WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

Final Report
August 2005

Washington Metropolitan Area Transit Authority
Department of Planning and Information Technology
Office of Business Planning & Project Development

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

FOREWORD

In the greater Washington metropolitan area, steady growth, particularly around Metrorail stations, has generated increased transit ridership, but has also led to more vehicular traffic in station areas. As a result, the different modes of access to transit often come into conflict in station areas. WMATA and local jurisdictional planners have recognized that many existing Metrorail stations designed twenty-five to thirty years ago, such as the Rockville station, need a new assessment to determine if existing conditions for pedestrian access, bus operations, and vehicular traffic are adequate to meet existing capacity and future demand. In addition, with the increased interest in WMATA's Joint Development program and projections of continued ridership growth, it is crucial that good access to Metrorail station is maintained, and even improved.

Improving access to and from Metro is critical to meeting ridership goals and serving customer needs. Potential riders may be lost or choose other means of travel if any of the following conditions exist: Pedestrian paths are indirect and fragmented; high traffic volumes and traffic conflicts in and around the station; bus service is unavailable due to a lack of bus bays and storage space; pick-up/drop-off space is inconvenient or limited and access is not provided for shuttle buses; short-term and long-term parking spaces are full or unavailable.

Potential riders may also be lost if access constraints mean that the door-to-door journey involving Metro becomes more time consuming, unreliable or frustrating than an alternative means of travel, such as driving the entire way. Ultimately, the goal of improving station access is to attract additional customers by: enhancing the pedestrian experience with a safer and more attractive walking environment, maintaining a good level of service for transit access to the site, which includes buses and other transit vehicles, accommodating future access needs, which include vehicular traffic growth, and making transit use more convenient and attractive as a travel mode.

This study is the seventh of a series of station access improvement studies that WMATA has conducted for the jurisdictions

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

TABLE OF CONTENTS

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

1. INTRODUCTION

Background

In October 2001, the Mayor of Rockville and the City Council adopted the Rockville Town Center Master Plan, a mixed-use commercial, residential, retail and entertainment development that will create a pedestrian-oriented downtown. The Town Center is located northwest of the Rockville Metrorail Station, directly across the heavily traveled, regional arterial Hungerford Drive/MD-355. One of the goals of the Town Center Master Plan is to give the Metro station a recognizable presence in the Town Center, by favoring mixed-use development on both sides of the station that would be connected to the Town Center via a "pedestrian promenade", which would replace the existing pedestrian bridge across MD-355.

During the planning process for the Town Center Master Plan, it was recognized that congestion on MD-355 would impact vehicular and pedestrian access to both the Town Center and to the Metrorail station. At that time, the Maryland State Highway Administration (SHA) was considering plans for improvements along MD-355 adjacent to the Metrorail Station to accommodate growth in traffic but deferred continuing planning at the key intersection at East Middle Lane/Park Road and Monroe Place/Church Street until the Washington Metropolitan Area Transit Authority (WMATA) could determine access requirements for transit facilities if development were to occur on the station site.

This Rockville Metrorail Station Access Improvement Study is being conducted by WMATA for the Maryland Department of Transportation, in conjunction with the City of Rockville, SHA, and Montgomery County Department of Public Works and Transportation (DPW&T) in support of the Rockville Town Center Master Plan and other transportation projects in the station vicinity.

Diagram 1-1: Study Area

Study Area

The study area consists of the Rockville Metrorail Station including the east side bus facility and parking, the adjacent Amtrak and Marc Station, the west side bus facility and parking, the surface parking lot north of the station, and the pedestrian bridge over Rockville Pike. In addition, the study area includes the intersections Middle Lane/Park Road, Monroe Place/Church Street, Route 28 and the intersection of First Street at Viers Mill Road. Also, intersections along Park Road and South Stone Street Avenue.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

1. INTRODUCTION

The primary objective of this study is to provide the City of Rockville and SHA with a report to use as a baseline for their planning efforts on transportation and development projects and to provide WMATA with a baseline for operational needs before any other project or a WMATA Joint Development Solicitation goes forward. Other goals and objectives for the study include:

- Survey existing facilities and traffic conditions, analyze existing traffic studies, and identifying access deficiencies;

- Develop conceptual Master Plan for the station site which reflects the design goals of the Rockville Town Center Master Plan: mixed-use development, improvements for pedestrians and buses accessing the station, and inter-modal connectivity;

- Coordinate this study's Master Plan, the subsequent reconfiguration of transit facilities, and station access with the City of Rockville's Master Plan, SHA requirements for access along MD-355, and Montgomery County plans for future growth in their bus service at the station;

- Coordinate transit station site facilities with the City of Rockville's master plans for the east and west sides of the station;

- Identify neighborhood and business concerns;

- Maximize the convenience and the levels of service at the Metrorail Station while enabling Joint Development that is acceptable to WMATA, The City of Rockville and the community.

Periodic meetings were held with the stakeholders group that included WMATA, MDOT, the City of Rockville, Montgomery County Department of Public Works and Transportation and the Maryland State Highway Administration. In addition, one community outreach meeting was held in Rockville to introduce the study and collect input from the neighborhood community.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

2. EXISTING CONDITIONS

Location

The Rockville Metro Station is located on the Red Line between the Shady Grove Metro Station to the north and the Twinbrook Metro Station to the south. Located between Park Road and Church Streets, the station site is bisected by the Metrorail and CSX railroad tracks with frontage on Hungerford Drive (MD Rt. 355) on the west side of the station and South Stonestreet Avenue on the station's east side.

Metrorail Station

The Rockville Metrorail Station is an aerial station with a center platform that connects to the mezzanine at grade level with two escalators and one elevator. A pedestrian tunnel, at mezzanine level connects the east and west sides of the station as shown on Diagram 2-3. Access from the east is from grade level while the west access is via a circulation tower that connects the grade and pedestrian bridge levels to the mezzanine by two elevators and two banks of stairs. The MARC and Amtrak trains run on tracks just east of the Metrorail tracks and have side platforms, accessible from two stairs at the station mezzanine level and an exterior elevator on the east side of the station.

Station Facilities

The existing station site is divided into the east and west sides of the railroad tracks. The east side contains 4 bus bays, used by Montgomery County Ride-On buses, and two bus layover spaces, entered and exited from Park Road. A storm water retention pond is in the center of the bus loop. In addition, 15 Kiss & Ride spaces and 524 Park & Ride spaces are accessed from Stonestreet Avenue. The entire parcel is approximately 6 acres with the south end of the site being approximately 30' higher than the north end, as shown on diagram 2-4. Access to Metrorail, MARC and Amtrak trains is at the mezzanine level, approached from sidewalks along Park Road and South Stonestreet Avenue on the station's east side and from the elevator/stair tower on the west side. The station site facilities on the west side consists of 6 bus bays and a Kiss & Ride lot with 34 spaces, entered from Park Road and Church Street and exiting onto Church Street only. The bus facility functions as a one-way loop with the Kiss & Ride parking in the center of the site, with mixed bus and automobile traffic. Pedestrians enter the station via the elevator/stair tower at grade level, then proceed down to the mezzanine level or up to the pedestrian bridge that crosses over MD 355, Hungerford Drive.

There is also an auxiliary parking lot, north of Park Road that contains 123 spaces for long term parking. The lot can be entered/exited from Park Road and exited to MD 355 at its north end.

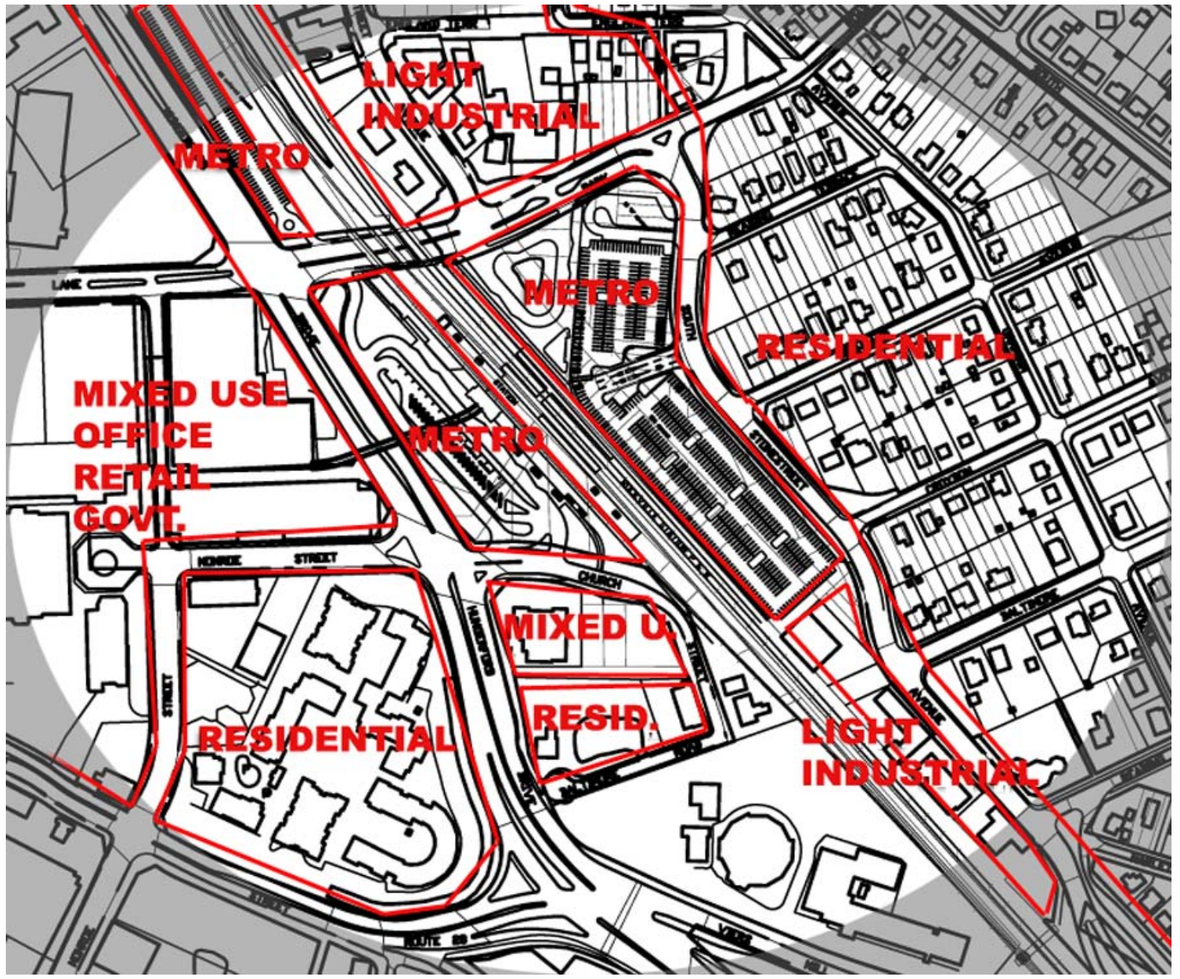


Diagram 2-1: Surrounding Land Use

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

2. EXISTING CONDITIONS

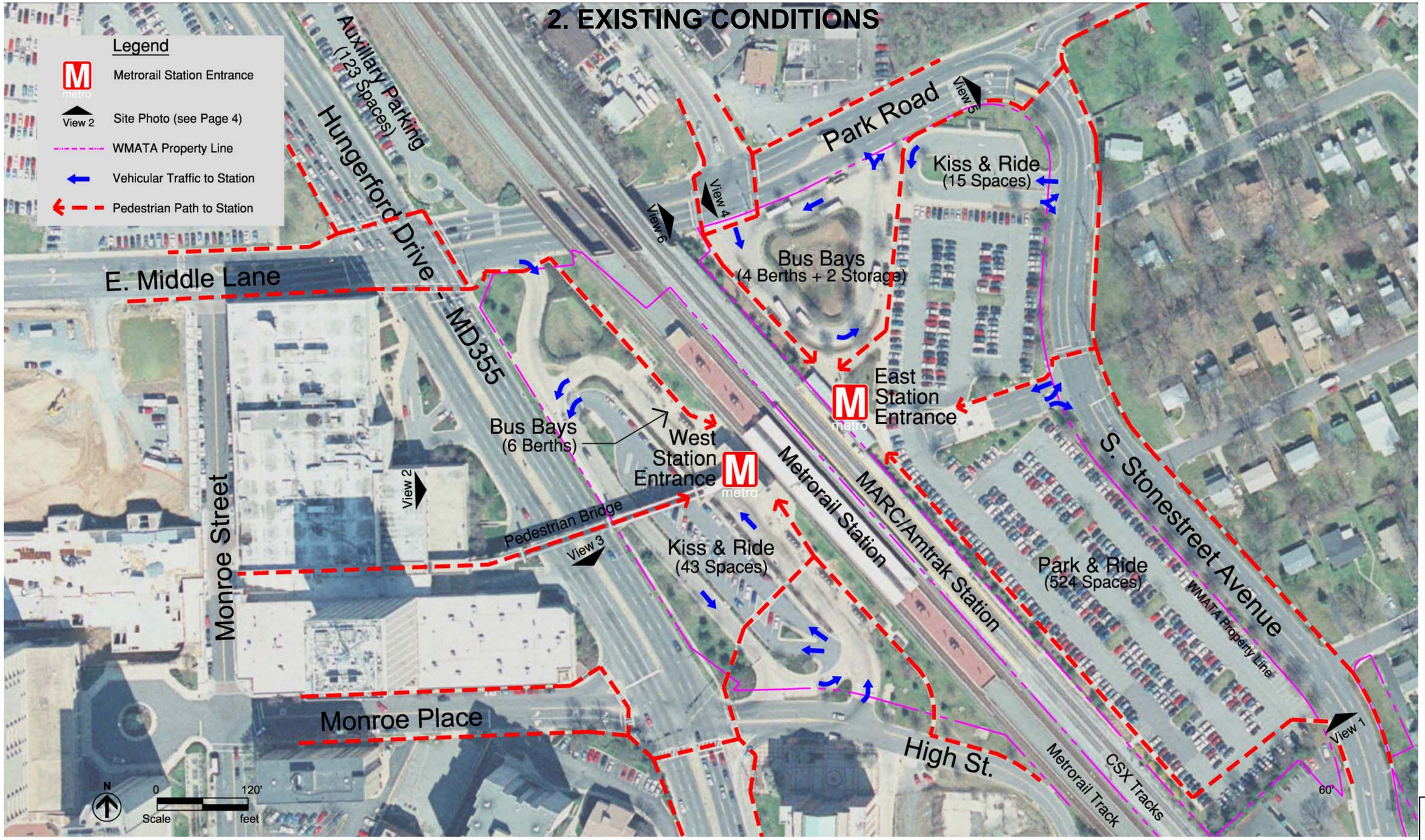


Diagram 2-2: Station Vicinity Aerial Photo

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

2. EXISTING CONDITIONS

View 1: North Stonestreet Avenue Looking North

View 2: Pedestrian Bridge and Station

View 3: Hungerford Drive Looking South

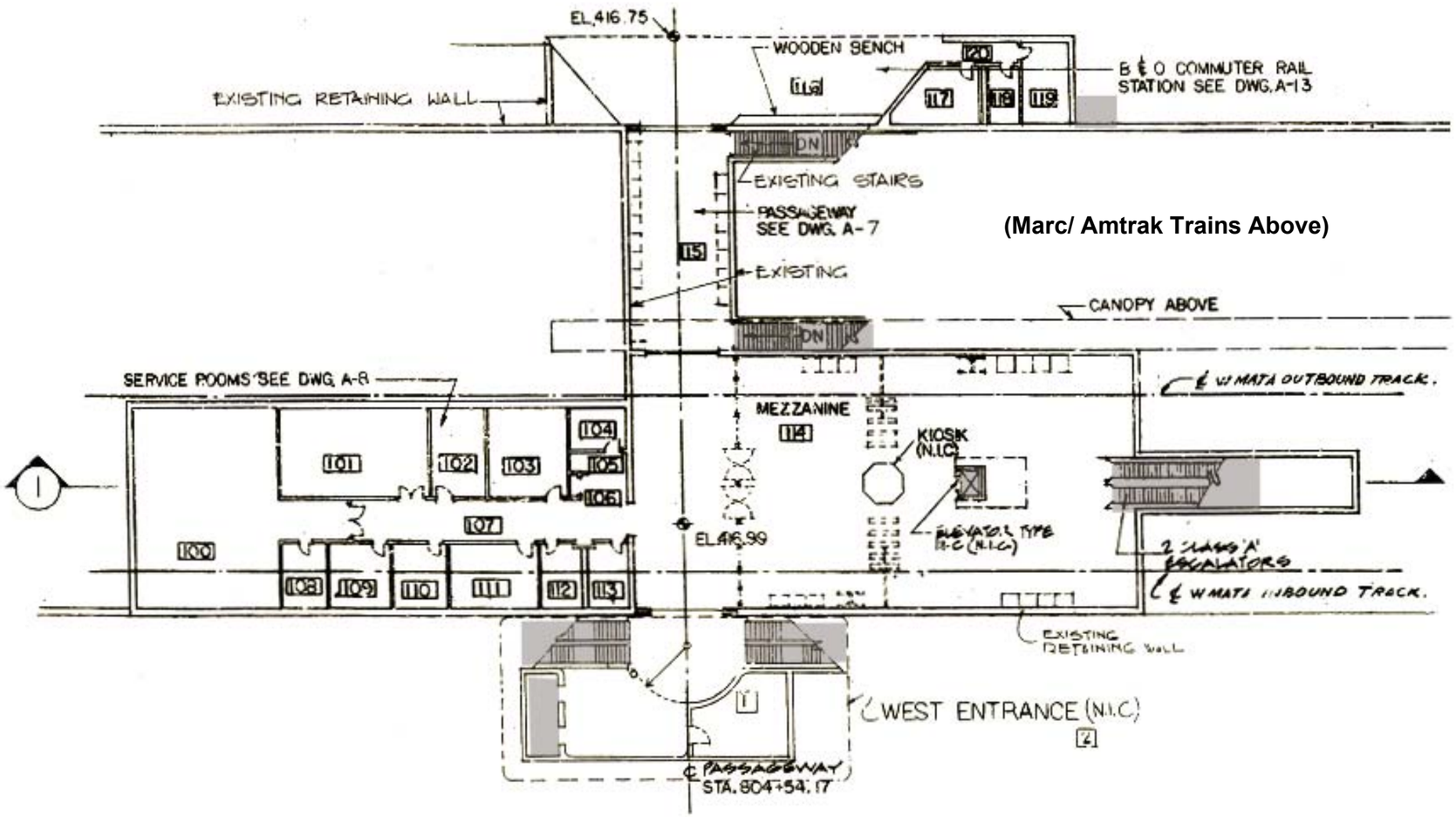
View 4: Park Road Looking West/Rail Overpass Above

View 5: North Stonestreet Avenue/Park Road Intersection

View 6: Park Road/Bus Access Intersection Looking East

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

2. EXISTING CONDITIONS



Station Entrance

Diagram 2-3: Existing Station Mezzanine Plan

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

2. EXISTING CONDITIONS

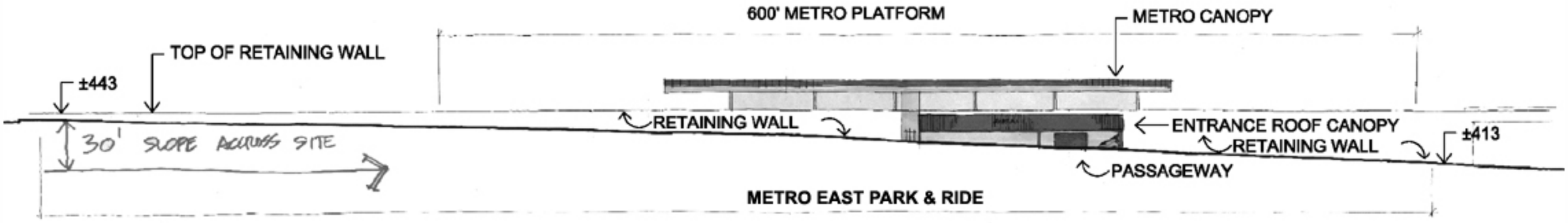


Diagram 2-4: Site Longitudinal Section- Looking West

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

Before beginning development of a new master plan for the station site, the City of Rockville's master plans were analyzed along with the existing conditions for the station site facilities, as well with other documents described in the Traffic Analysis section of this report. The analysis developed from this effort was used to establish 'design precepts', or general design principles, for station site and access improvements which were coordinated with the study's stakeholders.

Rockville Town Center Master Plan

The Rockville Town Center Master Plan envisions a revitalized downtown for the City of Rockville with a mixed-use development that creates a vibrant, pedestrian friendly environment that would become a destination point for civic, business, leisure and cultural activities. The Plan recognizes the importance of the Rockville Metrorail Station to the success of the plan's overall success and recommends a strong, appealing connection to the Town Center with both a wide pedestrian promenade and with at-grade connections. The plan calls for "the land immediately west of the station, adjacent to MD-355 should be redeveloped over time with a higher density mixed-use structure, with a major employment or office component". The Plan recommends depressing MD-355 below grade along the frontage to the Metrorail station to allow the pedestrian promenade to span the heavily congested MD-355 at the same elevation as the existing street level, mitigating pedestrian/vehicle conflicts at the E. Middle Lane/Park Road and Monroe Place/Church Street intersections that exist today. The Plan also envisions connecting any development on the station's west side to the East Rockville neighborhoods with an air rights development over the CSX and Metrorail tracks. Zoning for the parcels on both sides of the Metrorail station would be changed from Industrial use to Mixed use to allow Transit-Oriented development. The plan also emphasizes easy and safe pedestrian/bicycle access.

