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I. INTRODUCTION

John Meyer Consulting has performed this Traffic Impact Study on behalf of Midwood Management Co. in response to the DEIS Scoping Document adopted March 9, 2005 by the City of Yonkers. The DEIS Scoping Document requires an assessment of traffic impacts associated with the proposed improvements to the Cross County Shopping Center listed below. As outlined in the Scoping Document, a number of local and remote study locations in the vicinity of the site have been analyzed to determine traffic impacts.

The Cross County Shopping Center is an existing shopping center located in the City of Yonkers, New York. The property consists of a total of approximately 71.1 acres of land comprised of eighteen tax lots. It is bounded on the north by the Cross County Parkway, on the east by Kimball Avenue, on the south by Vredenburg Avenue, and on the west by Central Park Avenue northbound, which is adjacent to the New York State Thruway (I-87). The Cross County Shopping Center also contains a number of private internal roadways including Xavier Drive, South Drive, North Drive and West Drive. The site and surrounding roadway network can be seen on Figure 1 “Site Location Map” in Appendix B.

Proposed are the following improvements to the existing Cross County Shopping Center:

1. The complete renovation of the open air pedestrian mall.
2. The renovation of the existing eight story office building.
3. The net addition of approximately 245,375 square feet of new retail and restaurant space.
4. The removal of approximately 46,550 square feet of currently vacant existing retail space, yielding a net proposed 1,558,936 square foot shopping center.
5. The construction of a new 5 story customer parking structure, containing \pm 1,723 parking spaces.

6. The construction of a one level parking deck at the north end of the site, containing ±373 parking spaces.
7. The construction of related on and off-site traffic and infrastructure improvements (See Figures 1.A-8 and 1.A-9 in Appendix B).

II. EXISTING CONDITIONS

A. Roadway Network

Access to the site is provided by local roads, state highways, parkways and interstate highways. Local access to the site is provided by Mile Square Road, Kimball Avenue and Midland Avenue. Regional access is provided to the north and south by Central Park Avenue (CPA) and the New York State Thruway (I-87). Regional access to the east and west is provided by the Cross County Parkway (CCP).

John Meyer Consulting has compiled existing conditions information for the study locations outlined in the DEIS scope using data collected from the City of Yonkers, survey information, high resolution aerial photography and field reconnaissance performed at the site and adjoining roadway network. Pursuant to discussions with the New York State Thruway Authority (NYSTA), the I-87 northbound ramp connections for exits #2, #3, and #4 have been included in the scope as study locations and analyzed. Data has been collected for analysis of the following study locations:

1. Central Park Avenue Northbound and Cross County Parkway Eastbound On-Ramp (with I-87 weave)
[Described in scope as Central Park Avenue and Cross County Parkway Eastbound On-Ramp and also Cross County Parkway Eastbound and Westbound Ramps (Weaving Sections)]

2. Central Park Avenue Northbound and Site Driveway (Macy's), (with I-87 weave)
[Described in scope as Central Park Avenue and Cross County Entry Drive]
3. Central Park Avenue Northbound and South Drive (Site Driveway)
[Described in scope as Central Park Avenue and Cross County Shopping Center South Drive]
4. Central Park Avenue Northbound and Mall at Cross County Driveway
[Described in scope as Central Park Avenue Northbound and the Mall at Cross County Access]
5. Central Park Avenue Southbound and Mile Square Road
[As described in scope]
6. Central Park Avenue Northbound and Mile Square Road/Mildred Avenue
[Described in scope as Mile Square Road and Central Park Avenue Northbound]
7. Central Park Avenue Northbound and Vredenburgh Avenue/I-87 Exit 3 Northbound
[Described in scope as Vredenburgh and Central Park Avenue/I-87 Northbound Exit, and also as All Thruway Ramp and Ramp Junctions at Exits 2, 3 & 4 on I-87, and also as Central Park Avenue and NYS Thruway Off-Ramp]
8. Vredenburgh Avenue and Mile Square Road/Trenchard Street
[Described in scope as Vredenburgh Avenue and Trenchard and Mile Square Road]
9. Vredenburgh Avenue and Nolan Avenue
[Not included in scope]
10. Vredenburgh Avenue and East Drive (Site Driveway)
[Described in scope as Vredenburgh Avenue and West Driveway]

11. Vredenburgh Avenue and Xavier Drive (Site Driveway)
[As described in scope]
12. Kimball Avenue and Vredenburgh Avenue/Turner Avenue
[As described in scope]
13. Kimball Avenue and Site Driveway (Stop & Shop)
[Described in scope as Kimball Avenue and Cross County Shopping Center Central Driveway]
14. Kimball Avenue and North Drive (Site Driveway)
[Described in scope as Kimball Avenue and Cross County Shopping Center North Driveway]
15. Kimball Avenue and Midland Avenue/Cross County Parkway Eastbound Off-Ramp
[Described in scope as Cross County Parkway Eastbound and Westbound Ramps (Weaving Sections), and also as Kimball Avenue and Midland Avenue East/Cross County Parkway Off-Ramp]
16. Kimball Avenue and Midland Avenue/Nevada Place
[Described separately in scope as both Kimball Avenue and Nevada Place, and Midland Avenue West and Kimball Avenue]
17. Midland Avenue and Cross County Parkway Westbound Ramps
[Described in scope as Cross County Parkway Westbound Off-Ramp and Midland Avenue West]
18. Central Park Avenue and Sprain Brook Parkway Access
[As described in scope]
19. Central Park Avenue and Sprain Brook Parkway Southbound Off-Ramp (Freeway Merge)

[Not included in scope]

20. Central Park Avenue and Boulder Creek Access/Central Park Avenue U-Turn

[As described in scope]

21. Cross County Parkway Eastbound Local Ramp Between Central Park Avenue and Kimball Avenue (weave)

[Described in scope as Cross County Parkway Eastbound and Westbound Ramps (Weaving Sections)]

22. Seminary Avenue and Mile Square Road

[As described in scope]

23. Central Park Avenue Northbound and NYS Thruway Exit 2 Off-Ramp (Freeway Merge)

[Described in scope as Yonkers Avenue and I-87 Northbound Exit 2, and also as All Thruway Ramp and Ramp Junctions at Exits 2, 3 & 4 on I-87]

24. Kimball Avenue and Mile Square Road

[As described in scope]

25. Kimball Avenue and Fox Avenue

[As described in scope]

26. Cross County Parkway Westbound On-Ramp Off Midland Avenue West (weave)

[Described in scope as Cross County Parkway Eastbound and Westbound Ramps (Weaving Sections)]

27. Midland Avenue East and Bronxville Glen Driveway

[As described in scope]

28. Midland Avenue East and Bronx River Road

[As described in scope]

29. Broad Street and North Terrace

[Not included in scope]

30. Broad Street and Fleetwood Avenue/Cross County Parkway Interchange

[Described in scope as Broad Street and Fleetwood Avenue/Cross County Parkway Interchange 7]

B. Evaluation of Existing Traffic Conditions

John Meyer Consulting has completed this Traffic Impact Study utilizing standard traffic engineering procedures and intersection operation analyses methodology as published in the 2000 Highway Capacity Manual (HCM). As set forth in the scope, key locations have been studied in the vicinity of the site during the Peak Weekday AM, Peak Weekday PM and Peak Saturday traffic hours. John Meyer Consulting compiled existing conditions information for the study locations including lane widths, striping, horizontal and vertical alignments, signs, traffic signal phasing and timing, speed limits, sidewalks, curbing, etc. The existing physical features and traffic controls for each study location are described below.

In addition to collecting physical information on the study locations, manual turning movement counts and automatic traffic recorder counts were made at the study locations and adjoining roadway network. Manual counts were performed in 2004 and balanced with counts performed at several intersections in March, 2005. Automatic traffic recorder counts were performed in February, 2005 and have been included in Appendix C. The traffic counts have been summarized on Figures 2 A/B to 4 A/B “Existing Volumes” in Appendix B. Peak hours of 8:00-9:00 AM, 4:15-5:15 PM and 1:15-2:15 PM have been determined for the Peak Weekday AM, Weekday PM and Saturday Hours respectively. Intersection capacity analyses have been prepared which can be used to compare how well the studied intersections operate now and how well they will operate in the future. The capacity analyses use criteria set fourth in the 2000 Highway Capacity manual to analyze how each intersection is functioning.

Results are in the form of volume to capacity ratios, seconds of delay, levels-of-service and queues. Queue results have been summarized to indicate available storage, 50th and 95th percentile queues for two way stop intersections signalized intersections and 95th percentile queues for Existing Conditions analyses indicate that currently queued vehicles cannot be accommodated within the available storage at many intersections. Often, the existing queuing results in gridlock. It is expected that proposed improvements will alleviate but not eliminate queues at many intersections that are currently operating poorly. The specific volume to capacity ratios, delays, levels-of-service and queue lengths for the studied intersection locations as well as weave analyses under existing conditions are shown on Tables 5 to 13 and IV.F-6a-IV.F-6c in Appendix A. The analyses consider the busiest 15 minutes within the peak hour period. Accordingly, the intersection operations during the entire peak hour are generally better than presented.

