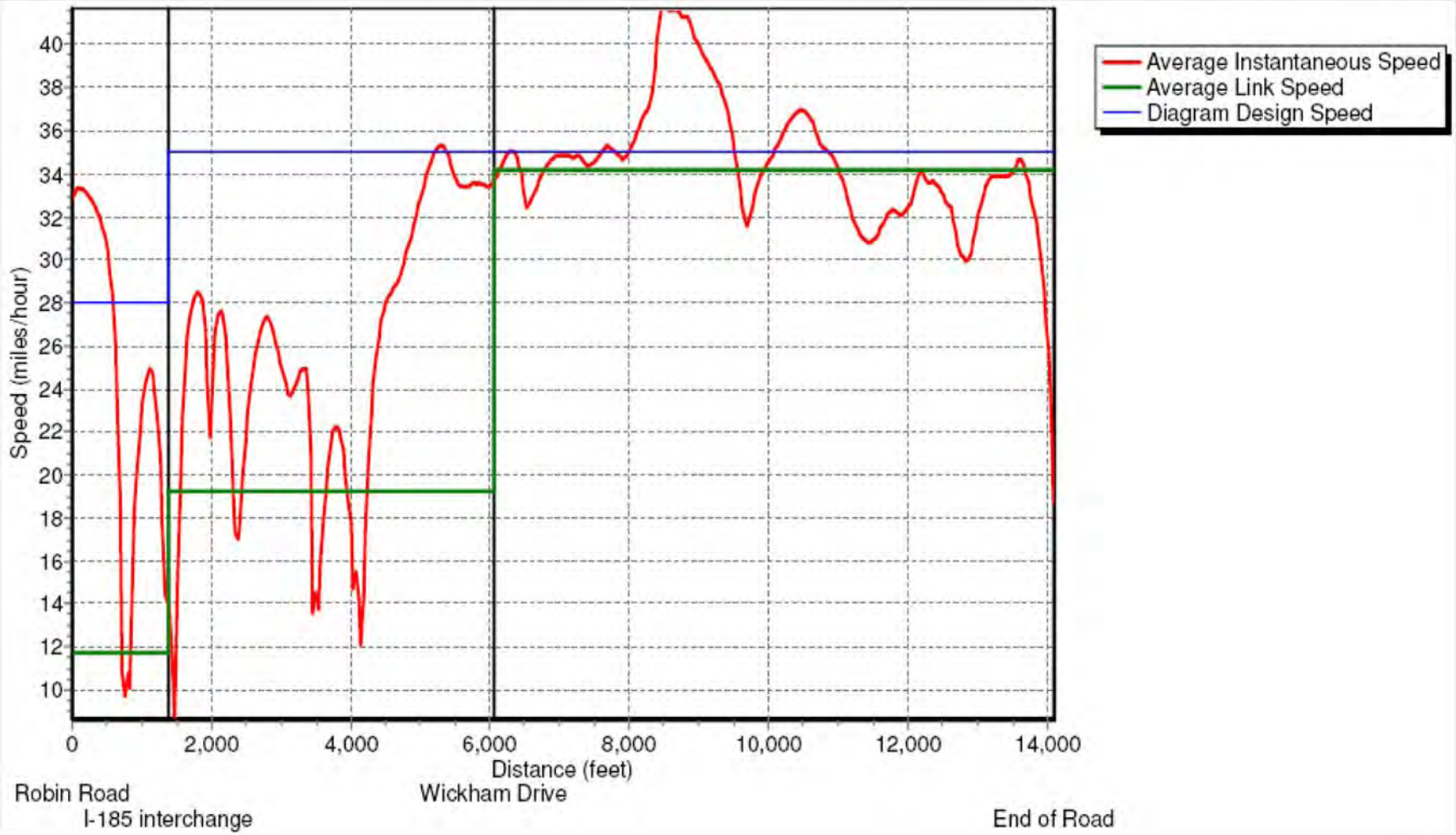
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

SAINT MARYS ROAD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

U.S. HWY 80 and 13th STREET

CMP STUDY—SPRING 2007
EASTBOUND TRAFFIC SUMMARY
JOWERS ROAD TO MACON ROAD

			AM Peak Period Eastbound			Off Peak Period Eastbound			PM Peak Period Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Jowers Road	2.51	55	18	52.1	OK	-12	59.3	GOOD	-11	58.8	GOOD
Lee Road 212	2.99	55	9	52.7	GOOD	-3	56	GOOD	-4	56.2	GOOD
Woodland Drive	0.63	55	12	43.3	GOOD	5	49.5	GOOD	13	43.8	OK
Winston Drive	1.54	45	-5	48.7	MARGINAL	-20	53.5	GOOD	-7	47.8	GOOD
36th Avenue	1.06	45	-10	52.3	SERIOUS	-18	57	GOOD	-18	57.5	GOOD
Auburn Avenue	0.12	45	15	29.3	MARGINAL	7	41.3	GOOD	6	44.7	GOOD
US 280 Bypass	0.53	45	71	20.3	MARGINAL	61	22.8	MARGINAL	55	21.5	CONGESTED
Opelika Road	0.35	35	10	28.8	OK	12	27.5	OK	9	28.7	GOOD
17th Avenue	0.50	35	6	32.4	GOOD	-4	38.5	GOOD	0	35.5	GOOD
10th Avenue	0.60	35	-1	36.9	GOOD	-8	41	GOOD	0	35.5	GOOD
Broad Street	0.32	35	55	16.9	MARGINAL	52	16.5	CONGESTED	50	18.6	OKAY
Broadway	0.43	35	8	30.8	OK	21	27.4	OK	12	28.5	GOOD
2nd Avenue	0.17	30	25	17.3	GOOD	20	19.1	MARGINAL	7	26.9	GOOD
Veterans Pkwy	0.21	30	37	14.9	GOOD	34	15	MARGINAL	27	16.2	CONGESTED
10th Avenue	0.41	35	16	28.3	GOOD	15	28.3	GOOD	7	32.6	GOOD
13th Avenue	0.31	35	10	29.2	OK	17	24	OK	8	30.8	GOOD
18th Avenue	0.44	30	-3	32.9	GOOD	-3	32.7	GOOD	-1	30.9	GOOD
Macon Road	0.73	30	49	21	GOOD	101	17.8	MARGINAL	68	18.4	CONGESTED

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

U.S. HWY 80 and 13th STREET

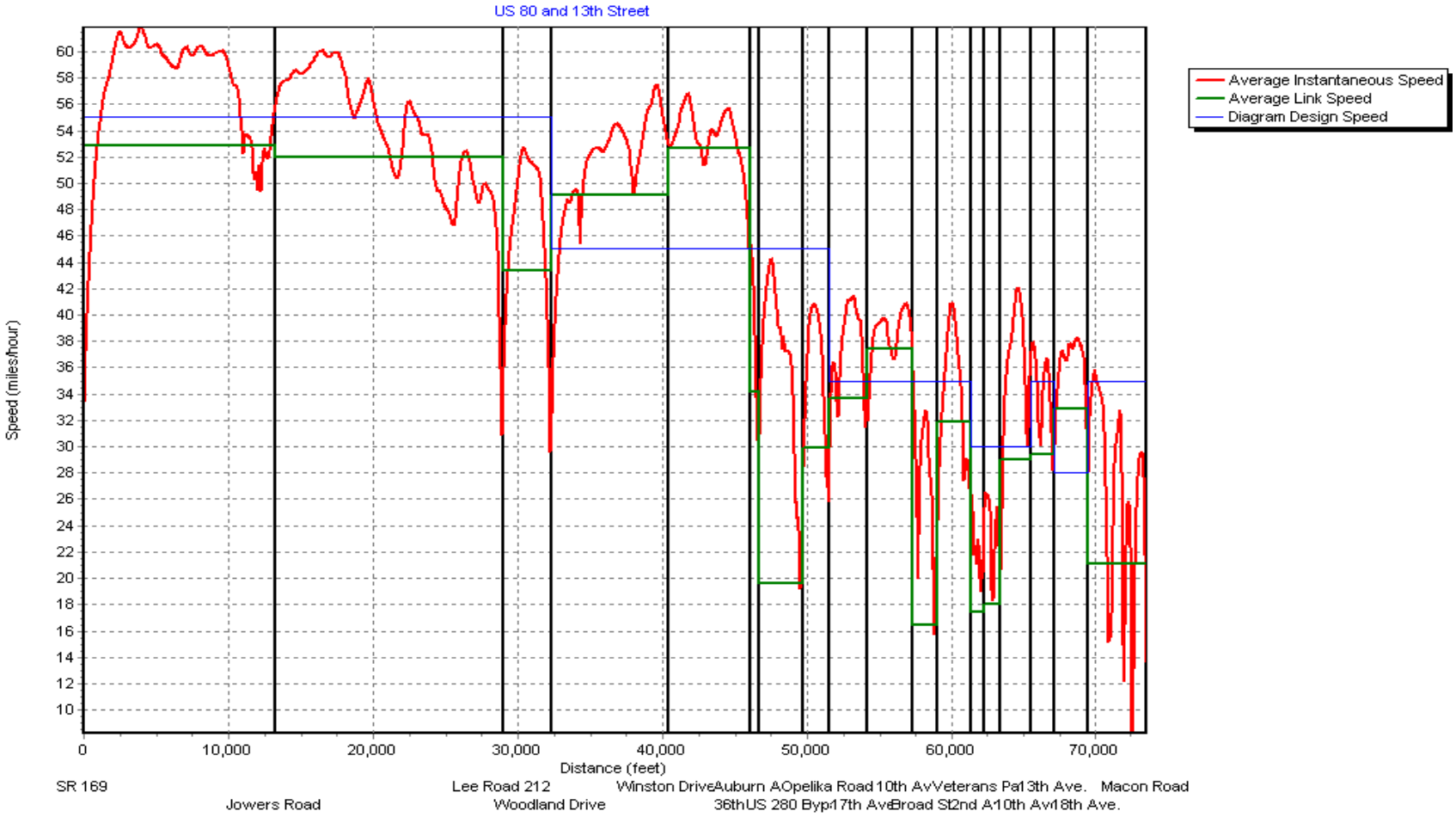
CMP STUDY—SPRING 2007
WESTBOUND TRAFFIC SUMMARY
MACON ROAD TO JOWERS ROAD

			AM Peak Period Westbound			Off Peak Period Westbound			PM Peak Period Westbound		
	Distance	Free Flow	Delay	Speed	Congestion	Delay	Speed	Congestion	Delay	Speed	Congestion
	(miles)	(mph)	(seconds)	(mph)		(seconds)	(mph)		(seconds)	(mph)	
Macon Road	0.73	30	42	21.6	OK	35	22.2	OK	47	20.6	OK
18th Avenue	0.44	30	-6	34.3	GOOD	-4	33.5	GOOD	-4	33.3	GOOD
13th Avenue	0.31	35	0	35.9	GOOD	25	24.2	OK	4	32.8	GOOD
10th Avenue	0.41	35	5	33.3	GOOD	8	31	GOOD	45	20.1	MARGINAL
Veterans Pkwy	0.21	30	41	14.7	CONGESTED	65	9.5	SERIOUS	86	9.3	SERIOUS
2nd Avenue	0.17	30	4	26.6	GOOD	21	18.9	MARGINAL	39	16.3	MARGINAL
Broadway	0.43	35	11	28.9	GOOD	51	16.2	MARGINAL	51	17.3	MARGINAL
Broad Street	0.32	35	9	30.6	GOOD	1	34.1	GOOD	14	27	OK
10th Avenue	0.6	35	0	35.9	GOOD	5	32.9	GOOD	4	34.2	GOOD
17th Avenue	0.5	35	6	33.7	GOOD	4	34.2	GOOD	9	30.9	GOOD
Opelika Avenue	0.35	35	29	26	OK	59	18.2	MARGINAL	40	17.3	MARGINAL
US 280 Bypass	0.53	45	10	37.7	GOOD	4	41.6	GOOD	12	36	OKAY
Auburn Avenue	0.12	45	12	33.9	OKAY	7	40	GOOD	3	45.3	GOOD
36th Avenue	1.06	45	-8	49.8	GOOD	-26	52.8	GOOD	-11	52	GOOD
Winston Drive	1.54	55	-16	51.8	GOOD	-1	47.9	GOOD	-4	47	GOOD
Woodland Drive	0.63	55	8	46.7	GOOD	8	46.1	GOOD	16	40.1	OKAY
Lee Road 212	2.99	55	0	55.2	GOOD	3	54.2	GOOD	14	51.4	GOOD
Jowers Road	2.51	55	-4	56.5	GOOD	-13	60.1	GOOD	11	51.5	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

