

CITY OF CAMBRIDGE

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Joseph E. Barr, Director Brad Gerratt, Assistant Director for Parking Management Brooke McKenna, Assistant Director for Streets Management

MEMORANDUM

To: Cambridge Planning Board

From: Joseph E. Barr, Director

Date: May 31, 2016

Re: NorthPoint Application for Special Permit Amendments to PUD Development Plan

(PB#179)

The Cambridge Traffic, Parking, and Transportation Department (TP&T) has reviewed the April 6, 2016 Request from DW NP Property, LLC (DivcoWest), in collaboration with the HYM Investment Group, LLC, for a Major Amendment to the NorthPoint Special Permit and Planned Unit Development (PUD) Plan (Planning Board #179).

The Major Amendment includes changes to the project phasing and schedule, advancing the first commercial building on Parcel J/K, and development of the first part of the Retail Square. The Major Amendment also includes modifications to the NorthPoint 40-scale roadway layout plan.

The proposed Major Amendment will not alter NorthPoint's total gross floor area (GFA), mix of uses, traffic generation, total open space, or number of total parking spaces. TP&T, in coordination with the Community Development Department (CDD), and Department of Public Works (DPW), has been working with DivcoWest and HYM on reviewing the application. TP&T offers the Planning Board the following comments on the proposed Special Permit and PUD Major Amendment.

General Comments

- TP&T has been working on the NorthPoint project since its original Special Permit was issued in 2003 for approximately 5.2 million square feet (sf) of development (3.1 million sf Residential, 2.1 million sf Commercial, and 11 acres of Open space). NorthPoint is envisioned to create a vibrant, mixed-use, transit-oriented neighborhood for people to live, work, shop and play. The transportation plan calls for a multimodal approach, connections and circulations for vehicles, cyclists, and pedestrians within the site and surrounding neighborhoods, and connections to public transit and open space. TP&T believes the proposed Major Amendment remains consistent with the original transportation framework.
- The NorthPoint project will have a maximum of 3,907 parking spaces (not including 300 MBTA park and ride spaces). The parking ratios include, 0.9/1,000 sf for Office, 0.8/1000 sf for Lab/R&D, 0.5-1.0 /Unit for Residential, 0.5/1,000 sf for Retail, and 1 per 2 sleeping rooms for Hotel use. The project will

- also share parking between uses that have peak parking demands at different times of day. <u>The proposed Major Amendment does not change the approved parking ratios or number of permitted parking spaces</u>.
- Overall, TP&T supports the Major Amendment. However, we continue to work with NorthPoint on details relating to the layout of some internal roadway segments. More information on the street layout plan is discussed below.

Street Layout Plan

- As approved in 2003, a key parameter of NorthPoint's transportation plan is for vehicles' entering NorthPoint from the north to use Water Street, and for vehicles entering NorthPoint from the south to use Museum Way. This will minimize traffic impacts at the O'Brien/First Street and O'Brien/Land Boulevard intersections. The proposed Major Amendment does not change this overall access plan.
- The Major Amendment proposes some adjustments to the internal roadway layouts; however, it should be noted that changes to the internal roadways was something that was expected to occur as the project advanced overtime. TP&T has been working with NorthPoint and believes the changes are generally positive, such as shifting NorthPoint Boulevard to align with the West Boulevard/Water Street intersection to be a standard 4-leg intersection rather than two separate and off-set intersections as shown in previous plans. TP&T will continue to work with NorthPoint to refine the internal roadway layout plan. A final 40-scale roadway plan is expected to be submitted to the Planning Board for the Major Amendment's second Planning Board hearing. Some of the details that TP&T and NorthPoint continue to work on include the following roadway segments:
 - The elimination of Baldwin Street (between Parcels J/K and L) into open space has been one item that TP&T has been discussing with NorthPoint, especially regarding roadway circulation and connectivity, loading and deliveries for Parcels J/K, and L, and minimizing the creation of superblocks.
 - A technical memorandum by VHB dated April 6, 2016, NorthPoint Internal Roadway Layout Master Plan Revisions, found that the elimination of Baldwin Street will not result in traffic deficiencies or poor traffic operations for the internal roadways at Dawes Street at North First Street and Dawes Street at North Park. However, TP&T believes that pedestrian and bicycle connectivity between North Street and Dawes Street, and loading and delivery for Parcels J/K, and L, and the Retail Square to prevent vehicles from stopping in bicycle lanes still needs some work. TP&T will continue to work with NorthPoint on these issues.
 - 2) The 40-scale plan needs more work on adequate buffer space and pedestrian crossings between the Community path and the Retail Square at Parcels I and W.
 - 3) The cross-section for First Street between O'Brien Boulevard and Dawes Street needs additional work to best accommodate buses, drop-off/pick-up activity for the future Lechmere MBTA Station, and pedestrian and bicycle conditions and safety. TP&T will continue to work with NorthPoint on this segment.
 - 4) The Dawes Street approach to NorthPoint Boulevard needs further refinement on the road curvature, and pedestrian and bicycle crossings at the intersection. NorthPoint is working on developing options for addressing the issues that have been raised at this location.
 - 5) The West Boulevard turnaround located adjacent to Parcels A and B, and the Community path needs additional adjustments. However, it should also be noted that this roadway segment is expected to be one of the last areas developed and could also be impacted by a future circumferential transit connection to the Inner Belt area of Somerville.
 - 6) A comprehensive loading and delivery plan should be developed for NorthPoint, especially for the Retail Square.