1. Signalized Intersection Analysis Methodology

The capacity of signalized intersections is based on an ideal saturation flow rate of approximately 1900 passenger vehicles per hour per lane. Adjustments are then made for lane width, grade, heavy vehicles, buses, left and right turns, on-street parking and pedestrians. The phasing of the traffic signals directly impact the capacity of individual lane groups. More complex traffic signals provide vehicular detectors which activate and extend phases as required based on varying vehicular demands. The coordination of traffic signals also impacts the delays experienced by motorists.

The results of the signalized analysis are summarized in delay which relates to level of service, as well as volume/capacity ratios. The delay is identified as control delay, which includes deceleration, stops and acceleration. Levels of service range from A thru F. Level of service A is less than or equal to 10 seconds delay per vehicle. Level of service B is between 10 seconds and 20 seconds, level of service C is between 20 and 35 seconds. Level of service D is between 35 and 55 seconds. Level of service E ranges from 55 thru 80 seconds and level of service F exceeds 80 seconds.

Signalized Level of Service Criteria	
Level of Service	Control Delay (Seconds/Vehicle)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

The volume/capacity ratio shows the portion of capacity used, thereby indicating the available unused capacity. While many individuals and reviewing agencies identify traffic operations and impacts solely with levels of service, it is important to recognize the volume/capacity ratio. A lane group may have a 'poor' level of service while ample capacity is provided for the movement. This phenomenon can be experienced when a minor roadway intersects an arterial roadway and the cycle length is relatively long. If the minor roadway volumes are relatively low, the vehicles will have to wait a considerable time until a green indication is provided. Once the signal turns green, the few vehicles could have more than ample capacity to clear thru the intersection. Thus, the level of service does not directly relate to capacity.

2. Unsignalized Intersection Analysis Methodology

Unsignalized intersection analysis is based on analyzing gaps in opposing traffic. The operations of unsignalized intersections are impacted by vehicle types, grades, truck composition, opposing traffic and other factors.

The unsignalized level of service ranges are lower than those associated with signalized intersections since it is felt that driver discomfort is greater when vehicles are waiting to be processed and searching for gaps in opposing traffic. For example, level of service E begins at 35 seconds and the level of service F is greater than 50 seconds for unsignalized intersections as compared to 80 seconds for signalized intersections.

3. Existing Conditions Intersection Operations

Existing conditions information for study locations 1-30 is described below. Existing intersection and freeway operations are summarized beneath the description of each study location. Table IV.F-1a in Appendix A summarizes the existing physical features of the major roadways in the vicinity of the site and includes Average Annual Daily Traffic Volumes (AADT). The specific lane widths, signal phasing and timing, intersection operations, etc. can be seen in the specific capacity analyses for each study location. The capacity analyses have been included in Appendix E of this Traffic Impact Study.

1) Central Park Avenue Northbound and Cross County Parkway Eastbound On-Ramp (with I-87 weave)

Vehicles exiting I-87 at Exit 4 have their own receiving lane along Central Park Avenue northbound and can travel unopposed along Central Park Avenue. Many vehicles exiting the ramp weave to the Cross County Parkway eastbound on-ramp. NYSDOT and Westchester County have been aware of the weave related issues for approximately 25 years. NYSDOT has undertaken preliminary studies in the past related to providing a ramp directly to the parkway but does not plan to implement any improvements in the foreseeable future. The existing conditions analysis indicates that this weave is currently constrained with a free flow speed of approximately 20.46 mph.

2) Central Park Avenue northbound and Site Driveway (Macy's), (with I-87 weave)

The site driveway at Macy's (Driveway 'B') intersects Central Park Avenue as an unsignalized stop controlled intersection allowing direct one-way access into the site. The I-87 Exit 4 (signed Cross County Parkway) off-ramp connects to Central Park Avenue just south of Driveway 'B' and vehicles weave across the lanes of Central Park Avenue northbound prior to entering the site. The existing conditions analysis indicates that this weave is congested with a free flow speed of approximately 23 mph.

3) Central Park Avenue Northbound and South Drive (Site Driveway)

South Drive (Driveway 'A') intersects Central Park Avenue northbound, south of the site driveway at Macy's, as an unsignalized stop controlled 'T' intersection. At this location Central Park Avenue provides two northbound thru lanes and one northbound right turn lane. The westbound right turn exit movement of South Drive consists of one stop controlled lane. The existing conditions analysis indicates that this weave is congested with a free flow speed of approximately 23 mph. Northbound vehicles are not required to stop and are therefore never delayed. Westbound vehicles must yield to northbound vehicles and experience long delays, level of service 'F'.

4) Central Park Avenue Northbound and Mall at Cross County Driveway

The Mall at Cross County Driveway intersects Central Park Avenue approximately 180 feet south of South Drive as a signalized 'T' intersection. The signal controlling this intersection has a two phase operation. At this location Central Park Avenue provides two northbound thru lanes and one northbound right turn lane. The Mall at Cross County Driveway provides two westbound right turn exit lanes. The intersection operates at an overall level of service 'B' and experiences acceptable delays for all peak hours.

5) Central Park Avenue Southbound and Mile Square Road

The intersections of Central Park Avenue northbound and Central Park Avenue southbound with Mile Square Road function as two coordinated signalized intersections. At the intersection of Mile Square Road and Central Park Avenue southbound, the southbound approach consists of one left lane, one thru lane and one thru/right turn lane. At this location, Mile Square Road eastbound provides a shared thru/right turn lane while Mile Square Road westbound provides one left turn lane and one thru lane. This signalized intersection operates at a level of service 'C' for all peak

hours but experiences level of service 'D' on the eastbound and westbound approaches of Mile Square Road.

6) Central Park Avenue Northbound and Mile Square Road/Mildred Avenue

Mile Square Road and Mildred Road intersect Central Park Avenue northbound as a signalized five way intersection. The signal has a dedicated phase for Mildred Road, which, due to low volumes on Mildred Road is activated only rarely. At this location, Central Park Avenue northbound provides one left/thru lane one thru lane and one thru/right turn lane. The eastbound approach of Mile Square Road provides separate left and thru lanes, while the westbound approach provides one thru/right turn lane. The Mildred Road approach consists of one thru/right turn lane. This signalized intersection operates at an overall level of service 'D' for all peak hours. The westbound Mile Square Road approach is currently over capacity during the peak Saturday and PM hours and experiences level of service of 'F'.

7) Central Park Avenue Northbound and Vredenburg Avenue/I-87 Exit 3 Northbound

South of the intersection of Mile Square Road and Central Park Avenue, Vredenburg Avenue and the I-87 Exit 3 off-ramp intersect Central Park Avenue northbound as an unsignalized intersection. The "eastbound" approach of the Exit 3 off-ramp consists of one "left turn" lane which must yield to and merge with Central Park Avenue northbound traffic. At this location, the northbound approach of Central Park Avenue consists of two thru lanes and one free movement right turn lane onto Vredenburg Avenue. The westbound approach of Vredenburg Avenue intersects Central Park Avenue slightly north of the Exit 3 off-ramp. At this location, the one lane free movement approach of Vredenburg Avenue connects to Central Park Avenue northbound to provide a three lane northbound section. This "eastbound" approach experiences a level of service 'B' for the peak AM and PM hours and a level of service 'F' for the peak Saturday Hour.

8) Vredenburgh Avenue and Mile Square Road/Trenchard Street

Vredenburgh Avenue intersects Mile Square Road and Trenchard Street as a five way signalized intersection south of the site. The eastbound, northeastbound and southbound approaches of Vredenburgh Avenue, Mile Square Road and Trenchard Street each provide a single lane that is utilized for all turning movements. The westbound approach of Vredenburgh Avenue consists of one left/hard left lane and one thru/right turn lane. The northbound approach of Mile Square Road consists of one left/ hard-left /thru lane and one channelized right turn lane. This intersection currently operates at a level of service 'C' for the peak AM and Saturday hours and a 'D' during the Peak PM hour. The operations at this intersection are impacted by delays along Mile Square Road from the Central Park Avenue northbound intersection.

9) Vredenburgh Avenue and East Drive (Site Driveway)

East Drive intersects Vredenburgh Avenue as an unsignalized 'T' intersection and provides access to the site from the south. The eastbound and westbound approaches of Vredenburgh Avenue both consist of two-lane approaches with shared right turn and left turn movements respectively. The southbound approach of East Drive consists of a single shared left/right turn lane. Vehicles exiting the site via East Drive must stop and yield to vehicles on Vredenburgh Avenue. At this location the shared left/right turn lane of the southbound East Drive approach must stop for traffic along Vredenburgh Avenue. This southbound approach operates at level of service 'B', 'C' and 'D' for the peak AM, PM and Saturday hours respectively.

10) Vredenburgh Avenue and Xavier Drive (Site Driveway)

Xavier Drive intersects Vredenburgh Avenue as a signalized 'T' intersection. The eastbound approach of Vredenburgh Avenue consists of one thru lane and one left turn lane. The westbound approach of Vredenburgh Avenue consists of two thru lanes with

shared right turns. The southbound approach of Xavier Drive consists of a shared left/right turn lane. This intersection operates at level of service 'B', 'C' and 'D' for the Peak AM, PM and Saturday hours respectively.