U.S. HWY 80 and 13th STREET

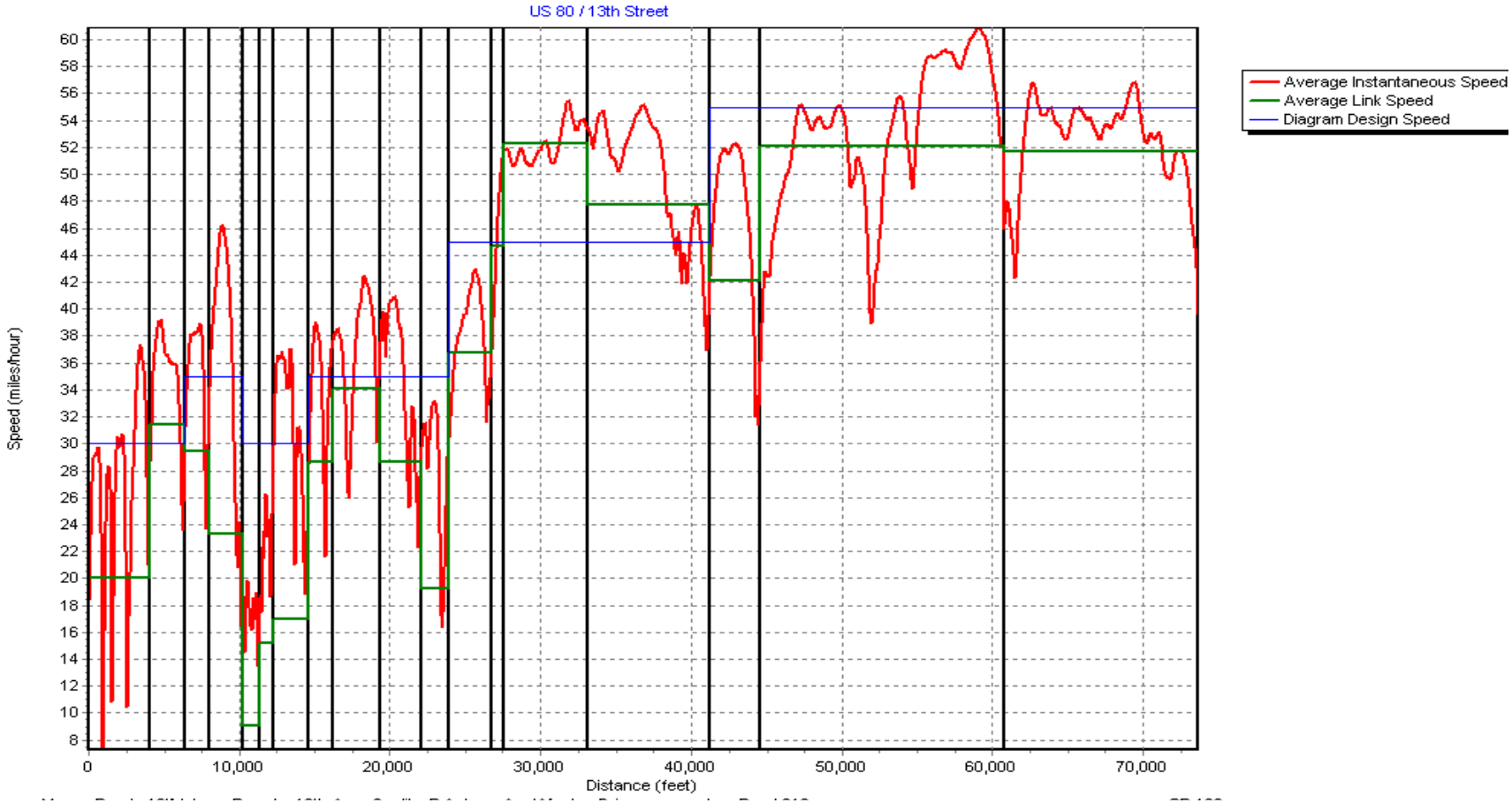
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

U.S. HWY 80 and 13th STREET

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

J.R. ALLEN PARKWAY (US 80)

CMP STUDY—SPRING 2007

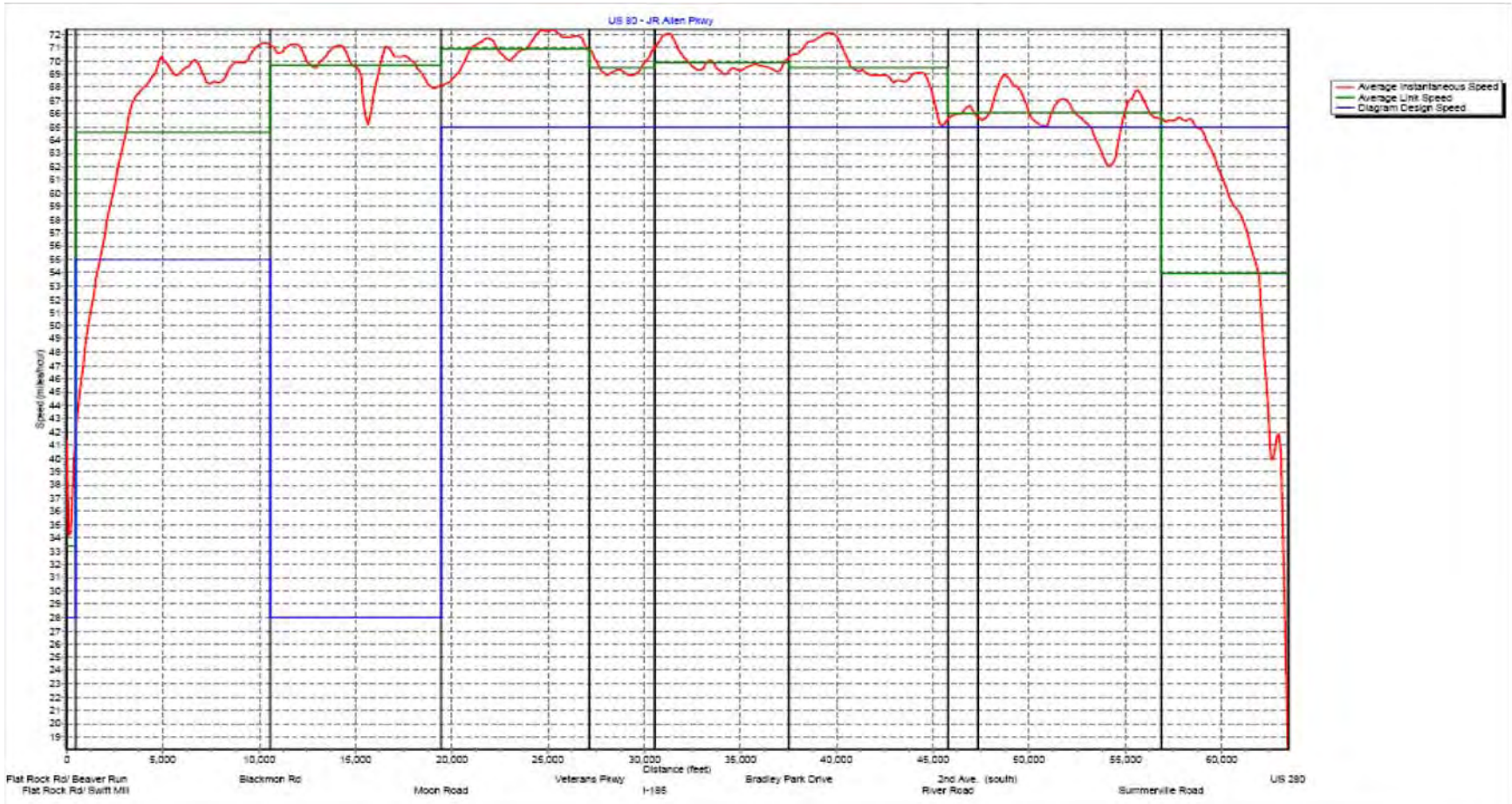
US 280 TO FLAT ROCK ROAD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Summerville Road	1.24	65	2	55.3	GOOD	2	55.7	GOOD	0	56.7	GOOD
2nd Ave. (south)	1.81	65	-3	67.6	GOOD	-1	66	GOOD	-3	67.7	GOOD
River Road	0.33	65	-1	65.4	GOOD	-1	62.9	GOOD	-2	68.4	GOOD
Bradley Park Drive	1.57	65	-3	67.2	GOOD	-4	68.3	GOOD	-6	69.7	GOOD
I-185	1.32	65	-5	69.3	GOOD	-4	67.6	GOOD	-7	70.7	GOOD
Veterans Pkwy	0.64	65	-2	69.9	GOOD	-2	67.8	GOOD	-3	70.1	GOOD
Moon Road	1.46	65	-7	71.3	GOOD	-6	69.7	GOOD	-7	70.8	GOOD
Blackmon Rd	1.68	65	-7	69.9	GOOD	-5	69	GOOD	-8	71	GOOD
Flat Rock Rd/ Swift Mill	1.91	55	-12	60.6	GOOD	-18	63.9	GOOD	-16	62.5	GOOD
Flat Rock Rd/ Beaver Run	0.09	55	1	47.1	GOOD	1	51.3	GOOD	1	47	GOOD
			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds	Speed (mph	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Flat Rock Rd/ Swift Mill	0.09	55	9	33.4	MARGINAL	-3	44.1	OK	15	31.6	MARGINAL
Blackmon Rd	1.91	55	-19	64.6	GOOD	-18	64.4	GOOD	-16	63.1	GOOD
Moon Road	1.68	55	-23	69.7	GOOD	-21	68.3	GOOD	-22	68.9	GOOD
Veterans Pkwy	1.46	65	-7	70.9	GOOD	-3	67.5	GOOD	-4	68.6	GOOD
to I-185	0.64	65	-2	69.5	GOOD	-2	68.3	GOOD	-2	69.1	GOOD
Bradley Park Drive	1.32	65	-5	69.8	GOOD	-3	68.1	GOOD	-4	69	GOOD
River Road	1.57	65	-6	69.4	GOOD	-4	68.5	GOOD	-4	67.9	GOOD
2nd Ave. (south)	0.33	65	-2	66	GOOD	-2	67.8	GOOD	-2	67.2	GOOD
Summerville Road	1.81	65	-1	66.1	GOOD	1	64.2	GOOD	-1	65.5	GOOD
US 280	1.24	65	14	53.9	GOOD	12	55.3	GOOD	34	44.2	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

J.R. ALLEN PARKWAY (US 80)

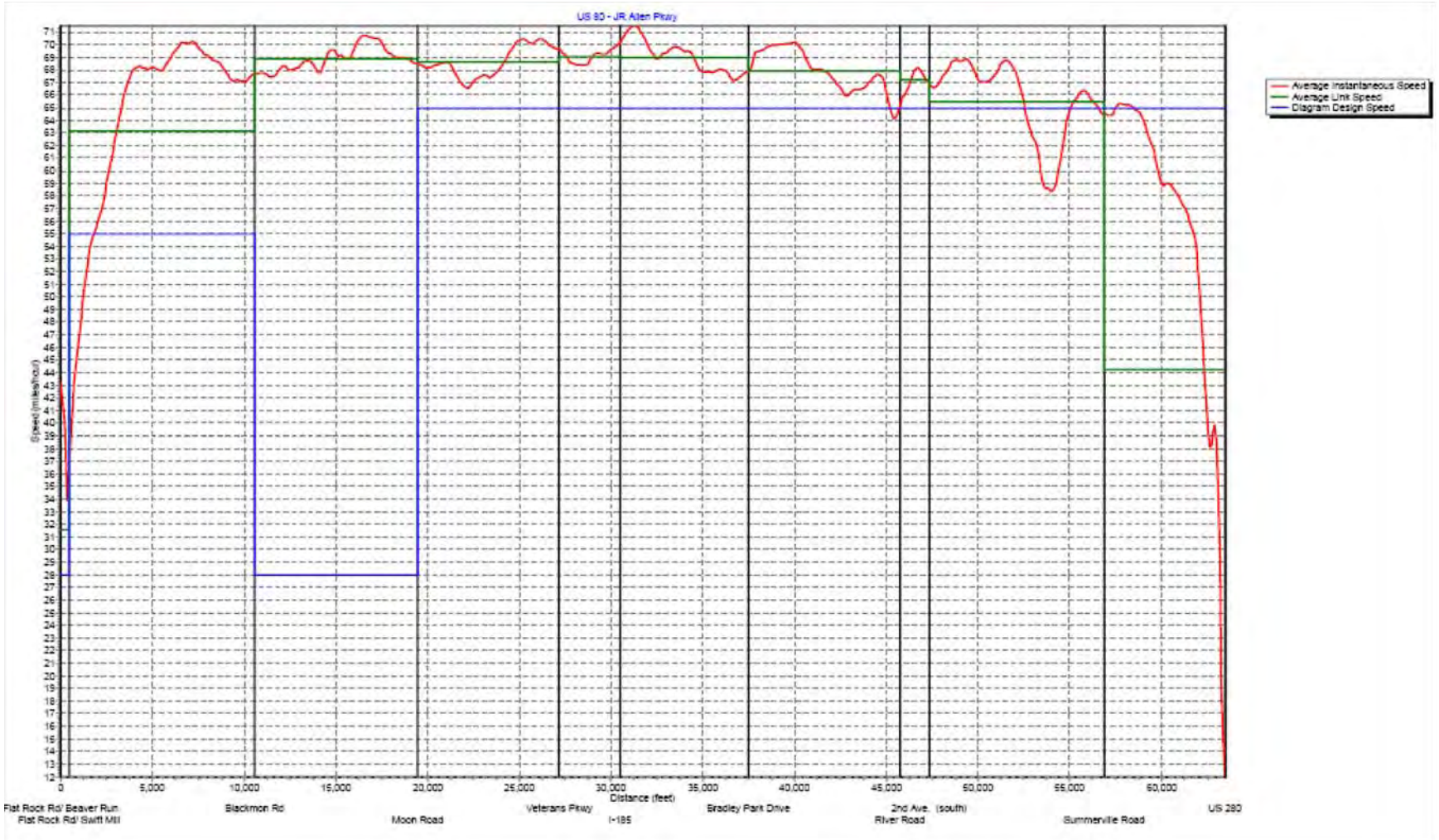
CMP STUDY—SPRING 2007
US 280 TO FLAT ROCK ROAD
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

J.R. ALLEN PARKWAY (US 80)

CMP STUDY—SPRING 2007
US 280 TO FLAT ROCK ROAD
PM PEAK CONGESTION



Mitigation Strategies and Associated Impact on CMP Performance Measures

Victory Drive	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▲	▶	▶
Traffic Oper. Imp.	▲	▶	▲	▶	▶
Growth Management	▲	▶	▲	▶	▶
Access Management	▲	▶	▲	▶	▶
Non Motorized Modes	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

