

# MEMORANDUM



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TO:	6165347 Manitoba Inc.	ACTION BY:	
FROM:	Andres Baez	FOR INFO OF:	
PLEASE RESPOND BY:		PROJECT No.:	3140364.00
RE:	Parker Lands Development Preliminary Traffic Review	DATE:	December 7, 2017

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Z:\PROJ\3140364\06 PRE-DESIGN\SECONDARY PLAN APPLICATION\FINAL MEMO SUBMITTED TO THE CLIENT APR 7 2017\PARKER LANDS TRAFFIC MEMO SECONDARY APPLICATION REV\_DEC 7\_2017 FINAL.DOCX

## **Background**

The purpose of this preliminary traffic review was to evaluate proposed development units and configuration considering a trip generation that allows reasonable accommodation through the proposed road network for future development of the Parker Lands. It examines the preferred density and land use and determines the maximum development potential of the site from the perspective of traffic capacity at surrounding intersections within the study road network.

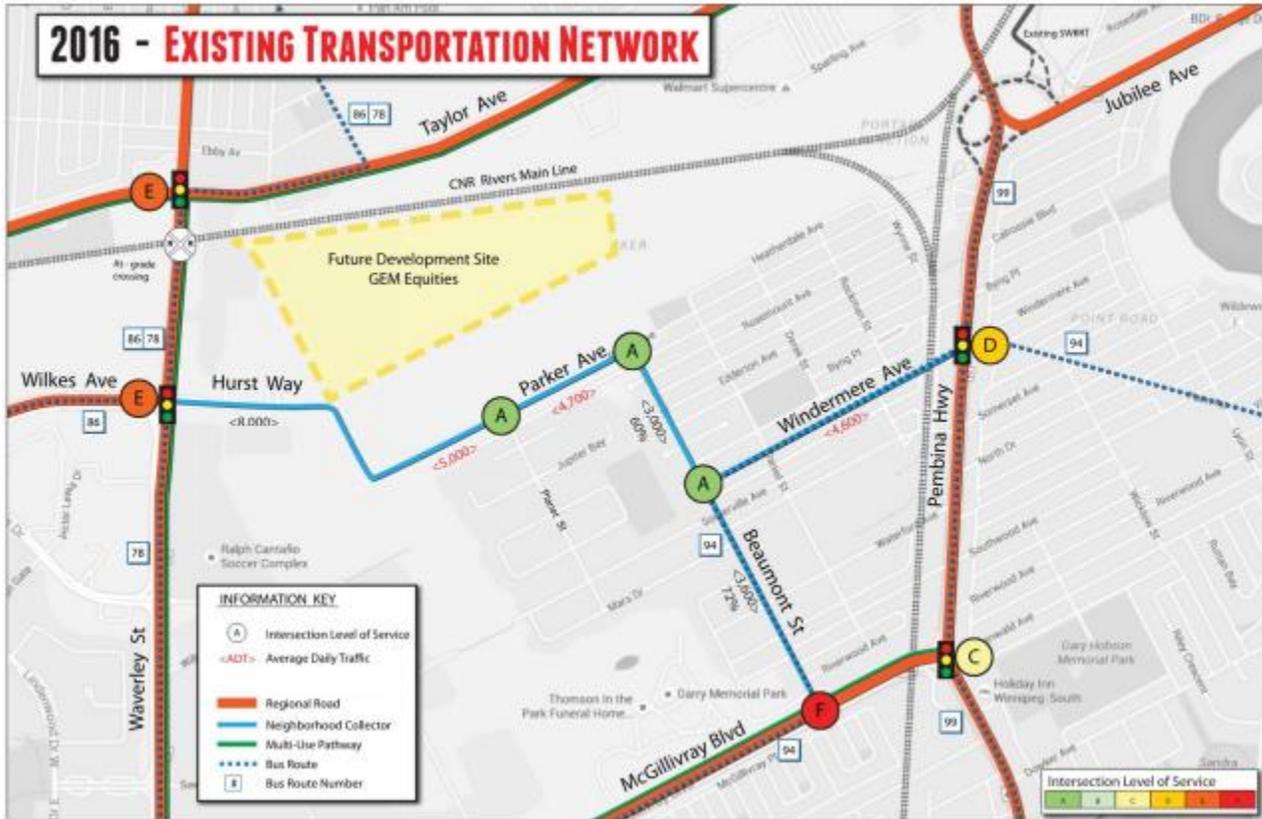
The access options available to the site are constrained by the CNR Rivers Main Line to the north and east, future storm retention basin to the east, and future Waverley Street Underpass to the west. Network changes are anticipated to the existing Hurst Way and Parker Avenue in order to provide access to the proposed development as well as to provide better integration with the planned Southwest Rapid Transit (SWRT) corridor and associated infrastructure in the neighborhood.