11) Kimball Avenue and Vredenburgh Avenue/Turner Avenue

Vredenburgh Avenue and Turner Street intersect Kimball Avenue as an offset four-way signalized intersection. The eastbound, northbound and southbound approaches of Turner Street and Kimball Avenue consist of single left/thru/right lanes. The eastbound approach of Vredenburgh Avenue consists of one left turn lane and one shared right turn lane. The intersection operates with split phasing to accommodate the offset between Vredenburgh Avenue and Turner Street and has a cycle length of approximately 130 seconds. This signalized intersection operates with a level of service 'C' during the peak AM hour and level of service of 'D' during the peak PM and Saturday hours. During all hours, the eastbound approach of Vredenburgh Avenue operates at level of service 'D'. The westbound approach operates at a level of service of E for all hours but experiences very low volume and therefore has sufficient capacity to accommodate all vehicles that approach during any cycle.

12) Kimball Avenue and Site Driveway (Stop & Shop)

Site driveway 'D' intersects Kimball Avenue north of Vredenburgh Avenue as a signalized 'T' intersection. Both the northbound and southbound approaches of Kimball Avenue consist of single lanes with shared left and right turns, respectively. The eastbound approach of the eastern site driveway consists of one shared left/right turn lane. The signal controlling this intersection has two phases. This signalized intersection currently operates level of service 'A', 'B' and 'C' during the peak AM, PM and Saturday Hours, respectively. The eastbound approach of the site driveway currently operates 'C', 'D' and 'F' for the Peak AM, PM and Saturday hours, respectively.

13) Kimball Avenue and North Drive (Site Driveway)

North Drive intersects Kimball Avenue as a signalized 'T' intersection providing access to the northeast of the site and for patrons arriving from the Cross County Parkway. The signal controlling this intersection has two phase operation and a cycle length of approximately 100 seconds. The eastbound approach of North Drive is wide enough to operate as two lanes. The northbound approach of Kimball Avenue consists of one left turn and one thru lane. The southbound approach of Kimball Avenue consists of two thru lanes with shared right turns. This signalized intersection currently operates at level of service 'B', 'E' and 'D' for the peak AM, PM and Saturday hours respectively. The southbound thru/right turn approach of Kimball Avenue operates at level of service 'E' during the peak PM and Saturday hours.

14) Kimball Avenue and Midland Avenue/Cross County Parkway Eastbound Off-Ramp

Northeast of the site, the Cross County Parkway eastbound off-ramp and Midland Avenue east intersect Kimball Avenue as a four-way signalized intersection. The eastbound approach of the Cross County Parkway ramp consists of one left turn lane, one thru lane and one channelized right turn lane which yields to Kimball Avenue traffic. The westbound approach of Midland Avenue consists of one left turn lane and a right turn lane. Kimball Avenue northbound has separate thru and right turn lanes and the southbound approach has a left turn lane and two thru lanes. This signalized intersection currently experiences congestion during the peak PM and Saturday hours and experiences level of service 'F' and 'D' respectively for those hours. In addition, the westbound approach of Midland Avenue operates at level of service 'F' during both the peak PM and Saturday hours.

15) Kimball Avenue and Midland Avenue/Nevada Place

The intersections of Nevada Place/Kimball Avenue and Midland Avenue (west)/Kimball Avenue operate essentially as one intersection with an offset of the eastbound and westbound approaches. The signals controlling these intersections work together as one with cycle length of approximately 100 seconds. Phasing at the signals consists of eastbound/westbound split phasing, a northbound/southbound thru phase and a protected northbound left turn phase with an eastbound right turn overlap. The eastbound approach of Midland Avenue (west) has a negative slope towards the intersection and consists of separate left and right turn lanes. The southbound approach of Kimball Avenue has a gradual negative slope towards the intersection and consists of a shared thru/right turn lane. The westbound approach of Nevada Place occasionally operates as a shared left/right turn lane. The northbound approach of Kimball Avenue consists of shared left/thru lane and a shared thru/right lane. This signalized intersection currently operates at a Level of Service of B for all peak hours. However, the westbound and southbound approaches to this intersection operate at level of service 'D'.

16) Midland Avenue and Cross County Parkway Westbound Ramps

The on/off ramps of the Cross County Parkway eastbound intersect Midland Avenue, west of Kimball Avenue as an all-way stop intersection. The eastbound approach of Midland Avenue consists of one thru/right turn lane. The westbound approach of Kimball Avenue consists of one left/thru lane and the northbound approach of the Cross County Parkway eastbound off-ramp consists of one wide lane that occasionally operates as separate left and right turn lanes. The northbound approach of the off-ramp is separated from the southbound Cross County Parkway on-ramp by a raised concrete curb median. A short turnaround/driveway for an apartment building exists opposite the ramp. This unsignalized all-way stop intersection currently operates at an overall level of service of F for the peak PM and Saturday hours. In addition, the northbound

approach of the Cross County Parkway ramps operates at a level of service of F for the peak PM and Saturday hours and does not provide sufficient capacity to accommodate existing traffic volumes.

17) Central Park Avenue and Sprain Brook Parkway Access

Access to the Sprain Brook Parkway Northbound from Central Park Avenue is provided by the signalized intersection of Central Park Avenue and the Sprain Parkway Ramp. The signal controlling this intersection has a two phase operation with a cycle length of approximately 100 seconds. At this location, Central Park Avenue provides two northbound thru lanes and one left turn lane. The southbound approach of Central Park Avenue provides three thru lanes with channelized right turns onto the parkway ramp. This signalized intersection currently operates at level of service 'C', 'C' and 'B' during the peak AM, PM and Saturday hours respectively. During the peak AM and peak PM hours, the northbound approach experiences a level of service 'D'.

18) Central Park Avenue and Sprain Brook Parkway Southbound Off-Ramp (Freeway Merge)

South of the Sprain Parkway on-ramp, the Sprain Parkway southbound off-ramp intersects Central Park Avenue as a yield control merge. At this location CENTRAL PARK AVENUE provides two thru lanes and the parkway ramp provides an acceleration lane approximately 200 feet in length. The existing conditions analysis indicates that this merge operates at level of service 'C'.

19) Central Park Avenue and Boulder Creek Access/Central Park Avenue U-Turn

Farther to the south on Central Park Avenue, a jughandle is provided opposite the Boulder Creek Steak House. This intersection consists of the north/south lanes of Central Park Avenue in a four way intersection with two nearside jughandles that facilitate u-turns and access to the Steak House. The signal controlling this intersection

has a two phase operation. The eastbound approach of the intersection is the jughandle from the southbound lanes and provides one left turn lane onto Central Park Avenue northbound. The westbound approach of the intersection is the jughandle from the northbound lanes and provides two left turn lanes onto Central Park Avenue southbound. The northbound and southbound Central Park Avenue approaches provide three thru lanes and two thru lanes, respectively. This signalized intersection currently operates smoothly with an overall level of service 'B' for all peak hours.

20) Cross County Parkway Eastbound Local Ramp Between Central Park Avenue and Kimball Avenue (weave)

The north is the right-of-way of the Cross County Parkway. The parkway has both local and express lanes that travel east towards the Hutchinson River Parkway and west towards the Saw Mill Parkway. Ramps off of the eastbound Cross County Parkway in the immediate vicinity of the site provide access to Central Park Avenue southbound and Midland Avenue to the northeast corner of the site. Vehicles attempting to access the Cross County eastbound can merge onto the parkway from Central Park Avenue northbound. Vehicles exiting the Cross County westbound in the immediate vicinity of the site can utilize ramps from Central Park Avenue northbound and Midland Avenue (west) in the northeast corner of site. Two weaving sections along this stretch of the Cross County Parkway have been identified as study locations. The first is the Cross County Parkway eastbound between Central Park Avenue and Kimball Avenue. The second is the Cross County Parkway westbound local ramp between Midland Avenue and Central Park Avenue. The existing conditions analysis indicates that this weave is currently constrained with a free flow speed of approximately 30.33 mph.

21) Seminary Avenue and Mile Square Road

Mile Square Road intersects Seminary Avenue as an all way stop 'T' intersection. At this location, the westbound approach of Mile Square Road consists of a shared left/thru lane which slopes gradually upward into the intersection. The northbound and

southbound approaches of Seminary Avenue both consist of single thru lanes with shared right and left turn lanes respectively. Traffic volumes at this intersection are relatively low and consist mainly of local traffic. This unsignalized T-intersection currently operates level of service 'A' during all peak hours.

22) Central Park Avenue Northbound and NYS Thruway Exit 2 Off-Ramp (Freeway Merge)

South of the site, the New York State Thruway Exit 2 northbound off-ramp intersects Central Park Avenue as a free merge. At this location, Central Park Avenue provides two northbound lanes which combine with the thruway exit ramp lane to provide a three lane section of approximately 500 feet in length to the intersection of Yonkers Avenue and CENTRAL PARK AVENUE northbound. There is no traffic control at this merge. The I-87 Exit 2 off-ramp intersects with Central Park Avenue northbound as a free merge and becomes an additional thru lane on Central Park Avenue. The existing conditions analysis indicates that this merge operates smoothly with a level of service of A.

23) Kimball Avenue and Mile Square Road

Kimball Avenue and Mile Square Road meet as a four way intersection controlled by a two phase signal with a cycle length of approximately 80 seconds. All approaches of the intersection consist of single left/thru/right turn lanes. This signalized intersection currently operates smoothly 'B' during all peak hours.

24) Kimball Avenue and Fox Avenue

Immediately east of the site, Fox Avenue provides access to residences off of Kimball Avenue. This 'T' intersection is located between the intersections of Kimball Avenue/North Drive and Kimball Avenue/Site Driveway 'D'. All approaches of this intersection consist of single lanes with shared turns. This unsignalized T-intersection

currently operates smoothly at level of service 'B' for all hours on the westbound approach and level of service 'A' for all hours on the southbound left turn movement.