US 280—ALABAMA

CMP STUDY—SPRING 2007

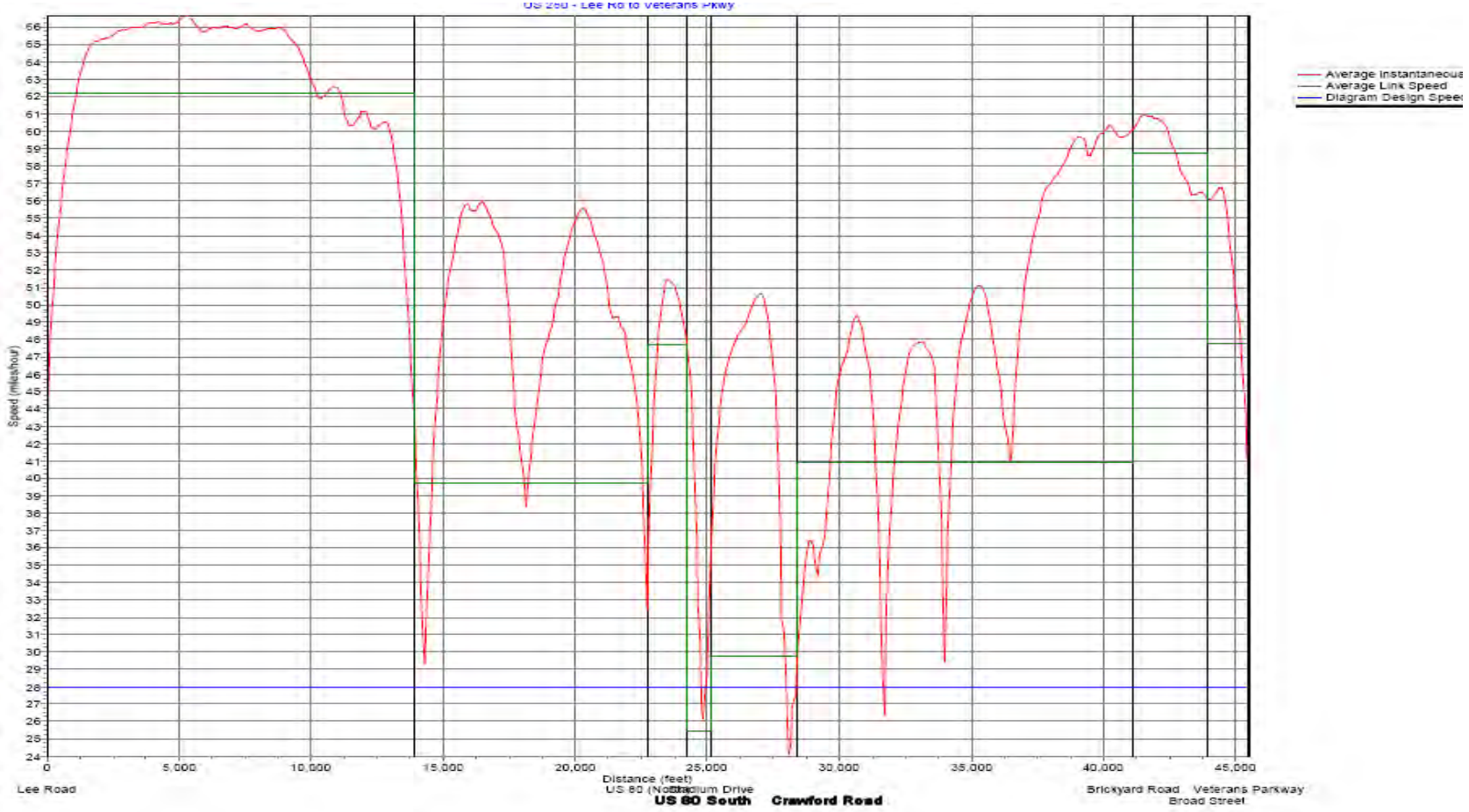
LEE ROAD TO VETERANS PARKWAY

			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay	Speed	Congestion
Pierce Road	2.64	60	-7	62.6	GOOD	0	60	GOOD	0	60	GOOD
US 80 North	1.68	55	63	37.8	MARGINAL	64	36.9	MARGINAL	114	32.1	MARGINAL
US 80 South	0.28	55	2	45.9	GOOD	4	44.9	GOOD	34	29	MARGINAL
Stadium Drive	0.16	45	29	20	CONGESTED	49	11.9	CONGESTED	70	9	SERIOUS
Crawford Road	0.62	45	58	27	MARGINAL	54	25.7	MARGINAL	36	28.9	MARGINAL
Brickyard Road	2.42	45	18	42.1	GOOD	15	42.2	GOOD	61	34.5	OK
Broad Street	0.53	45	-10	58.8	GOOD	-9	58	GOOD	-8	56.2	GOOD
Veterans Parkway	0.3	45	4	46.6	GOOD	8	38.9	GOOD	-1	47	GOOD
			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay	Speed	Congestion
Broad Street	0.30	45	-1	47.7	GOOD	2	42.4	GOOD	3	40.5	GOOD
Brickyard Road	0.53	45	-8	56.1	GOOD	-7	53.6	GOOD	-6	51.9	GOOD
Crawford Road	2.42	45	42	37.5	GOOD	62	34.6	OK	94	30.8	OK
Stadium Drive	0.62	45	15	37.3	GOOD	32	30.5	MARGINAL	36	28.8	MARGINAL
US 80 Sotuh	0.16	45	1	47.8	GOOD	1	42.8	GOOD	2	43.4	GOOD
US 80 North	0.28	55	18	33.3	OK	19	35.8	OK	20	32.4	OK
Pierce Road	1.68	55	6	48.9	GOOD	48	38.5	OK	82	30.5	MARGINAL
Lee Road	2.64	60	-3	61.5	GOOD	3	59.1	GOOD	2	59.4	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

US 280 – ALABAMA

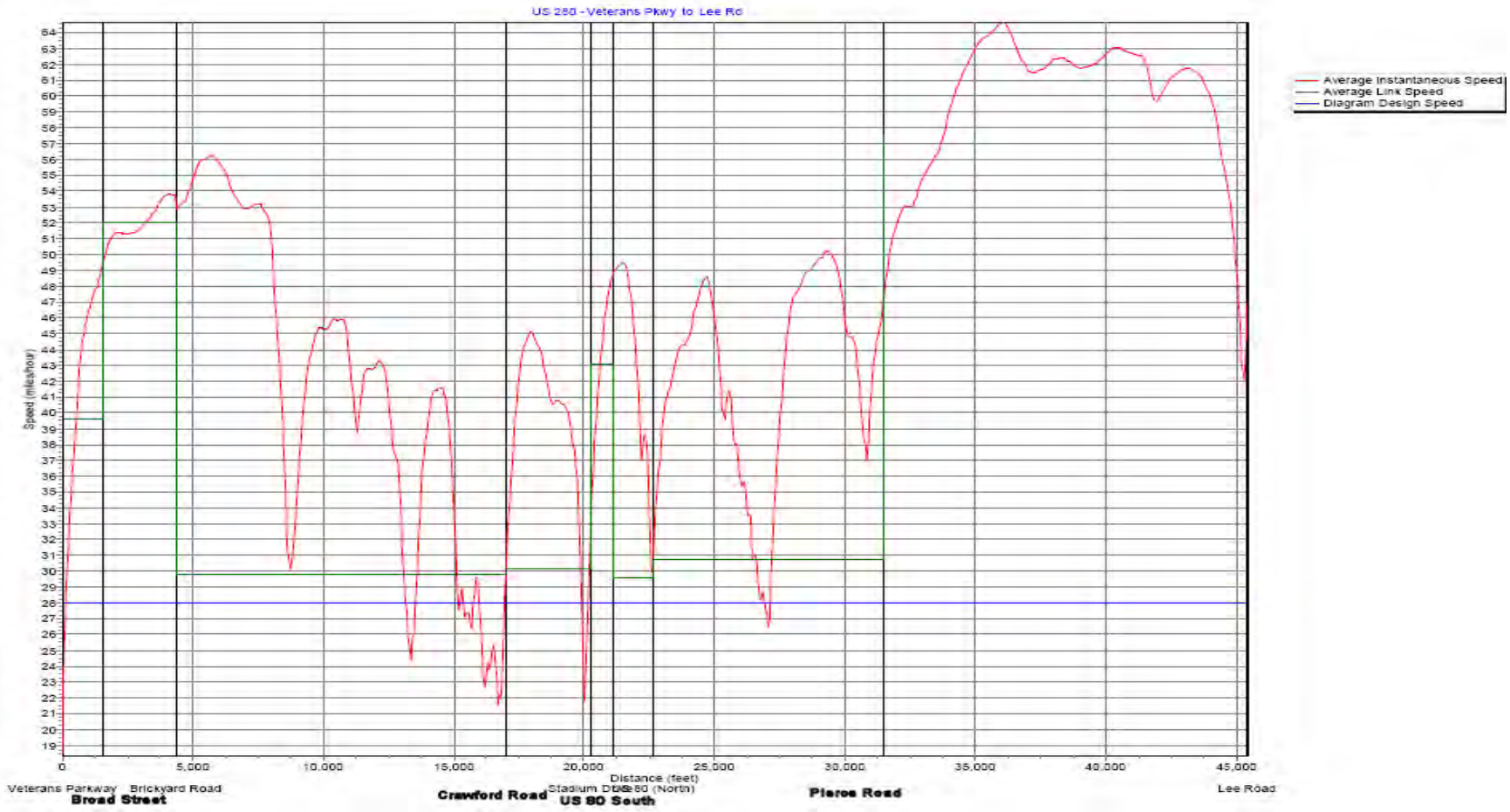
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

US 280—ALABAMA

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

CMP STUDY—SPRING 2007
NORTHBOUND DIRECTION
4TH STREET TO ALMOND ROAD

			AM Peak Period			Off Peak Period			PM Peak Period		
			Northbound			Northbound			Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
9th Street	0.66	30	-2	31.9	GOOD	10	29.4	GOOD	2	29.5	GOOD
13th Street	0.52	30	-4	33.5	GOOD	52	18.2	MARGINAL	78	13.8	CONGESTED
16th Street	0.27	30	1	32.3	GOOD	17	23	OK	12	23	OK
19th Street	0.65	40	8	42.3	GOOD	22	23.3	OK	-1	35	GOOD
23rd Street	0.16	45	-1	47.2	GOOD	10	30.5	OK	6	40.5	GOOD
29th Street	0.35	45	11	44.3	GOOD	2	42.9	GOOD	-2	49.5	GOOD
River Road	0.38	45	31	23.7	MARGINAL	19	34.4	OK	24	37.1	GOOD
Neil Drive	0.32	45	4	44.2	GOOD	16	34.9	OK	14	36.1	OK
Manchester Expwy	0.63	45	-12	41.6	GOOD	6	39.8	GOOD	24	26.4	MARGINAL
50th Street	0.39	45	22	26.7	MARGINAL	3	40.7	GOOD	3	40.5	GOOD
Airport Thruway	0.66	45	44	28	MARGINAL	46	29.5	OK	78	20.5	SERIOUS
Whitesville Road	0.46	45	1	43.2	GOOD	13	32	OK	25	25.5	MARGINAL
W. Britt David	0.25	45	8	47	GOOD	6	37.7	GOOD	57	15.3	SERIOUS
Whittlesey Road	0.75	45	-5	49.2	GOOD	74	20.3	CON-GESTED	45	28.1	MARGINAL
US 80 Southbound Ramps	0.55	45	-1	46.2	GOOD	5	40.8	GOOD	29	28.4	MARGINAL
Double Churches Rd.	0.32	45	48	16.6	SERIOUS	36	29.7	OK	20	29.2	MARGINAL
Williams Road	1.09	45	37	33.9	OK	29	34.9	OK	20	38.1	GOOD
Hancock Road	1.26	50	90	36.4	OK	9	45.6	GOOD	24	40.9	GOOD
Pierce Chapel Road	0.99	55	6	50.3	GOOD	6	50.5	GOOD	9	48.5	GOOD
Wooldridge Road	0.61	55	4	49.3	GOOD	4	48.8	GOOD	11	41.6	OK
Almond Road	1		2	53.8	GOOD	4	52.1	GOOD	11	49.9	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

