



# APPENDIX

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### **Appendix III**

*Preliminary Traffic Study  
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## INTRODUCTION

This technical memorandum assesses potential traffic and pedestrian impacts associated with amenities in the McAuliffe Park development. The exercise involved trip generation for proposed facility improvements under two alternatives as well as a “no action” alternative, assigning the trips to access points to the Park, and conducting intersection level of service analysis, and sight distance evaluation. Current AM and PM peak hour turning movement counts were collected at the main entrance into the Park, as well as at NE 116th Street and 98th Avenue NE, and at NE 116th Street and 120th Avenue NE, the two signalized intersections closest to the main entrance into the Park for roadway capacity analysis. Mitigation measures that address potential vehicle and pedestrian safety issues are also identified and discussed.

## EXISTING CONDITIONS

NE 116th Street and 108th Avenue NE is the main access into McAuliffe Park. NE 116th Avenue is a three-lane roadway with a center two-way-left-turn lane that becomes a left turn pocket at major intersections, and provides access to SR 405 which is located to the east of the Park site. 108th Avenue NE is a collector roadway inside the Park property. Views of the main entrance into McAuliffe Park are shown in the pictures below.

Unlike 108th Avenue NE, there are sidewalks and dedicated bike lanes on either side of NE 116th Street, as well as a mid-block pedestrian crosswalk across the west leg of NE 116th Street, just west of a transit bus zone. Posted speed limit on NE 116th Street is 35 MPH, and 20 MPH when school children are present.

The closest signalized intersections to the main Park entrance are located to the west at NE 116th Street and 98th Avenue NE, and to the east at NE 116th Street and 120th Avenue NE.

## PROPOSED PARK AMENITIES AND IMPROVEMENT

Refer to proposed master plan on page 5 of the report which shows the maximum level of development being considered for the McAuliffe Park development. Two alternatives are being considered: Alternative “A” would have the maximum level of development, Alternative “B” would be scaled back without cafe/caterer or daycare, and Alternative “C” would be “no action”.

In alternative A & B, there would be a new covered pavilion in the gravel area east of the new barn, as well as low display/equipment sheds for some of the historic equipment, and a screen/noise barrier for the neighbors.

The farm area would be extended to the north to add lawn/gardens closer to the new pavilion and barn.

The flexible event area would capitalize on the fantastic view which would be open with a low planted edge to offer separation at event times.

The farm would be enlivened with more gardeners, perhaps a farmer, small animals, and interpretation of the Langdon/Johnson/McAuliffe stories. The barn would be structurally improved.

The garage is shown with the cafe/catering improvements, but would be downscaled or eliminated in alternative B.

Parking at the nursery area is shown fully developed, but this would also be scaled back in alternative “B”, such that the M&O facility could move into the garage in lieu of the cafe/catering. A daycare or school is proposed in the SW corner house, but with only a small parking area, except along 108th Avenue NE. The “no action” alternative “C” might include

**Table 1: Composition of Proposed Alternatives**

FACILITIES	ALTERNATIVE "A"	ALTERNATIVE "B"	ALTERNATIVE "C"
New covered pavilion in gravel area east of the new barn	R	R	
Low display/equipment sheds for some of the historic equipment including screen/noise barrier for the neighbors	R	R	
Garage with cafe/catering improvements (Entry Area)	R		
Fully developed parking at Nursery Area	R		
Daycare or School at the West Play Area	R		
Trails and Signage	R	R	R

**PARK USES AND EVENTS**

Uses of the Park would include both passive and active activities, with a variety of events from weddings and social gatherings to business meetings and restaurant. Special events may include Cider Pressing and Harvest festivals.

It is anticipated that a private contractor would manage and operate events at McAuliffe Park, similar to the City of Bellevue’s arrangement to operate the Robinswood Park. The private contractor may have business office on site and will manage all activities including parking associated with special events such as weddings and business meetings. The current layout of proposed amenities at the Park shows far enough separation between the West Play Area which would house a Day Care/small school, and the Flexible Space to the north where special events would take place. Each of these areas has ample parking adjacent to it, and with the facility being managed by a private contractor, it is anticipated that events will be scheduled to optimize but not exceed available parking capacities.