25) Cross County Parkway Westbound On-Ramp Off Midland Avenue West (weave)

Vehicles entering the Cross County Parkway westbound from Midland Avenue must weave with vehicles along the parkway destined to Central Park Avenue north. The existing conditions analysis indicates that this weave is constrained with a free flow speed of approximately 28.53 mph.

26) Midland Avenue East and Bronxville Glen Driveway

East of the site, the Bronxville Glen Apartments are situated along Midland Avenue. Access to these apartments is provided by a signalized 'T' intersection off of Midland Avenue. The eastbound approach of Midland Avenue consists of one thru lane with a shared right turn. The westbound approach consists of one left turn lane and one thru lane. The northbound approach of the Bronxville Glen driveway consists of one shared left/right turn lane which is separated from incoming traffic via a large raised curb median on which is situated a guard house and an entrance gate. This intersection currently operates smoothly with an overall level of service 'A' for all peak hours.

27) Midland Avenue East and Bronx River Road

Farther to the east, Midland Avenue intersects Bronx River Road as a four-way signalized intersection. The signal controlling this intersection has protected lead phasing for eastbound and southbound left turns and a cycle length of approximately 90 seconds. The eastbound approach of Midland Avenue has a downward slope into the intersection and consists of one left turn lane and one thru/right turn lane. The northbound and southbound approaches operate as two lanes. The westbound approach occasionally operates as two narrow lanes. This intersection currently operates at an overall level of service 'D' during all peak hours. During the peak AM

hour the westbound approach operates at level of service 'F'. During the peak PM and Saturday hours, the eastbound thru/right turn lane group operates at a level of service 'F'.

28) Broad Street & North Terrace/Fleetwood Avenue/Cross County Parkway

Broad Street intersects North Terrace, Fleetwood Avenue and the Cross County Parkway ramps as two closely spaced signalized intersections. The cycle length is approximately 80 seconds. At Broad Street and North Terrace, both the eastbound and westbound approaches consist of two thru lanes while the northbound approach typically operates as one left turn lane and one right turn lane. Where Broad Street intersects the Cross County Parkway Ramps and Fleetwood Avenue, all approaches consist of one left turn lane and one shared thru/right turn lane. The Broad Street and North Terrace intersection operates 'C' during the peak AM and PM hours and level of service 'B' during the peak Saturday hour. The Broad Street and Fleetwood Avenue/Cross County Parkway eastbound ramps intersection operates at level of service 'C', 'D' and 'C' for the peak AM, PM and Saturday hours respectively.

29) I-87 Northbound Exit 2 and Central Park Avenue Northbound

The I-87 Exit 2 has a free access onto Central Park Avenue northbound. Thus, vehicles entering Central Park Avenue do so without delay. No site traffic is believed to utilize this exit since site traffic has the ability to use Exits 3 and 4 which are closer to the site. Therefore, the intersection is not discussed throughout the remainder of the DEIS.

C. Internal Traffic Analysis

There are several intersections within the site. In association with the expansion and renovation of the shopping center, several of these intersections are being improved to provide optimal traffic flow and intersection operations within the site. The improvements and anticipated operations are described as part of proposed conditions. On-Site manual turning

movement counts have been performed at the existing internal intersections. The internal counts were used as base volumes for determining anticipated internal intersection operations upon completion of the project. The existing internal volumes can be seen on Figure IV.F-6a in Appendix B.

D. Automatic Traffic Recorder (Machine) Verification Counts

In order to provide both daily and hourly variation data to supplement the manual traffic counts performed at the study locations, machine traffic counts have been conducted at the following locations:

1. Central Park Avenue south of Mile Square Road
2. Central Park Avenue north of Mile Square Road
3. Mile Square Road between Vredenburgh Avenue and Kimball Avenue
4. Vredenburgh Avenue between Mile Square Road and Kimball Avenue.
5. Kimball Avenue South of Vredenburgh Avenue.
6. Midland Avenue (East), east of Kimball Avenue.
7. Kimball Avenue North of Midland Avenue (east)
8. Midland Avenue (west) west of Kimball Avenue.

The machine traffic counts were conducted in February, 2005 over a period of one week and used in conjunction with the manual counts to create the 2005 Existing Traffic Volumes. The machine traffic counts can be found in Appendix C..

III. FUTURE TRAFFIC CONSIDERATIONS WITH AND WITHOUT THE PROJECT

A. 2009 No-Build Traffic Volumes

The 2009 No-Build Traffic Volumes represent traffic without the construction of the proposed Cross County Shopping Center expansion in the design year for the completion of the expansion and are analyzed to determine the relative impact of the expansion. In order to derive the No-Build Volumes, the Existing Volumes were increased by a compounded 2% annual growth rate for four years to represent general traffic increases in the area. In addition to the general growth rate, future developments were considered in the vicinity of the site which would affect the studied intersections above and beyond the general growth rate of the surrounding area. As a result of discussions with the City of Yonkers Planning and Traffic Engineering departments, two other developments have been considered as follows:

1. Proposed Ridge Hill Development
2. Proposed Yonkers Raceway Video Lotto

Utilizing information from traffic impact studies prepared by Philip Habib Associates and Adler Consulting, volumes for the proposed Ridge Hill development and Yonkers Raceway Video Lotto were added to the existing and general growth volumes.

As-of-right reoccupations of 72,647 square feet of currently vacant stores in the Cross County Shopping Center have been considered using trip generation rates from the Institute of Transportation Engineers (ITE). The reoccupation volumes for the Peak AM, Peak PM and Peak Saturday Hours on Table 1 below.

Table 1
Reoccupied Site Volumes

LAND USE	CONDITION	PEAK AM HOUR			PEAK PM HOUR			PEAK SATURDAY HOUR		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
72,647 S.F. REOCCUPIED RETAIL (1,313,561 S.F. TOTAL)	TOTAL	16	29	25	60	66	126	87	80	167
	25% PASS-BY	4	2	6	15	16	31	22	20	42
	75% GENERATED	12	7	19	45	50	95	65	60	125

The result of the addition of the general growth volumes to the Other Development Volumes and Reoccupation Volumes results in the "2009 No-Build Volumes" representing conditions in 2009 without construction of the proposed Cross County Shopping Center expansion. Traffic volumes discussed above are shown on illustrative traffic figures included in Appendix B.

B. Anticipated Impacts

1. Additional Site Generated Traffic Volumes

Additional site generated traffic volumes for the Shopping Center expansion have been prepared in accordance with data published by the Institute of Transportation Engineers (ITE) for the Peak AM, PM and Saturday Hours based on ITE Shopping Center Land Use (Land Use 820). These volumes can be seen on Table 2 below.

Table 2
Additional Site Traffic Volumes

LAND USE	CONDITION	PEAK AM HOUR			PEAK PM HOUR			PEAK SATURDAY HOUR		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
INCREASE DUE TO 245,375 S.F. NET NEW RETAIL (1,558,936 S.F. TOTAL)	TOTAL	48	31	79	197	213	410	283	261	544
	25% PASS-BY	12	8	20	49	53	102	71	65	136
	75% GENERATED	36	23	59	148	160	308	212	196	408

In addition, an evaluation of intersection operations during the "Christmas Season" has been performed. This evaluation is based on a Shopping Center Monthly Variation Rate of 141.8% for the month of December as well as manual traffic counts conducted during the "Christmas Season." The site generated traffic volumes for the "Christmas Season" can be seen on Table 3 below.

TABLE 3
HOLIDAY SITE TRAFFIC VOLUMES

LAND USE	CONDITION	PEAK AM HOUR			PEAK PM HOUR			PEAK SATURDAY HOUR		
		ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
INCREASE DUE TO 245,375 S.F.	TOTAL	69	43	112	279	302	581	401	370	771
NET NEW RETAIL FOR 1,558,936 S.F.	25% PASS-BY	17	11	28	69	76	145	100	93	193
TOTAL FUTURE RETAIL	75% GENERATED	52	32	84	210	226	436	301	277	578

2. Traffic Distributions and Alternative Access Configurations

In order to determine future traffic conditions with the expansion and renovation of the Cross County Shopping Center, the volumes associated with the expansion have been routed and distributed throughout the surrounding roadway network. These distributions

represent percentages of the total traffic generated by the site and can be seen on illustrative figures in the Traffic Impact Study. These distributions have been determined based on major roadways in the area, major population centers in the area, logical entering and exiting routes and zip code surveys performed by John Meyer Consulting. This information was used to determine the areas where patrons of the Cross County Shopping Center came from and what routes they utilized in entering and exiting the shopping center. Those results in conjunction with the proposed layout and signing for the internal circulation of traffic were used to determine the distributions. The "Expansion Generated Distributions can be seen on Figures IV.F-7a and IV.F-7b. The zip code survey results can be seen on Table 4 below.

Table 4

Regional Distributions

Percentage of Generated Trips from Origin/Destination									
Yonkers	Bronx	New York	Queens	Mount Vernon	Bronxville	Tuckahoe	New Rochelle	Points North	Total
33	29	11	6	5	4	4	3	5	100%

Using the Expansion Distributions, the Site Generated Volumes shown on illustrative figures in Appendix B were routed throughout the surrounding roadway network and combined with the design year "No-Build Traffic Volumes," resulting in the 2009 Build Traffic Volumes. The 2009 Build Traffic Volumes represent future conditions with the expansion of the Cross County Shopping Center. In addition to the build volumes, 2009 Holiday Build Volumes were calculated using the same method as described above. The build and holiday build volumes can be seen on illustrative figures in Appendix B.