East Rockville Neighborhood Study

To the east of the station are the Croydon Park and Lincoln Park neighborhoods. These are low density residential areas composed mostly of single family dwellings from the first part of the 20th century. These neighborhoods are separated from the station property by S. Stonestreet Avenue. The City has recently adopted the *East Rockville Neighborhood Plan* that states that the east side of the Rockville Metro Station property should be redeveloped into a mixed-use area containing retail, office and residential uses. The density and scale of this new development is intended to compliment the neighborhood as well as take advantage of its location as a transit stop. The plan also calls for the southern portion of the Metro property along S. Stonestreet Avenue should consist of single-family attached (townhouse) units, with any parking structures to not be visible from the neighborhood. The Plan also recommends that access be improved to allow safe pedestrian and bicycle flow to the station. A traffic circle is also proposed at the realigned intersection of South Stonestreet Avenue and Park Road. The neighborhood study proposes other recommendations for station improvements on the east side of the station that would be implemented in the Joint Development process:

- Limit traffic impacts from development to neighborhood streets, restrict vehicular access to a garage for Metro and residential parking with a one-way entrance from E. Stonestreet Avenue and a one-way exit to Park Road and also a one-way exit to Church Street on the west side of the station via a new tunnel below the CSX and Metrorail tracks.

- Design for access to station parking facilities that directs vehicular traffic to and from the Veirs Mill Road ramps.

- Provide distinctive trolley service from the neighborhood traveling through the station area an on to the Town Center.

- Extend the station platform north across Park Road to a new station entrance.

- Provide a traffic circle to replace the two intersections at Park Road/N. Stonestreet Avenue and at Park Road/S. Stonestreet Avenue.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

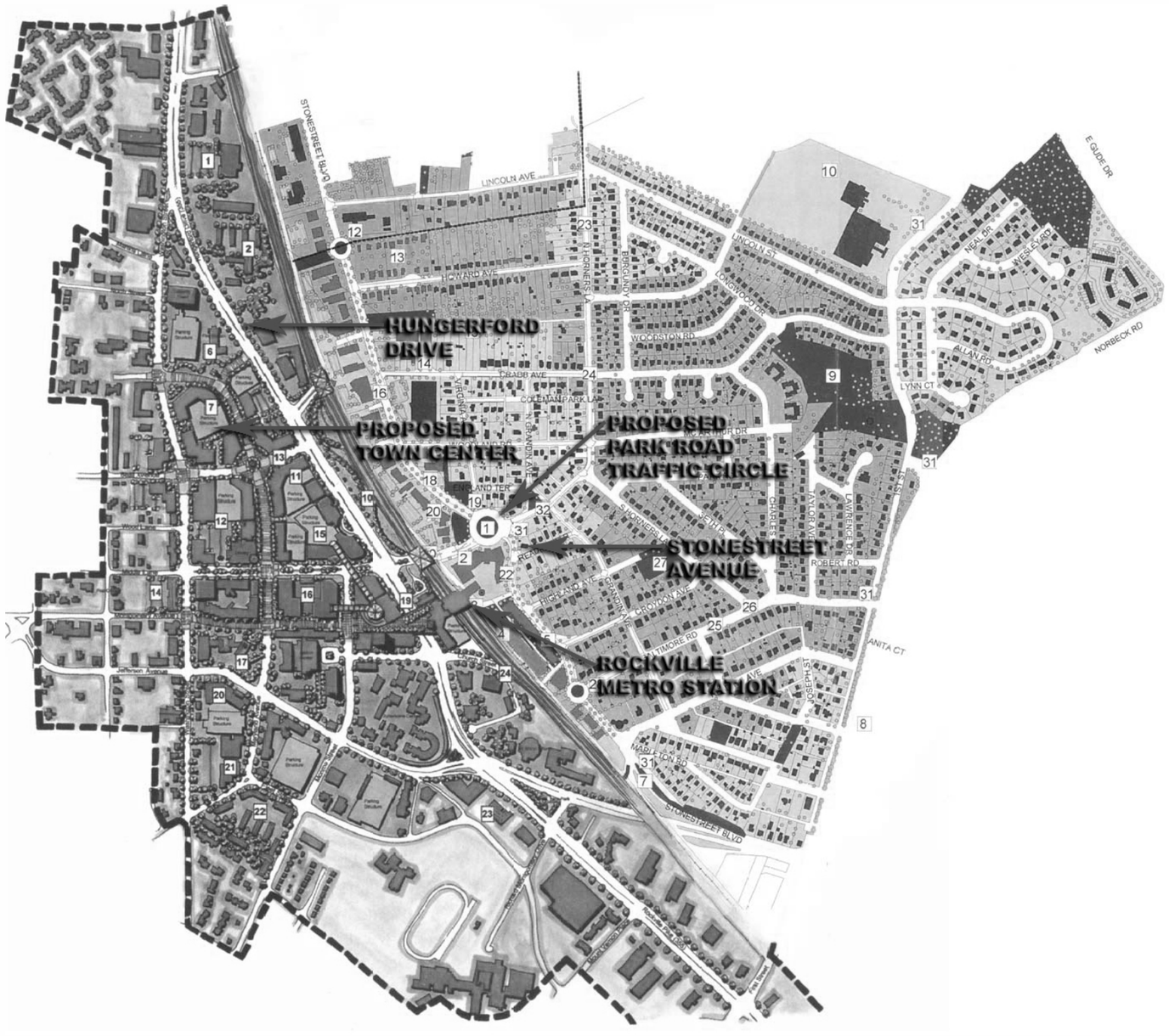


Diagram 3-1: Rockville Town Center & East Rockville Neighborhood Master Plans

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

Diagram 3-2: Enlarged Plan

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

Pedestrian Access

Pedestrian and bicycle access to the Metrorail station is given primary importance in the Rockville Town Center Master Plan, the East Rockville Neighborhood Plan, and also in WMATA's overall goal for improving overall access to stations. For pedestrian pathways connecting to a station site, it is generally recognized that providing a safe and convenient walking environment that includes clear, un-fragmented, and integrated pedestrian paths to the station will encourage more customers to walk (refer to Diagram 3-5 for missing sidewalks around the station). Good pedestrian access to the station entrance is essential in station site and access planning since all transit customers, that aren't walking to the station, will ultimately become pedestrians when transferring between modes.

The pedestrian mode of access was examined in depth with visual assessments and actual pedestrian counts around the entire station site. Pedestrians and bicycles access the station's west side via at-grade crossings and the pedestrian bridge over MD-355/Hungerford Drive. The at-grade crossings are generally recognized as deficient with inadequate crosswalk markings and crossing light timing. High speed and heavy vehicular traffic on MD-355 present challenges for pedestrians accessing the station from the west and south with many pedestrians jaywalking across MD-355, causing unsafe conditions. Table 3-1 illustrates pedestrian counts of pedestrians accessing the station during a morning and evening peak time period, at grade and on the pedestrian bridge. The highest counts during both time periods occur approaching from the west. The highest counts were recorded on the pedestrian bridge in both the morning and evening. In all, 789 pedestrians were counted accessing the station in both the morning and evening peak times.

Bicycle paths leading to the station are limited to posted shared roadways, as shown on Diagram 3-4.

Table 3-1: Pedestrian Counts- accessing station
(Counts taken Wednesday April 21, 2004)

Morning counts- 7:30 AM - 9:00 AM
West Side of Station

Location	Count	Percent
1. Pedestrian Bridge	176	50%
2. Park Rd. /Hungerford Dr.	104	30%
3. Church Rd. /Hungerford Dr.	72	20%
TOTAL	**352**	**100%**

East Side of Station

Location	Count	Percent
1. Park Rd. /N. Stonestreet Ave.	57	42%
2. Park Rd. /S. Stonestreet Ave.	29	21%
3. Highland Ave. /S. Stonestreet Ave.	13	10%
4. Croydon Ave. /S. Stonestreet Ave.	37	27%
TOTAL	**136**	**100%**

Evening counts- 4:30 PM – 6:00 PM
West side of station

Location	Count	Percent
1. Pedestrian Bridge	139	58%
2. Church St. /Hungerford Dr.	60	25%
3. Park Rd. /Hungerford Dr.	40	17%
TOTAL	**239**	**100%**

East side of station

Location	Count	Percent
1. Park Rd. /N. Stonestreet	26	42%
2. Park Rd. /S. Stonestreet	17	27%
3. Highland Ave. S. Stonestreet	5	08%
4. Croydon Ave. /S. Stonestreet	14	23%
TOTAL	**62**	**100%**

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

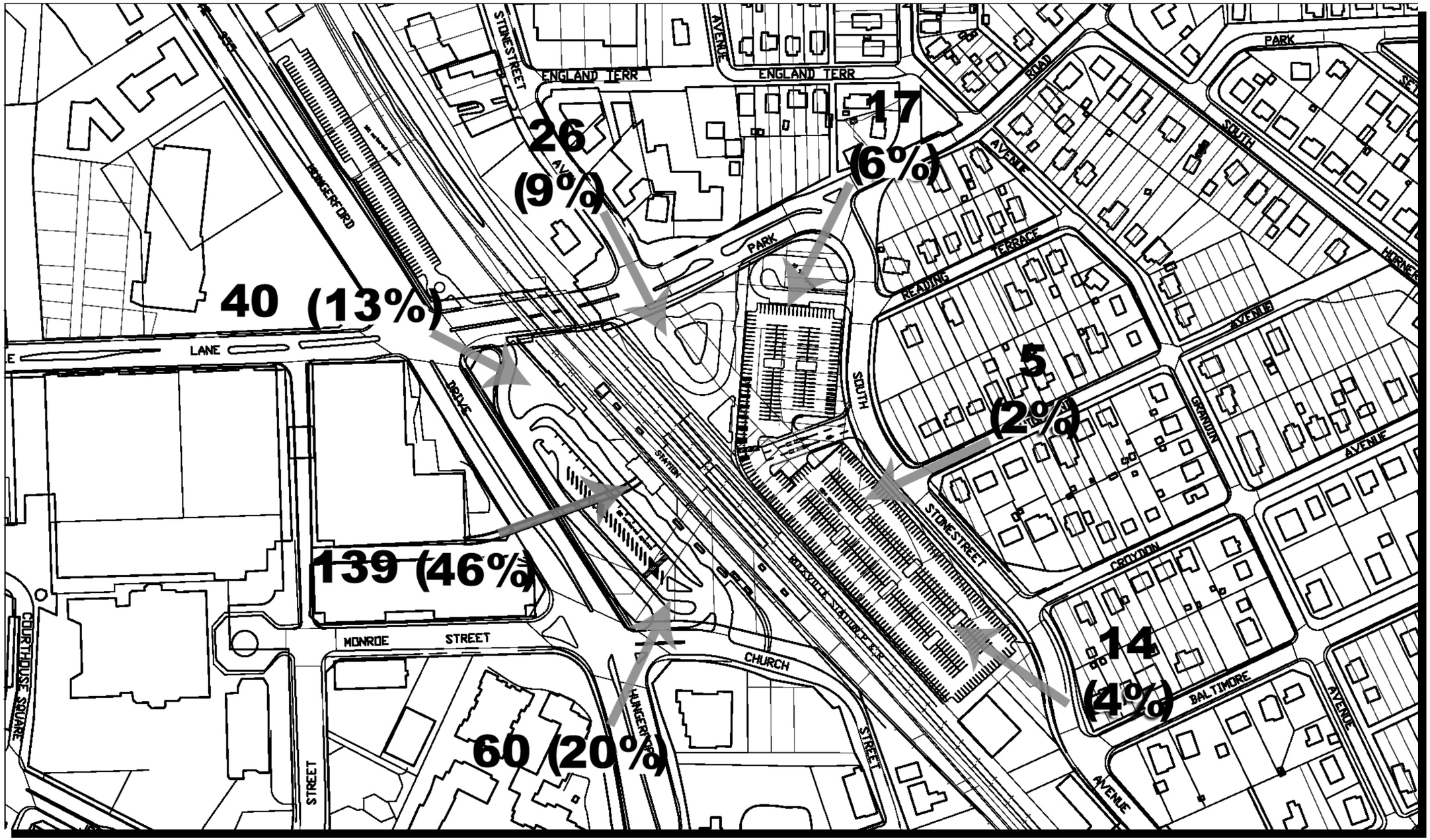


Diagram 3-3: Evening Peak Period Pedestrian Counts

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

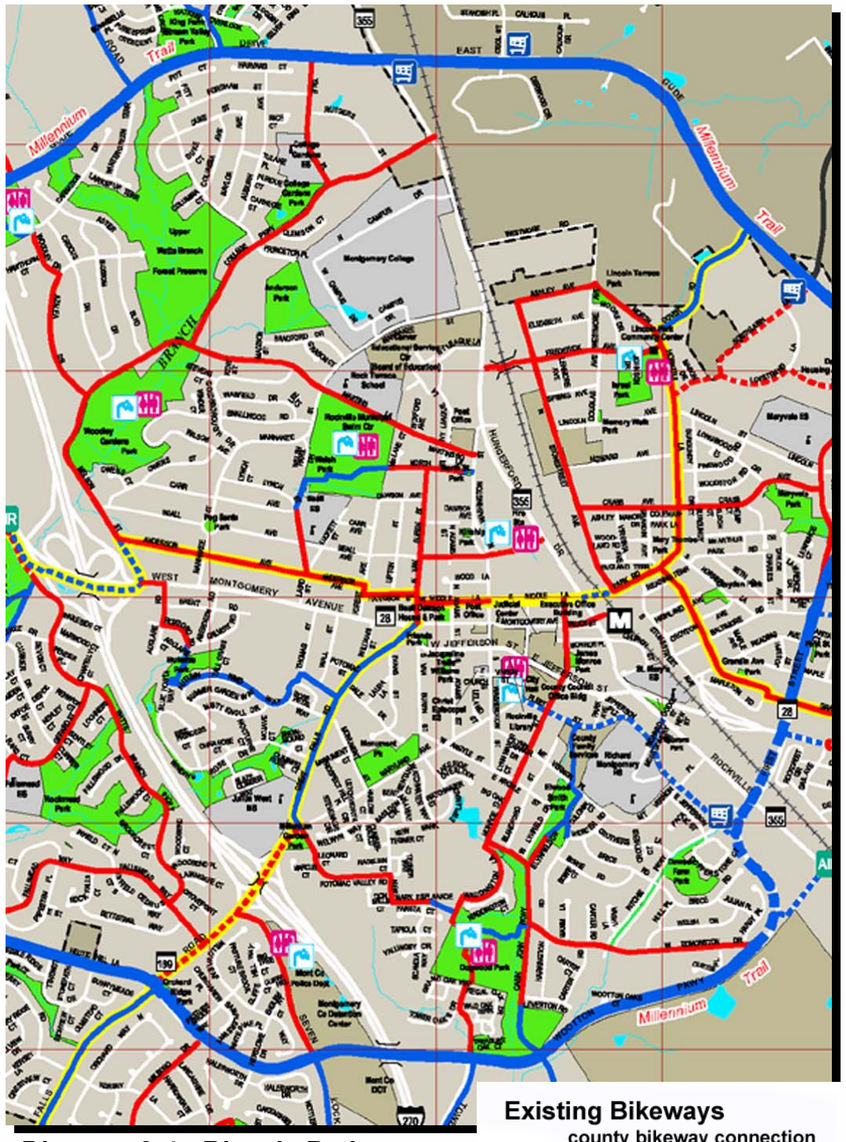


Diagram 3-4: Bicycle Paths

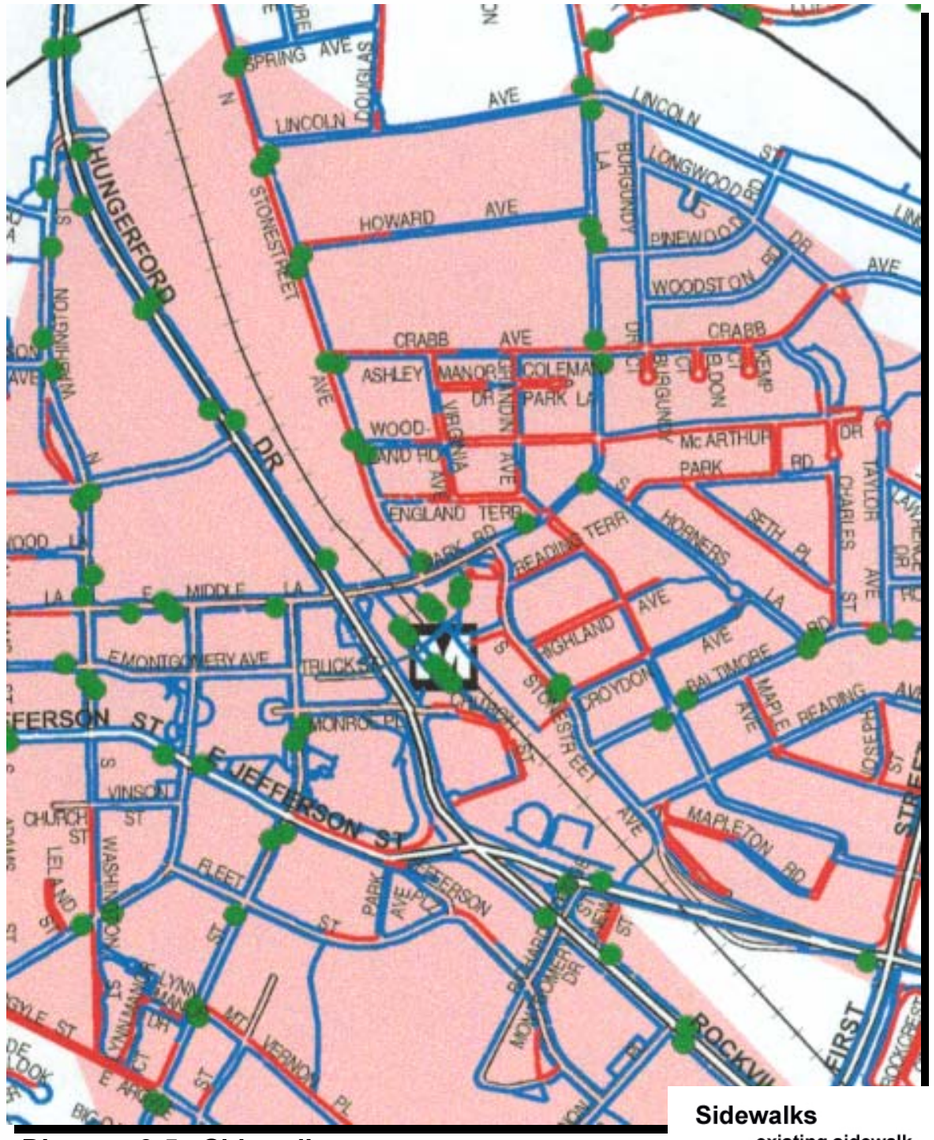


Diagram 3-5: Sidewalks

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

Design Principles

Before a conceptual master plan was developed, several meetings and workshops were conducted with the jurisdictional stakeholders, WMATA, and their consultants to establish 'Design Principles', or general design goals for planning station site improvements and the development program:

- Provide pedestrian promenade in the same location and elevation as the existing pedestrian bridge. (SHA would later dropped the plan for depressing MD-355 from future consideration due to difficulties foreseen with construction, maintenance of traffic, and access).

- Provide wide, distinctly marked crosswalks on all sides of each intersection along MD-355. Wide crosswalks would add capacity and facilitate movement of pedestrians.

- Present alternatives for new station entrances to divert pedestrians away from congestion points within and around the station site and to increase station capacity to meet future ridership projections which are discussed in the *Station Capacity Analysis* part of this section.

- Expand the number of bus bays and layover spaces on both sides of the station to accommodate Montgomery County's Strategic Transit Plan which calls for Pulse operations at Metrorail stations. (Pulse bus operations require additional bus bays so all buses may arrive and leave the station at the same time, bus-to-bus transfers can be streamlined, and wait times reduced). Provide space for additional BRT service on the east side of the station.

- Maximize the density of the development on both sides of the station to achieve the highest and best use of WMATA property and make development more viable for a potential developer, who must bear the cost for improvements to transit facilities.

- Maintain the existing number of Park & Ride and Kiss & Ride parking spaces. To meet current demand, increase the number of spaces for taxis to eight spaces on the west side of the station. Provide curb space for private shuttle buses to accommodate anticipated growth in that mode share.

In principle, it is WMATA's objective in this study to meet the design goals that were proposed in the Rockville Town Center Master Plan and the East Rockville Neighborhood Study. However, some of the major design recommendations presented in these studies conflict with the constraints of existing site conditions, WMATA guidelines and standards, or WMATA operational and access requirements:

- Diverting vehicles exiting from the parking structure directly to Park Road on the east side of the station would require automobiles traveling through the preferred location for the bus facility. Connecting the parking structure to Church Street on the west side of the station may be unfeasible, given high cost impacts for tunneling below the CSX and Metrorail tracks and traffic impacts on the already congested Church Street/MD-355 intersection.

- The proposal to extend the pedestrian promenade over the Metrorail station and the CSX tracks and the goal to connect both sides of the station with development above the tracks was not considered for the study due to the difficulties foreseen in negotiating air-rights development with CSX, Inc.. Both sides of the station are already connected with an at-grade passageway on the station mezzanine level.