TP&T will continue to work with NorthPoint, CDD, and DPW on the 40-scale roadway layout plan prior to the second Planning Board hearing on this Major Amendment.

Traffic Generation

- An analysis completed by Vanasse Hangen Brustlin, Inc. (VHB), dated April 6, 2016, for the NorthPoint Trip Generation 2016 Parcel Phasing Comparison, demonstrated that the Major Amendment will have no substantial changes to the daily, morning or evening peak hour vehicle trip generation compared to NorthPoint's 2014 Amended PUD Master Plan, and no changes in trip generation for the full PUD build-out.
 - The total gross square footage (GSF) of the Master Plan will not change.
 - o The amount of Residential, Commercial, and Retail GSF will remain as approved.
 - The traffic volume resulting from the proposed Major Amendment will not exceed the original trip generation estimated for the peak hours in the 2002 NorthPoint TIS.
 - TP&T was comfortable with the level and quality of analysis completed by VHB, and recommends the Planning Board approve the memo as an update to the PUD Special Permit and TIS.

Lastly, TP&T wants to thank DivcoWest and HYM for their ongoing coordination and cooperation with us on this evolving and exciting Northpoint district.



To: Joseph E. Barr, Director Cambridge Traffic, Parking and Transportation Department Date: April 6, 2016

Memorandum

Project #: 13369.00

From: Susan Sloan-Rossiter, Principal Meghan Houdlette, P.E.

VHB

Re: NorthPoint Trip Generation - 2016 Parcel Phasing Comparison

Analysis

Summary of Study and Findings

DW NP Property, LLC (DivcoWest), is submitting a Request for a Major Amendment to the Special Permit for the NorthPoint project. This filing is being submitted in accordance with the City of Cambridge, Massachusetts Zoning Ordinance (the "Zoning Ordinance") and the Notice of Decision Amendment to Planned Unit Development (Case No. PB#179 Amendment #3) filed with the City Clerk's Office on November 16, 2012; as amended by Notice of Decision (Case No. PB#179 Amendment #4) and filed with the City Clerk's office on February 13, 2015 and by Notice of Decision (Case No. PB 179 Amendment #5) filed with the City Clerk's Office on July 30, 2015 (together, the "Special Permit").

Since acquiring the property in August, 2015, DivcoWest has been considering ways in which the existing Master Plan can be improved in order to strengthen the public realm features of NorthPoint and accelerate the development schedule. The current Master Plan (as amended in 2015) provides for the construction of approximately 5.2 million square feet (3,060,792 sf of residential space, 2,185,062 sf of commercial space, and eleven (11) acres of open space). The proposed changes included in the amendment application do <u>not</u> include any requests to modify the approved 5.2 million square feet and do <u>not</u> include any requests to modify the breakdown of the approved square footage between residential and commercial uses.

DivcoWest retained VHB to prepare a traffic generation analysis showing the implication of the Major Amendment proposed changes. This memo contains a trip generation analysis comparing the trip generation of the proposed revised Master Plan to the Phase IA, Phase 1B and Full Build trip generation thresholds for the peak hours established in the certified NorthPoint TIS (2002).

The total gross square footage (GSF) of the Master Plan will not change. Additionally, the amount of Residential, Commercial, and Retail GSF will remain as approved in the Special Permit. The traffic volume resulting from the proposed amendments will not exceed the original trip generation thresholds for the peak hours established in the certified NorthPoint TIS (2002).