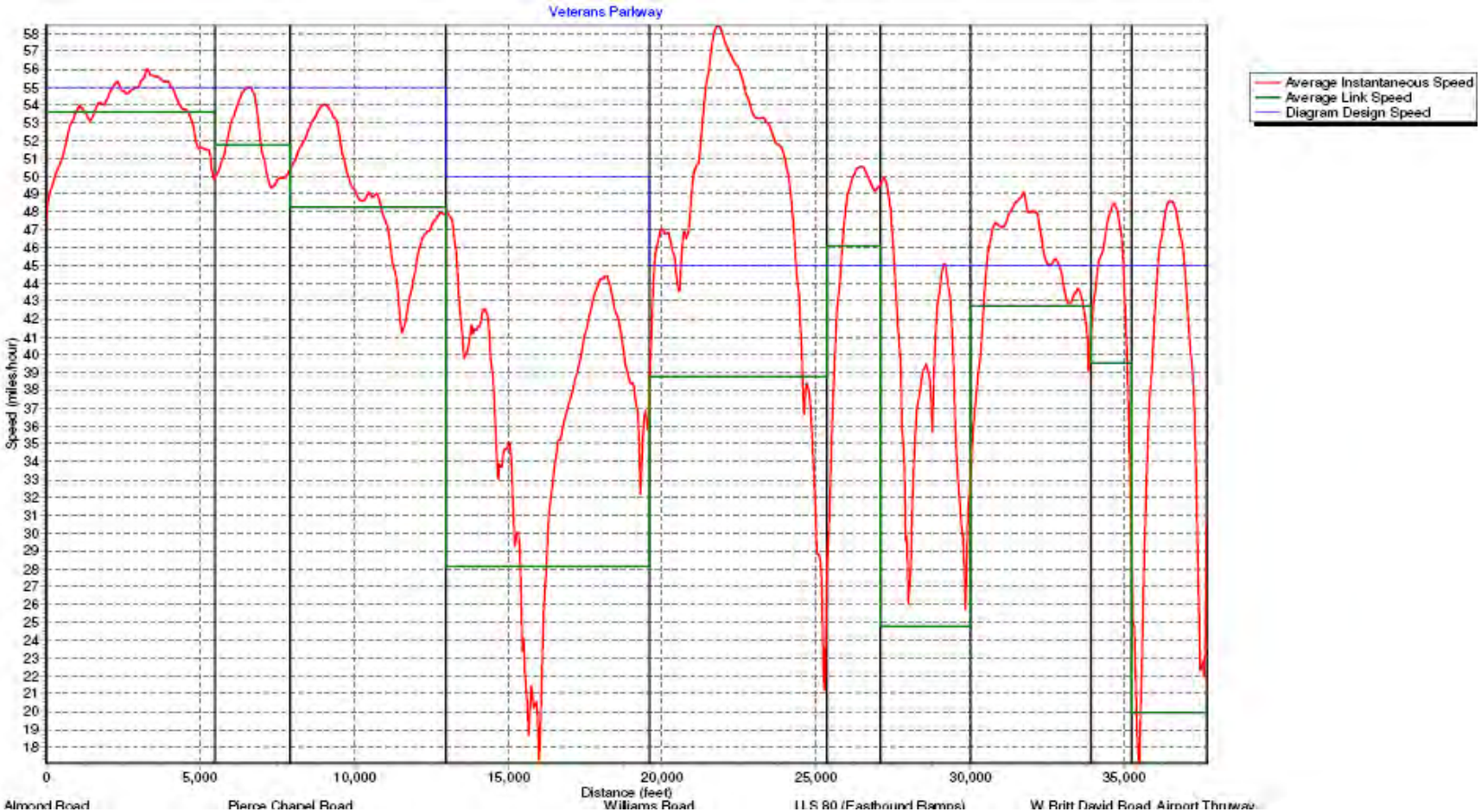
CMP STUDY—SPRING 2007
SOUTHBOUND DIRECTION
ALMOND ROAD TO 4TH STREET

			AM Peak Period			Off Peak Period			PM Peak Period		
			Southbound			Southbound			Southbound		
	Distance (miles)	Speed Limit	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Wooldridge Road	1	55	2	53.5	GOOD	5	51.8	GOOD	2	56.1	GOOD
Pierce Chapel Road	0.61	55	2	51.7	GOOD	5	47.7	GOOD	-1	56.3	GOOD
Hancock Road	0.99	50	9	48.3	GOOD	9	48.2	GOOD	3	53.2	GOOD
Williams Road	1.26	45	87	28.2	MARGINAL	47	33.8	OK	46	33.4	OK
Double Churches Road	1.09	45	17	38.8	GOOD	40	33	OK	34	33.8	OK
US 80 Southbound Ramp	0.32	45	-1	46.1	GOOD	1	43.4	GOOD	0	45.2	GOOD
Whittlesey Road	0.55	45	45	24.8	MARGINAL	78	18.1	CONGESTED	80	17.2	CONGESTED
W. Britt David	0.75	45	6	42.7	GOOD	5	42.7	GOOD	29	31.1	OK
Whitesville Road	0.25	45	31	23.2	MARGINAL	43	22.5	MARGINAL	5	39.1	GOOD
Airport Thruway	0.46	45	27	27.9	MARGINAL	23	25.7	MARGINAL	24	30.9	OK
50th Street	0.66	45	4	43.1	GOOD	6	41.6	GOOD	3	43.2	GOOD
Manchester Expwy	0.39	45	12	38.7	GOOD	20	32	OK	41	26.6	MARGINAL
Neil Drive	0.63	45	0	46.6	GOOD	-2	50.1	GOOD	0	46.4	GOOD
River Road	0.32	45	46	25.3	MARGINAL	42	23.4	MARGINAL	37	24.8	MARGINAL
29th Street	0.38	45	-1	46.5	GOOD	1	43.6	GOOD	-1	47.3	GOOD
23rd Street	0.35	45	-6	54.8	GOOD	0	46.9	GOOD	0	50.1	GOOD
19th Street	0.16	40	13	34.3	OK	15	35	OK	33	30	OK
16th Street	0.65	30	2	41	GOOD	2	41.3	GOOD	18	29.1	OK
13th Street	0.27	30	15	26.7	GOOD	41	16.6	MARGINAL	33	18	MARGINAL
9th Street	0.52	30	3	29.3	GOOD	33	20.2	OK	10	27.5	GOOD
4th Street	0.66	30	19	24.9	GOOD	12	28.6	GOOD	-9	35.5	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

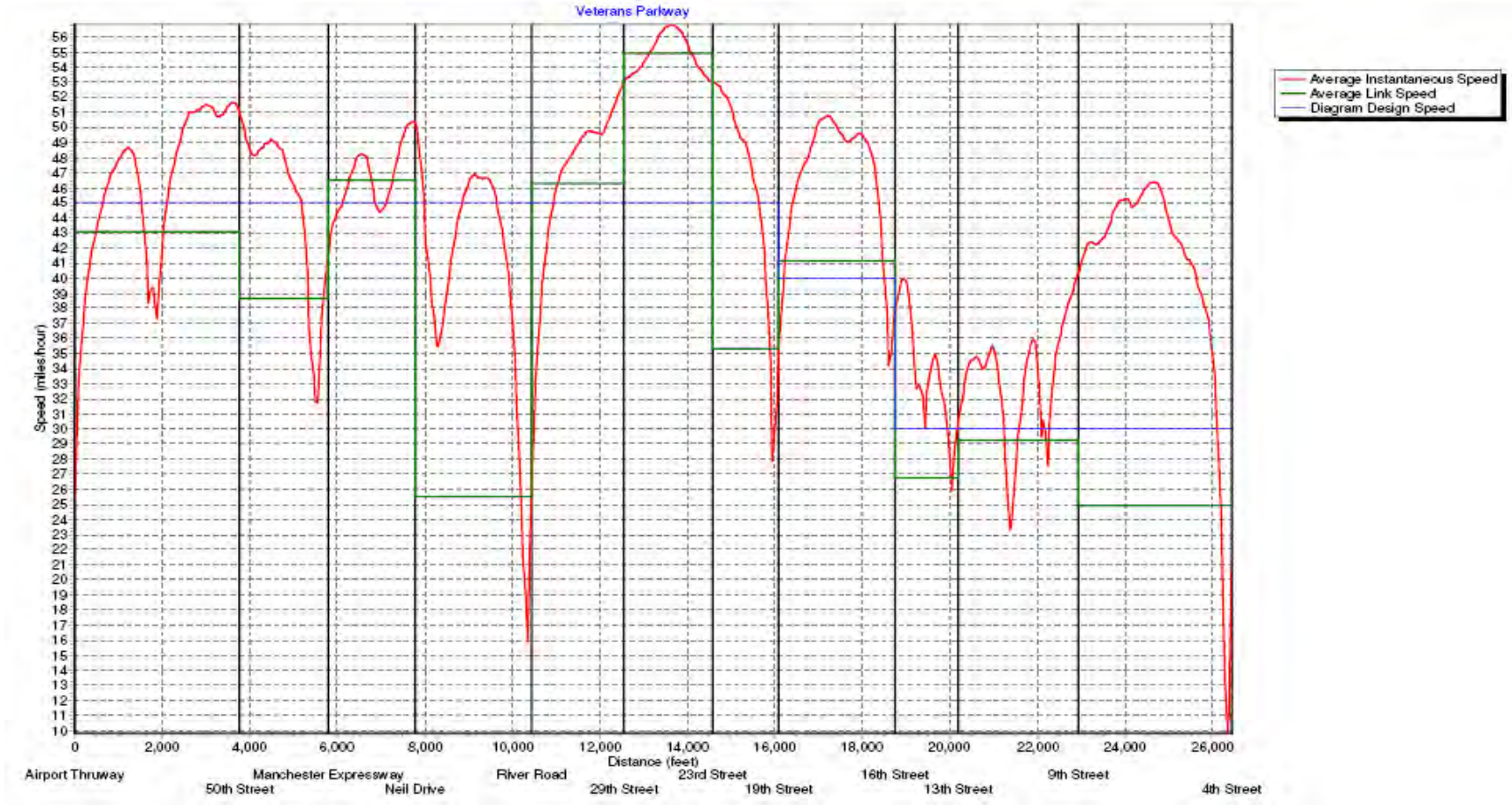
CMP STUDY—SPRING 2007
AM PEAK CONGESTION
NORTH SECTION
ALMOND RD TO AIRPORT THRUWAY



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

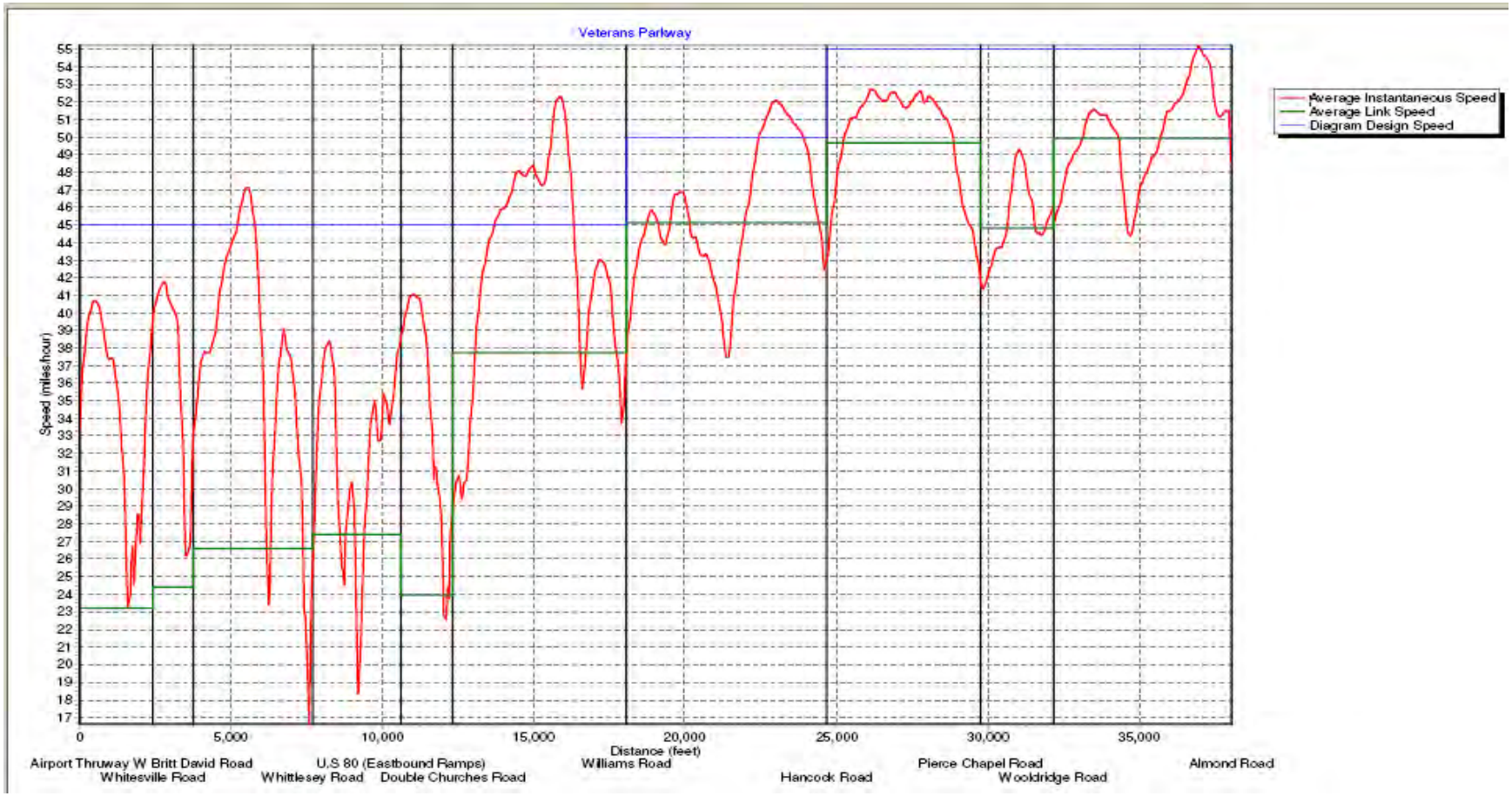
CMP STUDY—SPRING 2007
AM PEAK CONGESTION
SOUTH SECTION
AIRPORT THRUWAY TO 4TH STREET



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

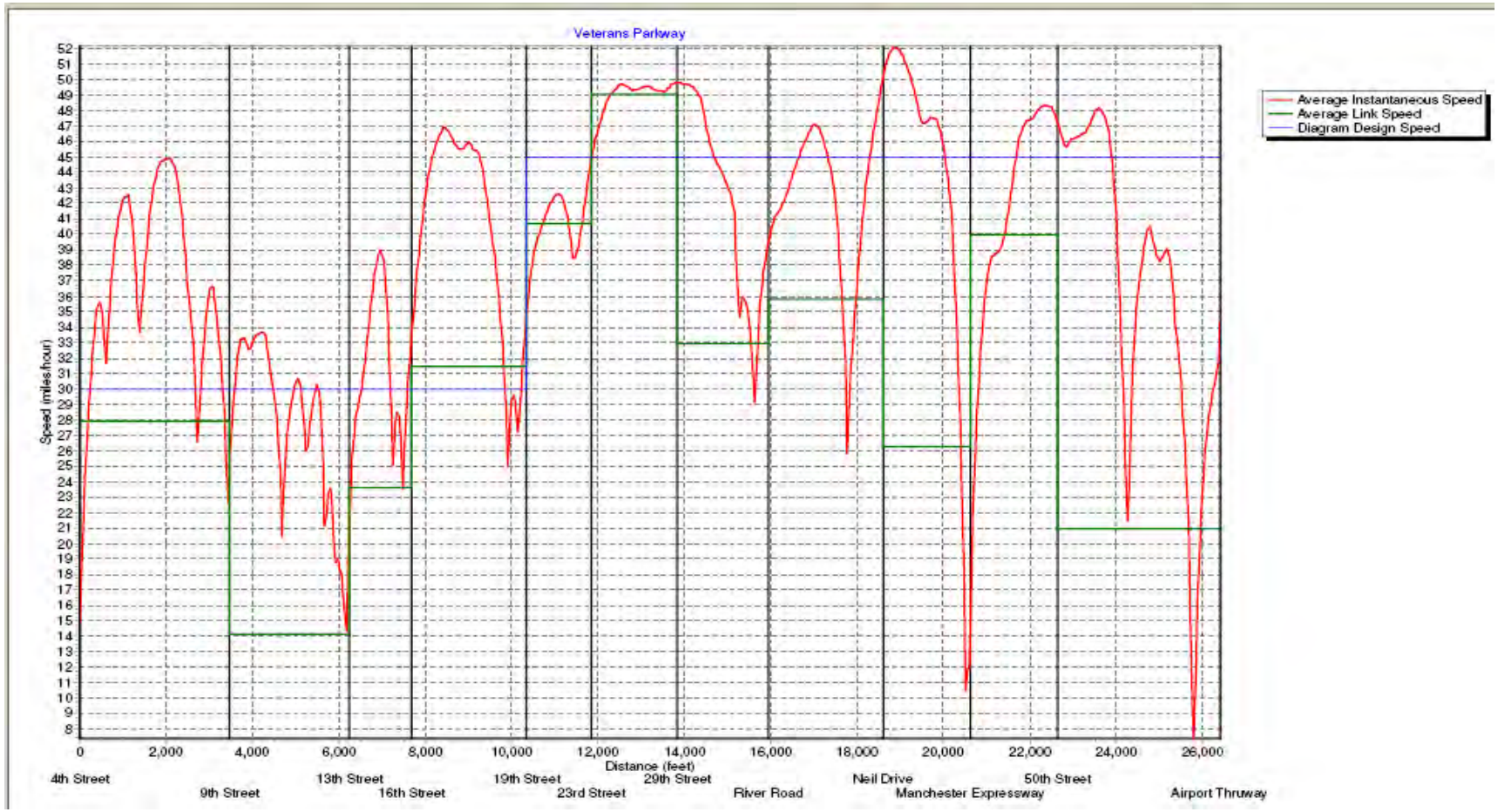
CMP STUDY—SPRING 2007
PM PEAK CONGESTION
NORTH SECTION
AIRPORT THRUWAY TO ALMOND ROAD