3. Intersection Operations

Utilizing the 2000 version of the Highway Capacity Software (HCS) Version 4.1E, capacity analyses have been computed for each of the study locations under Existing, No-Build and Build conditions during Peak Weekday AM and PM as well as Peak Saturday Hour. The capacity analyses results have been summarized on Tables 5-13 in Appendix A.

In addition to HCS capacity analyses, a Synchro/SimTraffic analysis has been prepared for the local roadway network surrounding the site, including the Kimball Avenue and Mile Square Road/Central Park Avenue corridors. This Synchro/SimTraffic analysis was used to develop cycle lengths and coordinated phasing schemes for the above referenced areas. These coordination schemes in the form of proposed phasing and timing were then incorporated into the HCS capacity analyses for build conditions with improvements. In order to optimize traffic flow through the corridors mentioned above, an 80 second cycle length has been used for analysis of improved signals along the Central Park Avenue Corridor and a 100 second cycle length has been used for analyses of improved intersections along the Kimball Avenue Corridor.

As a result of the significant improvements proposed to the roadway network in the vicinity of the site, many intersection operations will be improved. In general, weave conditions will be nominally exacerbated. The elimination of the direct access from the I-87 northbound Exit 4 into Site Driveway 'B' (Macy's) will eliminate an existing undesirable weave. A descriptive comparison of no-build, build and build with improvement conditions at the area intersections is provided below:

Central Park Avenue Northbound and South Driveway

As previously described, the westbound right turn approach of South Drive must currently stop for northbound traffic on Central Park Avenue. Under no-build and build conditions (without improvements), this approach will continue to operate at level of service 'F' and

will not provide sufficient capacity to accommodate vehicular volumes. The proposed addition of a coordinated traffic signal, two egress lanes and Central Park Avenue improvements at this intersection will provide an overall intersection level of service of 'B' during the Peak Weekday AM and PM hours and 'C' during the Peak Saturday hour. Westbound right turning vehicles out of the site will be provided with sufficient capacity and an acceptable level of service of 'B' during the Peak AM Hour and 'C' during the Peak PM and Saturday Hour.

Central Park Avenue Northbound and Mall at Cross County Driveway

Under no-build and build conditions this signalized intersection will degrade from an existing level of service 'B' to level of service 'C' for the Peak PM and Saturday Hours. In addition, proposed northbound thru volumes will approach the capacity of that movement. Proposed improvements at this intersection will allow it to operate at level of service 'A' during the Peak AM and PM hours and level of service 'B' during the Peak Saturday Hour. Sufficient capacity and acceptable Levels of Service will be provided for all lane groups.

Central Park Avenue Southbound and Mile Square Road

Proposed improvements to this signalized intersection will improve overall intersection level of service compacted to over and above no-build conditions for all peak hours. Sufficient capacity and acceptable levels of service will be provided for all lane groups.

Central Park Avenue Northbound and Mile Square Road

Overall intersection level of service will degrade from 'C' to 'D' between no-build and build conditions for the Peak AM Hour at this location. During the Peak PM and Saturday Hours overall intersection level of service will be maintained at levels of service 'E' and 'F', respectively. During the Peak PM and Saturday hours, sufficient capacity will not be provided for the anticipated vehicular volumes on the westbound and northbound approaches. Proposed mitigation measures at this signalized intersection will improve

intersection operations 'B', as compared to levels of service 'C' and 'D' under existing conditions. Sufficient capacity and acceptable levels of service will be provided for all lane groups.

Central Park Avenue Northbound and New York State Thruway Exit 3

During the Peak PM Hour, there will not be sufficient capacity provided for the westbound approach under no-build or build conditions. During the Peak Saturday Hour, sufficient capacity will not be provided for vehicles on the eastbound left turn approach. Proposed mitigation measures at this location will consist of a new coordinated traffic signal which will improve intersection operations for all peak hours. All lane groups and approaches to the intersection will operate at level of service of 'B' for all peak hours and sufficient capacity will be provided for all lane groups.

Vredenburg Avenue and Mile Square Road with Trenchard Street

Intersection operations at this location will degrade one level of service increment from existing conditions to no-build conditions for all peak hours. The no-build level of service will be maintained during build conditions for all peak hours. For no-build conditions and build conditions during both the Peak PM Hour and Peak Saturday Hour, sufficient capacity will not be provided for anticipated vehicular volumes on the westbound left turn approach. During the Peak PM Hour for both no-build and build conditions, sufficient capacity will not be provided for anticipated vehicular volumes on the southbound approach. Proposed mitigation measures at this intersection will improve overall intersection levels of service. In addition, sufficient capacity and acceptable levels of service will be provided for all approaches and lane groups during all peak hours.

Vredenburg Avenue and East Drive

During the Peak PM Hour, level of service will degrade one increment from existing to no-build conditions and one increment from no-build to build conditions for the southbound

approach. During the Peak Saturday Hour, the level of service for the southbound approach will degrade from 'D' to 'F' under no-build conditions. During the Peak Saturday Hour, the southbound approach will not have sufficient capacity under build conditions to accommodate anticipated traffic volumes. Proposed mitigation measures at this intersection will increase capacity for the southbound approach and improve that approach level of service.

Vredenburg Avenue and Xavier Drive

Overall intersection levels of service at this location will be maintained during no-build and build conditions for all peak hours. Proposed mitigation measures will increase the capacity of the southbound approach.

Vredenburg Avenue and Kimball Avenue

During the Peak AM Hour, overall intersection levels of service at this location will be maintained under no-build and build conditions. During the Peak PM Hour, overall intersection level of service will be maintained for no-build conditions but will degrade one level of service increment to an 'E' for build conditions. During the Peak Saturday Hour overall intersection Level of Service will degrade one level of service increment to an 'E' for no-build conditions and an additional level of service increment to an 'F' for build conditions. During the Peak PM and Saturday Hours, the northbound approach will not provide sufficient capacity to accommodate anticipate traffic volumes during build conditions. Proposed mitigation measures at this signalized intersection will increase capacity and improve overall intersection levels of service. Sufficient capacity and acceptable levels of service will be provided for all approaches and lane groups.

Kimball Avenue and Site Driveway D

At this location, overall intersection level of service will be maintained under no-build and build conditions during the Peak AM and PM Hours. During the Peak Saturday Hour,

overall intersection level of service will be maintained under no-build conditions but will degrade one level of service increment to a D under build conditions. Also, during the peak Saturday Hour the eastbound approach of the Shopping Center driveway will not provide sufficient capacity under no-build or build conditions to accommodate anticipated traffic volumes. Proposed mitigation measures at this location will increase capacity and improve overall intersection levels of service. Adequate capacity and acceptable levels of service will be provided for all lane groups and approaches.

Kimball Avenue and North Drive

During Peak AM and Peak PM Hours, the overall intersection level of service will not degrade during no-build or build conditions. During the Peak Saturday Hour, the overall intersection level of service will degrade one level of service increment to an 'E' under no-build conditions and one level of service increment to an 'F' under build conditions.

During the Peak PM and Peak Saturday Hours, the southbound approach will not provide sufficient capacity under no-build or build conditions to accommodate anticipated traffic volumes. Proposed mitigation measures at this location will increase capacity and greatly improve intersection operations compared to existing conditions. Adequate capacity and acceptable Levels of Service will be provided for all lane groups and approaches.

Kimball Avenue and Midland Avenue east with Cross County Parkway Eastbound Ramp

Overall intersection Levels of Service will be maintained under no-build and build conditions for all peak hours. During the Peak PM and Peak Saturday Hours, under no-build and build conditions sufficient capacity will not be provided to accommodate anticipated traffic volumes for the westbound approach. Proposed mitigation measures at this location will increase capacity and improve overall intersection levels of service.

Kimball Avenue and Midland Avenue West with Nevada Place

Overall intersection level of service at this location will be maintained under no-build and build conditions during the Peak AM Hour. During the Peak PM and Peak Saturday Hours, overall intersection Levels of Service will degrade one level of service increment from a 'B' to a 'C' under no-build conditions and will be maintained at a 'C' under build conditions. Under build conditions during the Peak PM and Peak Saturday hours, the southbound approach will not provide sufficient capacity to accommodate anticipated traffic volumes. Proposed mitigation measures at this location will improve capacity and increase overall intersection levels of service. Sufficient capacities and acceptable levels of service will be provided for all lane groups and approaches.

Midland Avenue (West) and Cross County Parkway Westbound Ramps

During the Peak PM and Peak Saturday Hours, sufficient capacity will not be provided for the westbound or northbound approaches under no-build or build conditions. The proposed installation of a coordinated traffic signal and widening at this location will increase capacity and overall intersection levels of service compared to existing conditions for all peak hours. There will be sufficient capacity and acceptable Levels of Service provided for all lane groups and approaches.

