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FROM: Richard Hui
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SUBJECT: Clarification on Transportation Study Assumptions
Yonge and Bernard Key Development Area (KDA) Secondary Plan

During the November 1, 2017, Council Public Meeting, comments on the draft Yonge and Bernard Key Development Area (KDA) Secondary Plan were received from area residents and stakeholders. More specifically, there were many questions and comments related to the assumptions and information contained in the Yonge-Bernard KDA Transportation Study conducted by BA Group on behalf of the Town of Richmond Hill in support of the Secondary Plan. The purpose of this memorandum is to address and clarify some of the specific assumptions made in the Transportation Study.

1. Infrastructure upgrades assumptions: The Yonge-Bernard KDA Transportation Study has referenced and acknowledged transportation infrastructure improvements planned by York Region including those identified in the Region's 2016 Transportation Master Plan (TMP). The Region's Transportation Master Plan is a "needs-based" plan which identified infrastructure timing based on need rather than funding availability. Recognizing the uncertainty in timing for funding and construction of some of the Regional projects, the Yonge-Bernard KDA Transportation Study has not relied on infrastructure changes such as the Elgin Mills Road grade separation in their analysis for the KDA. Based on the Region's transportation infrastructure information and documented timetables in the Region's TMP, it can be expected that most of the area road network changes, including the Elgin Mills Road grade separation, will occur concurrently or be completed prior to the full build-out of the Yonge-Bernard KDA. The Transportation Study, conservatively, does not make an allowance for traffic diversions from the Yonge Street corridor resulting from the widenings of parallel arterial roads (e.g., Bayview Avenue, Leslie Street, or Bathurst Street), the Elgin Mills grade separation or a large general shift to transit travel in the greater area. Much of these infrastructure projects are planned in the Region's 10 Year Roads Capital Construction Program and/or funded.

With respect to the Elgin Mills Road grade separation, it is acknowledged that the project would benefit the traffic situation in the area. It should be noted that the Region has this project in their current Development Charges Bylaw and is also seeking Federal funding for it. The Town continues to work with the Region in advocating for this grade separation project to be in the Region's 10 Year Roads Capital Construction

Program. The Region's 10 Year Construction Program is reviewed and project priorities are evaluated annually.

2. **Existing traffic level assumptions:** Questions were raised regarding the volume to capacity (v/c) ratios at the Yonge/Elgin Mills intersection documented in the Town's 2015 Downtown Transportation and Parking Study versus the Yonge-Bernard KDA Transportation Study. A direct comparison cannot be drawn between the two reported analyses as one is a detailed analysis of individual turning movements at the Yonge Street/Elgin Mills Road signalized intersection and the other is a high-level, coarse assessment of the mid-block capacity along the segment of Yonge Street between Elgin Mills Road and Oxford Street. The 0.75 v/c ratio reported in the Yonge-Bernard KDA Transportation Study is for the individual southbound through movement of the Yonge Street / Elgin Mills Road intersection which considers existing signal timing splits and parameters, measured traffic volume characteristics, and a base saturation flow rate different than the mid-block capacity. The 1.02 v/c ratio reported in the Downtown Study is for the southbound midblock condition of Yonge Street between Elgin Mills Road and Oxford Street, with a conservative capacity assumption and contributing volumes from the turning movements (left, through, and rights) at the upstream Yonge/Elgin Mills intersection. For the above reasons a direct comparison cannot be made between the two reported analyses.
3. **Auto trip generation rates and assumptions:** Trip rates for residential use was based on a "First Principles" methodology while office use was based on a combination of First Principles and Institute of Transportation Engineers (ITE) Trip Generation Manual office employee trip rates. The retail trip generation was based on auto trip generation rates determined from surveys of existing commercial sites within the KDA, which are currently auto focused. The first principles approach was applied to reflect future residential and office traffic demands, and characteristics with synergies of uses and transit modal shares. The commercial trip generation rates, while reflective of existing travel characteristic, will likely decrease with time and transit oriented development. While the ITE Trip Generation Manual is a key reference resource for transportation studies, it is based on surveys and data mostly from the United States. The use of First Principles and local proxy site surveys are also reasonable methods for trip generation estimation.
4. **Public transit usage assumptions:** The overall existing transit mode share adopted for the study area is 11% while the auto driver mode share is 65%. This is based on the 2011 Transportation Tomorrow Survey (TTS). Future mode share assumptions for the residential travel are based on projections established in the 2005 Yonge Street Corridor Public Transit Improvements Environmental Assessment (EA). The future transit mode share is assumed to be 17% while the auto driver mode share is assumed to be 55%. The future overall transit share assumption for the Yonge-Bernard KDA of 17% is considered a conservative estimate in comparison to the 30% and 50% transit share targets set out in the Region and Town's Official Plans. The Transportation Study assumes a reduction in auto drivers from 65% to 55%, which is also considered reasonable.