- A traffic circle for Park Road and Stonestreet Avenue was considered early in this study, but was removed from consideration when the alternative was dropped in the City of Rockville's on-going Stonestreet Avenue study.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

3. ANALYSIS

Station Capacity Analysis:

Currently, the Rockville Metrorail Station serves an average 4,300 rail boardings on a typical weekday. This represents a 27% increase in ridership over the last ten years. Based on the 2004 Dulles Corridor EIS Patronage Forecast Report, ridership at the Rockville Station is projected to increase to 7,760 daily boardings in year 2025, a 55% increase in ridership over 20 years. Given that the station has only the minimal vertical transportation systems: two escalators and one elevator, assessment of existing and future demand is warranted to determine if the station capacity can meet future ridership projections.

To verify if the escalators will have an acceptable Level of Service (LOS) to meet future demand, existing conditions were analyzed. The escalator LOS is based on the platform clearance time, the maximum passenger queuing length, and the total passenger wait time for boarding an escalator immediately after a train is unloaded. Trains arriving in the peak direction generate the largest surge of passengers accessing the escalators, so the highest number of passengers unloading in the peak period is used when calculating the escalator LOS.

The platform clearance analysis of the existing conditions, shown on Table 3-2, indicates a platform clearance time of 64.4 seconds, a queuing length of six passengers, and a maximum queuing time of 4 seconds, all within an acceptable LOS. The platform clearance analysis projected for year 2025, shown on Table 3-3, indicates a platform clearance time of 103 seconds, a queuing length of 58 passengers, and a maximum queuing time of 43 seconds, none of which are within an acceptable LOS. A queuing length of 58 passengers would occupy approximately 26 linear feet of platform space in front of the escalator, more than the standard queuing distance for an escalator.

If the station facilities are to accommodate growth in ridership, then additional vertical circulation to the platform should be provided. At least one additional escalator or stair should be added to the existing system. A wide stairway is preferred because it can handle the capacity requirements of an escalator while affording the benefit of lower installation, maintenance and operating costs. It also would eliminate service disruptions associated with escalator service, which is a major inconvenience to Metro customers. An additional platform elevator should also be added to provide redundancy and continuous accessibility to the station platform for customers using wheelchairs during periods of service disruptions for repairs and maintenance.

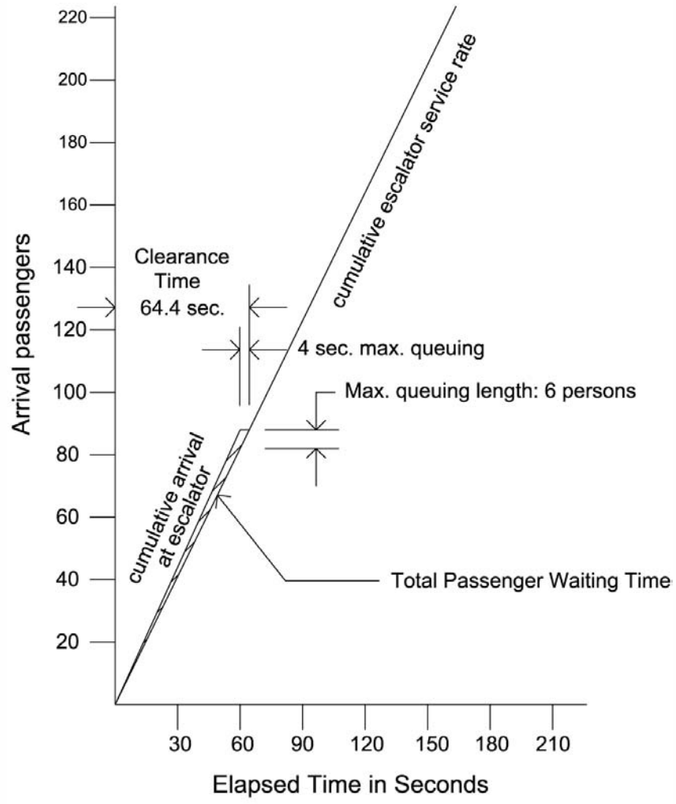


Table 3-2: Platform Clearance Time - Existing

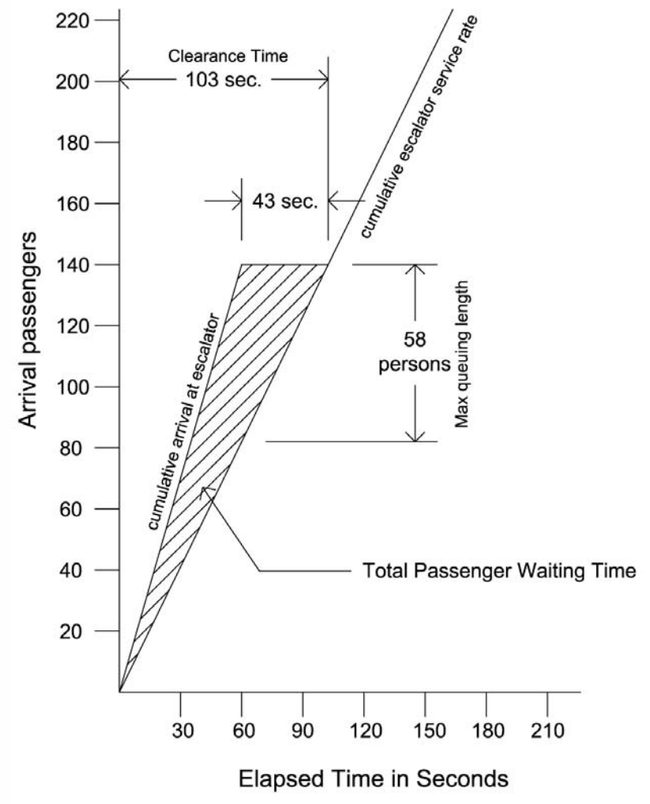


Table 3-3: Platform Clearance Analysis - Year 2025

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN

One of the primary goals of this study is to develop a conceptual mater plan for the station site which reflects the design goals from of the Rockville Town Center Master Plan and the Design Principles established in stakeholders meetings mentioned in the previous Section. The Master Plan, as shown at the end of this section, is based on an analysis of existing conditions (pedestrian access, traffic, ridership, surrounding land uses, etc.), approved City of Rockville master plan recommendations, future ridership projections, community input, and the Development Program (Table 4-1). The end goal of the study Master Plan is to provide any potential future developer with clear guidelines and objectives for meeting the requirements of established Design Principles that has been coordinated with the jurisdictional stakeholders and with various WMATA offices and departments involved in planning and operating transit facilities.

Pedestrian/Bicycle Access

One of the primary goals of the study is to identify and make recommendations for improving station access for pedestrians, bicycles, and vehicles. Pedestrian counts were performed and analyzed with vehicular traffic data. With most of the pedestrian traffic coming from the west, it is obvious that crossing Hungerford Drive/MD-355 is a major point of pedestrian/vehicular conflict. Therefore, intersections at Middle Lane/Park Road and Hungerford Drive and Monroe Street/Church Street and Hungerford Drive should be improved to enhance pedestrian safety, capacity, and facilitate vehicular traffic flow along MD-355. Besides widening, crosswalks need to be timed with count down signals, have a larger median refuge area and special paving materials to visibly mark the crossings. The same criteria should be applied to the intersections on the east side of the station. Eliminating the existing bus exit at Park Road and North Stonestreet Avenue will improve pedestrian crossings. The traffic light at this intersection should be maintained. Any new intersection created by Joint Development on South Stonestreet Avenue should also include pedestrian crosswalks on every corner of the intersection, unlike existing conditions. Traffic lights at these intersections would require additional traffic analysis beyond the scope of this study.

The heaviest counts for pedestrian traffic were recorded on the pedestrian bridge over Hungerford Drive/MD-355. The City's Town Center Master Plan calls for the existing bridge to be replaced with a "promenade" that is "a visually stimulating architectural statement that provides a positive entry at the transit site". While this study agrees with this concept as a way to create an important link to the Town Center, this element would fall out of the scope of any future Joint Development solicitation due to foreseen high cost which could compromise the development potential of the site if the cost was borne by the Developer. Therefore, this study assumes that the replacement of the pedestrian bridge beyond the boundaries of WMATA property would be constructed by others.

To coordinate pedestrian access to the west station entrance with the realignment of the bus bays, a new vertical circulation core would need to replace the existing stair/elevator tower. The new core would be on the west side of the bus bays to allow bus passengers to deboard and access the station entrance at the Mezzanine level without crossing the bus lanes.

Vehicular Access

The Plan recommends improvements for vehicular access, including automobiles and buses. To accommodate additional bus bays and additional area for development the west bus facility must be realigned in the opposite direction of the existing facility with a relocated entrance on Park Road and a relocated exit on Church Street. The exit on Church Street will have a dedicated right turn lane for buses turning north onto MD-355. The entrance to an underground parking garage for the development is located at mid-block on Hungerford Drive with right turn in/right turn only access. A second entrance to the parking garage is shown on Church street accessing the Kiss & Ride facility and parking levels for the development. Access to the surface parking lot north of Park Road remains unchanged.

The east bus facility is a two-way system with an entry/exit on Park Road and another entry/exit on South Stonestreet Avenue as shown. To accommodate the recommendation in the City's Town Center Master Plan, a public plaza is located on the north end of the site and would have vehicular access from South Stonestreet Avenue. The location of entrances to the parking structure on the south part of the site, with shared development and transit use, will depend on design coordination with the stakeholders during the Joint Development process. A minimum of two entrances will be required from South Stonestreet Avenue to serve each use.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN

Joint Development

The Master Plan is considered a concept design for Joint Development on both sides of the Rockville Metro Station. The Master Plan is based on the following assumptions:

- Any potential Joint Development must accommodate the established Design Principles from this study;
- Satisfy community and business interest groups;
- Improved pedestrian/bicycle and vehicular access to the station;
- Accommodate future ridership growth at the station.

The study's Master Plan was developed and coordinated with the local jurisdictional stakeholders and WMATA for the use and benefit of any potential future WMATA Joint Development partner, for the benefit of the jurisdictional stakeholders, and the Rockville community. To help achieve the highest and best use of WMATA property *(*a primary goal of the WMATA Joint Development program), the study's Development Program and Master Plan depicts the site as developed to its highest density and full development potential. Planning for the highest and best use of WMATA property is in the interest of maximizing the value of the land to attract development interest, and to attract additional transit ridership. As this study will demonstrate, the use of land and the density of any future development on the station site must be carefully weighed against the impacts to traffic on the adjacent street infrastructure.

Station East Side

The development proposed for the east side of the station incorporates the majority of development planning principles described in the East Rockville Neighborhood Study. To maximize the area for development and to accommodate Ride-On's program for expanded bus service, a two-way, linear bus facility was chosen for it's efficient layout and for convenient bus access from both Park Road and S. Stonestreet Avenue. Sidewalks connect the station entrance to all areas of the site and to all the municipal sidewalks and crosswalks on adjacent streets. To limit parking space requirements, and thus the size of the parking structure, development on the east side is shown as all residential use with street level retail on the north end of the site. Any commercial development could significantly impact parking requirements. A public space is provided in a plaza within the retail/residential development which includes street parking for retail use and pick-up/drop-off curb lanes for transit use. The residential units consists of three to six levels above the ground floor retail space. The residential development on the south end of the site is governed by a *residential proximity slope*, as shown on Diagram 4-1, which limits building heights to 35 feet adjacent to S. Stonestreet Avenue but increases to 65 feet beyond a 90 foot setback. To provide a transition from the single-family dwellings to high density development, the height and facade of the residential units along S. Stonestreet Avenue shall replicate a single-family townhouse design. The parking structure, with combined transit and residential use, is located behind the residential development to obscure the structure from view of the neighborhood across S. Stonestreet Avenue. For the size of the parking structure shown, six parking levels is required to accommodate the estimated 984 parking spaces for the residential/retail use and the replacement parking for transit customers.

Station West Side

Too meet the goals of the Rockville studies, the plan for west side of the station envisions high density development with a strong pedestrian connection from the Metrorail station entrance to the Rockville Town Center via a pedestrian promenade. In the proposed plan, the pedestrian promenade over MD-355 becomes a retail galleria within the development that would create a significant design component and a positive entrance to the transit station. This primary pedestrian link to the station entrance innately creates two separate building towers which could have separate uses. A hotel use was selected for the study to maximize the highest and best use of the property for such a narrow lot width without competing with development uses in the nearby Town Center. Residential use was also considered because parking space requirements are less than for both office use and a hotel. The development program and the plans show two alternatives for building heights that are allowed by the current zoning ordinance. The Base Method limits the building height on the station's east side to 100 feet, while the Optional Method allows a 225 feet building height.

Because the potential for vehicular access along MD-355 is constrained with heavy traffic volumes during the peak rush hours, the amount of programmed parking on the station's west side is limited to 1,000 spaces for study purposes. Due to the site's irregular geometry, the narrow width, and bus facility requirements, parking is shown located below grade although it is recognized that above-grade, structured parking is more economically viable. Also, the soils report from the original station contract indicates a high water table and a small area of solid rock below the site which would likely impact the cost of construction. Two access ramps to the parking garage, one from MD-355 and one from Church Street allow cars the opportunity to access the station and the development from either direction on MD-355, and vise versa.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN

To provide the optimum amount of space for a development footprint on the station's east side, it was determined that the existing elevator/stair tower from the pedestrian bridge to the station entrance level should be replace with a new tower located on the opposite side of the new bus facility to allow the bus lane to be shifted closer to the station abutment. Bus passengers transferring to rail or to the buses on the station's west side would use the stairs or elevators to the mezzanine level below, then cross back under the bus lanes.

New Entrances and Mezzanine Expansion Alternatives:

Although the pedestrian promenade, any new station entrance or mezzanine expansion proposed in this study would not be part of the contract for any future Joint Development project, they are nevertheless, an important component in how well the overall station functions when considering the projected growth in transit ridership. To accommodate the projected growth in ridership at the Rockville Station (discussed in the Station Capacity Analysis), the station's vertical circulation capacity to the station platform should be increased by either expanding the existing facilities or by adding an additional entrance. As part of the study Master Plan, three alternatives for expanding the station capacity are presented:

Alternative 1 - Mezzanine Extension: This alternative involves cutting through the existing concrete wall structure on both sides of the existing escalator way in the station mezzanine, extending the mezzanine to accommodate a new elevator and a wide stair to the platform. The platform canopy would also be extended to cover the stair and elevator. This Alternative affords the greatest redundancy in vertical circulation and capacity from the mezzanine to the platform, but does not reduce walking distances for customers accessing the station platform from the Rockville Town Center, as do the other Alternatives.

Alternative 2 - New Station Entrance at Pedestrian Promenade: This alternative includes a new mezzanine with a manned station manager kiosk, four faregates, one elevator, and a stair that connects the proposed pedestrian promenade directly to the existing station platform. The objective of this Alternative is to provide the most convenient access from the Town Center to the station platform to divert customers that would normally access the existing station entrance via the crosswalks on MD-355 to the pedestrian bridge, thus reducing pedestrian conflicts with vehicles along the MD-355 corridor. With increased traffic generated from planned development at the Town Center and the Metro site, providing direct, convenient pedestrian access to Metrorail from the Town Center becomes critical for traffic movement and pedestrian safety on MD-355.

Alternative 3 - New Station Entrance at Park Road & MD-355: This alternative includes a new mezzanine with a manned station manager kiosk, four faregates, two platform elevators, and a stair. To connect the new entrance to the existing station platform, the service rooms at the north end of the platform must be relocated to extend the platform across the bridge above Park Road. This option provides easier, and more convenient access for customers accessing the station from the north sector of the Rockville Town Center. Also, customers would only have to cross MD-355 to access the new station entrance, instead of also having to cross Park Road to access the existing entrance. However, this Alternative would present a special challenge by building between operating Metrorail tracks.

Option - Additional Elevator to MARC Platform: This option, which can be included with any of the Alternatives, would not expand Metrorail station capacity but would provide redundancy for elevator service and improve the connection between MARC and Metrorail. An elevator installed at the north end of the inbound MARC platform could extend to an elevator vestibule located directly off of the existing passageway to the mezzanine.

These design alternatives for expanding station capacity were prepared for this study to demonstrate the basic feasibility of the concept presented. The preferred alternative would be subject to further refinement during any future design and engineering efforts should the City of Rockville and the State of Maryland decide to advance the planning process. The order of magnitude cost estimate, for the design and construction of any of the three expansion alternatives is shown on Page 49.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN

Table 4-1: Development Program

West Side

Transit Program

8 Bus Bays (1 articulated bay) on site
One bus pullout on Hungerford Drive (Q2 Bus)
7 layover spaces
123 existing long term spaces north of Park Rd. to remain
16 Kiss & Ride spaces (in parking garage)
4 Taxi stands (in parking garage)
Shuttle buses on Church St.

Joint Development (developed as of right at 100' base height)

Site area approximately 138,000 s.f.
Hotel- 240,000 s.f
Approximately 260 rooms
9 stories (7 room levels over two levels of retail and hotel functions)
Commercial 220,000 s.f.
9 stories (7 levels over two levels of retail and commercial space)
Retail- 25,000 s.f.
At mezzanine (ground) and pedestrian promenade levels
TOTAL DEVELOPMENT = 485,000 s.f. for an FAR of 3.6 (approx)
Parking
Hotel- 300
Commercial- 730
Retail- 0 (assume transit related retail)
TOTAL= 1030 spaces
Underground Parking- 412 spaces /level x 2.5 levels = 1030 spaces
Note: ½ of the top parking level is devoted to taxis and Kiss and Ride

Joint Development (developed with Optional Method at 235' maximum height)

North Mixed Use Tower
Hotel- 240,000 s.f.
Approximately 260 rooms
9 stories (7 room levels over two levels of retail and hotel functions)
Residential- 150,000 s.f.
Approximately 128 units
10 stories (10 room levels over hotel floors)
Totals North Tower
390,000 s.f. (does not include retail)
19 stories

South Residential Tower
Residential- 380,000 s.f
Approximately 340 units
19 stories (17 room levels over 2 levels of retail and residential amenity/lobby space
Retail- 25,000 s.f.
At mezzanine (ground) and pedestrian promenade level
TOTAL DEVELOPMENT= 795,000 s.f. for an FAR of 5.8
Parking
Hotel- 300
Residential- 700
Retail- 0 (assume transit related retail)
TOTAL= 1000 spaces
Underground parking- 412 spaces / level x 2.5 levels= 1030 spaces
(Note: ½ of the top parking level is devoted to taxis and Kiss and Ride)

East Side

Transit Program
8 Bus bays (including 2 articulated BRT bus bays)
2 layover spaces
Kiss & Ride/taxi in public plaza area

Joint Development
Site area approximately 280,000 s.f.
Commercial- 50,000 s.f
Assume ground floor retail and upper level residential
3-6 stories above retail development
North End Residential- 150-160 units or 180,000 s.f.
South End Residential- 30-60 units or 70,000 s.f.
TOTAL Development=300,000 s.f. for an FAR of 1.1 (Total of 180-220 units)

Parking
6 levels= 984 spaces
Metro- 524 spaces (includes 524 existing)
Joint Development- 460 spaces

Station Expansion

Alternative 1: Mezzanine Extension
Additional elevator and stair to station platform
Alternative 2: New Station Entrance
Stairs and elevator connecting pedestrian promenade to new mezzanine
Alternative 3: New Station Entrance
Platform extension across Park Rd. Bridge to new station entry north of Park Rd.- elevators/stairs only
Option: Elevator
Additional elevator to mezzanine passageway and MARC platform

