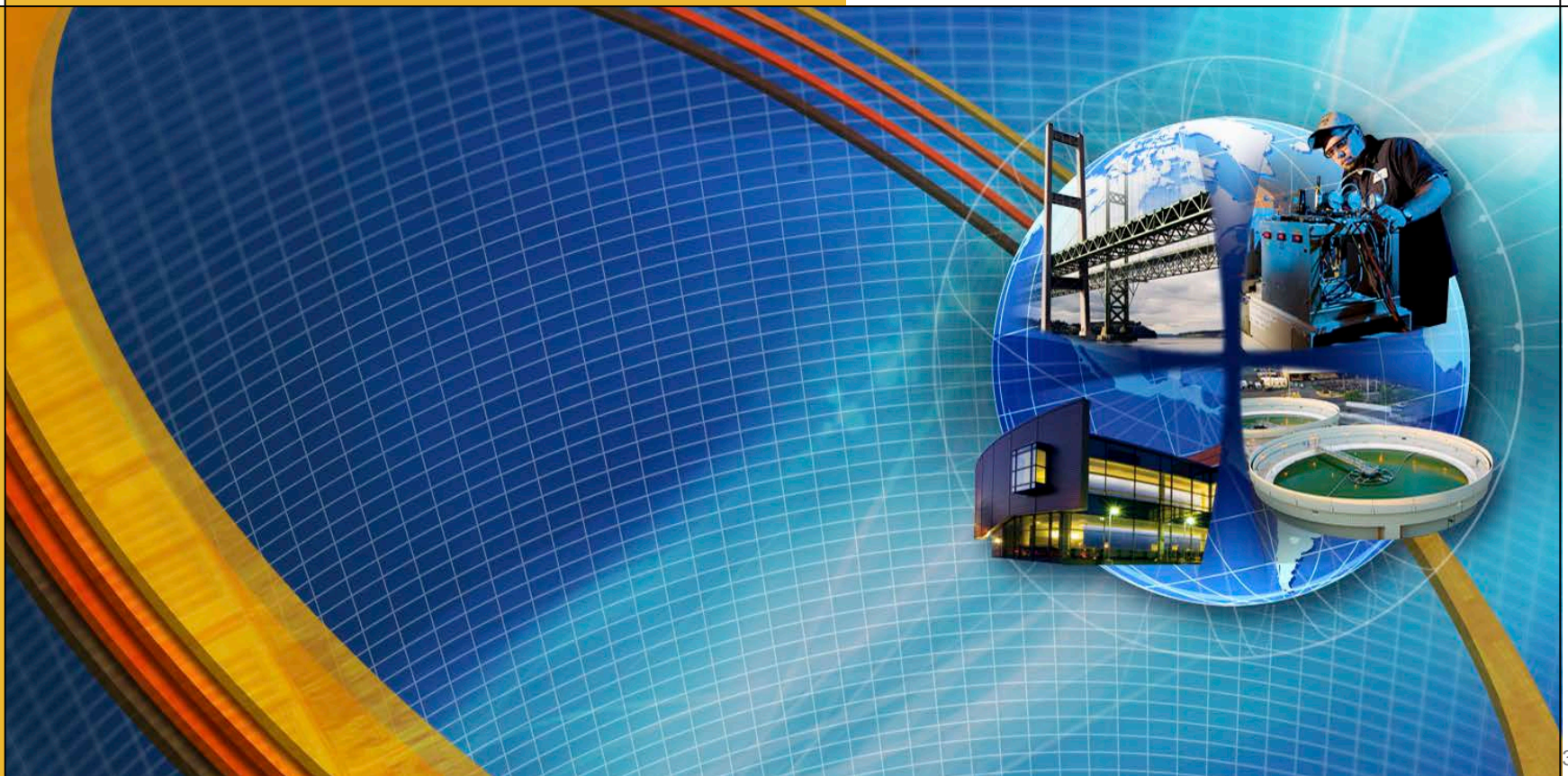


Traffic Study 2015 / 2016

Activities To-date





Activities To-date

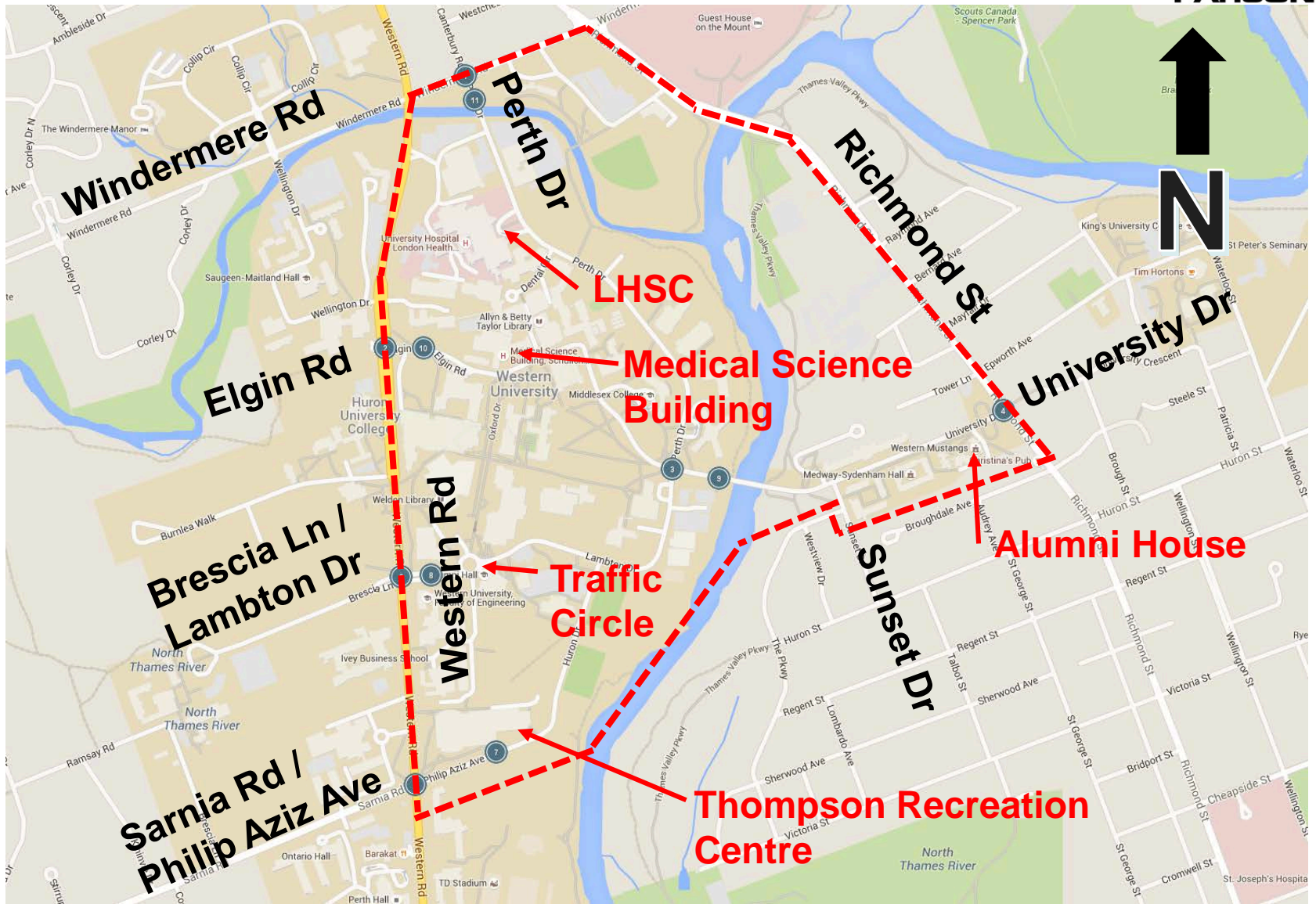
PARSONS

- Support Traffic / Rapid Transit Task Team
 - Inform
 - Advise
- Benchmark existing conditions
 - Characterize vehicular traffic
 - Quantify transit activity
- Characterize road use
 - “Linked trips” or “Kiss-n-Ride” activity
 - “Cut-through” activity
- Model future “Master Plan” scenarios
 - Reduction / elimination of motor vehicles within campus core