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VETERANS PARKWAY

CMP STUDY—SPRING 2007
PM PEAK CONGESTION
SOUTH SECTION
4TH STREET TO AIRPORT THRUWAY



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VICTORY DRIVE

CMP STUDY—SPRING 2007

Mitigation Strategies and Associated Impact on CMP Performance Measures

Victory Drive	Travel Time	V/C Ratio	Arterial/ Intersection LOS	Transit System Measures	Incident Management
TDM Measures	▲	▶	▶	▶	▶
Traffic Oper. Imp.	▲	▶	▲	▶	▶
Growth Management	▲	▶	▲	▶	▲
Access Management	▶	▲	▲	▶	▲
Non Motorized Modes	▲	▶	▲	▶	▶

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VICTORY DRIVE

CMP STUDY—SPRING 2007

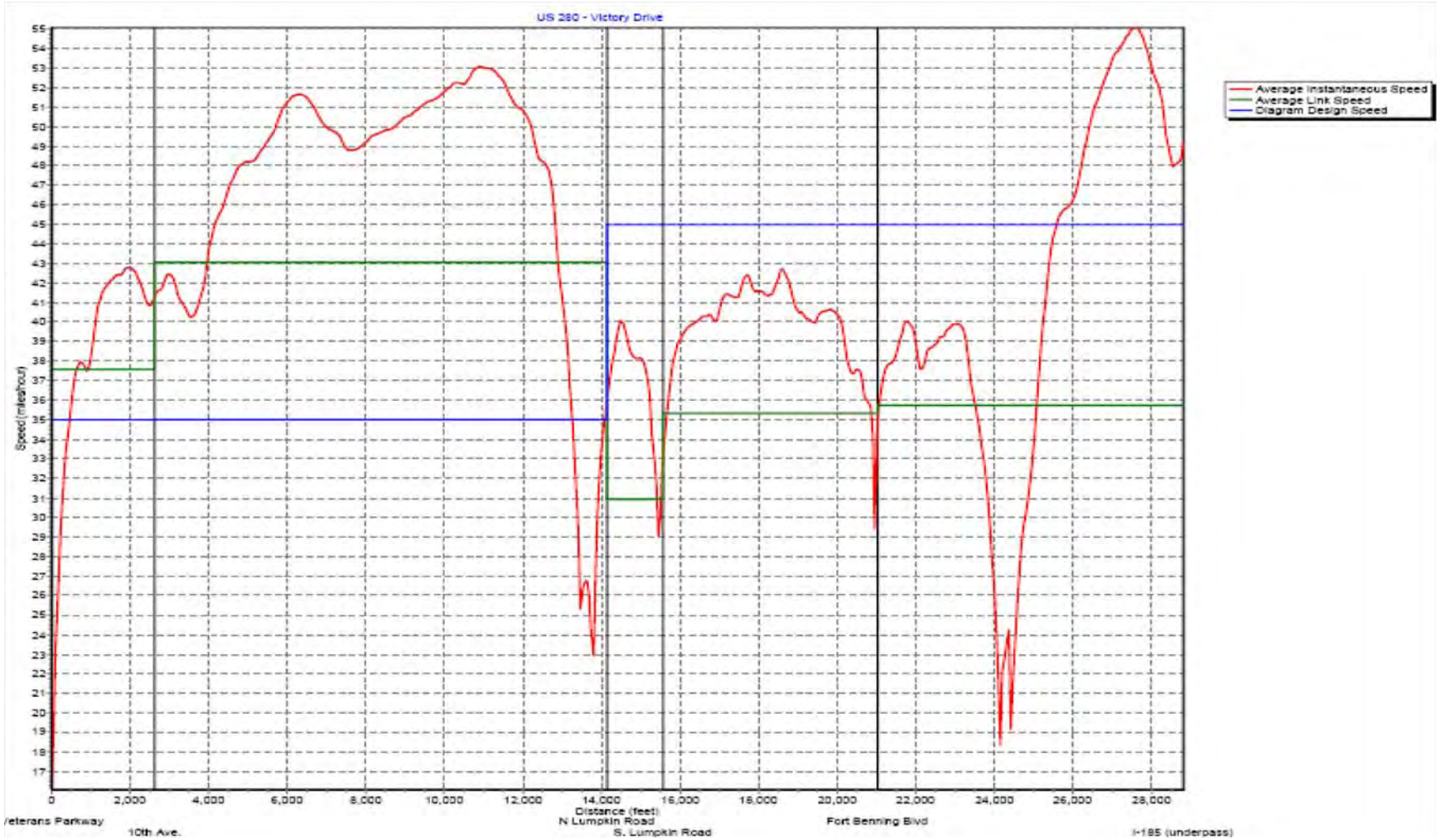
			AM Peak Period Westbound			Off Peak Period Westbound			PM Peak Period Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Conges-tion	Delay (seconds)	Speed (mph)	Congestion
I-185											
Ft. Benning Rd.	1.47	45	35	35	OK	13	40.3	GOOD	22	38.3	GOOD
South Lumpkin Rd.	1.03	45	3	44.1	GOOD	5	43.1	GOOD	19	38.3	GOOD
North Lumpkin Rd.	0.28	45	9	33.8	OK	2	39.5	GOOD	-1	44.9	GOOD
10th Avenue	2.18	35	17	42.4	GOOD	18	42.4	GOOD	22	41.7	GOOD
Veterans Pkwy.	0.50	35	12	32.1	GOOD	17	30.2	GOOD	34	23.1	OK

			AM Peak Period Eastbound			Off Peak Period Eastbound			PM Peak Period Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Conges-tion	Delay (seconds)	Speed (mph)	Congestion
Veterans Pkwy.											
Tenth Avenue	0.50	35	-4	37.5	GOOD	-4	37.3	GOOD	-7	39.8	GOOD
North Lumpkin Rd.	2.18	35	-31	43.1	GOOD	10	35	GOOD	-30	42.6	GOOD
South Lumpkin Rd.	0.28	45	15	30.9	OK	18	30.3	OK	39	24.5	MARGINAL
Ft. Benning Rd.	1.03	45	29	35.3	OK	32	33.3	OK	43	33	OK
I-185	1.47	45	33	35.7	OK	12	41.4	GOOD	0	46.4	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VICTORY DRIVE

CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

VICTORY DRIVE

CMP STUDY—SPRING 2007
PM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WARM SPRINGS ROAD

CMP STUDY—SPRING 2007
EASTBOUND TRAFFIC
VETERANS PKWY TO COUNTY LINE RD

			AM Peak Period Eastbound			Off Peak Period Eastbound			PM Peak Period Eastbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
12th Avenue	0.78	30	6	29	GOOD	61	18.9	MARGINAL	61	18.9	MARGINAL
17th Avenue	0.68	30	-17	38.6	GOOD	46	21.4	OK	46	21.4	OK
Hilton Avenue	0.61	30	2	32.1	GOOD	18	27.2	GOOD	18	27.2	GOOD
Armour Road	0.45	40	24	27.2	OK	37	26.1	OK	37	26.1	OK
I-185 (overpass)	0.29	40	8	37	GOOD	26	25.2	MARGINAL	26	25.2	MARGINAL
Manchester Expwy	1.15	40	41	31.4	OK	83	25.1	MARGINAL	83	25.1	MARGINAL
Manchester Expwy	1.01	35	4	36.9	GOOD	18	32.5	GOOD	18	32.5	GOOD
Miller Rd.	1.11	35	-53	36.1	GOOD	-14	21.8	MARGINAL	-14	21.8	MARGINAL
Blackmon Rd.	1.08	40	-8	43.9	GOOD	-5	42.8	GOOD	-5	42.8	GOOD
Schomburg Rd.	1.17	40	-12	45.7	GOOD	-15	46.8	GOOD	-15	46.8	GOOD
US 80	0.86	40	-15	49.9	GOOD	-8	44.8	GOOD	-8	44.8	GOOD
Pierce Chapel Rd.	0.51	40	-5	46.5	GOOD	-10	51.6	GOOD	-10	51.6	GOOD
Lynch Rd.	2.02	45	-8	47.9	GOOD	-19	51	GOOD	-19	51	GOOD
County Line Rd.	0.70	45	-1	49	GOOD	-3	50.1	GOOD	-3	50.1	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WARM SPRINGS ROAD

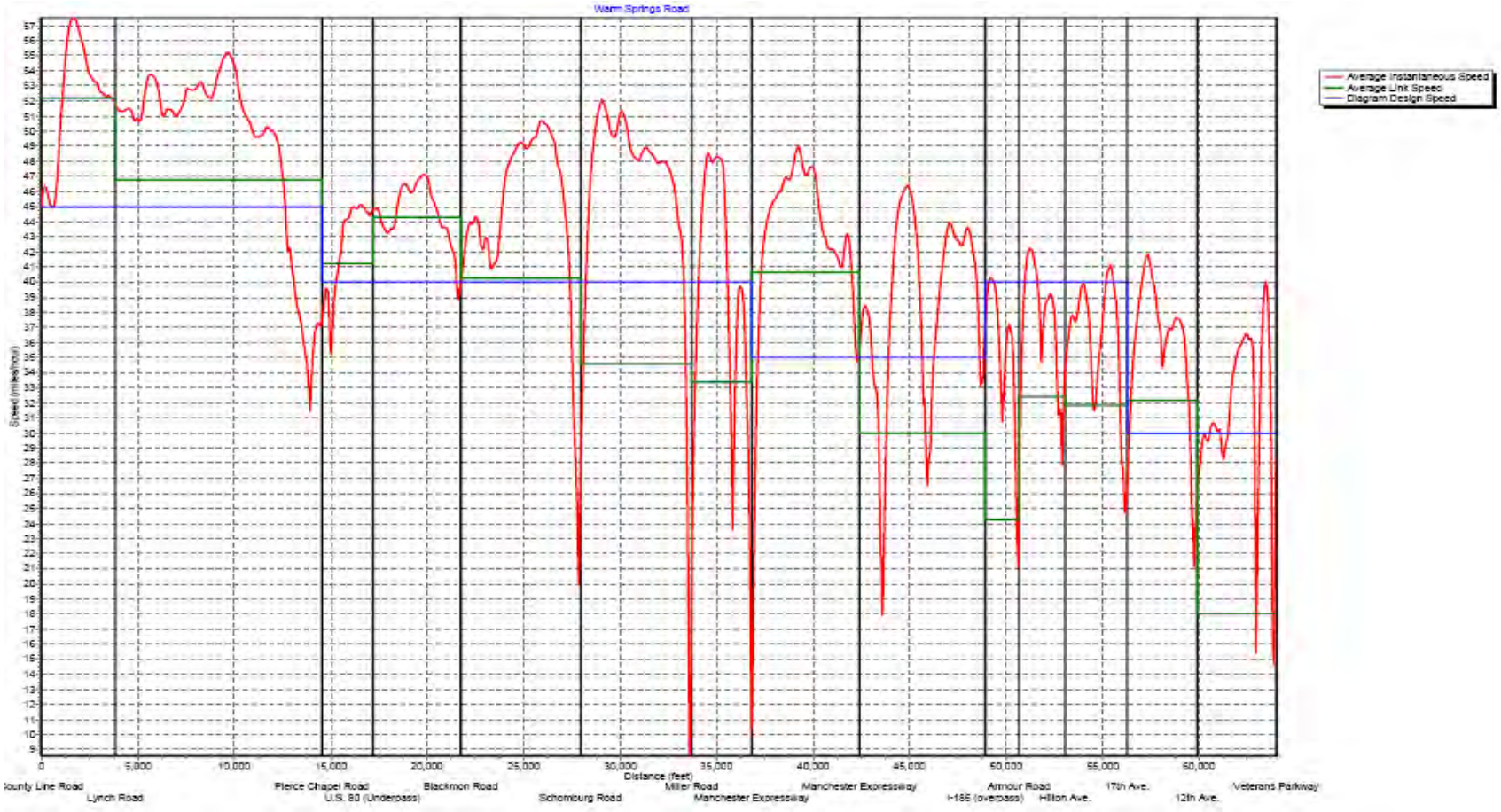
CMP STUDY—SPRING 2007
WESTBOUND TRAFFIC
COUNTY LINE ROAD TO VETERANS PKWY

			AM Peak Period Westbound			Off Peak Period Westbound			PM Peak Period Westbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
County Line Rd.	0.70	45	-5	52.2	GOOD	-5	51.7	GOOD	-5	51.7	GOOD
Lynch Rd.	2.02	45	-2	46.8	GOOD	-21	51.8	GOOD	-21	51.8	GOOD
Pierce Chapel Rd.	0.51	40	1	41.2	GOOD	-9	49.7	GOOD	-9	49.7	GOOD
Schomburg Rd.	0.86	40	-8	44.3	GOOD	-14	48.9	GOOD	-14	48.9	GOOD
Blackmon Rd.	1.17	40	4	40.2	GOOD	-10	45	GOOD	-10	45	GOOD
Miller Rd.	1.08	40	17	34.6	GOOD	2	40.1	GOOD	2	40.1	GOOD
Manchester Expwy	1.11	40	-35	33.4	GOOD	-34	33.3	GOOD	-34	33.3	GOOD
Manchester Expwy	1.01	35	-11	40.6	GOOD	-2	37.6	GOOD	-2	37.6	GOOD
I-185 (overpass)	1.15	35	42	30	GOOD	19	33.1	GOOD	19	33.1	GOOD
Armour Road	0.29	40	33	24.3	MARGINAL	30	24.8	MARGINAL	30	24.8	MARGINAL
Hilton Avenue	0.45	40	15	32.4	GOOD	19	29	OK	19	29	OK
17th Avenue	0.61	40	18	31.8	OK	46	23	MARGINAL	46	23	MARGINAL
12th Avenue	0.68	30	-5	32.2	GOOD	18	25.2	GOOD	18	25.2	GOOD
Veterans Parkway	0.78	30	63	18	MARGINAL	48	20.3	OK	48	20.3	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WARM SPRINGS ROAD