4. MASTER PLAN

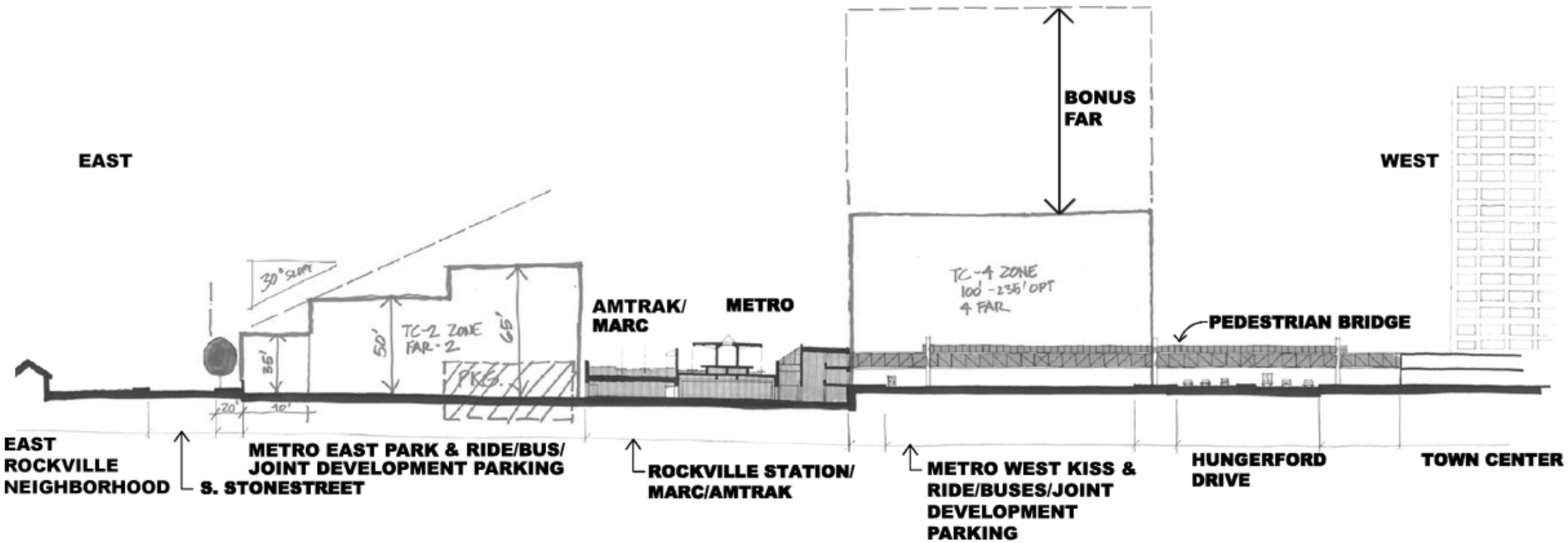
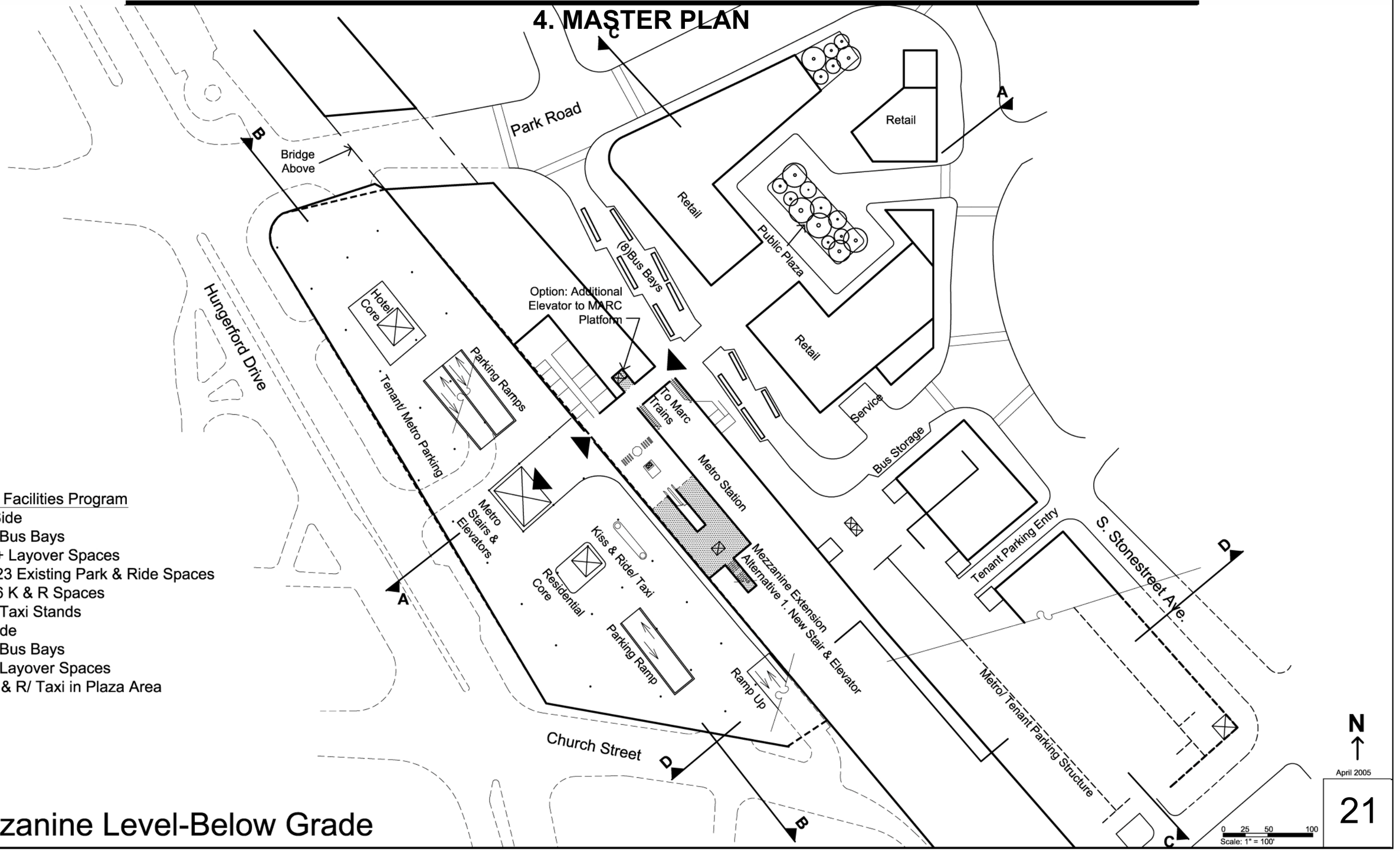


Diagram 4-1: Site Cross Section- Looking South (Based on Rockville Station Area Master Plan)

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN



Transit Facilities Program

West Side
- 9 Bus Bays
- 3+ Layover Spaces
- 123 Existing Park & Ride Spaces
- 16 K & R Spaces
- 4 Taxi Stands

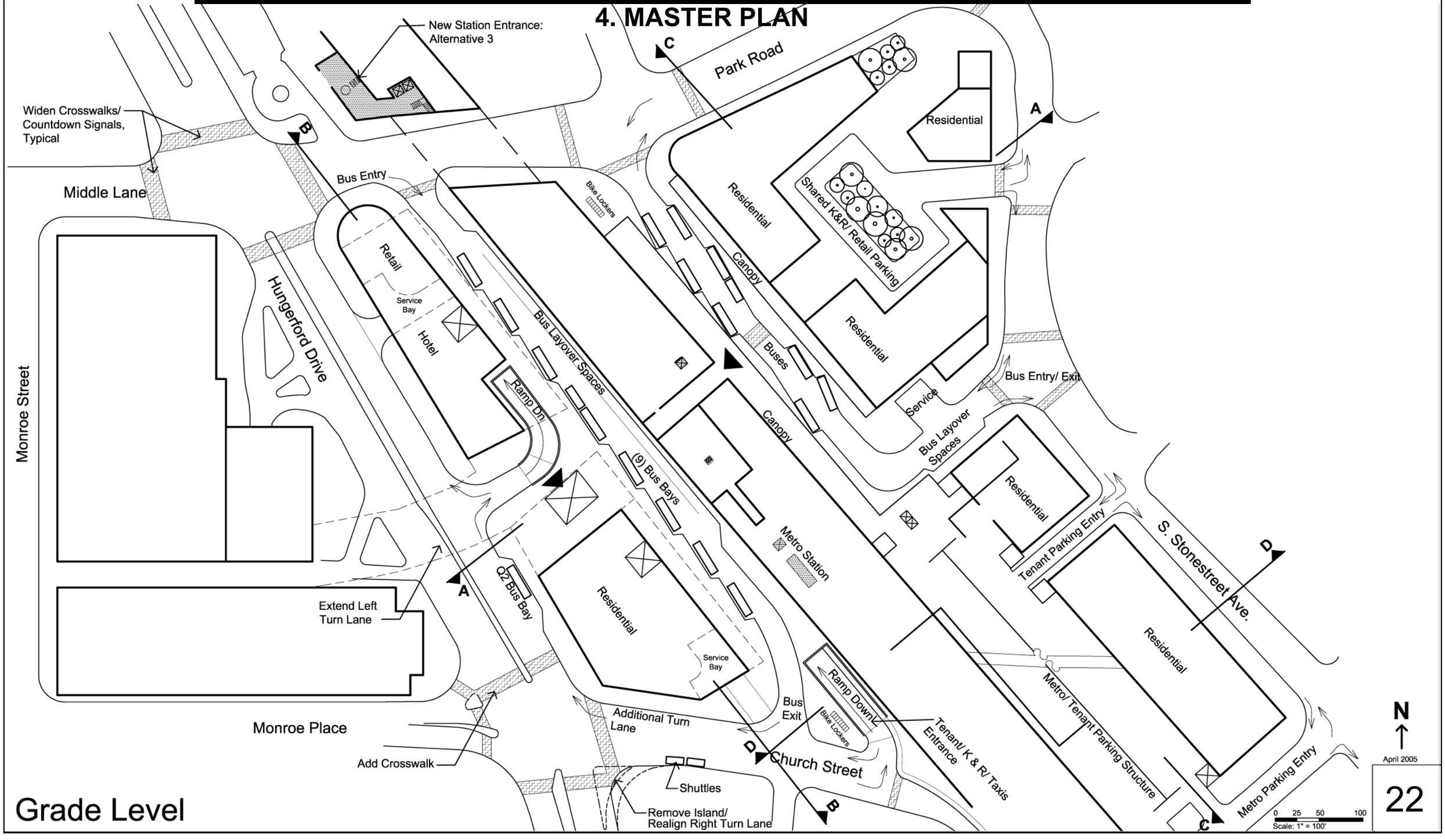
East Side
- 8 Bus Bays
- 2 Layover Spaces
- K & R/ Taxi in Plaza Area

Mezzanine Level-Below Grade

April 2005

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN

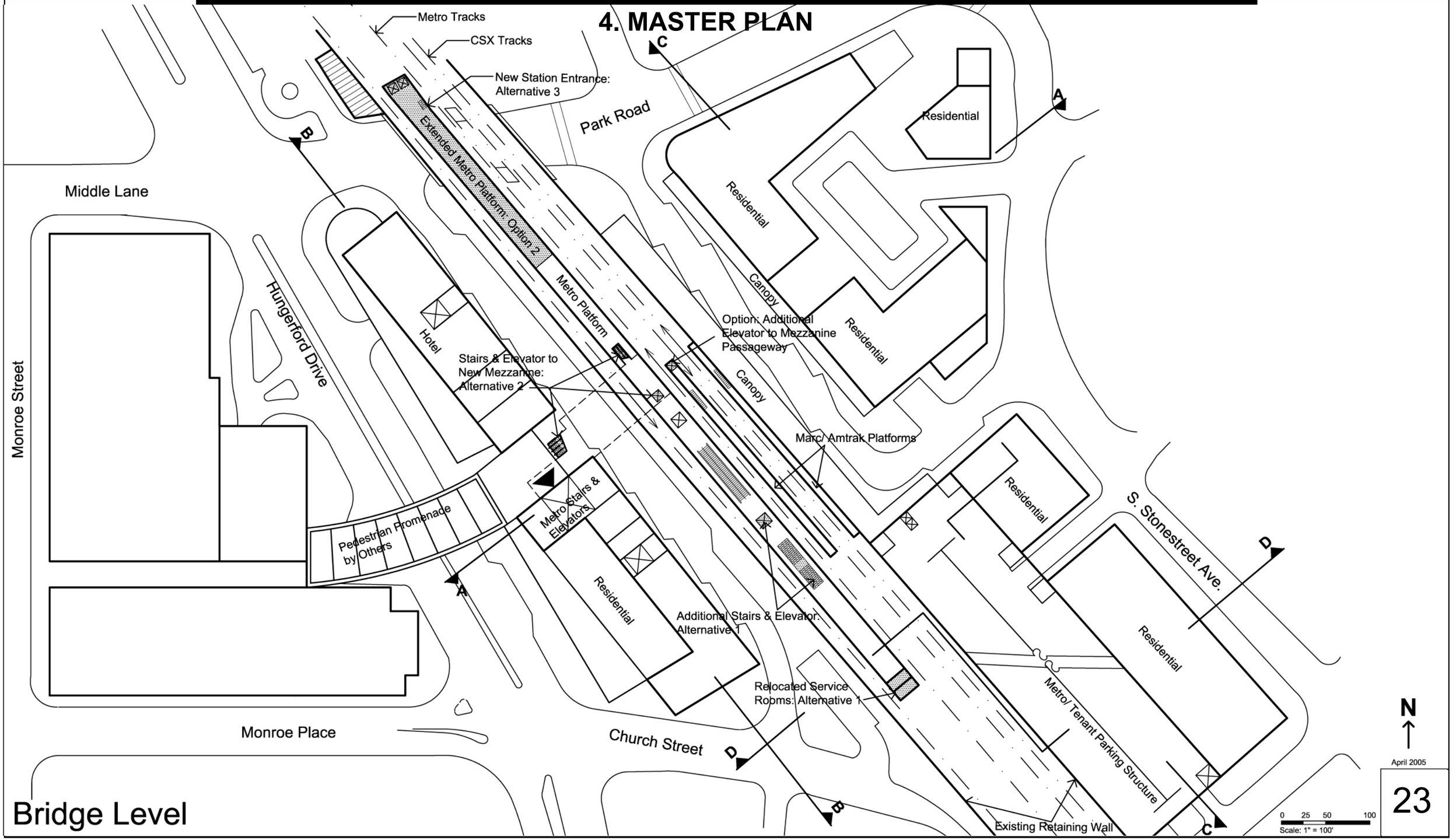


Grade Level

April 2005

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN

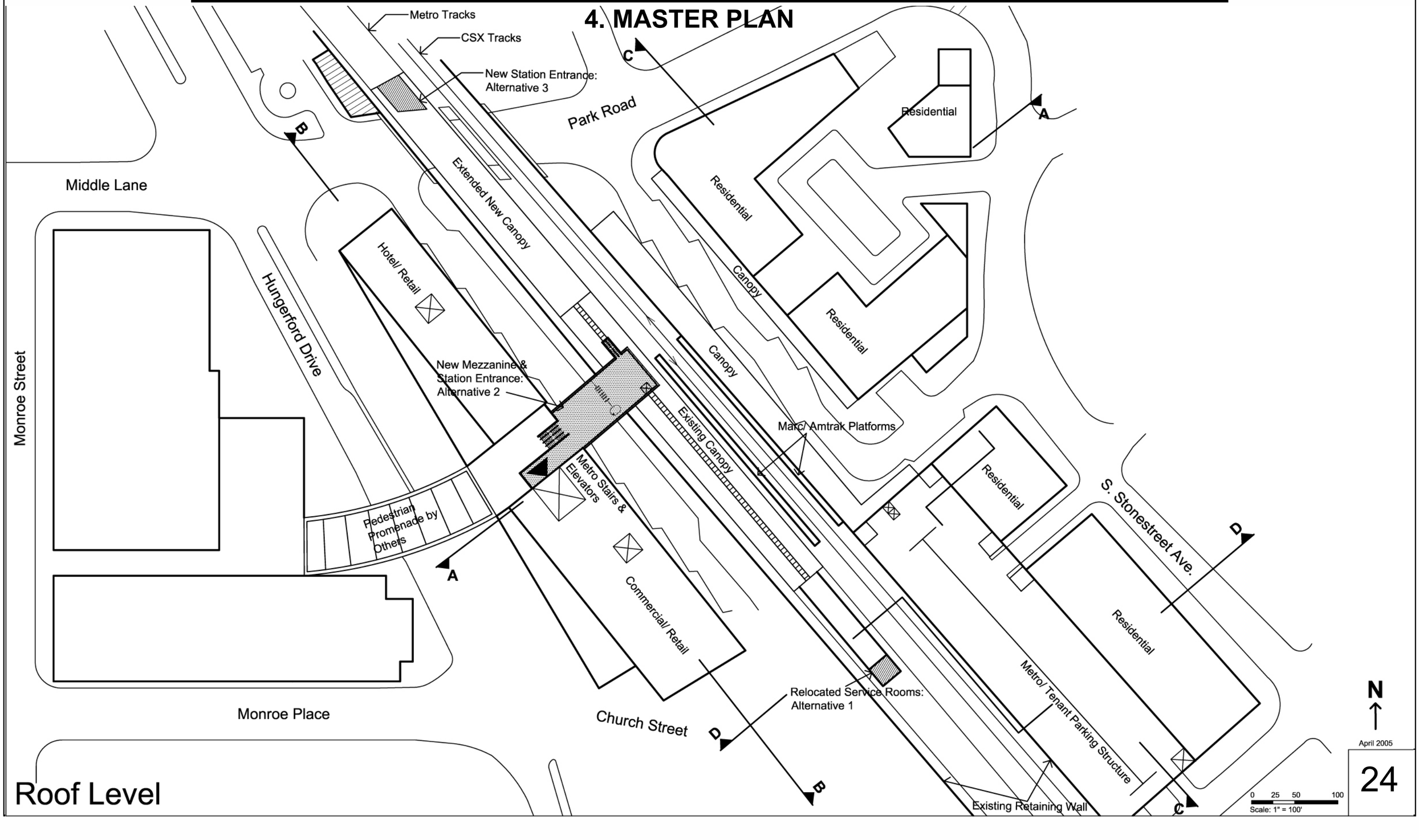


Bridge Level

April 2005

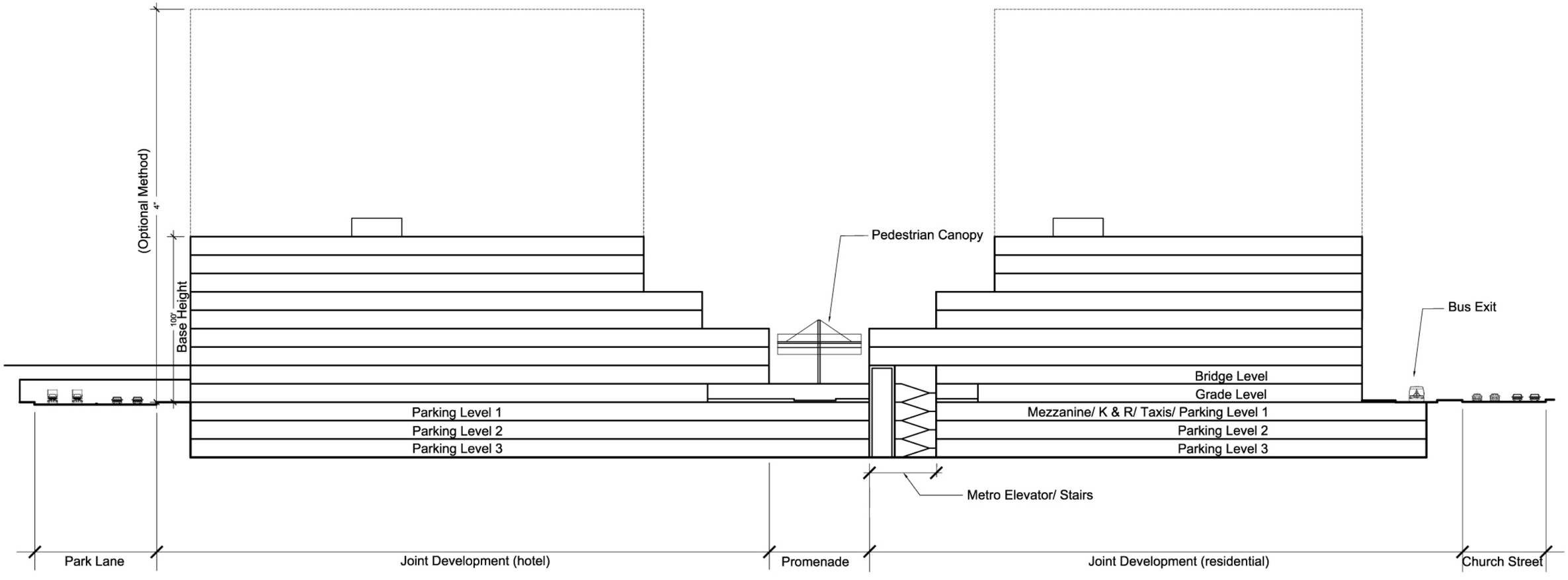
ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN



ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN



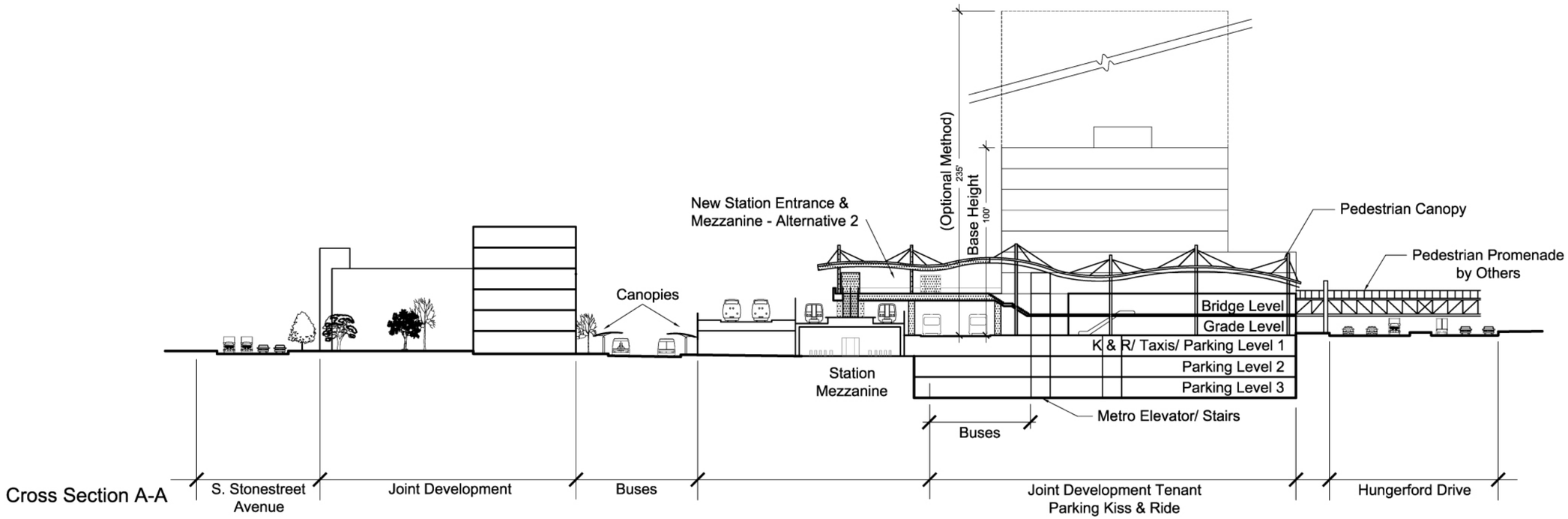
Longitudinal Section B-B

Sept. 2004

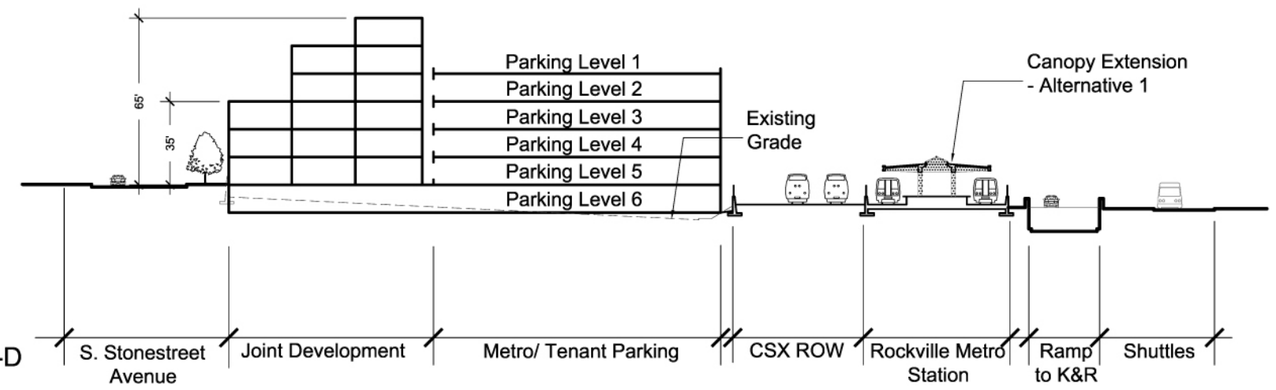
0 15 30 60
Scale: 1" = 60'