Historically, from 1986 to 2011, the Transportation Tomorrow Survey (TTS) has shown the proportion of auto drivers to be constantly around 65%. The TTS reflects the current transit system with limited rapid transit service. The dedicated rapidways on Highway 7 were only opened in recent years, while the Yonge Street rapidway is still under construction. The TTS data is mostly reflective of conventional York Region Transit bus service provided over the years with modest transit modal share. The investment in rapid transit has lagged the pace of development and population growth. The expectation is that auto modal split will reduce while transit ridership will increase as density and the rapid transit network builds out.

The Yonge rapid transit corridor was comprehensively studied by the Region in the EA and Transportation Master Plan. The rapid transit network is a game changer that helps re-distribute travel modes. Over time,

the multi-million dollar investment will increase transit demand. In addition, there will be other network infrastructure such as transit priority lanes and active transportation facilities. The Yonge-Bernard KDA Transportation Study assumptions were more realistic in terms of how long this modal split transformation will take. The Official Plans actually have higher targets of 30% and 50% modal splits.

- 5. York Region's target volume to capacity ratios:** York Region staff have been fully engaged as part of the Technical Advisory Committee and are partners in developing the plan and transportation elements. They have reviewed the volume to capacity (v/c) ratios at the intersections and concur with the findings. York Region's Transportation Mobility Plan Guidelines are used as guidelines and acknowledge that higher levels of congestion in intensification areas may need to be considered to support Provincial, Regional, and local growth objectives, and change travel behaviours and patterns. The Guidelines state that:

Historically, York Region has identified a v/c ratio threshold of 0.85 for critical movements and intersections in urban areas, or 0.7 in rural areas (Region's Transportation Impact Study (TIS) Guideline for Land Development Applications August 2007). Since centres and corridors can experience greater levels of congestion, critical movement v/c ratios are not the only indicators that should be considered to address the impacts of the developments.

The Region's guidelines recognize that congestion levels may be higher than the traditional 0.85 thresholds in centres and corridors such as the Yonge-Bernard KDA in order to maximize investments on alternative modes of transportation such as rapid transit and Transportation Demand Management (TDM) initiatives. The Transportation Mobility Plan Guidelines were recently updated in November 2016 and this reflects the Region's current practice on transportation impact studies.

- 6. Traffic signal spacing:** York Region's desirable signal spacings are achieved where possible, however, within an urban centre, there are examples of existing intersections where spacings are less than the minimum 215m. York Region staff have been engaged in the network plans including the proposed new signal location north of Bernard Ave. The signal would be subject to approval by the Region in the long term. However, protecting for a signalized intersection would be prudent at this time to provide future opportunity for a finer grid network, accessibility for land uses and active transportation. Without identifying the potential signal, this could be precluded in the future. Only one new signal is being proposed on Yonge Street. The Region is currently in the process of reviewing and updating their Access Design Guidelines and the intersection signal spacing parameters are part of the review.
- 7. Bus lane crossing:** The Secondary Plan does propose a new road with a traffic signal on Yonge Street which will need to cross the rapid transit lanes. This new road will help create a finer grid network for the KDA and disperse the side street green times at each of the minor street approaches to Yonge Street. If York Region does approve the proposed signal and connection when it is warranted in the future then the Rapidway can be re-designed to accommodate the intersection without affecting the future stations. Closely spaced traffic signals can be coordinated to provide a green bandwidth for major traffic flows.
- 8. Key intersections excluded from study:** Generally, key intersections, from a transportation study perspective, are those most directly impacted by new potential site traffic, new road geometries, and/or intersections in the site vicinity that operate near capacity under existing conditions. Given this definition, the key intersections of the Yonge-Bernard KDA Transportation Study area include: Yonge Street / Elgin Mills Road, Yonge Street / Plaza Accesses, Yonge Street / Bernard Avenue, Elgin Mills Road / Yorkland Street, Yorkland Street / Justus Drive, Yorkland Street / Bernard Avenue, and Canyon Hill Avenue / Leyburn Avenue. As such, the adopted study area for the Transportation Study includes these immediate intersections and in addition, intersections making up a broader area than the Yonge-Bernard KDA