Central Park Avenue and Sprain Parkway Northbound Ramp

During the Peak AM and Peak PM Hours, overall intersection Levels of Service at this location will degrade one level of service increment from a 'C' to a 'D' under no-build conditions and will be maintained at a 'D' under build conditions. During the Peak Saturday Hour, overall intersection level of service will be maintained under no-build and build conditions. During the Peak AM and Peak PM hours, sufficient capacity will not be provided for anticipated vehicular volumes under no-build or build conditions for the northbound left turn lane group. During all peak hours for all lane groups approaches and

the overall intersection, the increase in delay between no-build conditions and build conditions will be negligible.

Central Park Avenue and Boulder Creek U-Turn

During the Peak AM and Peak PM Hours, overall intersection level of service under no-build and build conditions will be maintained. During the Peak Saturday Hour, overall intersection level of service will degrade one level of service increment from a 'B' to a 'C' under no-build condition. For all peak hours, increases in delay from no-build conditions to build conditions will be negligible.

Mile Square Road and Seminary Avenue

Overall intersection operations at this location will be maintained at level of service 'A' under no-build and build conditions during all peak hours.

Kimball Avenue and Mile Square Road

Overall intersection operations at this four-way signalized intersection will be maintained at a level of service 'B' under no-build and build conditions for all peak hours.

Kimball Avenue and Fox Avenue

At all approaches to this intersection, levels of service will be maintained under no-build and build conditions during all peak hours.

Midland Avenue East and Bronxville Glen Driveway

Overall intersection levels of service generally will be maintained at this location under no-build and build conditions for all peak hours. During the Peak Saturday Hour the overall

intersection level of service degrades one level of service from 'A' to 'B'. This drop in level of service was due to a minor increase in delay of 0.6 seconds from 9.9 to 10.5 seconds.

Midland Avenue and Bronx River Road

During the Peak AM Hour, the overall intersection level of service degrades one level of service increment from an existing 'D' to 'E' under no-build conditions. The overall intersection and level of service is maintained at an 'E' for build conditions during the Peak AM Hour. During the Peak PM and Peak Saturday Hours, the overall intersection level of service are maintained at 'D' under no-build and build conditions. During the Peak PM and Peak Saturday Hours, sufficient capacity will not be provided under no-build or build conditions for the eastbound thru/right turn lane group. Proposed mitigation measures at this location will increase capacity and improve overall intersection level of service.

Broad Street and North Terrace/Fleetwood Avenue/Cross County Parkway Eastbound Ramps

Overall intersection operations at this location will be maintained under no-build and build conditions for all peak hours. Recommended timing improvements at this location will improve capacity and overall intersection level of service.

4. Internal Intersection Operations

Several key intersections within the Cross County Shopping Center have been analyzed to determine whether acceptable internal intersection operations will be provided in the future upon completion of the project. For these analyses, future traffic volumes under build conditions with improvements have been used in conjunction with the proposed layout of the shopping center including new parking structures and an improved ring road. These volumes have been logically routed through the internal shopping center roadway network including the key internal intersections. Those intersections were then analyzed based on

their proposed design and the anticipated future traffic volumes. The key internal intersections and their anticipated operations are as follows:

A. North Drive and Xavier Drive

[as described in scope]

This intersection will operation with an overall level of service and delay of B and 17.07 seconds. Adequate capacity and acceptable levels of service will be provided for all lane groups and approaches.

B. West Drive and Macy's Driveway

[Described in scope as West Drive and Macy's/Entry Drive]

This unsignalized intersection will operate on a two-way stop basis allowing the free movement of northbound and southbound traffic on West Drive. Adequate capacity and acceptable levels of service will be provided for all lane groups and approaches.

C. South Drive and West Drive

[as described in scope]

This intersection will operate with an overall level of service and delay of B and 12.4 seconds. Adequate capacity and acceptable levels of service will be provided for all lane groups and approaches.

D. South Drive and East Drive/Parking Structure

[Described in scope as South Drive and proposed parking structure drives]

This intersection will operate with an overall level of service and delay of B and 19.0 seconds. Adequate capacity and acceptable levels of service will be provided for all lane groups and approaches.

E. South Drive and Xavier Drive
[as described in scope]

This intersection will operate with an overall level of service and delay of B and 11.6 seconds. Adequate capacity and acceptable levels of service will be provided for all lane groups and approaches.

Several of the internal study locations do not exist as described in the scope and therefore were not studied, they are as follows:

- South Drive and North Drive
- Xavier Drive and East Drive
- North Drive and East Drive

A summary of the capacity analyses for the internal intersections mentioned above can be seen on Table 9 "Internal Intersection Operations" in Appendix A. It is anticipated that all internal intersections will operate with adequate capacity and acceptable levels of service.

5. Proposed Mitigation

The following improvements are recommended to mitigate the impact of the expansion as well as to improve overall traffic operations in the vicinity of the site as described above.

- a. Eliminate the direct access (weave) from I-87 exit 4 northbound across Central Park Avenue northbound to the "Macy's" driveway (Driveway 'B') by closing the existing curb cut along Central Park Avenue.
- b. Provide a new entrance to Driveway 'B' just north of the existing bank along Central Park Avenue. Vehicles which currently enter Driveway via I-87 northbound (Exit 4) will be able to access the site by two routes. The first route will be to continue to take

Exit 4 and drive along the local spur of the Cross County Parkway eastbound to the new direct access into the northeast portion of the site described below. The second route will be to take Exit 3 (signed Mile Square Road) onto Central Park Avenue northbound and enter via Driveways 'A' and 'B'.

- c. Signalize Central Park Avenue northbound and South Drive (Driveway 'A') and provide a second egress lane as well as an additional ingress lane. The new signal would be coordinated with the Mall at Cross County signal at Central Park Avenue. Central Park Avenue will be widened to accommodate a four lane section south of Driveway 'A'.
- d. Add an additional lane along Central Park Avenue northbound beginning just north of Mile Square Road and ending just north of Driveway 'A'. Reconstruct the traffic signal at the Mall at Cross County driveway.
- e. The Central Park Avenue southbound intersection with Mile Square Road will be improved to provide dual left turns with shared thru movements along Central Park Avenue southbound as well as Mile Square Road westbound. A separate right turn lane along Mile Square Road southbound is recommended. It is anticipated that the existing traffic signal will be replaced with a new signal in conjunction with the lane use improvements.
- f. Central Park Avenue northbound at Mile Square Road is proposed to be improved with the addition of a northbound left turn lane onto Mile Square Road, as well as dual left turns with a shared thru movement from Mile Square Road onto Central Park Avenue northbound. Mile Square Road is recommended to be a one-way roadway in a southeasterly direction between Central Park Avenue northbound and Vredenburg Avenue. The elimination of the northwestbound approach of Mile Square Road in conjunction with the lane use modifications provides the ability to adjust traffic signal phasing and timing, which will significantly improve the intersection operation. A new traffic signal will likely be required at the intersection.

- g. Signalize the intersection of the NYS Thruway (I-87) Exit 3 off-ramp (signed as the Mile Square Road exit) and Central Park Avenue northbound. Widening of the ramp is recommended to provide two lanes along the ramp. Parking should be prohibited along Central Park Avenue northbound between Vredenburgh Avenue and Mile Square Road to improve traffic flow.
- h. Restripe Mile Square Road as one-way southbound between Vredenburgh Avenue and Central Park Avenue northbound. Modify timing and phasing of the traffic signal at Vredenburgh Avenue/Mile Square Road/Trenchard Street. The one-way traffic pattern will improve local traffic flow. Vehicles which currently queue along Mile Square Road and 'spill' onto Vredenburgh Avenue will be directed to continue along Vredenburgh Avenue to Central Park Avenue northbound and will continue to its improved intersection with Mile Square Road.
- i. East Drive (Site Driveway 'F') will be improved at Vredenburgh Avenue to provide separate left and right turn lanes.
- j. Xavier Drive (Site Driveway 'E') will be improved to provide separate left and right turn lanes at Vredenburgh Avenue.
- k. Traffic signal timing improvements are proposed at the intersection of Vredenburgh Avenue/Turner Avenue and Kimball Avenue.
- l. A second egress lane as well as traffic signal timing modifications are recommended at the Kimball Avenue/Site Driveway 'D' (north of Stop & Shop) intersection.
- m. North Drive (Driveway 'C') will be widened in the vicinity of Kimball Avenue to provide dual left turns and a single right turn lane out of the site, as well as three inbound lanes. Left turns are recommended to be prohibited from Kimball Avenue, which will facilitate a traffic signal phasing modification. A new traffic signal will

likely be required. Kimball Avenue is proposed to be widened north of the intersection and a separate left turn lane may be provided along Kimball Avenue southbound to accommodate residents making left turns into apartments as well as vehicles patronizing the gas station and bank. Portions of Kimball Avenue will be milled and resurfaced.