The specific Major Amendment modifications to the parcel phasing include the following:

- o Move Parcel JK and I into Phase 1A
- o Include new Parcel W and Parcel Q1 in Phase 1A
- o Include a temporary commercial use on Parcel H in Phase 1A
- Move Parcel U to Phase 1B
- Move Parcel H to Phase IB

This memorandum contains a trip generation analysis comparing the trip generation of the proposed parcel phasing, to the Phase IA, Phase 1B and Full Build trip generation thresholds for the peak hours established in the certified

NorthPoint TIS (2002). This memo also contains a comparison of the proposed parcel phasing to the 2015 Master Plan Update program. Note that the Phase 1B condition is cumulative and includes all buildings to be constructed through the end of Phase 1B, including all Phase 1A buildings. The trip generation analysis undertaken in this memorandum demonstrates that the trip generation for the proposed parcel phasing is less than the trip generation thresholds for the peak hours established in the certified NorthPoint TIS, as shown in Table 1. The trip generation analysis in this memorandum utilizes the same assumptions that were used in the trip generation analysis approved by the City for Special Permit Amendment #4 (the "2014 Master Plan Update") and utilized for Special Permit Amendment #5 (the "2015 Master Plan Update").

The vehicle trip generation analysis for the amendment proposed parcel phasing in comparison to the certified TIS and the 2015 Master Plan Update for Daily, AM peak hour and PM peak hour conditions in the Full Build, Phase 1 A and Phase 1B are shown in Table 1. Compared to the certified TIS baseline, on which the NorthPoint traffic mitigation plan is based, the vehicle trips generated for the proposed parcel phasing are less than the certified TIS threshold trips in all of the Full Build, Phase 1A and Phase 1B conditions.

Compared to the TIS, the 2016 Parcel Phasing vehicle trip generation is lower for the Phase 1A, Phase 1B and Full Build Daily, AM peak hour and PM peak hour. The proposed phasing vehicle trip generation is higher in Phase 1A and Phase 1B in comparison to the 2015 Master Plan Update, reflecting the acceleration of the development schedule but still lower than the TIS projections.

Table 1 - Comparison of TIS, 2015 M aster Plan Update, and 2016 M ajor Amendment Vehicle Trip Generation*

		<u>TIS</u>		<u>2015</u>	Master Plan (<u>Jpdate</u>	2016 Major Amendment				
	Daily	Morning Peak	Evening Peak	Daily	Morning Peak	Evening Peak	Daily	Morning Peak	Evening Peak		
	Total	Total	Total	Total	Total	Total	Total	Total	Total		
Phase 1A	5,430	720	760	3,979	405	422	5,188	450	542		
Phase 1B	10,400	1,260	1,405	9,698	992	1,089	10,224	1,122	1,222		
Full Build	16,015	1,695	1,840	15,992	1,429	1,754	15,980	1,436	1,750		

^{*}The Phase 1B condition is cumulative and includes all buildings to be constructed through the end of Phase 1B, including all Phase 1A buildings. The Full Build condition includes all buildings to be constructed as part of the NorthPoint project.

Trip Generation Analysis Methodology

Table 2 compares the NorthPoint development program studied as part of the certified TIS to the original NorthPoint Master Plan, the 2015 Master Plan Update and the 2016 Master Plan program. The overall NorthPoint Master Plan development program size and land-use allocation does not change from the original NorthPoint approved development program under this Major Amendment request. The 2016 Master Plan program allocation of residential

and commercial square footage is also consistent with the 2012 Master Plan. Note that the development program analyzed in the TIS was approximately 294,146 gsf larger (264,208 gsf of residential program and 29,938 gsf of commercial program) than the current NorthPoint development program. The residential square footage has been reduced while adding additional units at a smaller square footage/unit ratio. The total amount and allocation of development program square footage between residential and commercial uses does not change from the originally approved NorthPoint Master Plan.

Table 2 - NorthPoint Program Comparison

Full Build Program	TIS (GSF)	Original NorthPoint Master Plan	2015 Master Plan Program (GSF)	2016 Master Plan Program(GSF)
Residential	3,325,000	3,060,792	3,077,254	3,060,792
Commercial	2,215,000	<u>2,185,062</u>	<u>2,168,600</u>	<u>2,185,062</u>
Total	5,540,000	5,245,854	5,245,854	5,245,854

The development program assumed for the trip generation analysis of the proposed parcel phasing program is shown in Table 3, in comparison to the development program in the 2015 Master Plan Update and certified TIS. The development program for the proposed parcel phasing program reflects Parcels JK and Parcel EF as lab buildings.