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN



Cross Section A-A



Cross Section D-D

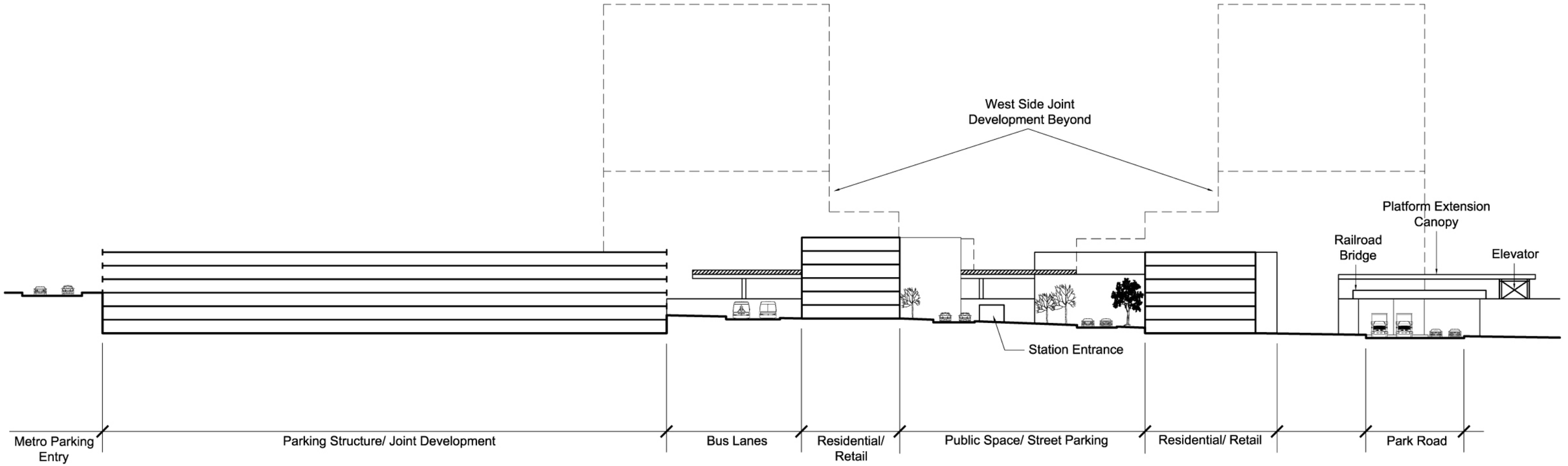
Jan. 2005

Cross Sections A-A & D-D

0 15 30 60
Scale: 1" = 60'

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

4. MASTER PLAN



Site Longitudinal Section C-C

Sept. 2004

0 20 40 80
Scale: 1" = 80'

5. TRAFFIC ANALYSIS

Rockville Metrorail Station Access Improvements Study
Transit Oriented Development
Traffic Analysis Technical Memorandum
Revised August 23, 2005

1. Introduction

As part of the Rockville Metrorail Station Access Improvements Study, a traffic analysis was performed on future traffic volumes that would travel in the city as a result of the Joint Development at the Rockville Metrorail Station and the Rockville Town Center. This memorandum discusses the analysis steps including site traffic estimation, future-year traffic volume determination, traffic assignment analysis, and traffic operations analysis. A summary of findings is presented at the end of the memorandum.

The study area for the Rockville Station Access Study, as shown in **Figure 1-1**, includes the Rockville Metrorail Station site, and the surrounding roadways of Hungerford Drive (Route 355), Park Road, East Middle Lane, North Stonestreet Avenue, South Stonestreet Avenue, Veirs Mill Road (Route 28), and Jefferson Street (Route 28). The Joint Development program analyzed for the station site is a mixed-use development that includes hotel, retail, and residential components, as well as parking for development and transit uses. Provisions for bus service and Kiss-and-Ride functions were also included in the analysis.

2. Existing Conditions

Much of Rockville's traffic travels on the major arterials near the Rockville Metrorail station. According to the East Rockville Neighborhood Plan, the East Rockville neighborhood and the Rockville Metrorail station are adjacent to two of the Rockville's top 10 most congested intersections: Veirs Mill Road-First Street at 109 percent of volume-to-capacity ratio, and Rockville Pike-Park Road-Middle Lane at 96 percent of capacity. Neighborhood cut-through travel is also a problem as vehicles try to escape congestion from MD 28 and MD 355 via neighborhood roads.

In the vicinity of the Rockville Metrorail station, Hungerford Drive (MD 355) carries an average of 53,600 vehicles per day (vpd) and MD 28 carries 46,500 vpd. According to the East Rockville Neighborhood Plan, First Street (MD 28) and Veirs Mill Road carry 30,000-50,000 automobile trips each day. North Stonestreet Avenue, a major neighborhood collector street serving industrial properties along the railroad, carries over 2,500 trips per day with five to eight tractor-trailers and 310 single-unit trucks. South Stonestreet Avenue carries 4,400 trips southbound and 5,500 northbound per day. Traffic counts from 2002 capture the daily volumes on South Stonestreet Avenue, reporting 4,470 vpd southbound and 5,360 vpd northbound between Croydon Avenue and Highland Avenue.

From traffic counts taken by the City of Rockville in 2001 and 2002, the morning peak period is from 7:00 am to 9:00 am. The evening peak period is 4:00 pm to 6:00 pm. The morning peak-hour volumes range from 1,600 to 2,760 vehicles per hour (vph) on Hungerford Drive (MD 355), and 1,160 to 1,880 vph on MD 28. The highest morning peak volumes occur on Hungerford Drive at Church Street. Evening peak-hour volumes range from 2,300 to 2,670 vph for MD 355, and 1,430 to 1,800 vph on MD 28. Again, the highest evening peak volumes occur on Hungerford Drive at Church Street. See **Table 2-1** and **Figure 2-1** for the peak hour volumes.

Table 2-1. Peak-Hour Volumes, 2001 and 2002
Source: City of Rockville

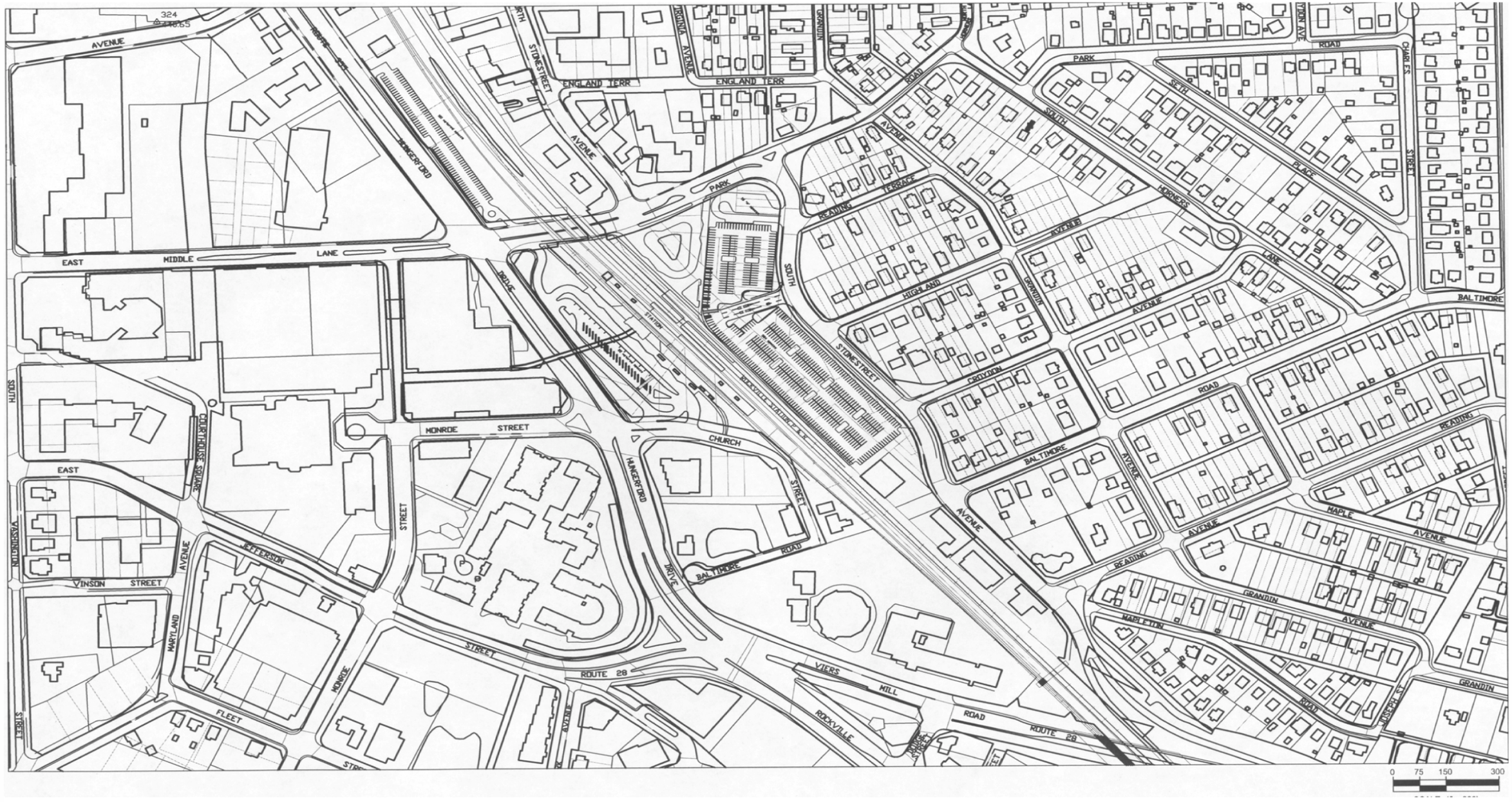
Link	Highest Peak-Hour Volume	
	AM	PM
SB Hungerford Dr at Church St	2760	
SB Hungerford Dr at Middle Lane		2300
NB Hungerford Dr at Middle Lane/Park Rd	1600	
NB Hungerford Dr at Church St		2670
WB MD 28 before Metro ramps	1880	1430
EB MD 28 after Metro ramps	1160	1800
NB Stonestreet at Park Rd	685	425
SB Stonestreet at Metro entrance	270	490
SB Stonestreet between Croydon Ave & Highland Ave	224	459
NB Stonestreet between Croydon Ave & Highland Ave	632	325
SB Stonestreet between Baltimore Rd & Reading Ave	310	497
NB Stonestreet between Baltimore Rd & Reading Ave	354	527

Results from the Rockville Town Center Transportation Analysis reveal that half of the intersections along MD 355 and MD 28 operate with significant delays or under failing conditions. **Table 2-2** displays the results of the intersection analyses for existing conditions. The shaded rows in the table indicate the intersections and times that have significant delays.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

5. TRAFFIC ANALYSIS

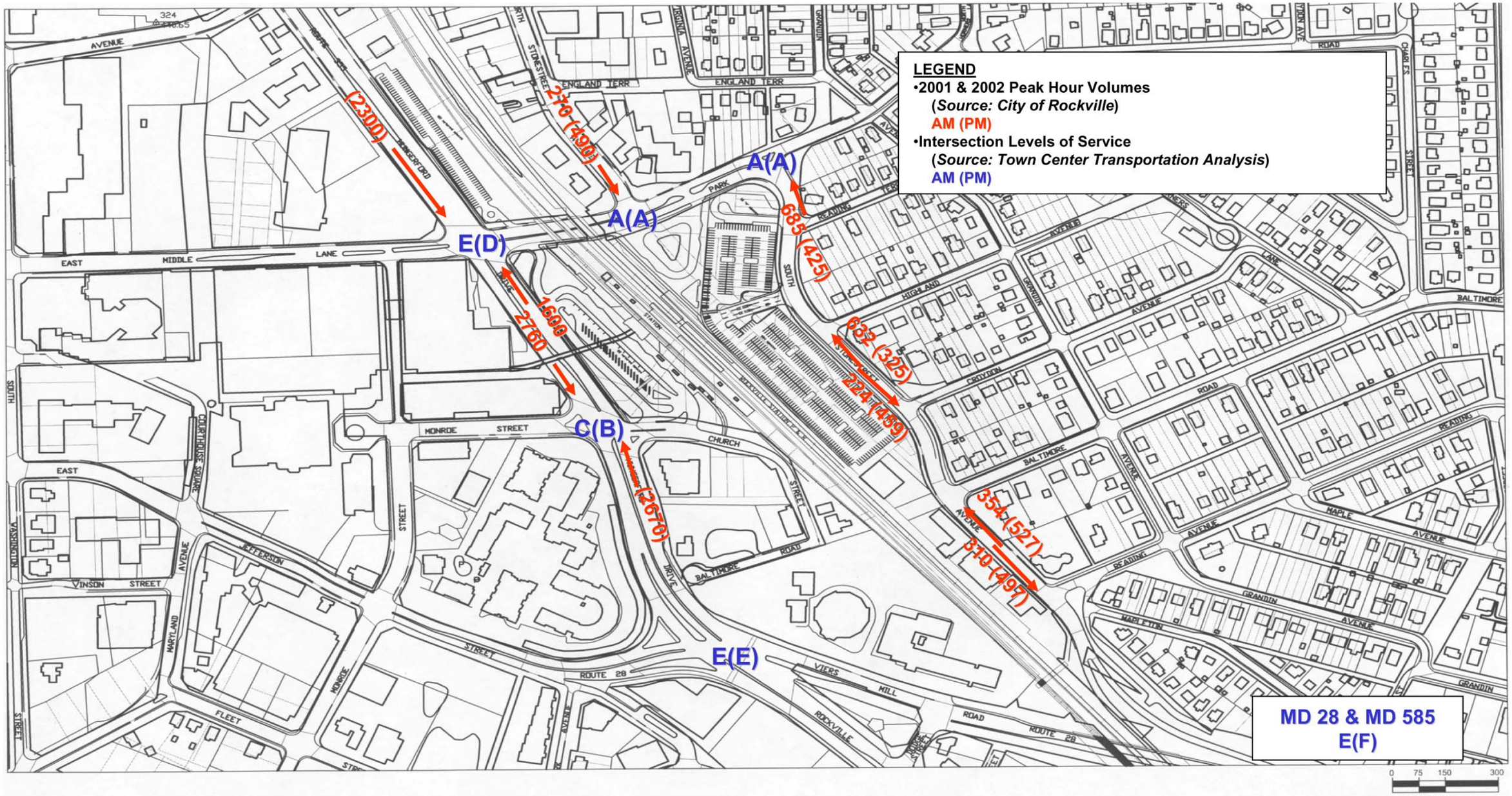
Figure 1-1. Study Area for Rockville Station Access Study



ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

5. TRAFFIC ANALYSIS

Figure 2-1. Intersection Operations Near the Rockville Metrorail Station



5. TRAFFIC ANALYSIS

Table 2-2. Existing Conditions Intersection Analyses
Source: City of Rockville, MD. Town Center Transportation Analysis. May 2003.

Intersection	AM/PM	Fr South CLV	Fr North CLV	Fr West CLV	Fr East CLV	CLV Total	V/C Ratio	LOS[1]
E. Middle Ln & MD 355	AM	631	1027	475	382	1502	0.96	E
	PM	948	800	419	311	1368	0.88	D
Park Rd & N. Stonestreet	AM	47	50	221	704	754	0.50	A
	PM	78	82	378	511	593	0.39	A
Park Rd & S. Stonestreet	AM	0	608	179	98	885	0.59	A
	PM	0	344	329	123	797	0.53	A
MD 355 & Church St & Monroe Pl	AM	553	956	307	284	1263	0.76	C
	PM	794	733	283	340	1134	0.68	B
MD 355 & W. Jefferson & MD 28	AM	671	951	539	433	1490	0.99	E
	PM	1098	730	383	279	1481	0.98	E
MD 28 & First St (MD 585)	AM	750	645	211	529	1490	0.96	E
	PM	771	823	597	310	1730	1.11	F

From the results, the critical intersections are MD 28-MD 355, and MD 28-MD 585. During the morning peak hour, the MD 28 corridor is congested at MD 355 and MD 585, both operating at LOS E. The average delay per vehicle ranges from 55 to 80 seconds per vehicle at these two intersections. The intersections of MD 355-Middle Lane-Park Road and MD 355-MD 28 operate at LOS E. The intersection of MD 355-Church Street operates at LOS C. The Middle Lane-Park Road corridor operates with adequate capacity at South Stonestreet and North Stonestreet Avenues.

During the evening peak hour, MD 28 at the MD 355 and MD 585 intersections operates at LOS E and LOS F, respectively. A LOS F equates to drivers experiencing average delays greater than 80 seconds per vehicle. High vehicle delays occur on MD 355 at the Middle Lane-Park Road intersection, operating at LOS E, and at the MD 28 intersection, operating at LOS F. Again, the intersection of MD 355-Church Street performs at acceptable traffic operations, LOS C, during the evening peak hour. The intersections of Park Road at South Stonestreet and North Stonestreet Avenues operate at excellent levels of service.

[1] The peak-hour level of service is a measure of the adequacy of the existing lanes and/or signalization at an intersection or roadway segment for the particular peak hour. Level of service is measured on a scale of A through F, with LOS A representing the best operating conditions with little or no delay and LOS F representing the worst with unacceptable delay. **LOS A** – less than 10.0 seconds of delay per vehicle; **LOS B** – between 10.0 & 20.0 seconds of delay per vehicle; **LOS C** – between 20.0 & 35.0 seconds of delay per vehicle; **LOS D** – between 35.0 and 55.0 seconds of delay per vehicle; **LOS E** – between 55.0 & 80.0 seconds of delay per vehicle; **LOS F** – greater than 80.0 seconds of delay per vehicle.

Transit

Metrorail, Metrobus, Ride On, and MARC currently service the Rockville Metrorail station. Thirteen Ride On bus lines and two Metrobus routes stop at the station. WMATA conducted a rail passenger survey in 2002. Based on this data, the mode of access and egress for Metrorail riders at the Rockville station varies as shown below.

Table 2-3. Mode of Access and Egress by Time Period at the Rockville Metrorail Station
Source: 2002 WMATA Rail Passenger Survey

Time Period	Mode of Access / Egress											
	Metrobus	Ride On	Other bus service	Drove a car and parked	Rode with someone who parked	Dropped off by someone	Bicycle	Walk	Amtrak, MARC, or VRE	Taxi	Unknown	Total
AM Access	43	173	0	1,040	26	329	35	373	295	0	0	2,314
AM Egress	144	323	0	9	0	25	9	303	3	0	53	869
PM Access	66	309	0	94	0	103	9	243	9	9	9	851
PM Egress	106	450	14	1,136	11	285	32	476	285	18	66	2,879
Daily Access	179	692	7	1,360	40	594	44	952	304	9	9	4,190
Daily Egress	424	1,080	30	1,513	39	421	54	1,367	300	36	140	5,404
Daily % of Total	**6.3%**	**18.5%**	**0.4%**	**30.0%**	**0.8%**	**10.6%**	**1.0%**	**24.2%**	**6.3%**	**0.5%**	**1.6%**	**100.0%**

** AM Peak Period is from 5:30 am - 9:30 am; PM Peak Period is from 3 pm - 7 pm. The PM peak hour is the peak hour of bus ridership and frequency at Rockville.*

Driving to or from the Rockville station was the most common mode of access, followed by walking. Ride On was the next highest mode of access, with 18.5 percent of Rockville Metrorail riders in this category. Ride On and Metrobus riders combined comprise 24.8 percent of the Metrorail riders at the Rockville station.

WMATA provided daily Metrobus ridership at the Rockville station for this study. The T2 and Q2 routes are summarized below. Both routes service the west side of the station.

Table 2-4. Daily Metrobus Ridership at Rockville Station, 2003
Source: WMATA, November 13, 2003 email

Route	NB – MD 355		SB – MD 355	
	Boardings	*Alightings*	*Boardings*	*Alightings*
T2	272	228	*	*
Q2	297	850	805	314
Total	**569**	**1078**	**805**	**314**

** The Route T2 does not travel on southbound MD 355.*

Based on the total number of daily Metrobus boardings at Rockville and the Rail Passenger Survey data, the total number of 2003 peak-hour boardings at Rockville (Metrobus and Ride On) is approximately 875.