- n. One of the most beneficial traffic mitigation improvements is the provision of a new roadway directly into the site at North Drive (Driveway 'C') from the vicinity of the terminus of the Cross County Parkway eastbound off-ramp at Kimball Avenue. Motorists who must currently enter onto Kimball Avenue after yielding to Kimball Avenue traffic will have direct access from the parkway into the site. Vehicles entering the site from the parkway will have their own receiving lane within Driveway 'C'. The elimination of the need for vehicles to enter onto Kimball Avenue prior to entering the site will significantly reduce the volume of vehicles on Kimball Avenue and improve the operations of the area intersections.
- o. The Kimball Avenue intersection with Midland Avenue and the Cross County Parkway eastbound off-ramp is proposed to be improved by providing a new right turn lane along the off-ramp to accommodate vehicles destined to Kimball Avenue southbound. The ramp will be widened west of the intersection and the traffic signal will be reconstructed. Midland Avenue westbound is recommended to be improved by providing a second left turn lane onto Kimball Avenue. A portion of the on-street parking would be removed along the south side of Midland Avenue. The removal of parking along a portion of Midland Avenue was requested by residents in the area.
- p. The Kimball Avenue/Midland Avenue (west) intersection is proposed to be improved to delineate two northbound lanes. A reconstructed traffic signal will be coordinated with adjacent signalized intersections. Kimball Avenue southbound will be widened to provide two lanes. Midland Avenue will be widened to provide dual right turn lanes and a separate left turn lane.

- q. Midland Avenue will be widened to provide a separate left turn lane at the Cross County Parkway westbound ramps, as well as to receive dual right turns off of the ramp. The off-ramp will be widened and dual right turns with shared left turns will be delineated. The intersection will be signalized as part of a coordinated system.
- r. At the Midland Avenue/Bronx River Road/Broad Street intersection, phasing and timing traffic signal modifications are proposed in conjunction with restriping of the westbound approach to provide two westbound lanes. The northbound and southbound approaches should be striped to delineate two lanes along each approach. The northbound approach should be striped as two thru lanes with shared turns and the southbound approach should be striped as a left turn lane and a shared thru/right turn lane.
- s. Traffic Signal phasing and timing improvements are recommended at the Broad Street intersections with North Terrace, Fleetwood Avenue and the Cross County Parkway eastbound ramps. Modified phasing and timing will improve operations at both intersections.
- t. An integral component of the on-site renovations will be the implementation of a series of guidance signs which will direct patrons to the most desirable egress driveways for their specific destinations (e.g. I-87 south). The signs will also direct patrons to major stores and parking facilities within the site. The new signs will minimize travel along several local streets by patrons who would otherwise not travel along the most desirable and efficient routes.

6. Alternate Access Configurations

- a. Proposed Access and Roadway Modifications

Alternate access configurations have been considered and are proposed to be implemented as mitigation measures at several locations around the site. The proposed alternate access mitigation measures are as follows:

- 1) Modification of New York State Thruway Exit 4 Ramp to prohibit weave maneuver from ramp across Central Park Avenue into the 'Macy's' Driveway 'B'.
- 2) Change the traffic flow pattern along Mile Square Road between Central Park Avenue northbound and Vredenburg Avenue to provide one-way southbound traffic flow along Mile Square Road.

These alternatives have been integrated into the traffic analysis as “2009 Build Volumes With Improvements” representing future conditions with construction of the shopping center expansion and the proposed modifications listed above.

b. Additional Considered Alternatives

Additional access alternatives have been considered, yet are not proposed. The additional alternatives are discussed below:

- 1) A conceptual alternate access configuration which has been considered yet is not proposed involves Driveways 'C' and 'D' along Kimball Avenue. This alternative would provide an exit only driveway at Driveway 'D' and an entrance only driveway at Driveway 'C' (North Drive). This potential access configuration would divert exiting vehicles south to Driveway 'D'. This would significantly increase the volumes along Kimball Avenue northbound in front of the nearby apartment buildings between the site driveways. The diversion of volumes to Driveway 'D' would require dual left turns from the driveway, which would necessitate the loss of on-street parking along Kimball Avenue.

- 2) An exit from the site directly onto the Cross County Parkway eastbound ramp is not desirable since vehicles would enter within a weave area of the parkway.
- 3) A "Texas-U" left turn lane was considered at the intersection of Central Park Avenue northbound to Mile Square Road westbound to Central Park Avenue southbound. The left turning vehicles would not have available capacity to enter onto Central Park Avenue southbound.

Capacity analyses have been performed for alternatives a and c to illustrate the following:

1. Operation of Stop & Shop driveway as a one way exit to the Shopping Center (alternative a).
2. Operation of Mile Square Road "Texas-U" westbound left turn yield/merge with Central Park Avenue SB (alternative C).

The analyses for the alternative access configurations can be seen on Table IV.F-10aa in Appendix A.

7. Conceptual Improvement Plans

The conceptual highway improvement plans, provided on Figures H-4 thru H-11 in Appendix B, show proposed improvements in the vicinity of the site. As part of the design process, proposed improvements were analyzed to identify their ability to accommodate turning vehicles. The physical characteristics of proposed improvements meet or exceed the ability of existing roadway geometrics to accommodate turning vehicles.

8. Accident History

Accident history data has been collected and summarized for the study locations in the vicinity of the site for the last three year period (2002 to 2004). The accident data has been

summarized on Table 15 in Appendix A. In addition, detailed printouts of all accidents at the study locations from the years 2002 to 2004 have been provided in Appendix D. Several accidents occurred along Central Park Avenue northbound between the I-87 Exit 4 ramp and the vicinity of Driveway 'B' (Macy's). The relocation of the driveway entrance is expected to reduce the accident rate in that area.

Several accidents occurred on Central Park Avenue at its intersections with the Sprain Brook Parkway ramps. Accidents at those locations consisted mainly of rear end collisions. Traffic from the Cross County Shopping Center is expected to have a negligible impact at these locations and should not increase accident rates.

Several accidents also occurred at the intersection of Midland Avenue and Bronx River Road/Broad Street. Many of the accidents were sideswipe accidents that may have occurred when drivers attempted to use the westbound approach of Broad Street as two lanes. Broad Street is currently wide enough to be utilized as two lanes yet is striped as one. Proposed improvements to this intersection will include restriping the Broad Street approach to provide two lanes. The striping will allow drivers to discern where the lanes are will and keep vehicles separated. The restriping is expected to reduce the sideswipe accidents at this location.

9. Parking Utilization

The City of Yonkers Zoning Ordinance currently requires a parking ratio of 1 parking bay per 200 square feet of proposed retail square footage. This ratio is based on a number of parking spaces that a shopping center could be reasonably expected to provide, while and still accommodating the parking needs of patrons during periods of maximum parking demand. Periods of maximum demand would likely occur during the late November/early December holiday shopping season.

A parking utilization study was performed at the Cross County Shopping Center in order to determine an existing ratio of parking utilization at the shopping center. This ratio was

determined in order to confirm the adequacy of a "one parking space per 200 square feet of retail" parking ratio for the Cross County Shopping Center. The study determined that the Cross County Shopping Center currently utilizes a maximum of approximately 0.6 parking spaces per 200 square feet of retail during any time period of a weekday or a Saturday. It is expected that any new development at the Cross County Shopping Center would require the same parking ratio. Upon comparing the required "one space per 200 square foot of retail" ratio to the existing utilization of 0.6 parking spaces per 200 square feet of retail, it can be seen that an adequate number of parking spaces will be provided upon completion of any new construction adhering to City Zoning. This new construction would of course include replacement-in-kind of any parking spaces that are removed in the process of the expansion/renovation of the shopping center. It is expected that parking demands for the different uses in the shopping center will peak during different time periods. Typical restaurant uses have peak operations during the evening hours whereas retail uses typically experience peak operations during the midday and early evening hours. The parking utilization study results have been tabulated in Figure IV.F-11 "Existing Parking Utilization," below.

TABLE IV.F-11

Existing Conditions Parking Utilization

Time Period	Total Number of Existing Spaces	Occupied Number of Spaces	Occupied Percentage of Spaces	Total Existing Occupied Square Footage	Existing Utilized Parking Ratio Spaces per 200 S.F.
Average Weekday Hour	4,439	2,960	67%	1,240,914 S.F.	0.5 : 200
Peak Weekday Hour	4,439	3,262	73%	1,249,914 S.F.	0.5 : 200
Average Saturday Hour	4,439	2,903	65%	1,240,914 S.F.	0.5 : 200
Peak Saturday Hour	4,439	3,350	75%	1,240,914 S.F.	0.6 : 200

The Cross County Shopping Center currently has 4,439 existing parking spaces. Proposed are a total of 5,631 parking spaces 354 of which are provided in a deferred parking structure at the northeast corner of the site adjoining Sears. The additional parking spaces are proposed based on BR Zoning District requirements. Spaces have been added for additional retail and restaurant uses and credit for spaces has been taken for the demolition of existing uses. A breakdown of existing and proposed parking can be seen on the parking summary table below. Based on the peak parking utilization ratio of 0.6:200 from the above table, it can be expected that for the proposed 1,558,936 total s.f. shopping center, 4,677 spaces would be required during peak parking demands. The total of 4,677 spaces required at peak demand is less than the proposed 5,277 parking spaces to be initially constructed (deferred parking not included).