High parking demand activities such as weddings would typically be held on weekends. It is anticipated that there would be not more than two weddings per day on Saturdays and Sundays. Overall, it is anticipated that internal parking capacity would be adequate for scheduled special events. Offsite parking can always be explored if Park amenities are expanded or more competing simultaneous uses are allowed to take place.

**TRIP GENERATION**

In order to quantify traffic impacts associated with the McAuliffe Park development, it is necessary to identify a primary characteristic of each amenity or parking demand, which is in turn used to estimate potential trips into the Park. Characteristics of proposed amenities and parking demand are presented in Tables 2 and 3.

**Table 2: Characteristics of Proposed Amenities**

AMENITY	CHARACTERISTICS
Shared Parking (Main Parking at Maintenance Facility)	100 spaces
House and Gardens	(Can accommodate) 150 people
Garage	3,500 s.f.

Restaurant (Entry Area/Flexible Space)	60-70 table (will use 100 spaces at the Pkg & Maint. Area)
New Barn	3,000 s.f. (will use 100 spaces at the Pkg & Maint. Area)
Johnson Historic House	18 parking spaces
West Play Area	12 parking spaces

**Table 3: Estimated Parking Space Demand for Trip Generation**

AMENITY	ALTERNATIVE "A"	ALTERNATIVE "B"	ALTERNATIVE "C"
House & Gardens, Flexible Space	100	75	0
Entry Area	4	4	0
Johnson Historic House	18	18	0
West Play Area (Daycare or school)	12	12	0
Trails and Signage	0	0	24

Based on proposed amenities in the McAuliffe Park development, it is estimated that Alternative "B" will require about 79% of the parking demand of alternative "A". It is anticipated that under optimum use, alternative "A" would require 134 parking spaces, whereas alternative "B" will require 109 parking spaces. The operational level of service of each major alternative is presented in Table 4.

#### TRAFFIC ANALYSIS

Existing (2005) AM and PM peak hour level of service (LOS) analysis results are presented in Table 4. The analysis results show that during the commuter peak travel period, existing signalized intersections on NE 116th Street at 98th Avenue NE and at 120th Avenue NE operate in a stop-and-go fashion at LOS F, and an average vehicle through either of the intersections experience delay in excess of 60 seconds per cycle during the AM peak period. The congestion situation does not get better in the PM peak period either, as vehicles going through the 120th Avenue NE intersection continue to experience significant delays. Traffic conditions at NE 116th Avenue and 98th Avenue NE intersection are slightly better, but at capacity, LOS E, during the PM peak period.

Current traffic operations at the main entrance to the Park at NE 116th Street and 108th Avenue NE are acceptable, albeit slight difficulty in finding adequate gaps in traffic on NE 116th Street in the morning and evening commuter hours. Special events that would generate the most traffic at the Park would occur on weekends, and outside the commuter peak travel periods. Level of service analysis results of existing commuter peak travel conditions and peak period of the Park facility are presented in Table 4.

**Table 4: Level of Service (LOS) Summary\***

INTERSECTION	EXISTING CONDITIONS	ALTERNATIVE "A"	ALTERNATIVE "B"
NE 116th Street at 98th Avenue NE	F (E)	B	B
NE 116th Street at 108th Avenue NE	A** (A***)	A	A
NE 116th Street at 120th Avenue NE	F (F)	B	B

A (A) = AM peak hour LOS (PM peak hour LOS)

\* The LOS results shown for existing conditions are for the weekday commuter peak period, which is different and does not coincide with the peak period of anticipated special events at the Park, which will occur over the weekend. The LOS results shown for the Alternative "A" and "B" are the expected intersection LOS due to activities at the Park.

\*\*Intersection is unsignalized. LOS for NE 116th Street, a principal arterial with highest traffic volumes is A for both EB and WB approaches. NB and SB approaches on 108th Avenue NE operate at LOS C.

\*\*\*NB and SB approach traffic from 108th Avenue NE experience significant delay in entering the traffic stream on NE 116th Street during the PM peak hour, where the average approach delay per vehicle exceeds 51 seconds.