5. TRAFFIC ANALYSIS

The present bus frequency at the Rockville station is shown below. Since several of the routes end or begin at the Rockville station, these buses were counted only once. The peak hour, from 5:00 pm through 6:00 pm, yields 36 buses on the west side of the station and 21 buses on the east side. The more active west side services several Ride On lines and the two Metrobus routes.

Table 2-6. Rockville Station Bus Frequency during Weekday Peak Hour by Route
Source: *www.wmata.com/timetables/timetables-state.cfm?State=MD; www.montgomerycountymd.gov/content/dpwt/transit/routesandschedules/rideonroutes.asp*

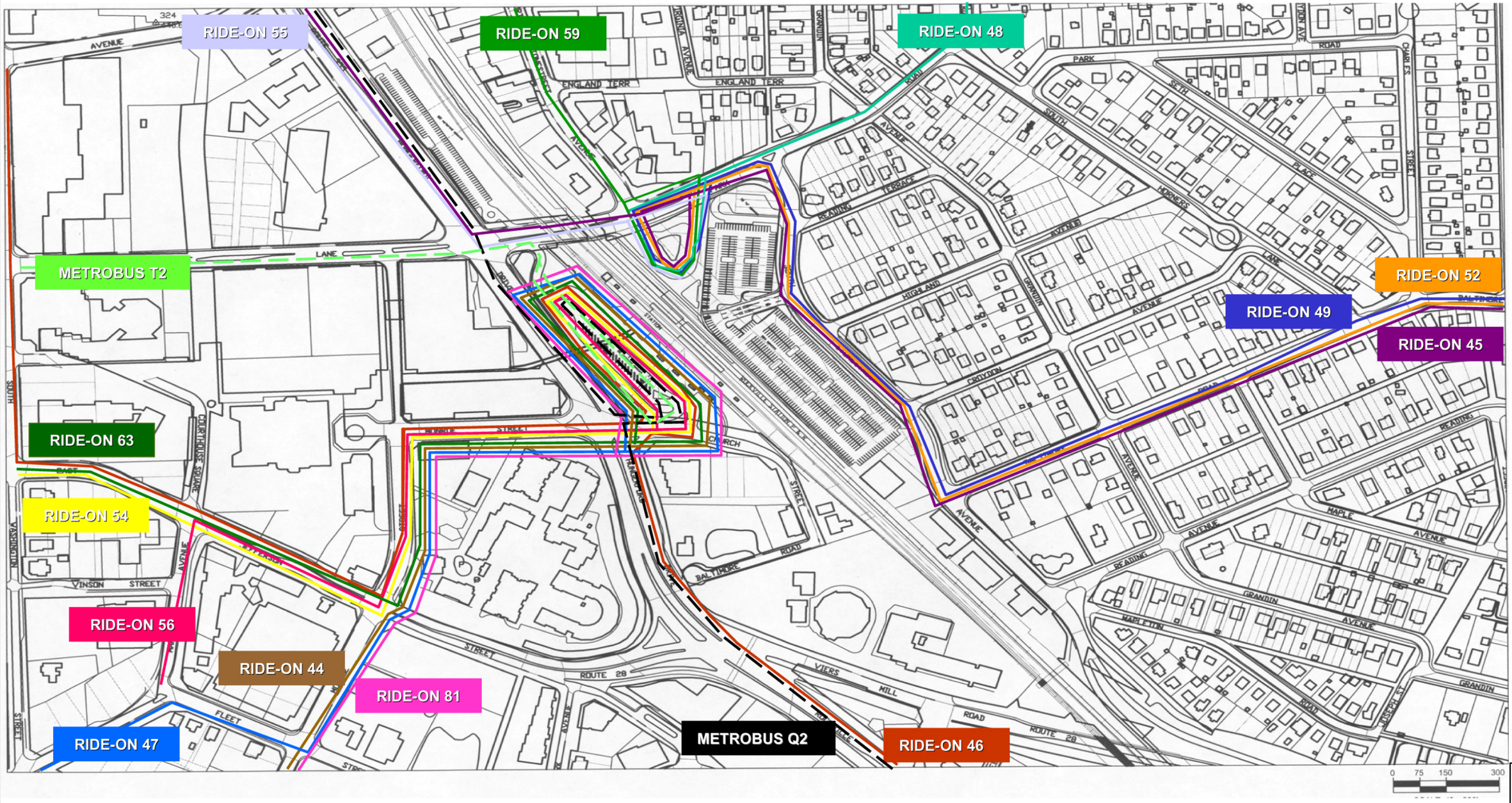
West Side	5 Bus Bays				*East Side*	4 Bus Bays			
Route	**NB AM**	**SB AM**	**NB PM**	**SB PM**	**Route**	**NB AM**	**SB AM**	**NB PM**	**SB PM**
T2	2	3	3	3	*45*	2	3	4	2
Q2	6	5	6	5	***48***	2	2	2	2
44	2	2	2	2	***49***	3	2	3	2
46	3	4	4	4	***52***	2	2	2	2
47	2	2	2	2	***55***	2	3	4	3
54	2	3	3	2	***59***	3	4	4	2
56	3	2	3	2					
63	2	1	2	2					
81	2	2	2	2					
Total	**35**		**36**		**Total**	**19**		**21**	

AM Peak: 6:30 – 7:30 AM; PM Peak: 5 – 6 PM
*Note: **Bold** text indicates that this route has its terminus at Rockville*

The number of buses at the Rockville station during the peak hour is currently 57 using nine bus bays. According to the information provided by WMATA, one bus bay is presently unused. **Figure 2-2** shows the bus routes accessing the Rockville Metrorail station.

5. TRAFFIC ANALYSIS

Figure 2-2. Bus Routes Serving the Rockville Metrorail Station



5. TRAFFIC ANALYSIS

3. Site Traffic Estimation

Several steps were performed in order to determine the amount of vehicular traffic that would be generated from the Joint Development at the Rockville Metrorail Station. The steps included trip generation, trip distribution, and traffic assignment. Each step is described below.

Trip Generation
Inputs to the vehicular trip generation activities were taken from the Development Program for the Rockville Metrorail Station Access Improvements Study. **Tables 3-1 and 3-2** show the components of the development program.

Table 3-1A. Development Program – Optional Program #1
Source: Lee and Associates, September 2004

West Side	East Side
Transit Program	
• 9 Bus Bays (1 articulated bay) on site • One bus pullout on Hungerford Drive • 7 layover spaces • 123 existing long term spaces north of Park Rd. to remain • 16 Kiss & Ride spaces (in parking garage) • 4 Taxi stands (in parking garage)	• 8 Bus bays (including 2 articulated BRT bus bays) • 2 layover spaces • Kiss & Ride/taxi in public plaza area
Joint Development	
North Mixed Use Tower • Hotel- 240,000 s.f. Approximately 260 rooms. 9 stories (7 room levels over two levels of retail and hotel functions). • Residential- 150,000 s.f. Approximately 128 units 10 stories (10 room levels over hotel floors). • **TOTALS** North Tower - 390,000 s.f. (does not include retail). 19 stories. *South Residential Tower* • Residential- 380,000 s.f. Approximately 340 units. 19 stories (17 room levels over 2 levels of retail and residential amenity/lobby space. • Retail- 25,000 s.f. At mezzanine (ground) and pedestrian promenade level • **TOTAL Development= 795,000 s.f. for an FAR of 5.8**	• Site area approximately 280,000 s.f. • Commercial - 50,000 s.f. Assume ground floor retail and upper level residential. 3-6 stories above retail development • North End Residential 150-160 units or 180,000 s.f. • South End Residential 30-60 units or 70,000 s.f. • **TOTAL Development= 300,000 s.f. for an FAR of 1.1 (Total of 180-220 units)**
Parking	
• Hotel - 300 • Commercial - 730 • Retail - 0 (assume transit related retail) • TOTAL= 1030 spaces • Underground Parking- 412 spaces /level x 2.5 levels = 1030 spaces • Note: ½ of the top parking level is devoted to taxis and Kiss and Ride	• Metro- 524 existing spaces • Joint Development- 460 spaces • TOTAL = 984 spaces • 7 levels = 984 spaces
Other	
• 8 pull out spaces on Hungerford Drive • Office/hotel drop off/K&R/taxi	

Table 3-1B. Development Program – Optional Program #2
Source: Lee and Associates, September 2004

West Side	East Side
Transit Program	
• Same as Optional Program #1	• Same as Optional Program #1
Joint Development	
• Same as Optional Program #1	• Same as Optional Program #1
Parking	
• Same as Optional Program #1	• Metro- 1024 spaces (includes 524 existing additional 500 Metro spaces) • Joint Development- 460 spaces • TOTAL = 1484 spaces • 7 levels = 1484 spaces
Other	
• Same as Optional Program #1	• Same as Optional Program #1

The methodology for calculating new trips to and from the joint development was found in the city's *Comprehensive Transportation Review Methodology* (CTR). Trips for each of the components were calculated using recommended trip generation rates and equations found in the *Trip Generation Manual* from the Institute of Transportation Engineers (ITE), and the *Local Area Transportation Review Guidelines* (LATR), from the Maryland National Capital Park and Planning Commission (M-NCPPC). The daily traffic volumes were calculated using the ITE Trip Generation rates and equations. The morning and evening peak-hour trips to and from the joint development were calculated using local rates and equations from the LATR.

For a conservative estimate, the high end of the range listed in the preliminary development was used for trip generation purposes. For the north end residential units on the east side of the development, 160 units were used in calculations. For the south end residential units on the east side of the development, 60 units were used in calculations.

The CTR and LATR listed the development site as a *Transit Oriented Area*, which would produce fewer vehicle trips due to its proximity to a Metrorail station. Based on the transit mode shares provided by the City of Rockville, as shown in **Table 3-2**, the amount of trip reduction for retail and residential development can be as high as 25 percent. Also, the joint development would be subject to further trip reductions because of its designation as a mixed-use development within a transit-oriented development. According to the CTR, the maximum trip reduction that could be applied is 10 percent. This percentage of trip reduction was used for office, retail, and residential trips at the development site. The parking garage associated with Metrorail use was considered as a Park-and-Ride location for the purposed of trip generation. The number of pass-by trips also reduced retail trips, which according to the ITE manual for shopping centers was a 35 percent reduction.

Table 3-2. Transit Mode Shares
Source: City of Rockville, 2005

Development Type	AM	PM	Saturday
Retail	15%	15%	15%
Residential	25%	25%	25%

According to the calculations, vehicular daily trips generated by the Joint Development ranging from 8,100 vpd to 10,400 vpd would travel on roadways near the Rockville Metrorail station. Approximately 1,200 trips would occur during the morning peak hour, and 1,300 trips would occur during the evening peak hour. **Table 3-3** shows the trip generation by site orientation. **Figure 3-1** shows the new trip volumes generated from joint development. The detailed trip generation results are shown in **Appendix A**.

Table 3-3A. Trip Generation Results for Optional Development Program #1
Source: Parsons Brinckerhoff, 2005

Joint Development	Daily	AM Peak	AM In	AM Out	PM Peak	PM In	PM Out
West Side	3,723	302	130	153	336	151	146
East Side	4,451	533	366	166	601	223	377
TOTALS	**8,174**	**835**	**496**	**319**	**937**	**374**	**523**

**Total Peak Generated Trips include pass-by and trip reductions.*

Table 3-3B. Trip Generation Results for Optional Development Program #2
Source: Parsons Brinckerhoff, 2005

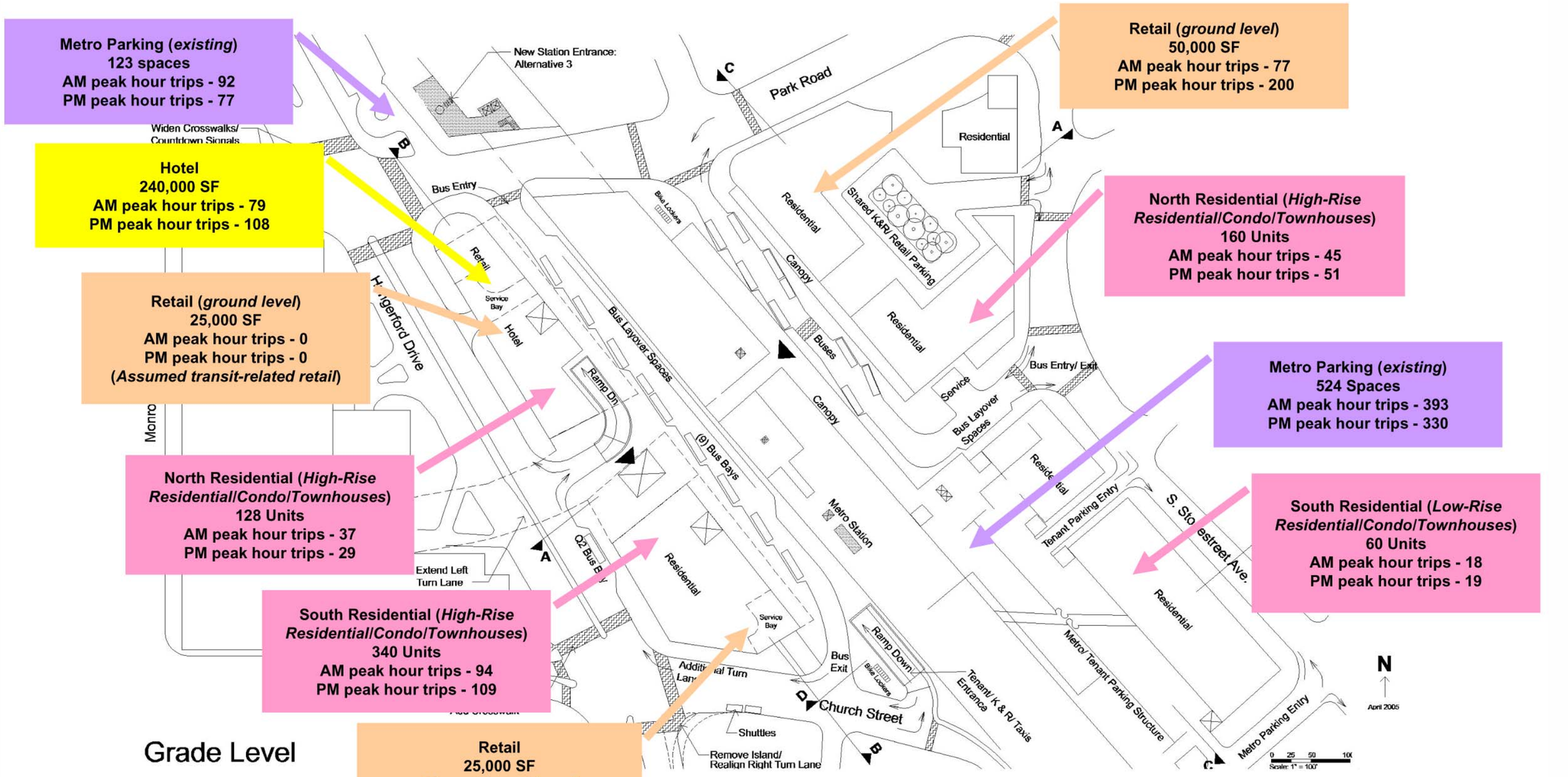
Joint Development	Daily	AM Peak	AM In	AM Out	PM Peak	PM In	PM Out
West Side	3,723	302	130	153	336	151	146
East Side	6,701	908	666	241	916	293	623
TOTALS	**10,424**	**1,210**	**796**	**394**	**1,252**	**443**	**769**

**Total Peak Generated Trips include pass-by and trip reductions.*

Based on the trip generation results, the Optional Development Program #2, which incorporates 500 additional Metrorail parking spaces, would generate over 2,000 more trips per day than Optional Development Program #1. The results from the traffic operational analysis in Section 5 discuss the impacts of the additional trips on the transportation system.

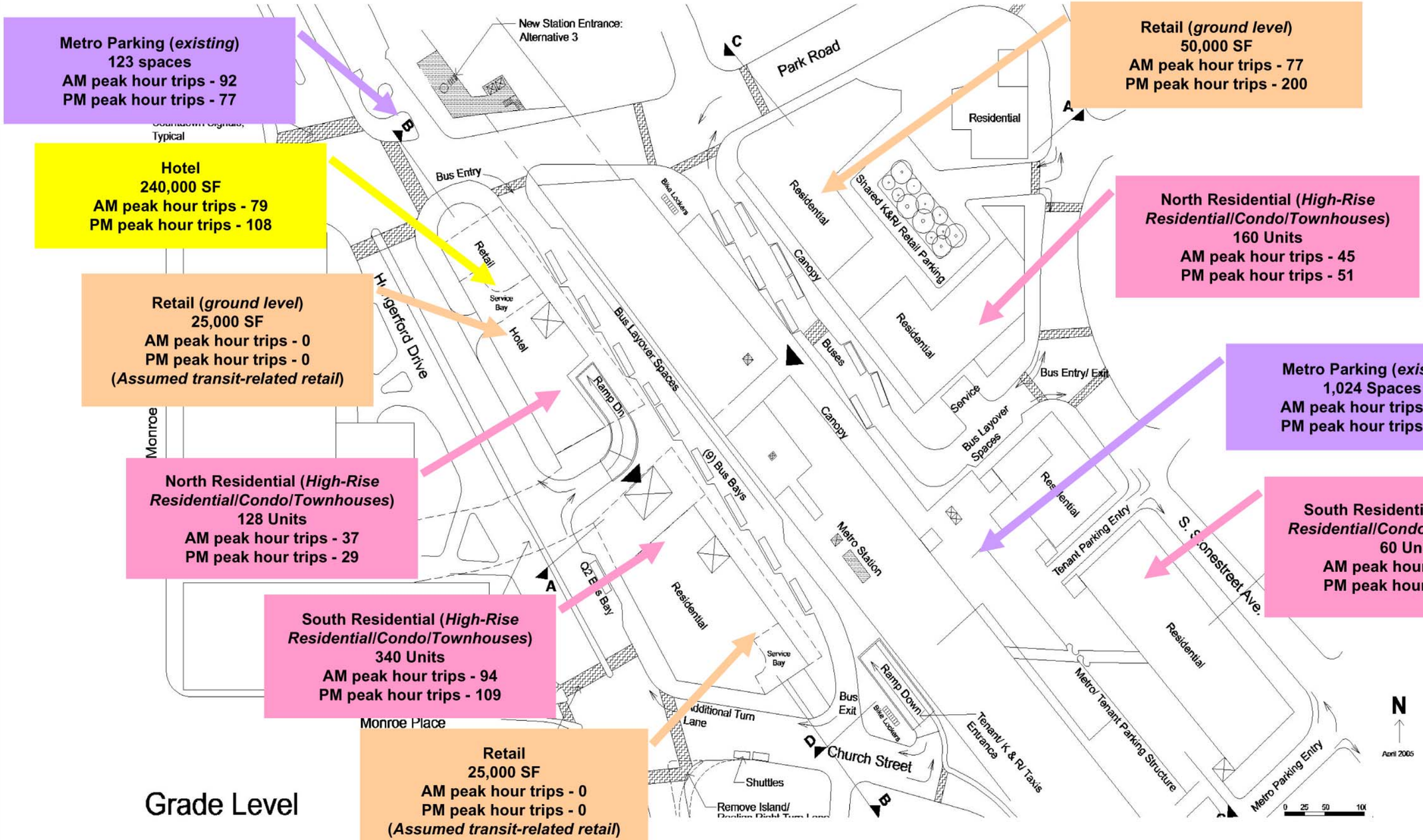
5. TRAFFIC ANALYSIS

Figure 3-1A. Trip Generation Results for Optional Development Program #1



5. TRAFFIC ANALYSIS

Figure 3-1B. Trip Generation Results for Optional Development Program #2



5. TRAFFIC ANALYSIS

Trip Distribution and Traffic Assignment

The next step after calculating the generated vehicle trips for the Joint Development was to determine the trip distribution of the trips throughout study area, and traffic assignment of the distributed trips at individual intersections. Trip distribution specifies the destination of trips originating at the development site, and the origin of trips destined to the development site. Traffic assignment specifies the individual local area intersections used to access the development site.[2] The trip distribution and traffic assignment values were calculated using the procedures and factors noted in the LATR.

According to the LATR, the Rockville Metrorail station development site is located in the Rockville/North Bethesda Super-District, and has specific trip distribution assumptions for developments in this area. For each super-district, the assumed trip distributions for only general office developments and residential developments are listed. The assumptions include the percentage of trips from all super-districts (DC metropolitan areas of Maryland, Virginia, and DC) that will access the proposed development.

Trip distribution assumptions for the hotel development, retail development, and parking at the Metrorail station are not included in the LATR. The trip distribution assumptions for these categories were assumed based on the distribution information in the LATR. Thus, engineering and planning judgment was used to determine the percentages of traffic from various super-districts that would access the retail and parking developments at the Rockville Metrorail Station.

Once the trip distribution assumptions were determined, the distributions were spread out over assumed roadways and intersections, or traffic assignment, for each trip accessing the development site from the various super-districts. Engineering and planning judgment was used to determine the travel paths for trips to and from the development site. Finally, the trip distribution percentages and the traffic assignment percentages were combined to create the percent of total development-generated trips. The assignment data was then summed to develop an aggregate trip assignment rate for each roadway, which was combined with the trip generation results to determine roadway and intersection volumes.