Campus Map

PARSONS





Data Collection

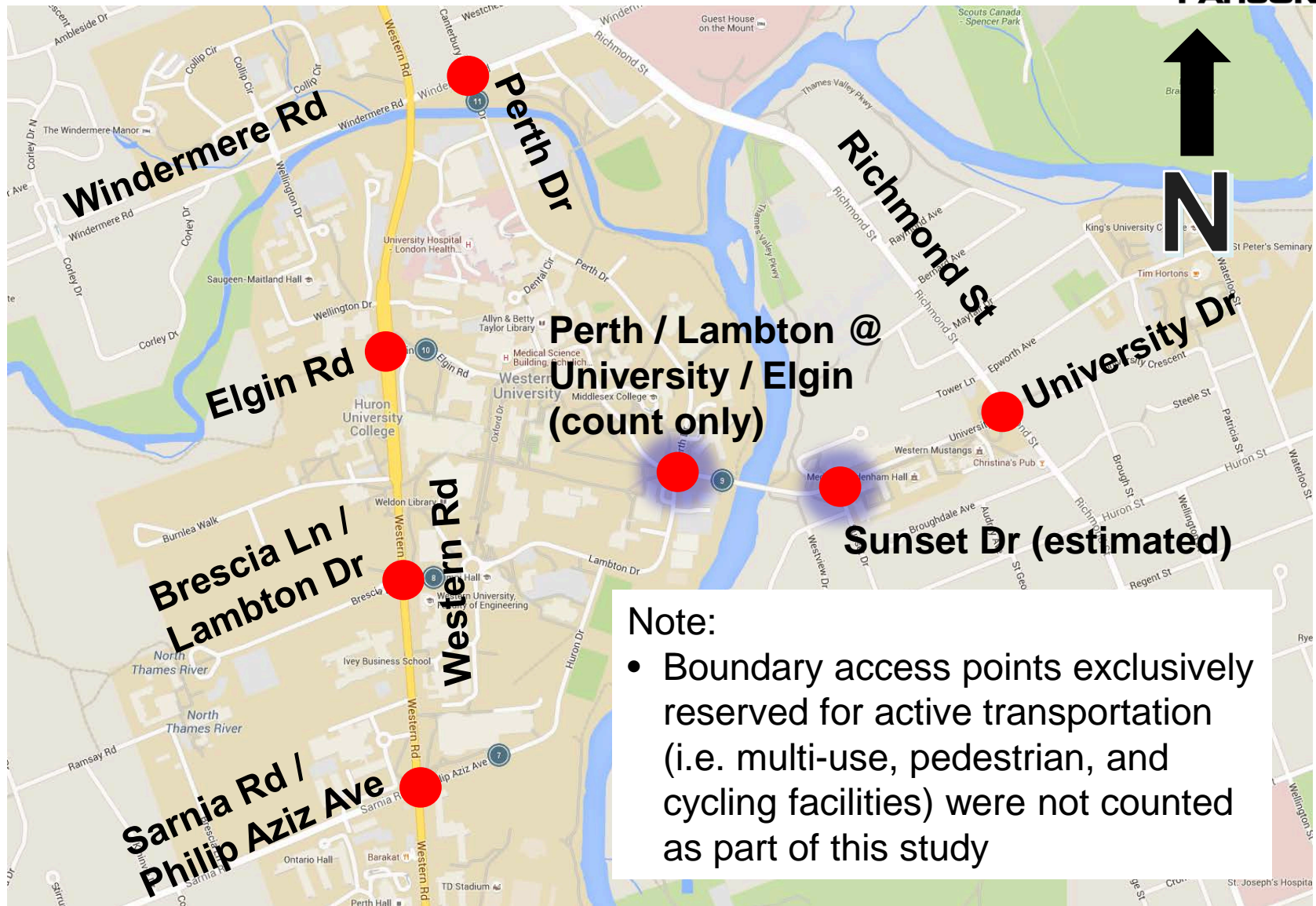
PARSONS

- **Five boundary intersections**
 - Western Road @ Sarnia Road/Philip Aziz Avenue;
 - Western Road @ Lambton Road;
 - Western Road @ Elgin Drive;
 - Windermere Road @ Perth Drive; and
 - Richmond Street @ University Drive.
- **Intersection Turning Movements –** summaries of all vehicles, cyclists, pedestrians entering intersection, and their departing route
- **Automated Vehicle Tracking -** movements of individual inbound and outbound vehicles with time-stamps



Data Collection Locations

PARSONS



Note:

- Boundary access points exclusively reserved for active transportation (i.e. multi-use, pedestrian, and cycling facilities) were not counted as part of this study