The analysis results in Table 4 show that the levels of service under alternative “A” and “B” are essentially the same at the upstream and downstream signalized intersections to the main Park entrance, and satisfactory at the main Park entrance. This means that the difference in trip generation and parking demand for alternative “A” and “B” are not large enough to reveal a significant change in roadway capacity impacts on NE 116th Street.

## ANALYSIS SUMMARY

The peak traffic period of the McAuliffe Park development which would occur over weekends, does not coincide with the peak traffic period on NE 116th Street which occurs during the morning and evening commute periods on weekdays when people leave from/to home and work. Also, during weekends, westbound and eastbound traffic volumes on NE 116th Street are substantially reduced. As a result, drivers exiting the main entrance to the Park would have ample opportunities to enter the traffic stream on NE 116th Street. The levels of current congestion on NE 116th Street during the weekday are not expected to occur on weekends with the McAuliffe Park development.

Suggested improvements at the main entrance to the Park to enhance traffic operations and pedestrian safety on weekends during special events, are described in the next section.

## MITIGATION FOR POTENTIAL TRAFFIC AND PEDESTRIAN IMPACTS

Even though weddings and special events at the Park would be managed and scheduled to minimize traffic congestion at the main entrance to the Park, a number of improvements are being proposed to enhance traffic operations and pedestrian safety in the vicinity of the Park.

1. Increase eastbound left turn storage on NE 116th Street west of 108th Avenue NE by relocating existing raised median island to the west by at least 100'. Reconfigure and re-stripe the two-way-left-turn-lane to accommodate the left turn storage lane. This will free up the eastbound through lane for traffic during the weekend peak event periods and reduce congestion at the Park entrance.
2. Relocate existing crosswalk (and sign) located on NE 116th Street west of 108th Avenue NE, to the intersection. Existing bus zone on the far side of the intersection can remain. Relocating the crosswalk to the intersection will allow pedestrians to safely cross NE 116th Street, and also to continue to have access to the nearby bus zone. The installation of In-Pavement Flashing Lights at the crosswalk would enhance pedestrian safety at the intersection.
3. Relocate existing street light pole located in the median island on the west leg of NE 116th Street to the intersection. The street light pole appears to have been installed to provide lighting at the crosswalk. Evaluate area street lighting and redesign as needed to provide adequate lighting at the main entrance to the Park.
4. Considering the absence of a traffic signal at the main entrance to the Park and inadequate gaps in the traffic stream on NE 116th Street, it is difficult for southbound vehicles from the Park to enter the traffic stream on NE 116th Avenue especially during the morning and evening peak periods. This difficulty is not expected to occur during special events on weekends when traffic volume on NE 116th Street is low. A uniformed officer could be used to control traffic at the main entrance to the Park during the unlikely event of prolonged congestion during special events on weekends.
5. Even though the close proximity of the main Park entrance and the access driveway by the Johnson Historic House would limit concurrent full use (normally a minimum driveway separation of 150' is desired to minimize queue problems), the secondary access could be restricted to “right-in, right-out” to alleviate congestion at the main entrance into the Park during full use. Westbound vehicles on NE 116th Street from SR 405 could access the Park via the driveway, whereas eastbound left turn traffic could access

the Park via the main entrance. Details of lane configuration at the internal intersection point could be refined during design.

## **NEXT STEPS**

The City of Kirkland has an established process that project sponsors have to follow in preparing traffic analysis for development in Kirkland regardless of the type of project sponsor, i.e., public or private. This technical memo assessed potential traffic and pedestrian impacts associated with the proposed McAuliffe Park development. After the selection of a preferred alternative (set of improvements), traffic information associated with the selected alternative will be submitted to the City with an application for traffic concurrency.

All new developments in Kirkland must pass the concurrency test before making an application for SEPA review, land use permits and building permits.

Once the project passes concurrency, then the City will issue a concurrency test notice. The City would provide a detailed trip distribution from its traffic model for use in calculating the project's proportional share of road impact fees, and any specific on-site improvement that might be required. A complete development package would then have to be submitted for permits.