The trip distribution-traffic assignment activities also accounted for the trips generated by Metrobuses and Ride On buses during the morning and evening peak hours. According to the 2004 Dulles Corridor EIS Patronage forecasts, Metrorail ridership is expected to grow by 55 percent between 2004 and 2025. Bus ridership was assumed to grow at the same rate. The number of buses at the Rockville station during the peak hour is currently 80 using 9 bus bays. The number of buses forecasted for 2010 was dependent on the current utilization, as well as the future volumes from the planned Viers Mill Road BRT service and the expanded pulse service for Ride On. Therefore, the increase in bus trips to the Rockville Metrorail station was proportional to the increase in projected ridership. For the purposes of this study, a calculation of approximately 90 buses will service the Rockville Metrorail station in year 2010 during the peak hour periods.

The bus trips were distributed to the appropriate intersections in the study area. Bus routes were assumed to be re-routed to use the new bus entrances on the west and east sides of the Metrorail station. Buses currently entering the station from eastbound Monroe Street/Church Street would be diverted to eastbound East Middle Lane, via Route 28 and South Washington Street, and would travel through the MD 355 intersection to enter the reconfigured bus facility from Park Lane. The only bus accessing the station via northbound MD 355 would be the Metrobus Q2, as it would have a dedicated stop location on MD 355. Buses would be re-routed through the Rockville Town Center, in lieu of MD 355, to minimize the vehicular turning conflicts with pedestrians at the crosswalks located to the east at the Monroe Street - MD 355 and East Middle Lane - Park Road intersections.

Figure 3-2 shows development-generated volumes at each intersection in the study area. The detailed trip distribution and traffic assignment results are shown in **Appendix B**.

4. Traffic Forecasts

The generated trips from the Rockville Station Joint Development were added to the background traffic volumes for the year of the Rockville Town Center build-out. The build-out year for the Joint Development was assumed to be 2010. The 2010 volumes were taken from the Rockville Town Center Master Plan and Transportation Analysis. The volumes in the Town Center report accounted for existing traffic volumes in the study area, background traffic data for developments that are planned or have been improved by the city including the Rockville Town Center, and traffic growth for through traffic generated solely by land uses outside the study area. The Town Center traffic accounted for traffic growth up to year 2006, and thus was increased to account for traffic growth to year 2010 by using growth factors from the City of Rockville's analysis worksheets. **Figure 4-1** shows the total volumes (background traffic + development-generated volumes) at each intersection in the study area. Detailed 2010 traffic volume data is shown in **Appendix C**.

5. Traffic Operations Analysis

A critical lane volume (CLV) analysis was performed to calculate the operational capacity at the intersections in the study area for year 2010. A CLV analysis is the preferred method of determining intersection capacity by the City of Rockville. A CLV analysis is a methodology for calculating intersection capacity and level of service (LOS) by using the intersection geometry, traffic control information, and traffic volumes. The critical lane volume is the sum of the critical movements in both the north-south and east-west approaches. The results of the CLV analysis include a volume-to-capacity ratio, which can then be used to determine the intersection LOS. **Table 5-1** shows the comparison between volume-to-capacity ratio and intersection capacity.

[2] M-NCPPC, Local Area Transportation Review Guidelines, Appendix E, pg. 56.

5. TRAFFIC ANALYSIS

Table 5-1. Level of Service
Source: City of Rockville Comprehensive Transportation Review Methodology, May 2004

LOS	Range (% of Capacity)
A	< 59%
B	60% - 69%
C	70% - 79%
D	80% - 89%
E	90% - 99%
F	> 100%

According to the City of Rockville Comprehensive Transportation Review Methodology, a total of 16 intersections must be analyzed for the Rockville Station Joint Development study area.[3] The City of Rockville's analysis worksheets were used to perform the CLV analysis for the study intersections. **Figure 5-1** shows the LOS results from the CLV analysis. The CLV results are shown in **Appendix D**.

The roadway geometry used in the CLV analysis was the same geometry used in the Rockville Town Center Traffic Analysis. Operational enhancements at intersections along MD 355, as noted in the Town Center Traffic Analysis report were also included in the analysis. The feature of "Right-Turn-On-Red" was removed from the MD 355 intersections at E. Middle Lane and Church Street to accommodate safe pedestrian crossings at these intersections. A right-in/right-out access point to the hotel parking on MD 355 is provided to minimize the possibilities of any operational deficiencies on MD 355 resulting from a signalized mid-block intersection with left-in/left-out potential. The service bay entry for the hotel and retail relocated off of MD 355 is designed so that trucks can easily enter and exit the bay. Thus, northbound traffic would not have to stop while trucks back into the service dock.

The bus exit on the west side of the station is located 200 feet east of the MD 355-Church Street intersection to provide longer stacking distances for buses. An additional right-turn lane was added to the Church Street approach as an exclusive turn lane for buses. The right-turn lane would serve as a bus queue jumper lane, which would allow buses to exit the station ahead of vehicles from the parking garage, thus minimizing delays in the bus service. Thus, the Church Street approach would be analyzed with four exiting lanes – a right turn lane (buses only), a shared through and right lane, and two left turn lanes.

To allow an additional curb lane for shuttle parking, the separate right-turn lane from northbound MD 355 to Church Street was eliminated and realigned with a conventional corner radius where the existing island is deleted and the crosswalks are straightened. The existing right turn lane was originally designed for northbound buses entering the station. The only northbound bus route, the Q2, would now go straight through this intersection to access the pull-out lane along MD 355. The left turn lane for southbound MD 355 was lengthened to approximately 230 feet to allow for additional vehicular storage.

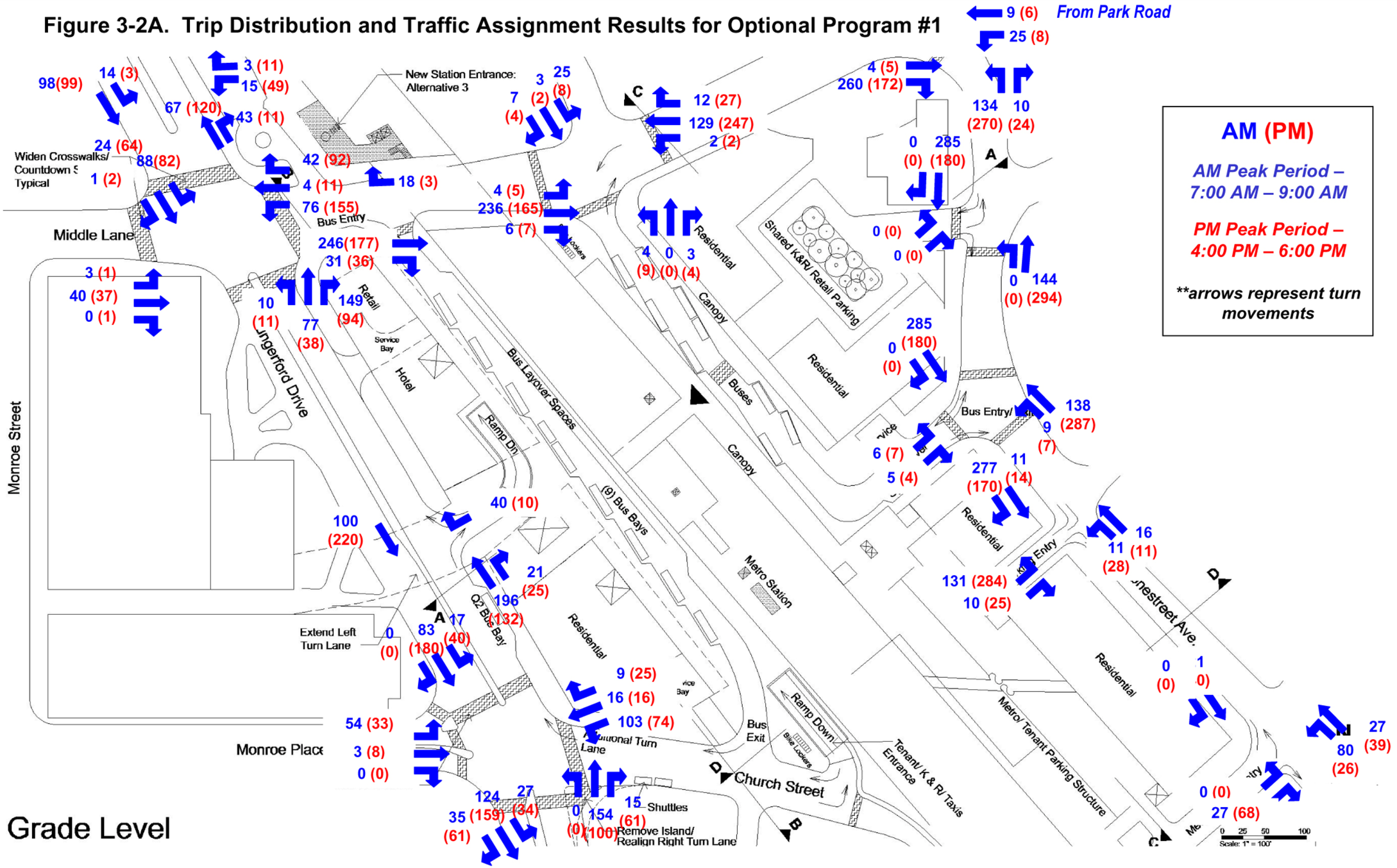
For improved pedestrian safety and convenience, the study recommends that crosswalks be widened at all intersections adjacent to the Metrorail station and additional crosswalks be added. On the Master Plan, a crosswalk was added on the north side of the MD 355/Church Street intersection for pedestrians accessing the station from the west, traveling along the sidewalk on the north side of Monroe Place. A crosswalk was added across Church Street adjacent to the K&R/Parking access ramp entry with a six-foot-wide sidewalk along the parking ramp to the Garage/Mezzanine level for pedestrian access from the south and the shuttle van parking area to the station entrance.

[3] City of Rockville, Comprehensive Transportation Review Methodology, pg. 11.

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

5. TRAFFIC ANALYSIS

Figure 3-2A. Trip Distribution and Traffic Assignment Results for Optional Program #1



AM (PM)

AM Peak Period – 7:00 AM – 9:00 AM

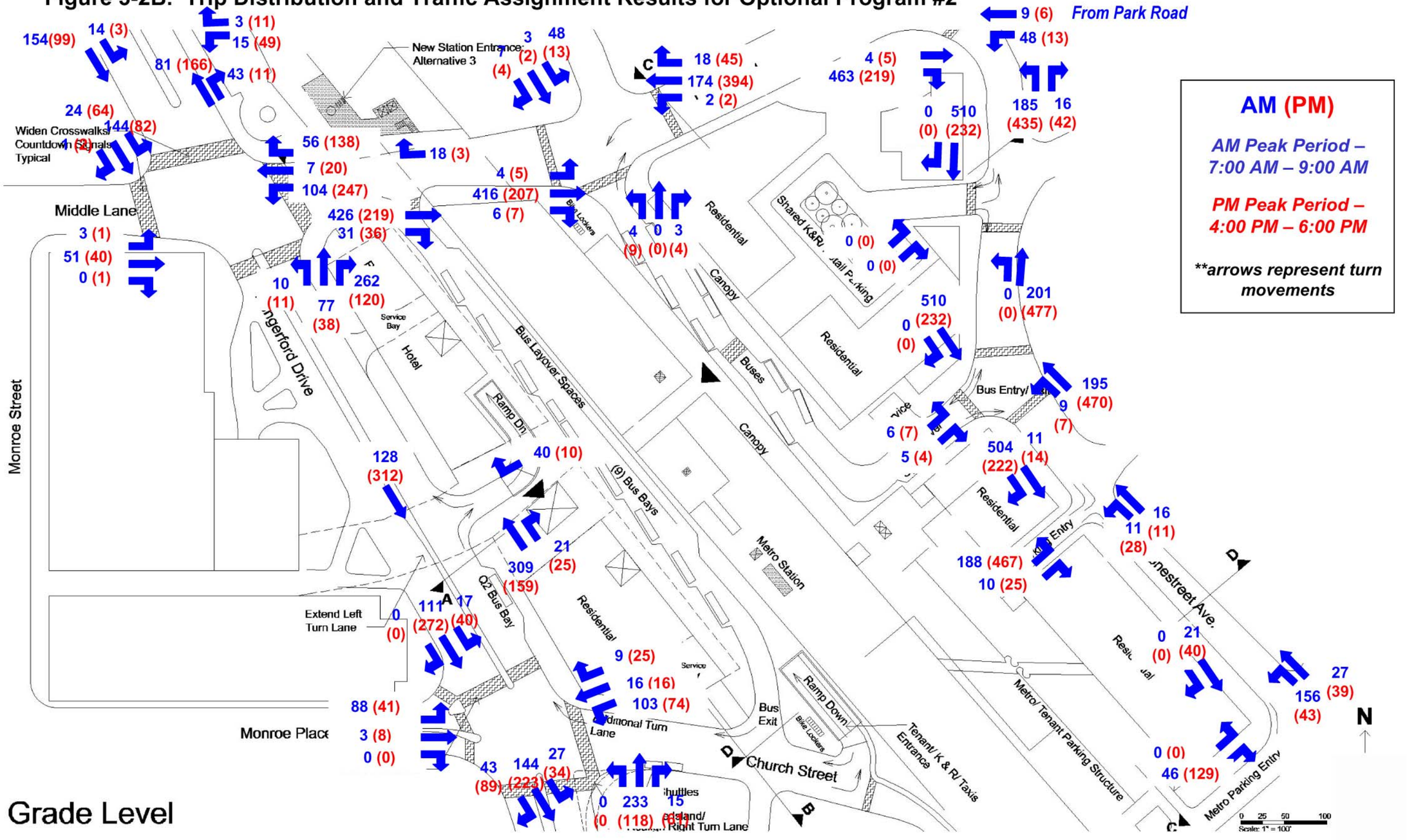
PM Peak Period – 4:00 PM – 6:00 PM

***arrows represent turn movements*

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

5. TRAFFIC ANALYSIS

Figure 3-2B. Trip Distribution and Traffic Assignment Results for Optional Program #2



AM (PM)

AM Peak Period – 7:00 AM – 9:00 AM

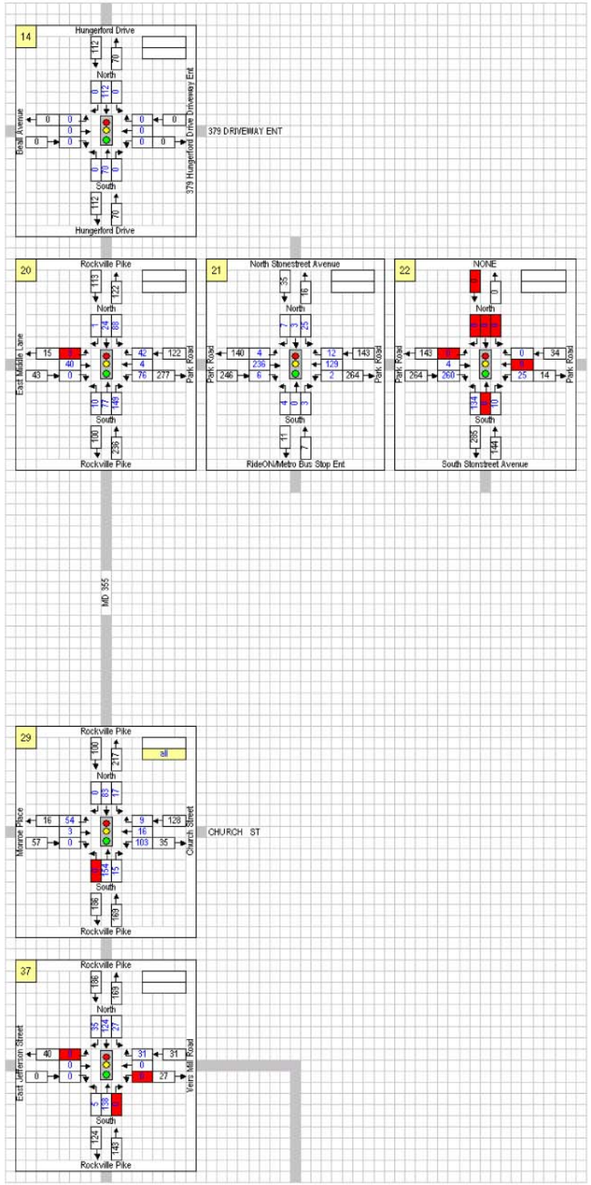
PM Peak Period – 4:00 PM – 6:00 PM

****arrows represent turn movements***

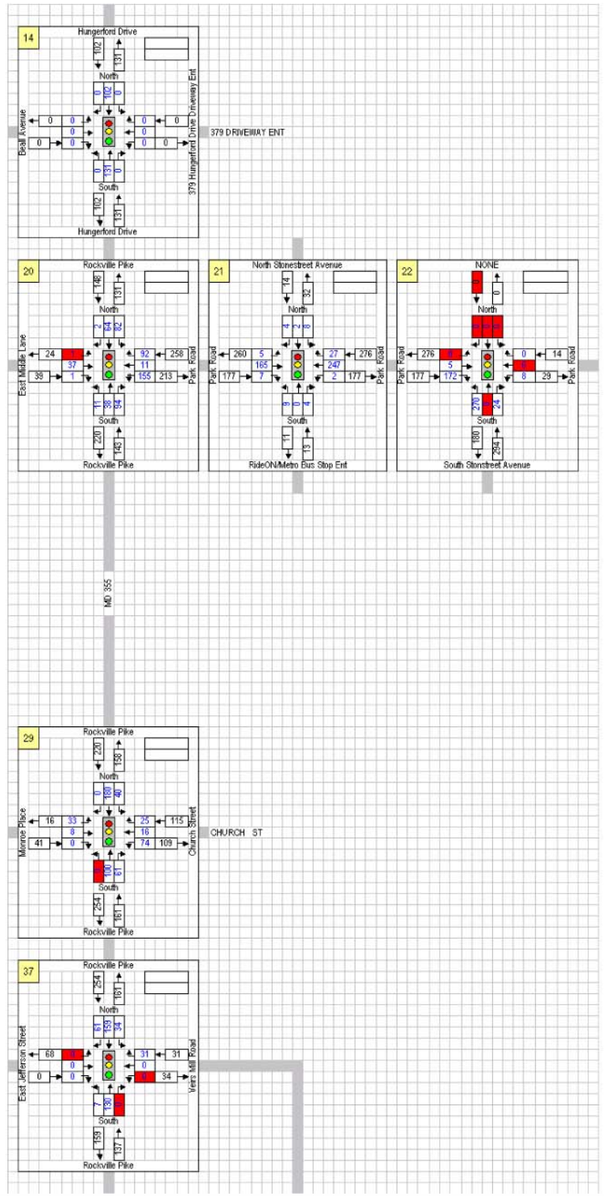
5. TRAFFIC ANALYSIS

Figure 4-1A. 2010 Traffic Volumes for Optional Program #1
Source: City of Rockville

AM Peak Hour



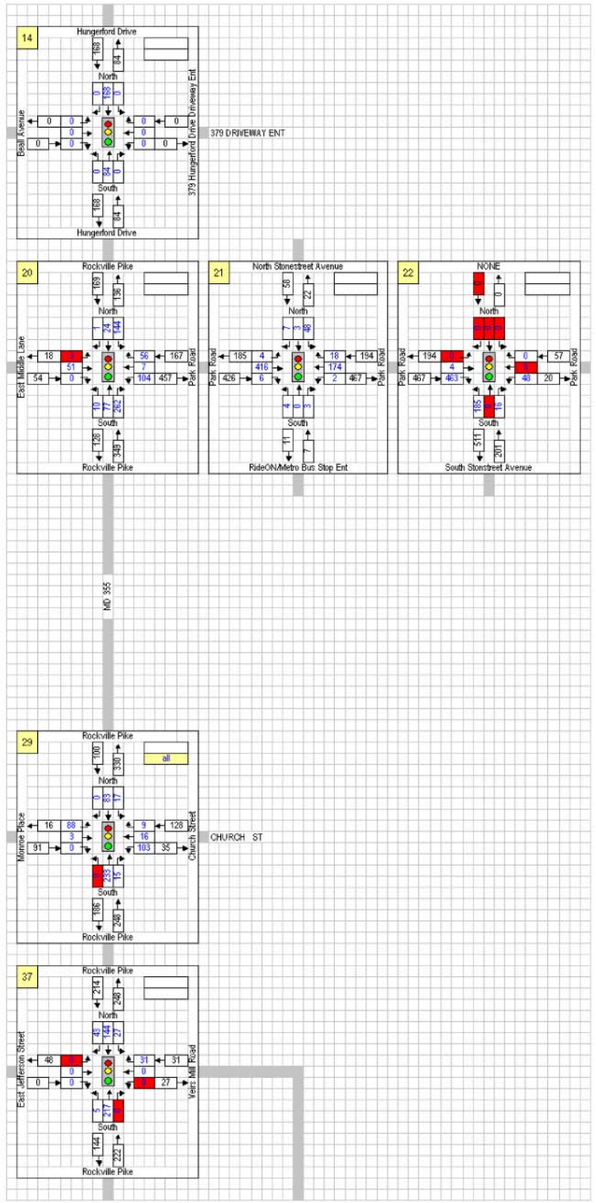
PM Peak Hour



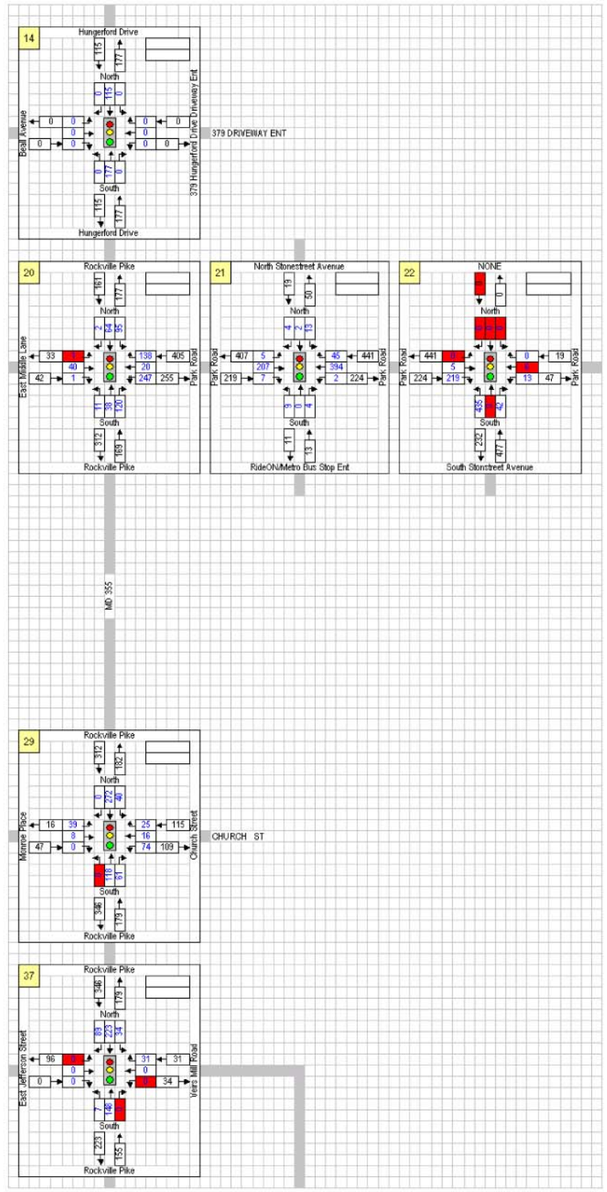
5. TRAFFIC ANALYSIS

Figure 4-1B. 2010 Traffic Volumes for Optional Program #2
Source: City of Rockville