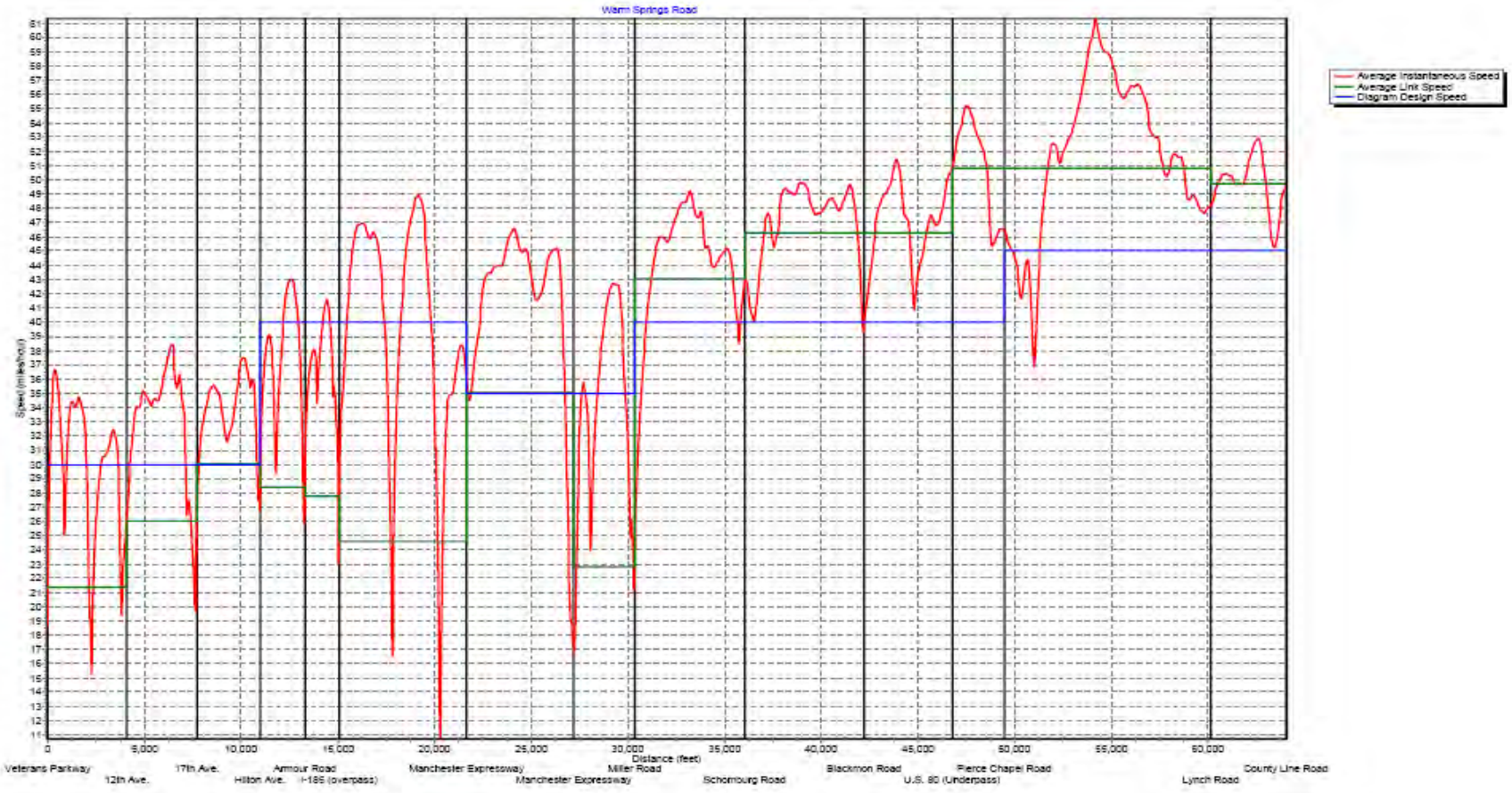
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WARM SPRINGS ROAD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITESVILLE ROAD

CMP STUDY—SPRING 2007

WILLIAMS ROAD TO AIRPORT THRUWAY

			AM Peak Period			Off Peak Period			PM Peak Period		
			Southbound			Southbound			Southbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Double Churches	1.06	40	23	32.9	GOOD	28	31.7	OK	48	27	OK
US 80	0.99	40	0	40.2	GOOD	2	39.4	GOOD	5	38.1	GOOD
Whittlesey Blvd.	0.22	40	6	37.4	GOOD	16	28.5	OK	32	21.1	MARGINAL
Bradley Park Drive	0.48	40	44	22.5	MARGINAL	26	28.6	OK	58	18.6	CON-GESTED
Veterans Parkway	0.51	40	34	24.8	MARGINAL	36	24.7	MARGINAL	60	19.5	CON-GESTED
Airport Thruway	0.45	30	38	20.9	MARGINAL	26	20.5	OK	15	23.9	OK
			AM Peak Period			Off Peak Period			PM Peak Period		
			Northbound			Northbound			Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Veterans Parkway	0.45	30	56	16.5	MARGINAL	57	16.2	MARGINAL	102	11.3	SERIOUS
Bradley Park Drive	0.51	40	4	36.8	GOOD	14	31.7	OK	25	28.7	OK
Whittlesey Blvd.	0.48	40	11	33.4	GOOD	7	36	GOOD	20	29.1	OK
US 80	0.22	40	1	37.4	GOOD	0	40.3	GOOD	1	39	GOOD
Double Churches	0.99	40	26	32.3	GOOD	14	35.2	GOOD	11	35.8	GOOD
Williams Road	1.06	40	30	30.6	OK	8	37.5	GOOD	5	38.1	GOOD

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITESVILLE ROAD

CMP STUDY—SPRING 2007
AM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITESVILLE ROAD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY ROAD

CMP STUDY—SPRING 2007

BRADLEY PARK DRIVE TO VETERANS PARKWAY

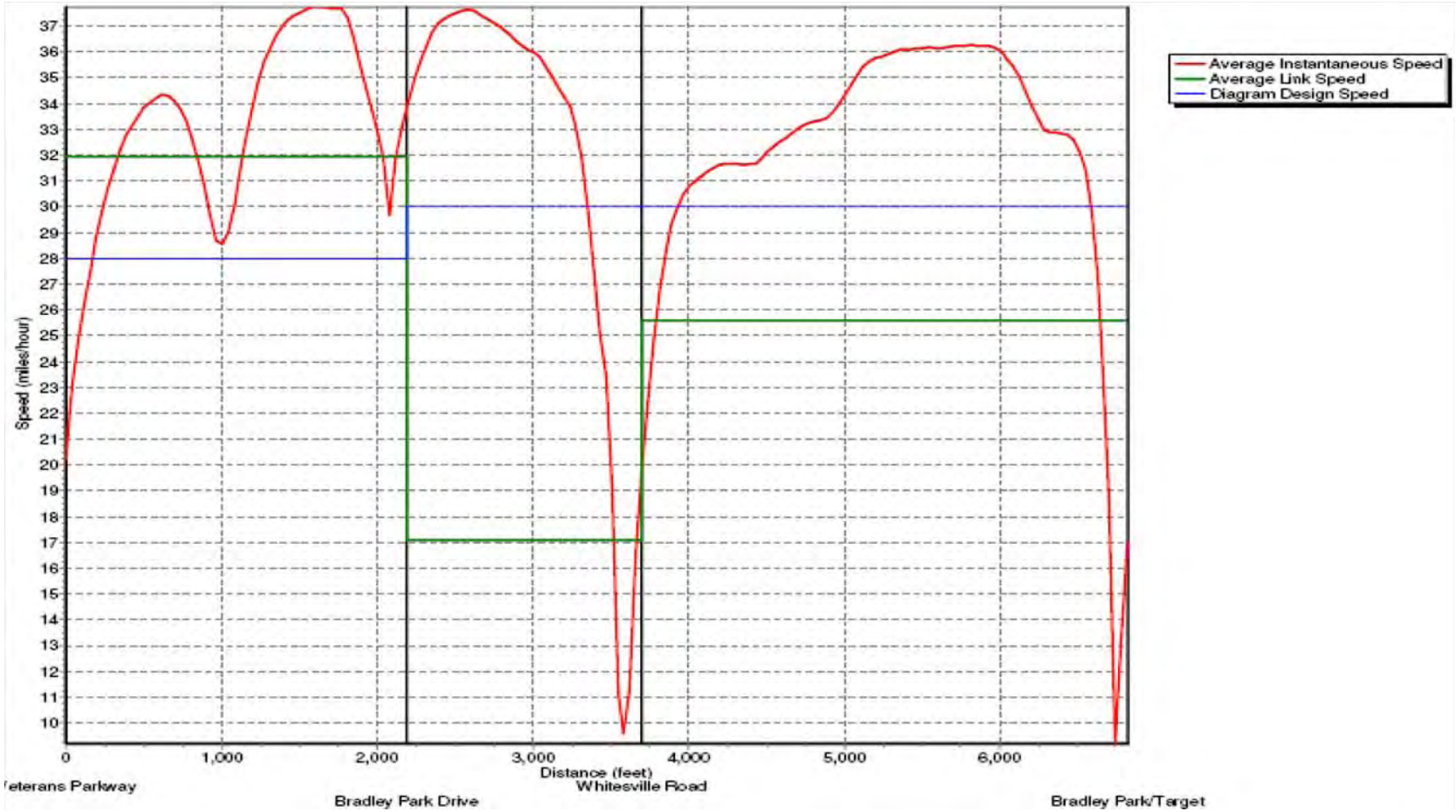
			AM Peak Period			Off Peak Period			PM Peak Period		
			Eastbound			Eastbound			Eastbound		
	Distance	Free Flow	Delay	Speed	Congestion	Delay	Speed	Congestion	Delay	Speed	Congestion
	(miles)	(mph)	(seconds)	(mph)		(seconds)	(mph)		(seconds)	(mph)	
Whitesville Rd	0.6	30	10	26	GOOD	8	27.3	GOOD	16	24.9	GOOD
Bradley Park	0.28	35	26	21.8	MARGINAL	7	30.4	GOOD	15	25	OK
Veterans Pkwy.	0.41	35	20	26.9	OK	51	19.4	MARGINAL	176	7.4	SERIOUS

			AM Peak Period			Off Peak Period			PM Peak Period		
			Westbound			Westbound			Westbound		
	Distance	Free Flow	Delay	Speed	Congestion	Delay	Speed	Congestion	Delay	Speed	Congestion
	(miles)	(mph)	(seconds)	(mph)		(seconds)	(mph)		(seconds)	(mph)	
Veterans Pkwy.											
Bradley Park	0.41	35	5	31.9	GOOD	14	27.8	OK	21	24	OK
Whitesville	0.28	35	37	17.1	CONGESTED	22	24.9	OK	54	15.5	CONGESTED
Bradley Park	0.6	30	15	25.6	GOOD	21	24.3	GOOD	39	19.8	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY ROAD

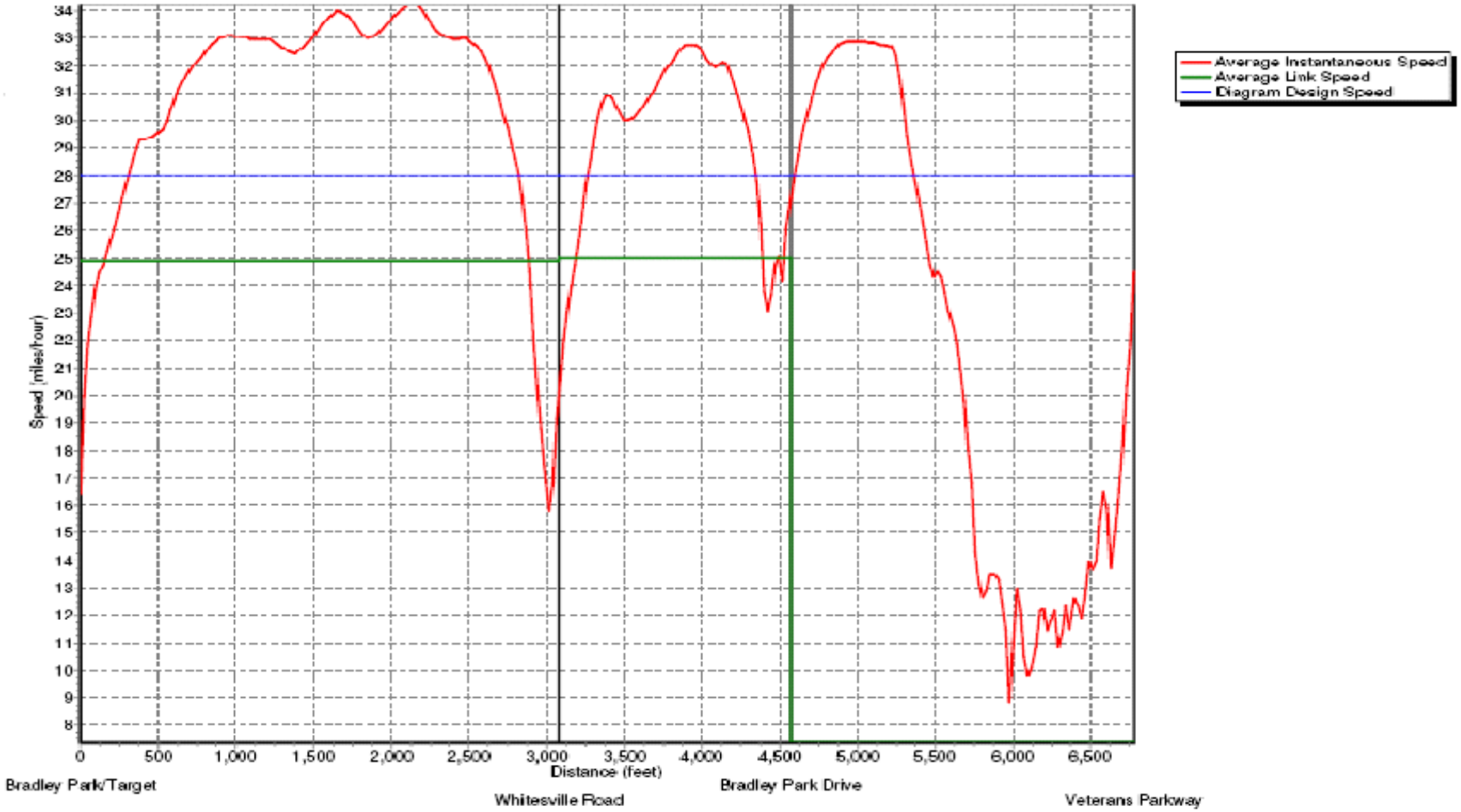
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY ROAD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY BOULEVARD