Data Collection Period

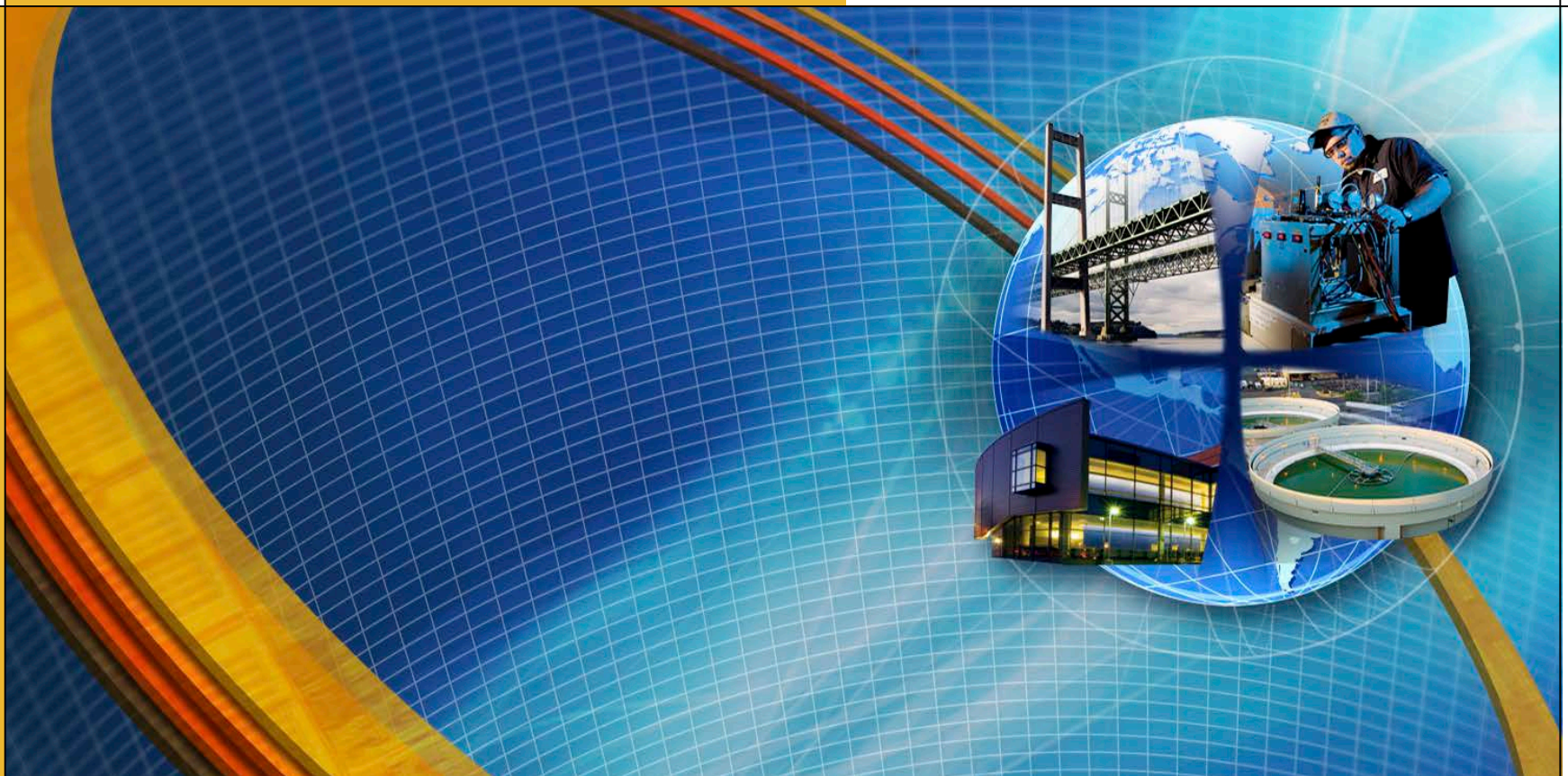
PARSONS

- Tuesday, December 2nd; Wednesday, December 3rd; and Tuesday, December 8th 2015
- Data from December 2nd and 3rd used to confirm December 8th was a “typical” day for traffic – just prior to exams
- Peak Periods
 - Morning Peak Period – 07:00-10:00
 - Noon Peak Period – 12:00-14:00 (2 PM)
 - Evening Peak Period – 15:00-19:00 (3 PM to 7 PM)
- Peak Hours
 - AM Peak Hour – 08:00-09:00
 - Noon Peak Hour – 12:00-13:00 (12 PM to 1 PM)
 - PM Peak Hour – 16:00-17:00 (4 PM to 5 PM)