The intent is to provide development road access to the future realigned Hurst Way which will enable further connectivity to/from major transportation corridors in the study area including Waverley Street, Pembina Highway, McGillivray Boulevard, etc. **Figure 1** shows the existing road network, road segment ADTs and intersection capacity Level of Service (ICU LOS<sup>1</sup>) for key intersections within the study area.

### **Figure 1. Existing Transportation Network**

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<sup>1</sup> Synchro's ICU method is a recommended tool for measuring overall intersection capacity. It gives insights on how an intersection is functioning, and how much extra capacity is available to handle traffic fluctuations and incidents. ICU LOS shown on Figure 1 should not be confused with delay-based LOS such as the HCM. Although they are interrelated, they measure different objectives.



### **2020 Pre-Development Conditions**

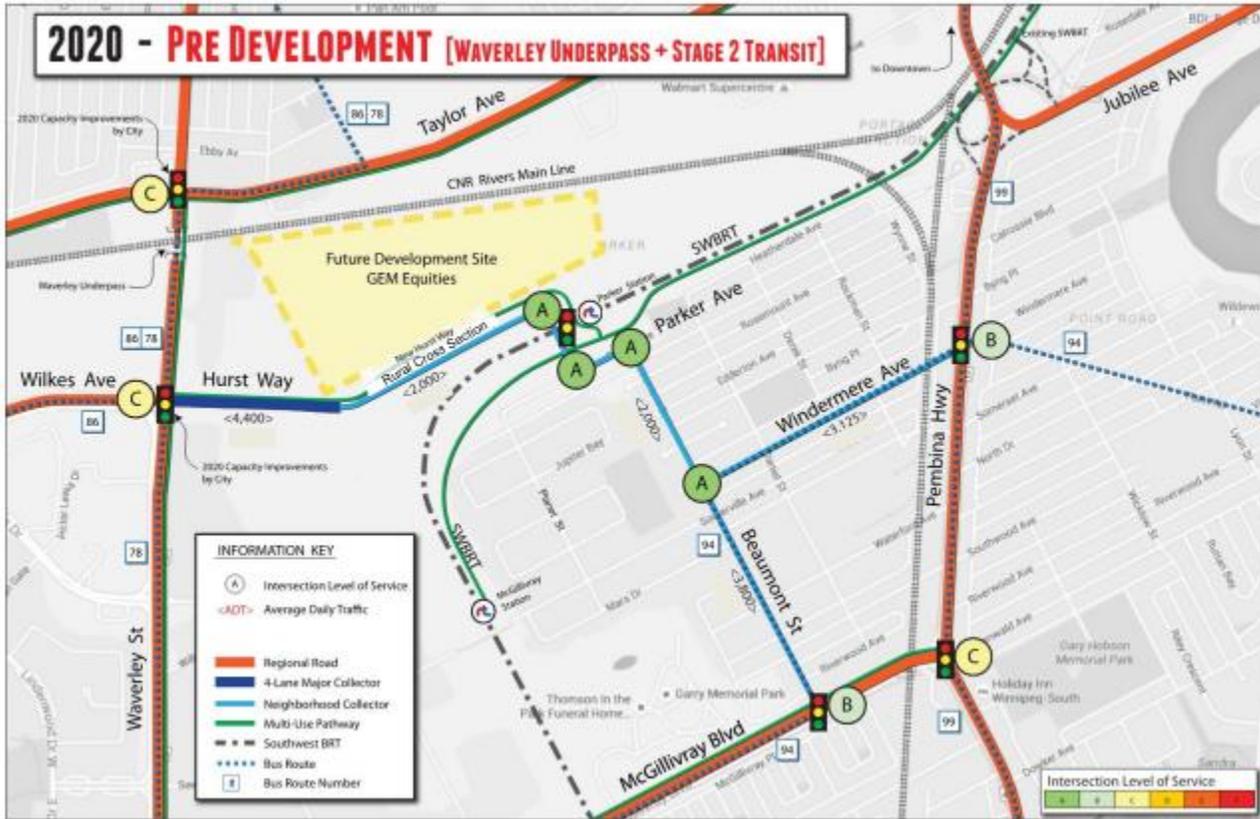
By the year 2020, after the implementation of the Waverley Underpass and the opening of SWBRT Transitway, it is anticipated that traffic pattern in the area will significantly change. In essence, expected 2020 improvements in the area, are expected to bring down automobile trips on neighborhood roads as a result of declining shortcutting and new rapid transit options for residents:

- **Reduction of shortcutting traffic through the neighbourhood.** Traffic shortcutting through the Beaumont neighbourhood between Waverley Street and Pembina Highway is a known issue for residents and the City. Its root cause are mainly attributed to overcapacity conditions at the intersection of Waverley Street and Taylor Avenue, as well as traffic disruptions and long queues at the existing at-grade CNR rail crossing at Waverley Street caused by heavy train frequent operations. After the Waverley Underpass improvement is completed, it is anticipated that current shortcutting traffic will stay on main arterial roads (Waverley Street and Pembina Highway) and away from neighbourhood roads (Hurst Way, Parker Avenue, Beaumont Street and Windermere Avenue).
- **Anticipated growth of transit trips after the SWBRT** thereby reducing automobile trips after the SWRT begins operation. A 25% shift of background trips from cars to transit for existing residential units within 400 m walking distance of the future Parker station, was agreed with Winnipeg Transit and Transportation Planning.

As shown in Figure 2, the City will realigned a section of Hurst Way to maintained existing connectivity and to accommodate anticipated feeder bus routes to connect to the Parker SWBRT station. It is understood, the realigned new Hurst Way will be built to a Rural Cross Section.

Figure 2 illustrates City committed road network upgrades anticipated to be open by year 2020. Underlined changes are also described below. These are considered the base road network conditions which the future proposed Development will be built upon.

Figure 2. 2020 Pre-Development Road Network



- Hurst Way Realignment, approximately 100 m north of and parallel to the planned SWRT (Stage 2) alignment, extended eastward till it intersects the new extension of Georgina Street. It is understood, the section of the realigned Hurst Way abutting the development is to be constructed as a Two-Lane Undivided Rural Roadway (24m ROW) by the City.
- Parker Avenue to be closed west of Planet Street.
- Capacity improvements at Waverley Street & Taylor Avenue intersection include:
  - Westbound approach to be reconfigured to dual-left turn lanes, 1 through lanes and 1 shared through and right turn lane.
  - Westbound left turn signal phase to be setup as protected-only phase for dual left turns.
- Capacity improvements at Waverley Street & Hurst Way intersection include:
  - Additional left turn lane (single to dual turn) on eastbound approach.
  - Eastbound left turn signal phase to be protected-only phase for dual left turns;
  - Additional through lane to be added to northbound through and southbound through movements.

Capacity improvements above, are identified in the latest draft concept plans available at the Waverley Underpass Project City Website.

## **Methodology**

For this preliminary traffic review, analyses were conducted using the following methodology:

1. Establish 2020 pre-development background traffic volumes of the existing road network.
  - Collect and/or conduct turning movement counts at key intersections, including:
    - Waverley Street & Taylor Avenue
    - Waverley Street & Wilkes Avenue / Hurst Way
    - Pembina Highway & Windermere Avenue
    - Pembina Highway & McGillivray Boulevard
    - Beaumont Street & McGillivray Boulevard
    - Windermere Avenue & Beaumont Street
    - Beaumont Street & Parker Avenue
  - Grow existing weekday AM and PM peak hour volumes at 1.00% annually from 2016 to 2020 and 2024.
  - Adjust background traffic due to anticipated pre-development City's committed network projects.
2. Determine trip generation from the future proposed Development.
  - It is understood that the construction of the proposed development is planned in two phases:
    - **Phase 1 (2020)**; Phase one aim construction of most single family homes towards the westernmost area of the site. Simultaneously, most townhouses will be constructed within the central area of the site in near proximity to the future Parker Station.
    - **Phase 2 (2024)**. Phase two aim construction of the remaining townhouses as well as all high-density and commercial units towards the easternmost area of the site in close proximity to the future Parker Station.
  - Conduct a trip generation analysis based on the methods and comparable trip generation rates published by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 8<sup>th</sup> Edition. The ITE Trip Generation Manual is a compilation of traffic data from existing developments throughout North America. It is the industry's prime reference for estimating vehicle trips generated by a proposed development. Trip generation rates used were also consulted and confirmed with the City's Transportation Department.
  - Estimate mode split for transit trips due to the operation of the SWBRT Transitway and the Parker Station in the neighbourhood. It is anticipated that a proportion of existing and future automobile trips generated from the new development will be shifted to public transit. The City's Transportation Planning Department in consultation with Winnipeg Transit have recommended to apply a 25% transit mode split to those units within 400 m radius of the station, and a 10% transit mode split beyond this point for remainder of the development.