CMP STUDY—SPRING 2007

BRADLEY PARK DRIVE TO VETERANS PARKWAY

Eastbound from Veterans Parkway to Moon Road

		AM Peak			Off Peak			PM Peak		
	Design Speed (mph)	Delay (seconds)	Average Speed (mph)	Congestion	Delay	Average Speed (mph)	Congestion	Delay (seconds)	Average Speed (mph)	Congestion
Main Street	35	19	17.8	CONGESTED	43	12.6	SERIOUS	36	11.7	SERIOUS
Adams Farm Road	35	-26	33.7	GOOD	-29	36.7	GOOD	-28	36.2	GOOD
CPC #2	35	-1	36.9	GOOD	7	31	GOOD	8	28.9	GOOD
CPC #3	35	-1	36.9	GOOD	7	31	GOOD	8	28.9	GOOD
CPC #4	35	-1	37.9	GOOD	9	27.1	OK	9	25.6	OK
CPC #5	35	-1	37.6	GOOD	17	20.8	MARGINAL	-1	38.6	GOOD
Moon Road	35	31	28.4	GOOD	37	28.2	GOOD	33	28.4	GOOD

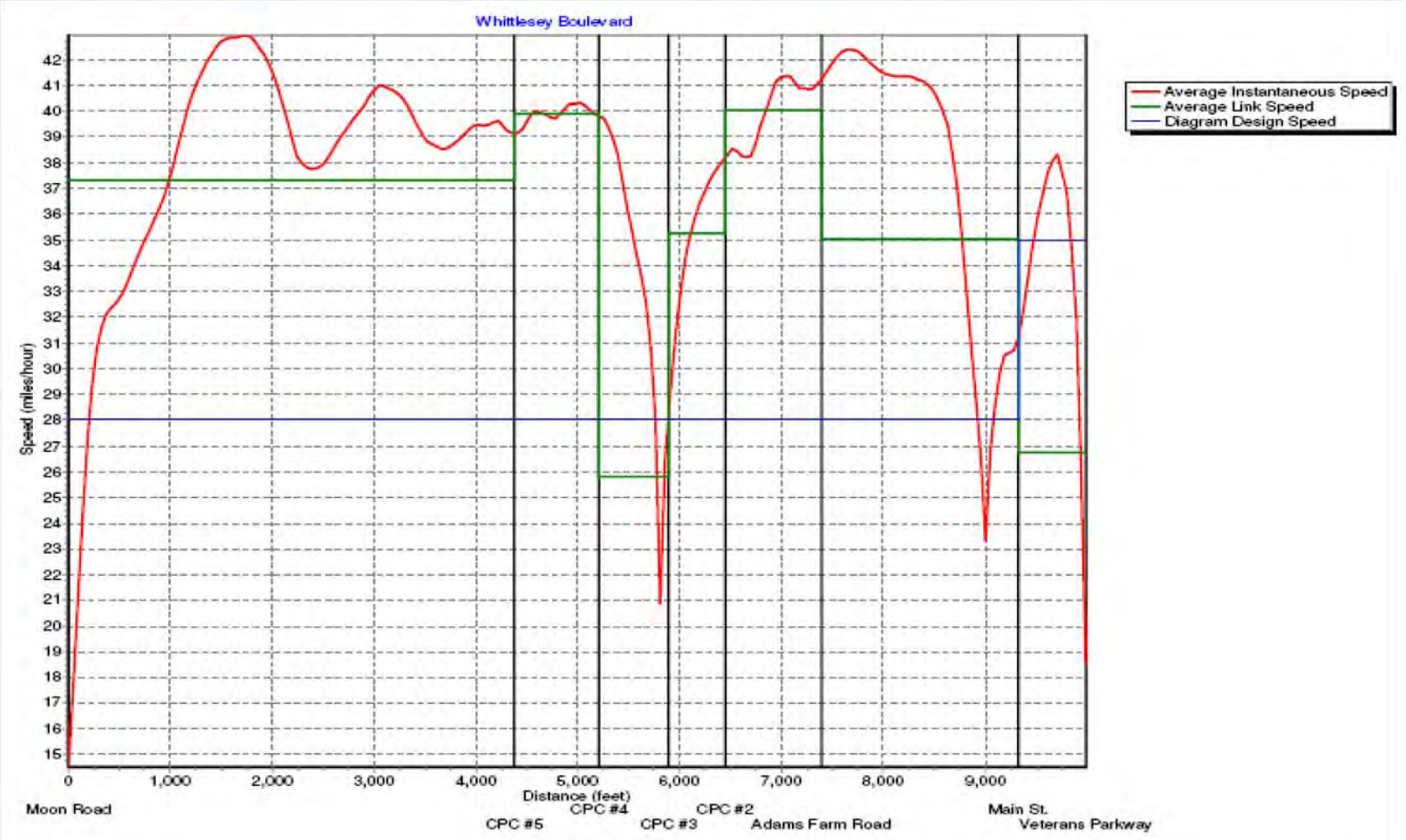
Westbound from Moon Road to Veterans Parkway

		AM Peak			Off Peak			PM Peak		
	Design Speed (mph)	Delay (seconds)	Average Speed (mph)	Congestion	Delay	Average Speed (mph)	Congestion	Delay (seconds)	Average Speed (mph)	Congestion
CPC #5	35	-22	37.3	GOOD	-24	38.3	GOOD	-13	34.4	GOOD
CPC #4	35	-6	39.9	GOOD	1	31.1	GOOD	37	10.2	SERIOUS
CPC #3	35	6	25.8	OK	-1	33.8	GOOD	19	20.7	MARGINAL
CPC #2	35	-2	35.2	GOOD	4	29.3	GOOD	1	28.2	GOOD
Adams Farm Road	35	-7	40	GOOD	10	21	MARGINAL	4	26.8	OK
Main Street	35	-44	35	GOOD	-15	21.9	MARGINAL	-18	21.4	MARGINAL
Veterans Pkwy	35	18	26.7	OK	11	23.4	OK	17	18.7	MARGINAL

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY BOULEVARD

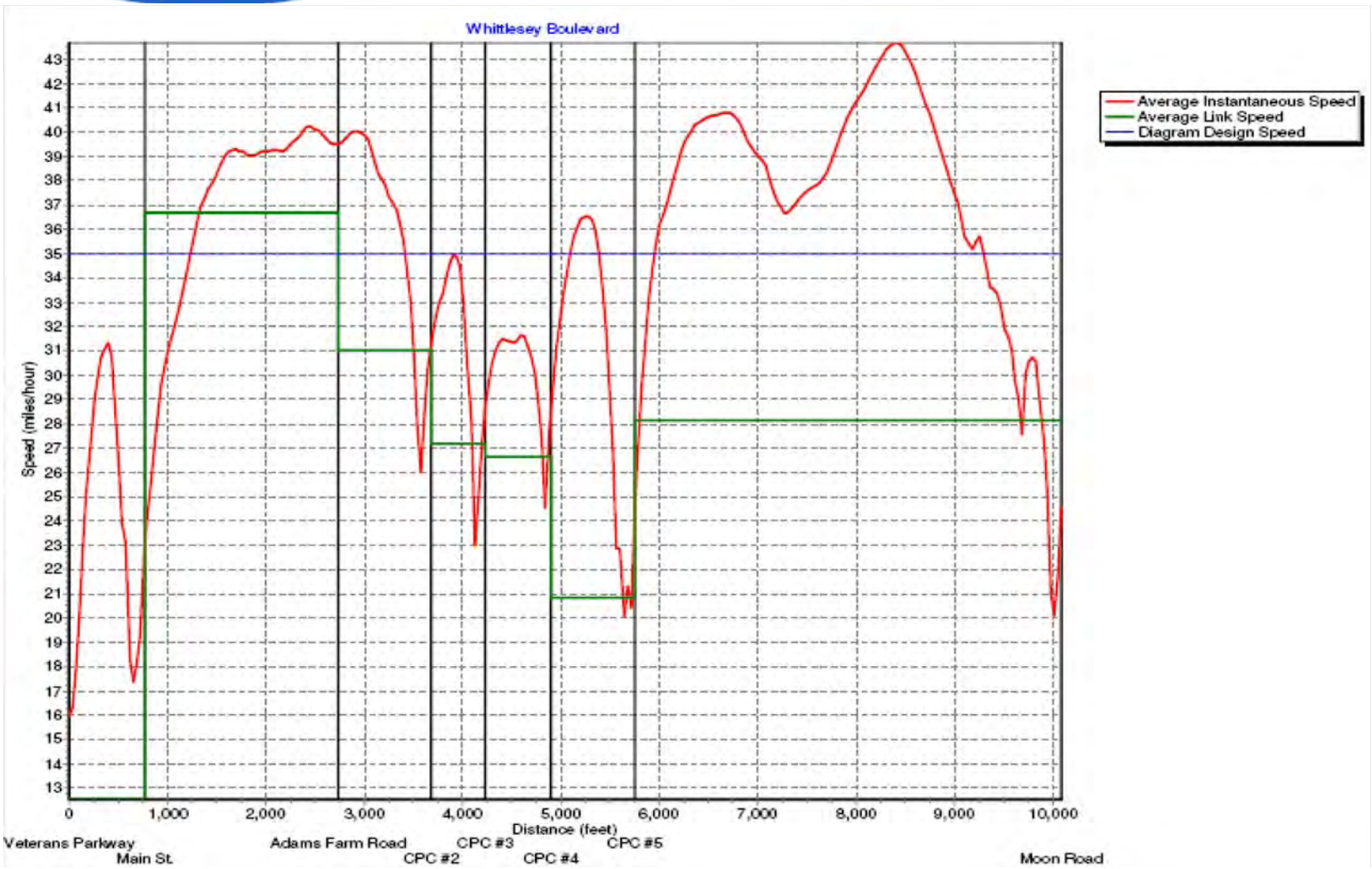
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WHITTLESEY BOULEVARD

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WILLIAMS AND MOON ROADS

CMP STUDY—SPRING 2007
WHITESVILLE ROAD TO MILLER ROAD

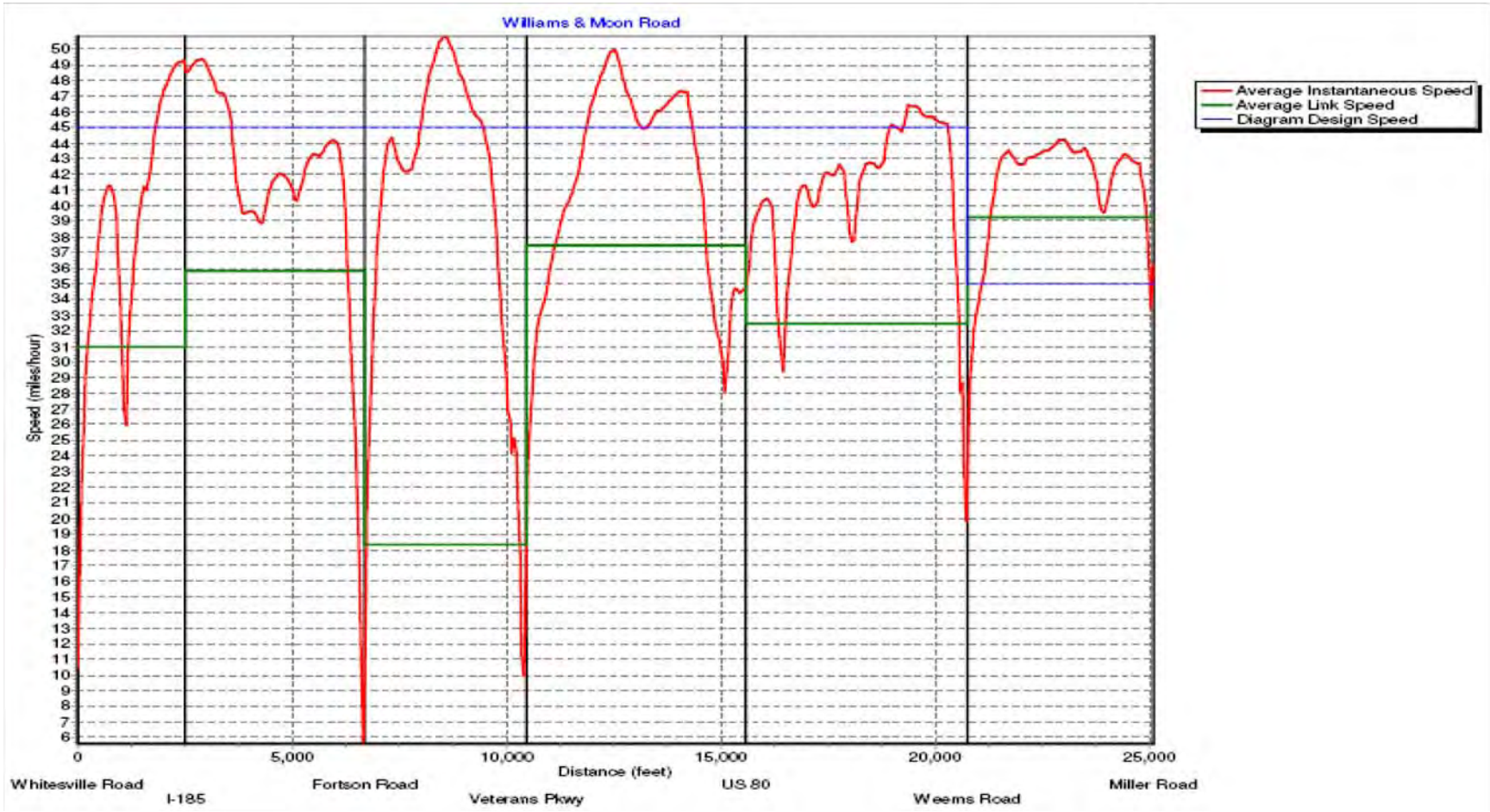
			AM Peak Period Southbound			Off Peak Period Southbound			PM Peak Period Southbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
I-185	0.48	45	20	31	OK	6	41.1	GOOD	22	30.4	OK
Fortson Road	0.79	45	16	36	OK	0	45.5	GOOD	16	36.7	GOOD
Veterans Pkwy.	0.72	45	83	21.4	MARGINAL	51	24.8	MARGINAL	49	25.9	MARGINAL
US 80	0.97	40	15	37.6	GOOD	7	41.8	GOOD	66	28.1	OK
Weems Road	0.97	35	38	33.1	GOOD	38	30.7	GOOD	160	16.1	CONGESTED
Miller Road	0.82	35	-6	38.6	GOOD	-8	39.6	GOOD	20	28.7	GOOD