Table 3 - TIS, 2015 Master Plan Update, and Proposed Parcel Phasing Program Comparison

Full Build Program	TIS (GSF)	2015 Master Plan Update (GSF)	2016 Parcel Phasing (GSF)
Office	1,500,000	1,142,081	1,060,000
Lab	640,000	576,519	725,000
Ancillary Retail	75,000	175,000	175,000
Retail	-	75,000	75,000
Grocery	-	50,000	50,000
Hotel	90,000 (90 keys)	150,000 (150 keys)	100,062 (100 keys)
<u>Residential</u>	3,235,000 (2,790 units)	3,077,254 (3,211 units)	3,060,792 (3,177 units)
Total	5,540,000	5,245,854	5,245,854

In order to confirm that the trip generation for the proposed parcel phasing is less than or equal to the initial trip generation calculated for Phase 1A, Phase 1B and the Full Build program in the certified TIS, a trip generation analysis was conducted for comparison purposes. Note that the same technical assumptions for the transportation analysis used for the 2014 Master Plan Update and the 2015 Master Plan Update, are used in this comparative trip generation analysis.

The ITE Land Use Codes from the Trip Generation 9th Edition assumed for the potential revised development program trip generation analysis are summarized in Table 4.

Table 4 - ITE Land Use Codes*

Land Use	ITE LUC	Methodology
Office	710	Fitted Curve Equation
Lab	760	Fitted Curve Equation
Ancillary Retail	820	Average Rate
Retail	820	Average Rate
Grocery	850	Average Rate
Hotel	310	Average Rate
Residential	220	Fitted Curve Equation

^{*} VHB Trip Generation Analysis and Shared Parking Study, March 24, 2014

Table 5 - Mode Shares

Land Use	Auto	Source			
Office/Lab	40%	Certified NorthPoint TIS			
Residential	32%	Kendall Square K2 City Study			
Supermarket	50%	Transportation Research Board (TRB) Paper			
Hotel	30%	Hotel PTDM Reports and Traffic Studies			
Ancillary Retail	10%	Certified NorthPoint TIS			
General Retail	31%	Kendall Square K2 City Study			

^{*} Food Shopping in the Urban Environment: Parking Supply, Destination Choice and Mode Choice (TRB 2011 Annual Meeting, Maley and Weinberger – Appendix Exhibit B), VHB Trip Generation Analysis and Shared Parking Study, March 24, 2014



Table 6 presents the TIS, 2015 Master Plan Update and Proposed Parcel Phasing Plan by square footage and land-use type used in the trip generation analysis for each development phase.

Table 6 - TIS, 2015 M aster Plan Update and Proposed Parcel Phasing Program Square Footage Comparison

<u>TIS</u>								2016 Parcel Phasing										
	Residential	Office	Lab	Retail	Hotel	Total	Residential	Office	Lab	Retail	Hotel	Total	Residential	Office	Lab	Retail	Hotel	Total
Phase 1A	480,000	1,063,000	-	-	-	1,543,000	1,224,992	320,000	-	25,000	-	1,569,992	1,580,992	30,000	350,000	104,000	0	2,070,992
Phase 1B	1,211,000	621,000	-	-	-	1,832,000	680,000	433,481	576,519	105,000	150,000	1,945,000	348,000	1,000,000	375,000	70,000	0	1,808,000
Phase 2	1,544,000	-	456,000	75,000	90,000	2,165,000	1,172,262	388,600	-	170,000	-	1,730,862	1,131,800	30,000	0	126,000	100,062	1,366,862
Total	3,235,000	1,684,000	456,000	75,000	90,000	5,540,000	3,077,254	1,142,081	576,519	300,000	150,000	5,245,854	3,060,792	1,060,000	725,000	300,000	100,062	5,245,854

Table 7 presents the additional delineation of the Inbound and Outbound trip movements for each development phase, for comparison purposes. The original benefit of the NorthPoint mixed-use development program having a balance of inbound and outbound trips has maintained.