Table IV.F-11a
Parking Summary Table⁽¹⁾

DESCRIPTION	EXISTING	PROPOSED	BR ZONING DISTRICT REQUIREMENTS
<i>Existing Parking Summary:</i>			
Existing Parking for Existing Shopping Center	4,439 ⁽²⁾	4,439 ⁽²⁾	4,439 ⁽²⁾
Parking Credit for Existing Retail (Building 10) to be Removed (46,550 S.F. @ 1 Space/200 S.F.)	N/A	-233	-233
Parking Credit for Existing Retail (Building 2) to be Removed (70,484 S.F. @ 1 space/200 S.F.)	N/A	-353	-353
Parking Credit for Existing Restaurant (Building 13) to be Removed (15,575 S.F. @ 1 space/100 S.F.)	N/A	-156	-156
Sub-Total Net Existing	4,439	3,697	3,697
<i>Proposed Parking Summary:</i>			
Building A Retail (80,000 S.F.)	N/A	400	400
Building B Retail (Macy's Expansion/50,000 S.F.)	N/A	250	250
Building E-1 Retail (44,500 S.F.)	N/A	223	223
Building E-2 Retail (45,400 S.F.)	N/A	227	227
Building E-3 Retail (13,000 S.F.)	N/A	65	65
Building E-4 Retail (9,700 S.F.)	N/A	49	49
Building F Restaurant (8,500 S.F.)	N/A	85	85
Building G Retail (25,000 S.F.)	N/A	125	125
Building H Retail (Sears Expansion/11,400 S.F.)	N/A	57	57
Building 13 Retail (20,000 S.F.)	N/A	100	100
Building 2 Retail (70,484 S.F.)	N/A	353	353
Sub-Total Proposed	N/A	1,934	1,934
Building Square Footage	1,360,111	1,558,936	
GRAND TOTAL	4,439	5,631	5,631

Notes:

- (1) The required parking spaces are based on maintaining the existing number of spaces for the existing uses to remain and providing additional spaces for the proposed uses based on the City of Yonkers Zoning requirements (1 space per 200 square feet of retail and 1 space per 100 square feet of restaurant). A credit has been taken for the demolition of Buildings 2, 10 and 13. 354 of the required spaces are provided in a deferred parking structure at the northeast corner of the site adjoining Sears.

- (2) Stop & Shop approval permits 50 residents of the Midland Owner's Corp. to park on-site between 7:00 PM and 8:00 AM daily.

10. Public Transportation

The Westchester County Department of Transportation (WCDOT) manages the Bee-Line Bus System, which provides bus service to the site. WCDOT became involved with the bus stop modifications associated with the renovation and expansion of the Cross County Shopping Center during the initial stages of the project redevelopment.

Existing service routes within the site and the surrounding area were discussed with WCDOT. The four bus routes serving the property are 20, 25, 26 and 55. Routes 20 and 25 are the most heavily utilized routes. More than 1,000 passengers a day utilize the BeeLine bus system to access the Cross County Shopping Center. Consistent with the 17.4% increase in automobile traffic projected as a result of the proposed expansion, an increase of more than 174 additional riders could be anticipated. WCDOT increases bus service to the site during the Christmas season. It is anticipated that bus ridership will increase due to the Cross County Shopping Center Expansion and the proposed Video Lotto Terminals at the Yonkers Raceway. WCDOT is doing an investigation of existing ridership and has indicated its willingness to coordinate with both developments to maintain adequate bus service to both based on anticipated additional demand. WCDOT indicated that it is standard practice to increase bus service to meet demand.

WCDOT indicated they did not believe that any of the existing routes which traverse in the vicinity of the site would be diverted to the site. Bus ridership on the BxM4C line to New York City has been declining over the past 9 years, which is believed to be in part due to improved service on the Metro-North Railroad and the difficulty of providing timely transportation to and from Manhattan.

Five bus stops are currently provided within the site. Two stops exist along the west side of Xavier Drive. The third stop is along the north side of South Drive, just west of Xavier

Drive. The fourth stop is located on the west side of East Drive, behind the movie theater, and the fifth stop is located on the west side of Macy's.

The two bus stops on Xavier Drive do not have pull offs and vehicles traveling along Xavier Drive southbound must stop and wait for passengers to board and alight the buses. A single expanded bus stop will be provided along the west side of Xavier Drive, just north of the east/west pedestrian mall. The proposed bus stop will include a pull off area to minimize impacts on passenger vehicle flow along Xavier Drive.

The bus stop on the west side of Macy's will be improved to provide two bus staging areas separated by an expanded raised concrete median which is to be used by pedestrians.

11. Pedestrian Access

Currently the roadways surrounding the site, Central Park Avenue, Vredenburgh Avenue and Kimball Avenue, have sidewalks along the site frontage. All proposed highway improvements will maintain or improve pedestrian access. Observations of pedestrian activities taken during the manual turning movement counts indicate that pedestrian volumes are generally low and do not significantly impact the capacity or operations of the intersections. Additionally, pedestrian sidewalks and crosswalks are proposed throughout the site and adjoining roadway network.

The following is a summary of the existing and proposed offsite pedestrian access:

1. At the intersection of Kimball Avenue and Midland Avenue, sidewalks exist along both sides of Kimball Avenue and along the north side of Midland Avenue. A crosswalk currently exists across Kimball Avenue on the north side of the intersection. Proposed in conjunction with widening at this location, is a new crosswalk on the north side of the intersection, pedestrian signals with countdown timers and replacement of sidewalk in the widened areas.

2. At the intersection of the Kimball Avenue and Nevada Place sidewalks exist on both sides of Kimball Avenue and along the north side of Nevada Place. Proposed in conjunction with improvements to this intersection are crosswalks across Kimball Avenue and Nevada Place and pedestrian signals with countdown timers.
3. At the intersection of Kimball Avenue and Midland Avenue East sidewalks currently exist along the eastside of Kimball Avenue and along both sides of Midland Avenue. Crosswalks exist on the east, west and south sides of the intersection. Proposed in conjunction with improvements to this intersection are crosswalks on the north and east side of the intersection, pedestrian signals with countdown timers and replacement of sidewalks disturbed during construction.
4. At the Cross County Shopping Center entrance/exit intersection of Kimball Avenue and North Drive. Sidewalks currently exist along both sides of Kimball Avenue and along the south side of North Drive. A crosswalk currently exists across the south side of the intersection. Proposed in conjunction with widening at this intersection is replacement of the crosswalk and configuration of the sidewalks to prohibit pedestrians from interfering with the proposed slip ramp from the Cross County Parkway.
5. Proposed improvements to the intersections of Mile Square Road with Central Park Avenue northbound and Central Park Avenue southbound will disturb existing crosswalks and sidewalks. Proposed are new crosswalks and improved sidewalks which will tie into any pedestrian accesses that were disturbed due to the widening of the intersections.
6. At the intersection of South Drive and Central Park Avenue northbound there exists sidewalks on the eastside of Central Park Avenue and on the south side of South Drive. No crosswalks currently exist at this location. Proposed in conjunction with the signalization and widening of this intersection are improved/updated sidewalks

and new crosswalks across South Drive along the east side of Central Park Avenue northbound.

Overall, the proposed pedestrian access schemes for the Kimball Avenue and Central Park Avenue corridors have been designed to convey pedestrians to the Cross County Shopping Center via the use of sidewalks and crosswalks. At all locations where there are crosswalks provided at new traffic signals, pedestrian signals will be provided with countdown timers. All proposed sidewalk ramps will meet the latest ADA requirements.

A proposed “pedestrian friendly” internal roadway network will incorporate items such as traffic calming mid-block roundabouts and ornamental concrete or paver stone crosswalks as well as traditional pedestrian access elements. This pedestrian friendly design will provide safe pedestrian access throughout the site

12. Expected Maintenance and Protection Of The Traffic During Construction

Construction traffic will include, but will not be limited to the following types of vehicles: parcel post delivery trucks, 10-wheel and 18-wheel delivery trucks, 10-wheel and 18-wheel dump trucks, concrete mixing trucks, cranes, pile driving equipment and general construction worker vehicles.

The New York State Thruway and Central Park Avenue will be the main thoroughfares being used for the entrance and egress of materials and workers into and out of the worksite. All delivery truck traffic will be limited from traveling throughout the local residential street networks, by the means of a contract requirement.

The New York State Department of Transportation, the New York State Thruway Authority, the City of Yonkers Department of Public Works and any applicable regulatory agencies will dictate the measures needed to maintain and protect traffic within the public thoroughfares. Such measures may include, but are not limited to: temporary vehicle barriers, flashing and non-flashing arrow boards, cones, police presence, trained flag

personnel, temporary re-striping, directional signage, informational signage, and signage restricting the speed limit to accommodate safer travel of all vehicles throughout construction zones.

Plans for traffic management and control will be submitted for approval prior to the commencement of construction related activities.

13. Use of Police Officers for Traffic Control

In the past, police officers have been posted at the North Drive (Driveway 'C')/Kimball Avenue intersection. This intersection is proposed to be widened to provide two outbound left turn lanes as well as a single outbound right turn lane. Along with improvements to this intersection, the mitigation measures performed at other locations to the north will improve intersection operations. The applicant will be willing to provide a police officer to control traffic as required in the future.

IV. CONCLUSION

Additional traffic will be generated as a result of the proposed expansion/renovation of the Cross County Shopping Center. Extensive on-site and off-site roadway improvements are proposed by the applicant to mitigate the additional vehicles associated with the expansion. In many locations, the proposed improvements significantly improve the capacities of the intersections. Analyses indicate that projected future operations will in many cases be better than existing operations. Coordinated signalization schemes along the Central Park Avenue and Kimball Avenue corridors will improve the flow of vehicles through currently congested areas. Internal shopping center intersections will operate with adequate capacity and levels of service and provide pedestrian access throughout the site. Existing pedestrian access to the site will be maintained and/or improved in conjunction with the extensive roadway improvements. Proposed parking will be sufficient to accommodate patrons and employees. On-site bus stops will be improved to provide safe and convenient access to public transportation.