			AM Peak Period Northbound			Off Peak Period Northbound			PM Peak Period Northbound		
	Distance (miles)	Free Flow (mph)	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion	Delay (seconds)	Speed (mph)	Congestion
Weems Road	0.82	35	8	33.1	GOOD	-4	37.7	GOOD	20	29.4	GOOD
US 80	0.97	35	19	31	GOOD	31	27	OK	64	23.7	OK
Veterans Pkwy.	0.97	40	97	21.6	MARGINAL	31	33.5	GOOD	58	28.4	OK
Fortson Road	0.72	45	16	35.8	OK	23	33.7	OK	19	34.8	OK
I-185	0.79	45	6	41.5	GOOD	5	41.6	GOOD	3	43.4	GOOD
Whitesville Road	0.48	45	14	34.9	OK	12	37.3	GOOD	19	32.8	OK

COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WILLIAMS AND MOON ROADS

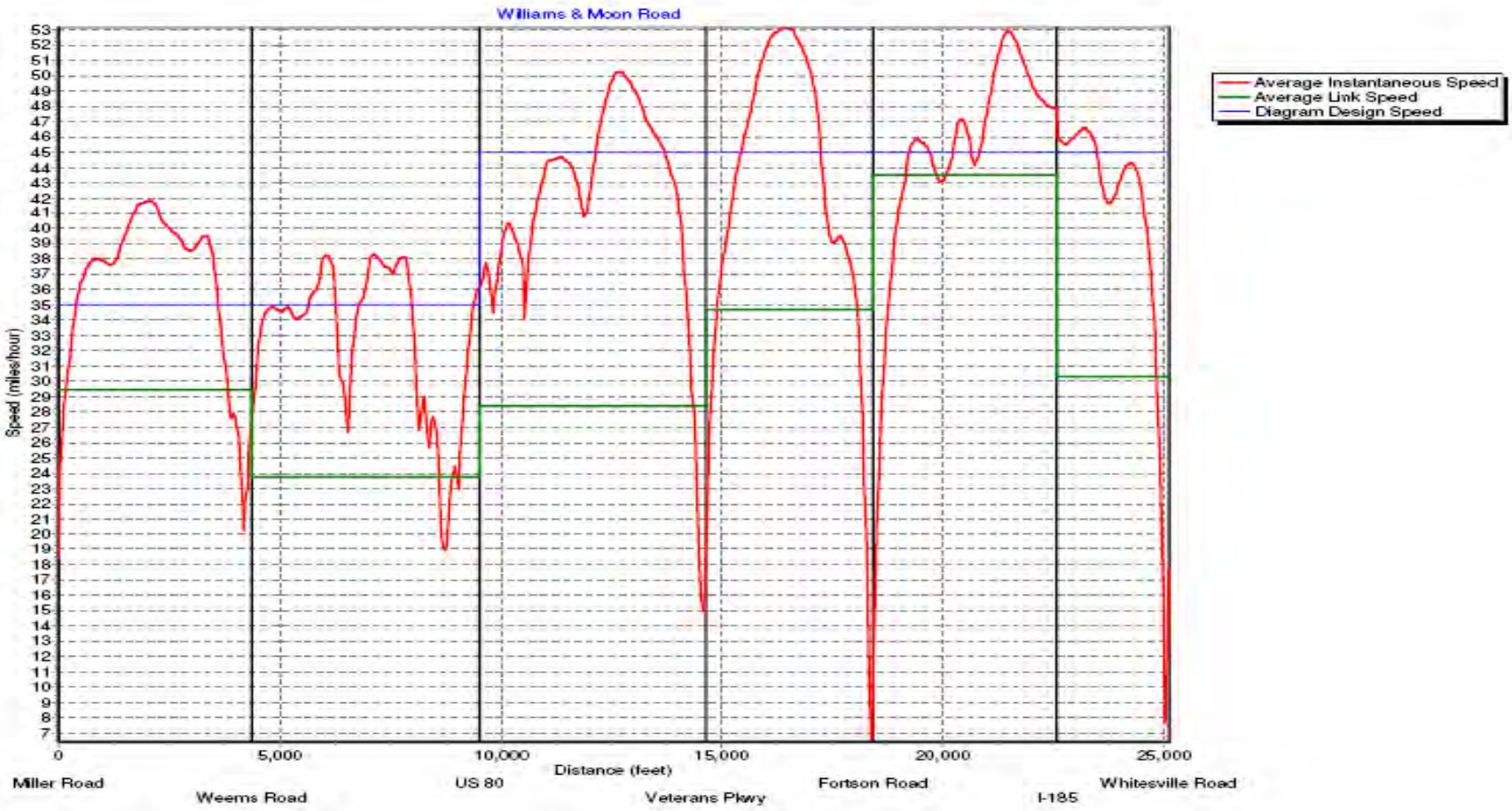
CMP STUDY—SPRING 2007
AM PEAK CONGESTION



COLUMBUS-PHENIX CITY
METROPOLITAN PLANNING ORGANIZATION

WILLIAMS AND MOON ROADS

CMP STUDY—SPRING 2007
PM PEAK CONGESTION



APPENDIX B
STRATEGIES FOR TRANSPORTATION SYSTEMS

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION

No Impact/Not A Measure
▲ Likely Potential Benefit
▼ Likely Potential Disbenefit
◀▶ Mixed Impact

IMPACTS OF STRATEGIES ON TRANSPORTATION SYSTEM

STRATEGY CLASS/GROUP	Reduce Total Vehicle Trips	Increase HOV Trips	Increase Non-Auto Trips	Improve Vehicular Travel Time	Improve HOV Travel Times	Improve Transit Travel Times	Reduce VMT	Shift Trip Timing	Safety	Air Quality	Other Environmental Socio Economic Factors
1. TDM Measures											
A. Ridesharing Programs	▲	▲	◀▶				▲	◀▶		▲	▲
B. Alternative Work Arrangements	▲						▲	▲		▲	
C. Transit/Carpool Incentives	▲	▲	▲				▲			▲	
D. Parking Management	▲	▲	▲				▲			▲	
E. Guaranteed Ride Home Programs	▲	▲	▲				▲			▲	
2. Traffic Operational Improvements											
A. Traffic Signal Improvements				▲	▲	▲					
B. Roadway Geometric Improvements				▲	▲	▲					
C. Time-of-Day Restrictions				◀▶	◀▶	▲					
D. Ramp Metering				◀▶	▲	▲					
E. Commercial Vehicle Improvements				▲	▲	▲					
F. Construction Management				▲	▲	▲					
3. HOV Measures											
A. HOV Priority Systems	▲	▲	▲		▲	▲	▲			▲	▼
B. HOV Support Systems	▲	▲	▲		▲		▲			▲	
4. Transit Capital Improvements											
A. Exclusive Right-of-Way Facilities	▲		▲			▲	▲		▲	▲	▼
B. Fleet Improvements	▲		▲				▲		▲	▲	
C. Transit Support Facilities	▲		▲	◀▶			▲			▲	
5. Transit Operational Improvements											
A. Transit Service Improvements	▲		▲			▲	▲		▲	▲	
B. Transit Marketing/Information	▲		▲			▲	▲			▲	
C. Fare Incentives	▲		▲				▲			▲	
D. Traffic Operations for Transit	▲		▲	◀▶		▲	▲		▲	◀▶	
6. Non-Motorized Modes											
A. Bike/Ped Infrastructure Improvements	▲		▲				▲		▲	▲	▲
B. Bike/Ped Support Services	▲		▲				▲			▲	
7. Congestion Pricing											
A. Road Use Fees	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
B. Parking Fees	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
8. Growth Management											
A. Compact Development	▲		▲				▲			▲	◀▶
B. Redevelopment and Infill Development	▲		▲				▲			▲	◀▶
C. Mixed Use Development	▲		▲				▲			▲	▲
D. Jobs/Housing Balance	▲						▲			▲	
E. Transit Oriented Development	▲		▲			▲	▲			▲	
F. Corridor Land Use and Transportation Coordination	▲			▲	▲		▲		▲	▲	
9. Access Management											
A. Driveway Management				▲	▲	▲	▼		▲	◀▶	◀▶
B. Median Management				▲	▲	▲	▼		▲	◀▶	◀▶
C. Frontage Roads				▲	▲	▲	▼		▲	◀▶	▼
10. Incident Management											
A. Incident Detection/Verification				▲	▲	▲	▲		▲	▲	
B. Incident Response				▲	▲	▲	▲		▲	▲	▲
C. Incident Clearance				▲	▲	▲	▲		▲	▲	▲
D. Incident Information/Routing				▲	▲	▲	◀▶	▲		▲	
11. Intelligent Transportation Systems											
A. Advanced Traffic Management Systems	◀▶		◀▶	▲	▲	▲		▲	▲	▲	
B. Advanced Traveler Information Systems	▲		▲				▲	▲		▲	
C. Advanced Public Transportation Systems	▲		▲			▲	▲		▲	▲	▲
D. Commercial Vehicle Operations				▲	▲	▲	◀▶		▲	▲	
E. Advanced Vehicle Control Systems	◀▶		▼	▲	▲	▲	◀▶		▲	▲	
12. Capacity Expansion											
A. Expressway Lanes	▼	▼	▼	▲	▲	▲	◀▶	▼	▲	◀▶	▼
B. Arterial Lanes	▼	▼	▼	▲	▲	▲	◀▶	▼	▲	◀▶	▼

COLUMBUS-PHENIX CITY METROPOLITAN PLANNING ORGANIZATION

No Impact/Not A Measure
▲ Likely Potential Benefit
▼ Likely Potential Disbenefit
◀▶ Mixed Impact

IMPACTS SPECIFIC TO CMP PERFORMANCE MEASURES

STRATEGY CLASS/GROUP	Travel Time	Travel Speed	V/C Ratio	Expressway Vehicle Density	Arterial/Intersection LOS	Duration of Congestion	Person Throughput	Vehicle Occupancy	Modal Shares	Transit System Measures	Incident Measures	% Near Bus Stop	% Near Expressway
1. TDM Measures													
A. Ridesharing Programs			▲	▲	▲		▲	▲	▲	◀▶	▲		
B. Alternative Work Arrangements			▲	▲	▲	▲							
C. Transit/Carpool Incentives			▲	▲			▲	▲	▲	▲			
D. Parking Management			▲	▲			▲	▲	▲	▲			
E. Guaranteed Ride Home Programs			▲	▲			▲	▲	▲	▲			
2. Traffic Operational Improvements													
A. Traffic Signal Improvements	▲	▲			▲		▲			▲	▲		
B. Roadway Geometric Improvements	▲	▲			▲	▲	▲			▲	▲		
C. Time-of-Day Restrictions	◀▶	▲			▲	▲					▲		
D. Ramp Metering	◀▶	◀▶		▲	◀▶	▲	▲				▲		
E. Commercial Vehicle Improvements	▲	▲			▲		▲				▲		
F. Construction Management	▲	▲				▲	▲				▲		
3. HOV Measures													
A. HOV Priority Systems	▲			▲	◀▶	▲	▲	▲	▲	◀▶			
B. HOV Support Systems				▲	▲		▲	▲	▲	◀▶			
4. Transit Capital Improvements													
A. Exclusive Right-of-Way Facilities	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	
B. Fleet Improvements		▲	▲	▲	▲	▲	▲	▲	▲				
C. Transit Support Facilities			▲	▲	▲	▲	▲	▲		▲		▲	
5. Transit Operational Improvements													
A. Transit Service Improvements	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		▲	
B. Transit Marketing/Information	▲		▲	▲	▲		▲	▲	▲	▲			
C. Fare Incentives			▲	▲	▲		▲	▲	▲	◀▶			
D. Traffic Operations for Transit	▲	▲	▲	▲	◀▶		▲	▲		▲	▲		
6. Non-Motorized Modes													
A. Bike/Ped Infrastructure Improvements									▲		▲		
B. Bike/Ped Support Services									▲				
7. Congestion Pricing													
A. Road Use Fees	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲			
B. Parking Fees	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲			
8. Growth Management													
A. Compact Development	▲		▲	▲		▲			▲	▲		▲	
B. Redevelopment and Infill Development	▲		▲	▲		▲			▲	▲		▲	▲
C. Mixed Use Development	▲		▲	▲		▲			▲				
D. Jobs/Housing Balance	▲		▲	▲		▲			▲	▲			
E. Transit Oriented Development	▲		▲	▲		▲			▲	▲		▲	▲
F. Corridor Land Use and Transportation Coordination	▲	▲	▲		▲	▲						▲	▲
9. Access Management													
A. Driveway Management	◀▶	▲	▲		◀▶						▲		
B. Median Management	◀▶	▲	▲		◀▶						▲		
C. Frontage Roads	▲	▲	▲	▲	◀▶						▲		
10. Incident Management													
A. Incident Detection/Verification	▲	▲				▲					▲		
B. Incident Response	▲	▲				▲					▲		
C. Incident Clearance	▲	▲				▲					▲		
D. Incident Information/Routing	▲	▲				▲					▲		
11. Intelligent Transportation Systems													
A. Advanced Traffic Management Systems	▲	▲	▲				▲		▼	◀▶	▲		
B. Advanced Traveler Information Systems	▲	▲				▲		◀▶	◀▶	▲			
C. Advanced Public Transportation Systems	▲	▲	▲				▲	▲	▲	▲	▲		
D. Commercial Vehicle Operations	▲	▲	▲								▲		
E. Advanced Vehicle Control Systems	▲	▲	▲				▲				▲		
12. Capacity Expansion													
A. Expressway Lanes	▲	▲	▲	▲	▲	▲							▲
B. Arterial Lanes	▲	▲	▲		▲	▲							