- Conduct trip distribution and determine trip directional split percentages in accordance with the 2007 Winnipeg Area Travel Survey Results (WATS). Trip distribution patterns in the study area should be based on the number of trips entering and exiting the District 10 – Fort Garry North (where the site is located) from all other transportation analysis zones.
3. Determine traffic operation performance at the surrounding key intersections under future Post-Development scenarios for 2020 and 2024.
- Key analysis assumptions include:
    - Three road accesses (intersections) to/from the development are being proposed to be taken off of the realigned Hurst Way. The existing Hurst Way is expected to be realigned and constructed as part of the SWRT (Stage 2) project.
    - Proposed development accesses #1 and #2 (two westernmost access to the site) will be connected to Hurst Way at a 90 degree intersection with a stop controlled on the minor approach. These accesses will be separated approximately 150 m from each other.
    - Road access #3 (easternmost) will be built with development of Phase 2, connecting to the intersection of Georgina Street and Hurst Way at a 90 degree angle with a stop controlled on the minor approach so that Hurst Way traffic has the right-of-way.
    - It is understood, no significant pedestrian traffic is anticipated on Georgina Street as the majority of pedestrians to/from the Parker Station are expected to be directed either north to a proposed Station Plaza near the proposed development, or south via sidewalks on Beaumont Street, and Parker Avenue east-west multiuse trail adjacent to the road.
    - It is understood that Georgina Street will intersect the Transitway at-grade thus warranting a signalized intersection control at this location
4. Revise (limit) development density assumptions if the new site accesses and surrounding major intersections do not perform at an acceptable level with the trip generated from the proposed Development for 2020 and 2024 horizon year scenarios.

## **Summary of Findings**

1. Existing and Pre-development conditions
- a. Existing traffic shortcutting along neighbourhood roads is significant ranging from approximately 30% to 50% of current AM and PM peak hour traffic volumes within Beaumont neighbourhood.
  - b. Existing traffic shortcutting is mainly attributed to overcapacity conditions at the intersection of Waverley Street and Taylor Avenue as well as traffic disruptions and long queues at the existing at-grade CNR rail crossing at Waverley Street caused by heavy train frequent operations.
  - c. The Waverley Underpass project along with capacity improvements at both intersections of Waverley Street & Taylor Avenue and Waverley Street & Hurst Way are anticipated to be completed by spring 2020. Is expected that neighborhood traffic shortcutting will be significantly reduced as a result.

- d. As part of the Waverley underpass and SWBRT projects, it is understood that the new realigned Hurst Way will be rebuilt to a rural cross-section standard through the development area and transitioned to a Residential Major Collector standard cross-section as it ties to the Waverley intersection. Prevalent adjacent land uses will be open space (incl. Brenda Leipsic Dog Park) and utility right-of-ways with large set-backs from the road. It is assumed that no on-street parking will be allowed on shoulders, nor significant amount of pedestrian or cyclist are anticipated to use this section of Hurst Way.

## 2. Post-Development conditions

- a. Both, the realigned Hurst Way and Georgina Street are being constructed as a Two-lane Road cross-section that includes shoulders, channelized drainage (no curb and gutter) and no sidewalks. Based on the information available, forecasted traffic volumes and surrounding context, is understood that the Two-lane Road cross-section is appropriate for the current and future operational conditions of these two roads.
- b. Subject to signal timing optimizations, all intersections in the surrounding road network will be operating with acceptable delay-based Level-of-Service (D or better) and max volume/capacity ratio (0.90 or lower) under both 2020 and 2024 horizon years.
- c. The intersection of Pembina Highway & McGillivray Boulevard is expected to continue enduring capacity issues unrelated to this development. It is recommended the City continue monitoring this and other locations along the Pembina Highway corridor as part of a future access management evaluation of the entire corridor.
- d. Regarding the shortcutting issue and its potential elimination, we recommend the City to conduct a plate-survey after the year 2020 once all major regional improvements are in place, in order to confirm anticipated reductions in post-2020 shortcutting volumes.

## **Conclusion**

Based on the preliminary analysis conducted, it is concluded that the proposed development does not place a significant burden on existing and planned transportation networks in the study area. Provided implementation of identified regional network improvements and development mitigation measures, the forecasted traffic loads are expected to operate acceptably on existing and planned transportation network as per the City of Winnipeg standards.

Should you have any questions or comments concerning the contents of this report, please do not hesitate to contact the undersigned at 604 454 0402.



Sincerely,  
MORRISON HERSHFIELD LTD.

**ANDRES BAEZ, P.Eng., MUP**  
Transportation Planning Engineer

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