boundary. Intersections which are further removed from the KDA such as Yonge/Major Mackenzie or Elgin Mills/Bathurst will have less impact by the development traffic.

9. **Parking:** Parking will be dealt with on a site specific basis. Where possible, this would be expected to be provided underground. However, where there are issues with the underground water system or not feasible, there are provisions for some above ground structure parking. The amount of development permitted on sites will be directly correlated with providing an adequate supply of parking spaces in accordance with the zoning bylaw.
10. **Northwest corner (NW1) excluded from Study:** The Tertiary Plan area (Yonge MCD site) is generally located in the south west quadrant of the Yonge Street / Brookside Road intersection, shown as parcel NW1 in the Transportation Study. This area is included in the Yonge-Bernard KDA study area but is excluded from the Yonge-Bernard KDA boundary and as such, has not been included in the site traffic forecasts for the KDA proper. Instead, the Transportation Study considered development in the Tertiary Plan area as future background area development. Traffic volume generation and distribution for these lands were based on the forecasting methodologies outlined in the Transportation Study and assumptions for appropriate medium density development as contemplated in the Yonge-Bernard KDA Recommendations Report. Hence, the multi-modal trip generation forecasts for the Tertiary Plan area were included in the Yonge-Bernard KDA Transportation Study.
11. **Suggested infrastructure improvements:** The Residents Group representatives have suggested the following list of infrastructure improvements for consideration by the Region and/or Town:
 - i) **Add car lanes on Yonge Street from 19th Ave to Elgin Mills** – Since Yonge Street is under the jurisdiction of York Region, they will be the approving authority on any infrastructure improvements along this arterial. It should be noted that widening Yonge Street for general purpose lanes (i.e., for cars) would be counter to the Region's policies on the Yonge corridor and all the investment being made on rapid transit. Town staff suggest that if there was an opportunity to widen at the approach to the intersections such as at Yonge/Elgin Mills for additional turn lanes to improve the intersection operations then it would be worthwhile pursuing. However, a full road widening for two additional lanes on Yonge Street between 19th Ave and Elgin Mills Road is difficult.
 - ii) **Widen Elgin Mills from Newkirk Road to Bathurst** - The stretch of Elgin Mills from Bathurst to Yonge is already scheduled for widening from the existing 3 lanes to 4 lanes in the Region's 10 year construction program. An Environmental Assessment has been completed. The portion of Elgin Mills from Yonge Street to Newkirk Road is already 4 lanes. Additional widening would be a throwaway cost when the grade separation is constructed.
 - iii) **Widen Yorkland street from Silverwood to Elgin Mills** - The Town will be updating its Transportation Master Plan next year and can review the opportunity to improve Yorkland including the additional storage capacity for the southbound left turns at Elgin Mills and possibly a centre left turn lane along Yorkland extending north.
 - iv) **Build a grade separation over the railway on Elgin Mills** – The Town is working closely with the Region to prioritize and seek funding for this project. Residents are encouraged to also advocate for the grade separation through York Region meetings and other transportation agencies.
 - v) **Remove street parking in the old town of Yonge Street** - it is acknowledged that Yonge Street through old town is congested and parking is already restricted during peak periods. Staff caution that removal of

on-street parking will be an issue with local businesses, however, it may be something that can be evaluated as part of the Town's Transportation Master Plan update.

- vi) **Increase bus routes** – York Region Transit reviews their service plans annually. With the Bernard transit terminal in the KDA already, it will provide greater opportunity to enhance transit service levels in the area. Other measures including TDM and better “first mile/last mile” enhancements will encourage ridership uptake.

Several of the suggested infrastructure improvements are already planned or supported by the Region and/or Town. The only exceptions which require further review and discussion are the Yonge Street road widening and the removal of on-street parking in the old town of Yonge Street.