Table 7 – TIS, 2015 M aster Plan Update and Proposed Parcel Phasing Program Trip Generation (Inbound and Outbound) Comparison

	<u>TIS</u>						2015 Master Plan Update						2016 Parcel Phasing								
	Daily	aily Morning Peak Evening Peak		k	Daily	Daily Morning Peak			Evening Peak		Daily Morning Peak		ak	Evening Peak		:					
	Total	In	Out	Total	In	Out	Total	Total	In	Out	Total	In	Out	Total	Total	In	Out	Total	In	Out	Total
Phase 1A	5,430	555	165	720	190	570	760	3,979	214	191	405	189	233	422	5,188	214	236	450	245	297	542
Phase 1B	10,400	840	420	1,260	450	955	1,405	9,698	631	361	992	396	693	1,089	10,224	755	366	1,122	403	819	1,222
Full Build	16,015	945	750	1,695	735	1,105	1,840	15,992	863	566	1,429	704	1,050	1,754	15,980	873	563	1,436	697	1,054	1,750



To: Joseph Barr. Director
Adam Shulman, Sr. Planner
City of Cambridge
Traffic, Parking & Transportation

Date: April 6, 2016

Memorandum

Project #: 13369.00

From: Susan Sloan-Rossiter, Principal

Ellen Donohoe, PE

Re: NorthPoint Internal Roadway Layout – Master Plan Revisions

DW NP Property, LLC (DivcoWest) acquired the NorthPoint property in August 2015. For the past several months, the new ownership team has been evaluating the approved development proposal, considering ways in which the existing Master Plan can be improved in order to strengthen the public realm features of NorthPoint and the development program can be accelerated. Some of the improvements have been through minor adjustments and re-alignments of internal roadways with the intention to improve the overall public realm experience and safety for pedestrians and bicyclists. The modified internal roadway layout improves the connectivity of the roadway network for vehicles, pedestrians and cyclists.

DivcoWest requested VHB to conduct a traffic assessment of the internal roadway modifications prepared by the project team civil engineer Beals & Thomas. The 40 scale internal roadway plan to be submitted as part of a major amendment to the current Master Plan Special Permit, maintains City of Cambridge and Somerville roadway design standards. Note that most of the roadway configurations are generally maintained from the current Master Plan except for the following modifications:

- Shifting of NorthPoint Blvd to align with the West Boulevard/Water Street intersection,
- Minor re-alignment of North First Street between NorthPoint Blvd and Dawes Street,
- Minor easterly shift of West Blvd turnaround adjacent to Parcel A,
- Minor re-alignment of the multi-use path to account for NorthPoint Boulevard shift
- Elimination of the one block street segment (Baldwin Street) between Parcel JK and Parcel L.

Traffic Operational Assessment of Proposed Roadway Modifications

VHB considers each of these modifications to be improvements to the current Master Plan internal roadway network for the following reasons:

• NorthPoint Boulevard shift north creates a perpendicular 4 legged intersections versus two off-set T-intersections on Water Street providing improved vehicle, pedestrian and bicycle crossings.

- Continuation of the multi-use path along the north side of NorthPoint Blvd provides direct single movement crossings at North First Street and Water Street and does not require multiple crossings.
- Increased segment length of North First Street by approx. 80 feet, between O'Brien Hwy and NorthPoint Blvd, provides more queue and curb space.
- Increased segment length of Water Street by approx. 100 feet, between Lechmere Station Intersection and NorthPoint Blvd, provides more queue and curb space.
- Increased segment length of Water Street improves bus visibility at Lechmere Station driveway.
- North First Street straight alignment reduces possible sight line impacts at intersections and driveways.
- Relocation of West Blvd turnaround adjacent to Parcel A reduces paved area.
- Elimination of the one block roadway segment between Parcels JK and L should not result in traffic deficiencies or poor operations.
- The proposed street modifications result in a reduction of 940 If of paved street equating to a reduction of over 1 acre of impervious surface (46,170 sf).

Traffic Operation Analysis of Roadway Elimination

As part of the Planning Board Decision, PB#179 Amendment #3, procedures for modifications of the Master Plan are described in Section 12, with modifications to "streets" being included in Section 12b. As stated "The elimination of any street segment shown on the Master Plan shall only be permitted as a Major Amendment to the Permit with the exception of streets which are *one block in length*, which may be relocated or eliminated if specifically approved by the Planning Board as part of the final design approval after having been reviewed and approved by City staff."

At the request of DivcoWest, VHB conducted an analysis of traffic operations on the internal NorthPoint roadways to determine if the one block street segment between Parcel JK and Parcel L could be removed from the roadway network. Peak Hour traffic volumes provided in the NorthPoint Traffic Impact Study (TIS) were used as the baseline for this analysis. In addition the following assumptions were made:

- All traffic currently on North Street would be relocated to Dawes Street as a worst-case scenario;
- Pedestrian volumes would total approximately 100 crossings per hour; and
- Each intersection approach would consist of one shared lane.