AM Peak Hour

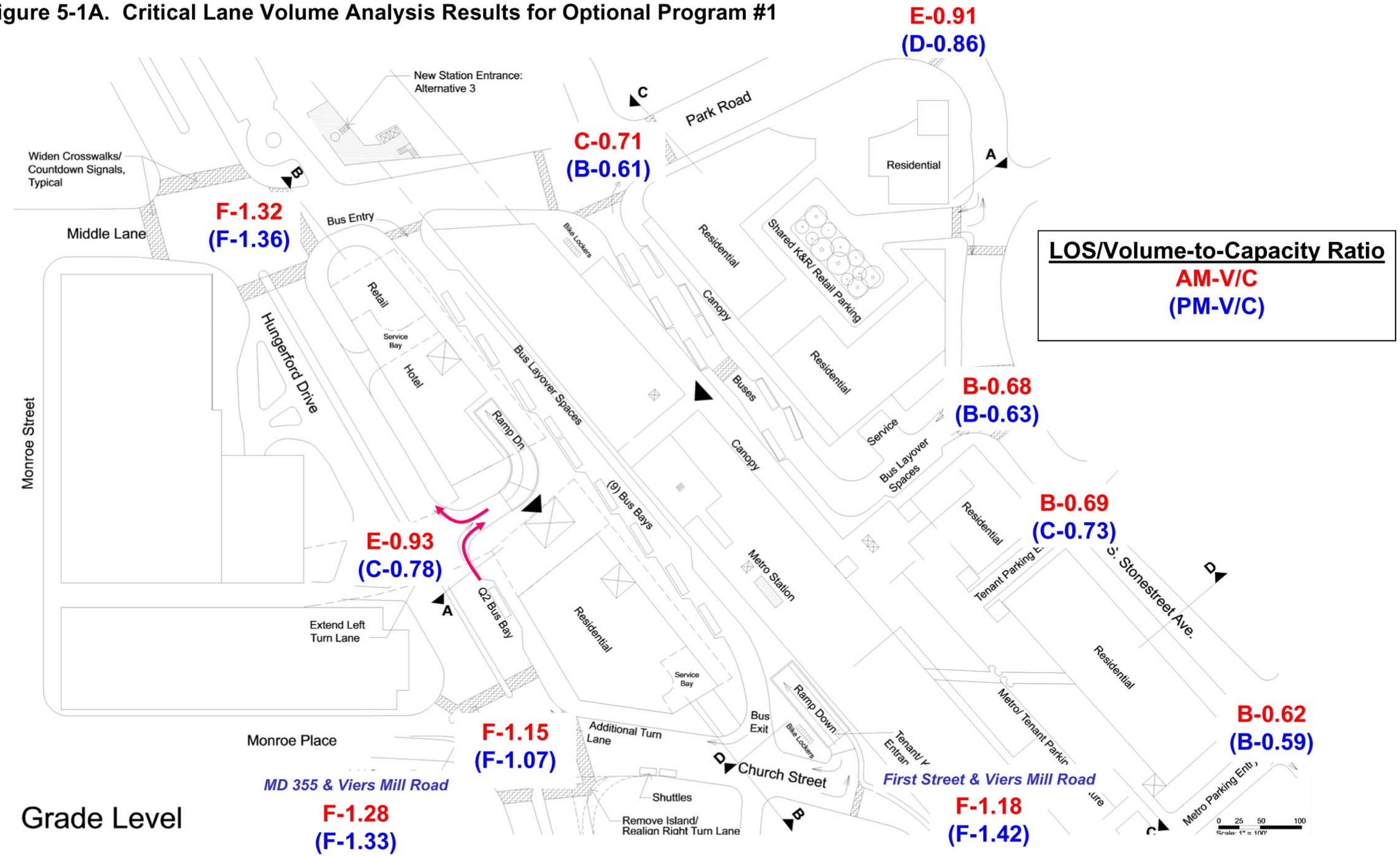


PM Peak Hour



5. TRAFFIC ANALYSIS

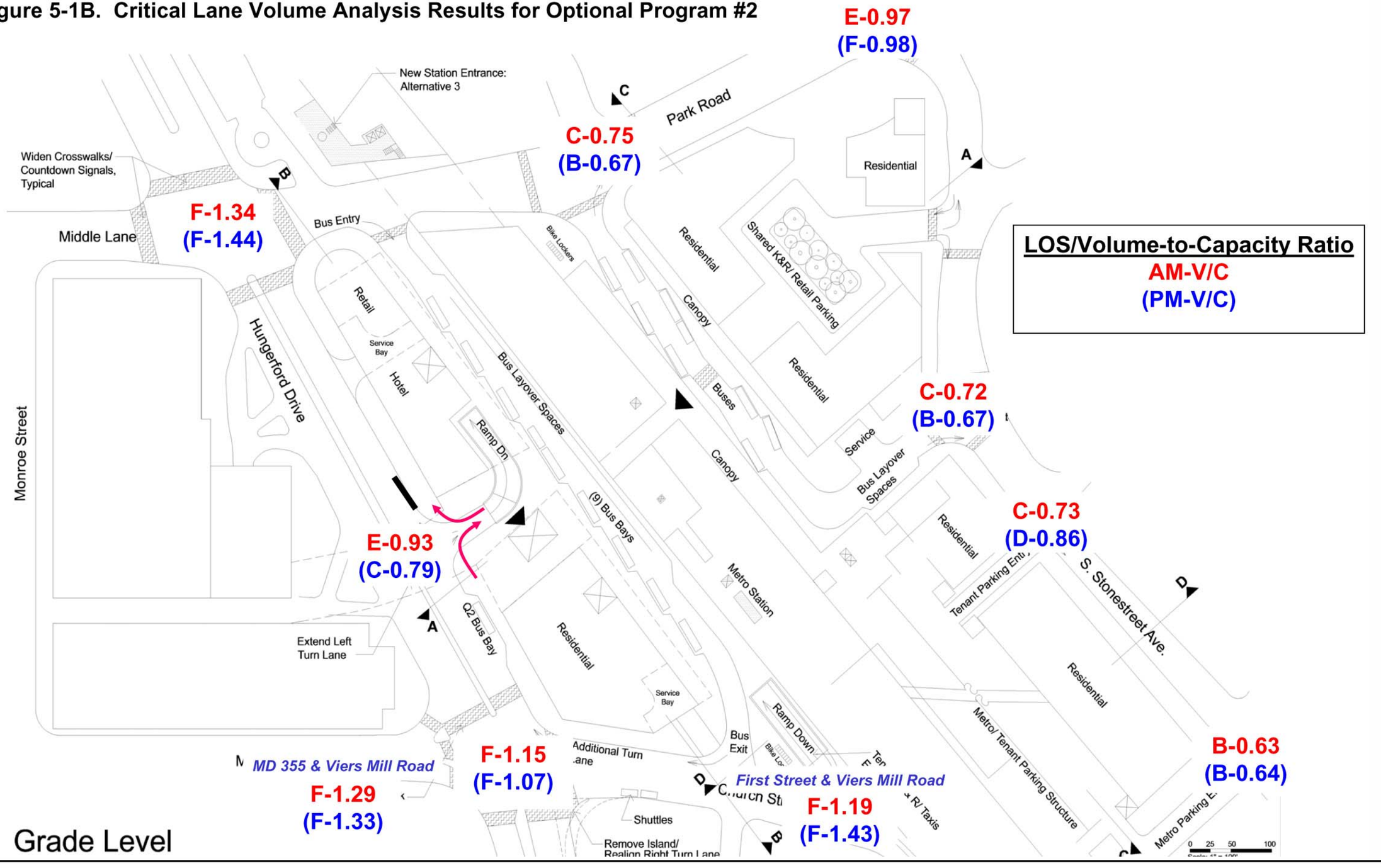
Figure 5-1A. Critical Lane Volume Analysis Results for Optional Program #1



LOS/Volume-to-Capacity Ratio
AM-V/C
(PM-V/C)

5. TRAFFIC ANALYSIS

Figure 5-1B. Critical Lane Volume Analysis Results for Optional Program #2



6. Summary of Findings

The following is a summary of findings of the analysis.

Optional Development Program #1
The intersections of MD 28-MD355 and MD 355-East Middle Lane would operate at LOS F during the morning and evening peak periods, as volumes at these intersections would exceed the intersection capacity of 1,550 vehicles per hour. The intersection of MD 355 with mid-block entrance to the hotel development on the west side of the Metrorail station would operate at 93 percent capacity during the morning peak hour and 78 percent capacity during the evening peak hour. The traffic traveling on MD 355 during the peak periods would not restrict right-turn movements from the hotel exit, and therefore not contribute to excessive queuing at the hotel exit.

The intersection of MD 355-Church Street-Monroe Place would operate at LOS F for both morning and evening peak hours. This is because of the increase in traffic volumes entering and exiting the mixed-use development via Church Street as a result of the limited access to the development from the mid-block entrance. The addition of a queue-jumper lane and a dedicated signal for buses at the west side of the station would be a benefit to traffic operations. According to a preliminary simulation analysis, queues of 245 feet or less form on the westbound Church Street approach but do not block the exit of the buses as the dedicated signal provides necessary gaps in traffic for buses to exit the facility.

On the east side of development, the intersections would operate at LOS C or better, with capacities of 73 percent or less. The exception, however, is the intersection of South Stonestreet Avenue with Park Road. This intersection would operate at LOS E for the morning peak hour and LOS D for the evening peak hour. The limited intersection operation and resulting congestion at the South Stonestreet Avenue-Park Road intersection could impact the circulation on South Stonestreet Avenue particularly at the two exits at the structured parking.

Table 6-1 shows the 2010 traffic operations results for the Optional Development Program #1.

Table 6-1. Traffic Operations Results – Optional Development Program #1
Source: Parsons Brinckerhoff

Intersection	AM/PM	V/C Ratio	LOS
East Middle Lane & MD 355	AM	1.32	F
	PM	1.36	F
Park Road & North Stonestreet Avenue	AM	0.72	C
	PM	0.62	B
Park Road & South Stonestreet Avenue	AM	0.91	E
	PM	0.86	D
MD 355 & Mid-Block Hotel Entrance	AM	0.93	E
	PM	0.79	C
MD 355 & Church Street & Monroe Place	AM	1.15	F
	PM	1.07	F
MD 355 & West Jefferson & MD 28	AM	1.28	F
	PM	1.33	F
MD 28 & First Street (MD 585)	AM	1.18	F
	PM	1.42	F
South Stonestreet Ave & Metro Bus Entrance	AM	0.72	C
	PM	0.67	B
South Stonestreet Ave & Metro Parking Entrance #1	AM	0.73	C
	PM	0.86	D
South Stonestreet Ave & Metro Parking Entrance #2	AM	0.63	B
	PM	0.64	B

Optional Development Program #2
The intersections of MD 28-MD 355 and MD 355-East Middle Lane would operate at LOS F during the morning and evening peak periods, as in Development Program #1. The intersection of MD 355 with mid-block entrance to the hotel development on the west side of the Metrorail station would function similarly to the Development Program #1 operations. The intersection of MD 355-Church Street-Monroe Place would operate at LOS F for both morning and evening peak hours. The results of the queue jumper lane are similar to the results from Development Program #1

On the east side of the development, the intersections would operate at LOS D or better, with capacities of 86 percent or less. The intersection of South Stonestreet Avenue with Park Road operates at LOS E in both the morning and evening peak hours

Table 6-2 shows a comparison of the 2010 traffic operations results for the Optional Development Program #2.

5. TRAFFIC ANALYSIS

Table 6-2. Traffic Operations Results – Optional Development Program #1
Source: Parsons Brinckerhoff

Intersection	AM/PM	V/C Ratio	LOS
East Middle Lane & MD 355	AM	1.34	F
	PM	1.44	F
Park Road & North Stonestreet Avenue	AM	0.75	C
	PM	0.67	B
Park Road & South Stonestreet Avenue	AM	0.97	E
	PM	0.98	E
MD 355 & Mid-Block Hotel Entrance	AM	0.93	E
	PM	0.79	C
MD 355 & Church Street & Monroe Place	AM	1.15	F
	PM	1.07	F
MD 355 & West Jefferson & MD 28	AM	1.29	F
	PM	1.33	F
MD 28 & First Street (MD 585)	AM	1.19	F
	PM	1.43	F
South Stonestreet Ave & Metro Bus Entrance	AM	0.72	C
	PM	0.67	B
South Stonestreet Ave & Metro Parking Entrance #1	AM	0.73	C
	PM	0.86	D
South Stonestreet Ave & Metro Parking Entrance #2	AM	0.63	B
	PM	0.64	B

Comparison of Traffic Conditions

Table 6-3 shows a comparison of the future traffic conditions with the existing traffic conditions. Intersections levels of service operations would deteriorate at key intersections adjacent to the Rockville Metrorail station. Only three intersections operate at LOS E or F during existing conditions, as compared to five intersections operating at LOS E or F in the future. Thus, traffic operations would deteriorate in the future when compared to existing conditions.

Table 6-3. Comparison of Existing and Future Intersection Analyses

Intersection	AM/PM	Existing		2010 w/ Optional Development #1		2010 w/ Optional Development #2	
		V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS
East Middle Lane & MD 355	AM	0.96	E	1.32	F	1.34	F
	PM	0.88	D	1.36	F	1.44	F
Park Road & N. Stonestreet	AM	0.50	A	0.72	C	0.75	C
	PM	0.39	A	0.62	B	0.67	B
Park Road & S. Stonestreet	AM	0.59	A	0.91	E	0.97	E
	PM	0.53	A	0.86	D	0.98	E
MD 355 & Church St & Monroe Place	AM	0.76	C	1.15	F	1.15	F
	PM	0.68	B	1.07	F	1.07	F
MD 355 & W. Jefferson & MD 28	AM	0.99	E	1.28	F	1.29	F
	PM	0.98	E	1.33	F	1.33	F
MD 28 & First St (MD 585)	AM	0.96	E	1.18	F	1.19	F
	PM	1.11	F	1.42	F	1.43	F

Table 6-4 shows a comparison of the future traffic conditions with the Rockville Town Center traffic operations for year 2006. In 2006, the intersections of MD355-East Middle Lane, MD 355-MD 28, and MD 28-First Street would operate at LOS F, with volumes exceeding intersection capacity ranging from six to 29 percent over capacity. These three intersections would operate at failing levels of service despite roadway improvements recommended by the City of Rockville for the Town Center development. The addition of traffic due to the Joint Development at the Rockville Metrorail station would reduce capacity by as much as 37 percent at intersections that would operate at LOS F in 2006. Intersections that would operate with adequate capacity in 2006, such as Park Road and South Stonestreet, would operate with reduced capacities in 2010.

Table 6-4. Comparison of Town Center and Future Intersection Analyses
Source: City of Rockville, MD. Town Center Transportation Analysis. May 2003.

Intersection	AM/PM	2006 w/ Town Center Development		2010 w/ Optional Development #1		2010 w/ Optional Development #2	
		V/C Ratio	LOS	V/C Ratio	LOS	V/C Ratio	LOS
East Middle Lane & MD 355	AM	1.13	F	1.32	F	1.34	F
	PM	1.09	F	1.36	F	1.44	F
Park Road & N. Stonestreet	AM	0.59	A	0.72	C	0.75	C
	PM	0.43	A	0.62	B	0.67	B
Park Road & S. Stonestreet	AM	0.78	C	0.91	E	0.97	E
	PM	0.61	B	0.86	D	0.98	E
MD 355 & Church St & Monroe Place	AM	0.88	D	1.15	F	1.15	F
	PM	0.81	D	1.07	F	1.07	F
MD 355 & W. Jefferson & MD 28	AM	1.18	F	1.28	F	1.29	F
	PM	1.22	F	1.33	F	1.33	F
MD 28 & First St (MD 585)	AM	1.06	F	1.18	F	1.19	F
	PM	1.29	F	1.42	F	1.43	F

Mitigation strategies are needed to accommodate the increased vehicular traffic to the joint development site. Recommended strategies outlined in the City of Rockville's Town Center Transportation Analysis should be the basis for any proposed mitigation plan. One of main goals for mitigating traffic in the town center includes substituting intersection traffic improvements with multimodal improvements if the impacted intersection resides close to the Metrorail station or provides a critical pedestrian link. Other recommended mitigation strategies from the Town Center Analysis include:

1. On MD 28, from I-270 to MD 189, use the center turn lane as a second eastbound lane from 7 – 9 AM. Complement this configuration with turning restrictions and pedestrian enhancements.
    a. Remove the eastbound to southbound right turn lane from MD 28 to Great Falls Road to enhance pedestrian safety / access
    b. Restrict left turn movements from Great Falls Road to Williams to eliminate cut-thru traffic
    c. Complete enhancements at I-270 / MD 28 / Nelson Street.

2. In conjunction with mitigation #1, implement a reversible lane configuration on Maryland Avenue to provide a second westbound lane from the Town Center to I-270 during PM peak hours. This would add PM capacity and divert trips from MD 28.
3. Add traffic signal at Maryland Avenue and Middle Lane.
4. Increase pedestrian and bicycle access along MD 355.
5. Complete MD SHA Town Center Intersection Study.
6. Raise average intersection safety ratings from "adequate" to "good" by adding pedestrian signals, crosswalks, right turn on red restrictions and any other warranted safety measures that should be built into the system
7. Add sidewalk links to ensure sidewalk continuity for pedestrian access to activity centers and transit-oriented areas.
8. Implement a TDM program.

Any operational enhancements and roadway improvements needed to mitigate traffic as a result of the WMATA Joint Development should harmonize with the City of Rockville's Master Plan, and the mitigation strategies outlined in the Rockville Town Center Transportation Analysis.

7. References

City of Rockville, MD. Town Center Transportation Analysis: FRIT Redevelopment – Final Draft. May 15, 2003.

City of Rockville, MD. Comprehensive Transportation Review Methodology. May 2004

City of Rockville, MD. East Rockville Neighborhood Plan.

City of Rockville, MD. Comprehensive Master Plan.

Maryland National Capital Park and Planning Commission, Montgomery County Department of Park and Planning. Local Area Transportation Review Guidelines. July 2004.

Institute of Transportation Engineers. Trip Generation Manual, 6th Edition. 1999.

6. ORDER OF MAGNITUDE COST ESTIMATE

CONCEPTUAL ORDER OF MANGNITUDE COST ESTIMATE

<u>Station entrance improvements</u>	
Alternative 1: Mezzanine Extension	$22,000,000
Alternative 2: New Entrance at Pedestrian Promenade	$25,000,000
Alternative 3: New Entrance at Park Rd./Platform Extension	$28,000,000
Option for New Elevator to MARC Platform	$1,500,000

ROCKVILLE STATION ACCESS IMPROVEMENT STUDY

7. NEXT STEPS

The Rockville Station Access Improvement Study has been prepared to provide WMATA, MDOT, the City of Rockville, and all other jurisdictional stakeholders with documentation for the feasibility of Joint Development on the station site and the feasibility for expanding station capacity with a new station entrance. If the City of Rockville decides to move forward with the Joint Development process, then WMATA will include the Rockville station into the next Joint Development Solicitation. If MDOT decides to move forward with implementing the study's recommendation for expanding station capacity with new station entrances, then WMATA will begin work with all the jurisdictional stakeholders in the conceptual engineering and environmental assessment process.

Any plans for Joint Development or station expansion is subject to further review by WMATA, MDOT, the City of Rockville, and the citizens of the Rockville community through the process of public hearing and environmental assessment.