The internal roadway traffic analysis investigated the morning and evening peak hour roadway volumes. The primary intersections at each end of Dawes Street (to the east and west) will be most impacted by this change. For this reason the following intersections were studied:

Dawes Street at North First Street

Dawes Street at North Park

Redistributed volumes for the morning and evening peak periods are shown in the attached Figure 1.

Level of Service

Synchro 8 software was used to model unsignalized level of service (LOS) operations at the study area intersections. LOS is a qualitative measure of control delay at an intersection providing an index to the operational qualities of a roadway or intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS D is typically considered acceptable. Table 1 below presents the level of service delay threshold criteria for unsignalized intersections as defined in the 2010 Highway Capacity Manual (HCM).

Table 1: Level of Service (LOS) Criteria

LOS	Unsignalized Intersection (seconds/vehicle)	
LOS A	≤ 10	
LOS B	> 10-15	
LOS C	> 15-25	
LOS D	> 25-35	
LOS E	> 35-50	
LOS F	> 50	

Source: 2010 HCM

The resulting LOS for the resulting redistributed traffic is shown in Table 2.

Table 2: Level of Service Summary – Full Build With Removal of Roadway

				95th Queue
	V/C ¹	Delay ²	LOS ³	(feet)
AM Peak Hour				
Dawes Street EB T/R	0.17	0.0	-	0
Dawes Street WB L/T	0.13	5.6	Α	11
North First Street NB L/R	0.49	19.8	С	66
Dawes Street EB L/R	0.64	24.7	С	109
North Park NB L/T	0.17	6.5	Α	16
North Park SB T/R	0.02	0.0	-	0
PM Peak Hour				
Dawes Street EB T/R	0.09	0.0	-	0
Dawes Street WB L/T	0.26	6.3	Α	26
North First Street NB L/R	0.48	24.4	С	62
Dawes Street EB L/R	0.54	18.9	С	80
North Park NB L/T	0.17	8.1	Α	16
North Park SB T/R	0.10	0.0	-	0

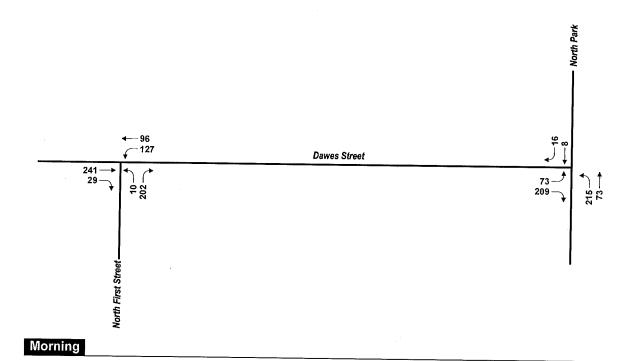
¹V/C –Volume-to-capacity ratio

NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

The results indicate a LOS C or better on all intersection approaches at both intersections which is considered acceptable operations. This assumes that a STOP condition is only required on the minor street approaches. The major street (Dawes Street) would remain operating with free-flow traffic operations. With the current volumes the intersections do not meet warrants for an all-way stop condition. In summary, based on the traffic analysis described above, removing the roadway between Parcel JK and Parcel L should not result in a degraded level of traffic operations at nearby intersections.

²Delay – Control delay per vehicle, expressed in seconds per vehicle

³LOS - Level-of-Service



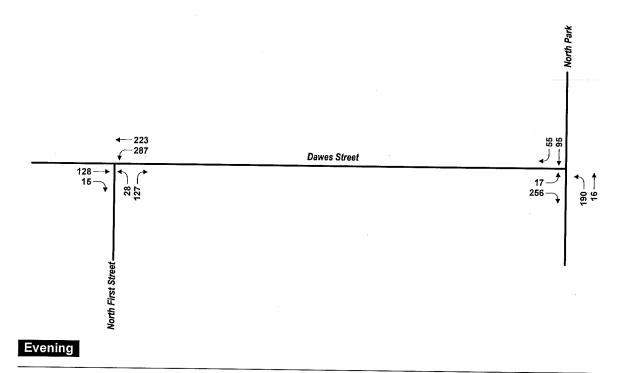






Figure 1
Full Build Redistributed Traffic Volumes
North Point