FINDINGS

Turning Movement Studies

Inbound and Outbound Traffic

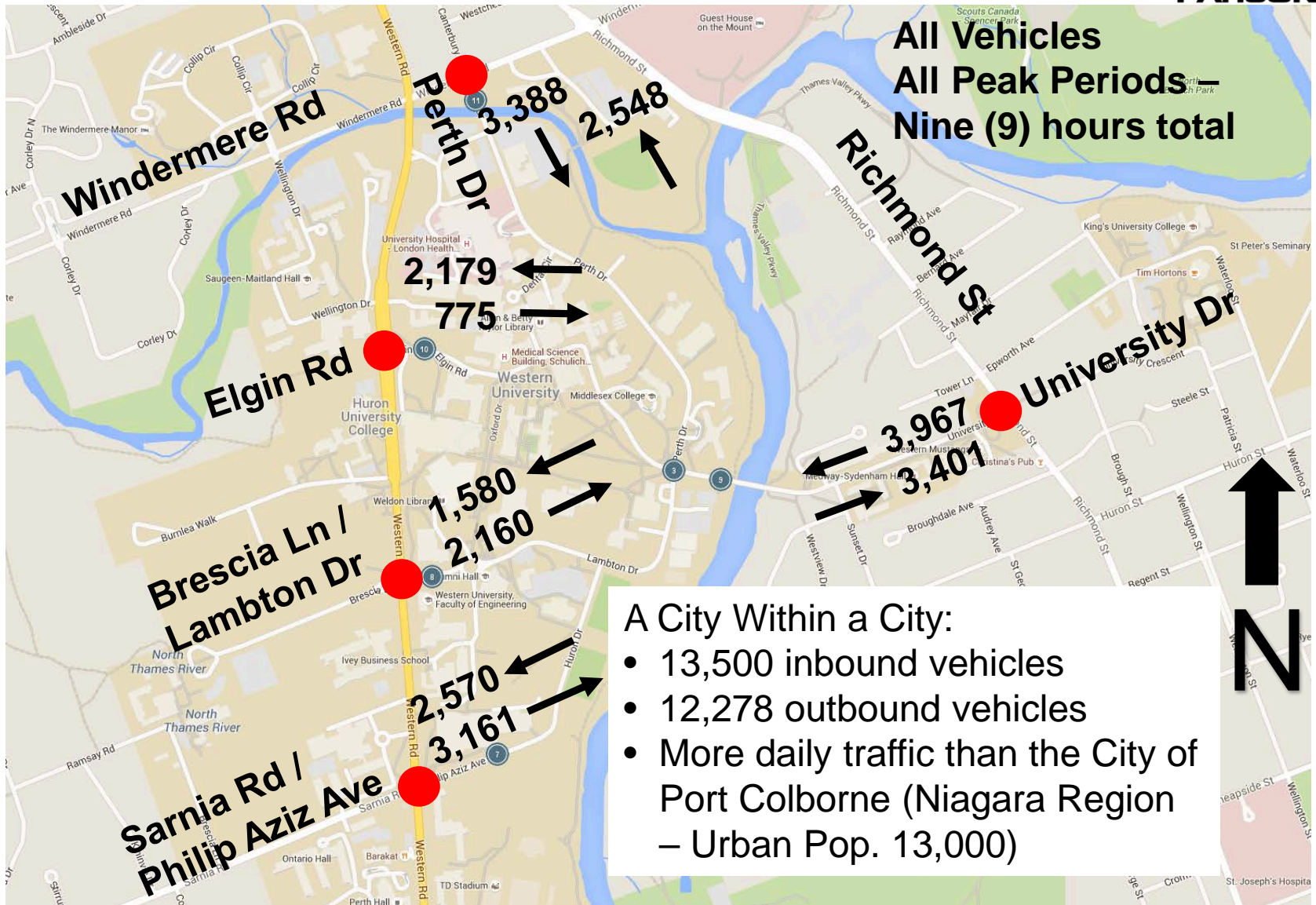




All Motor Vehicles

PARSONS

**All Vehicles
All Peak Periods –
Nine (9) hours total**



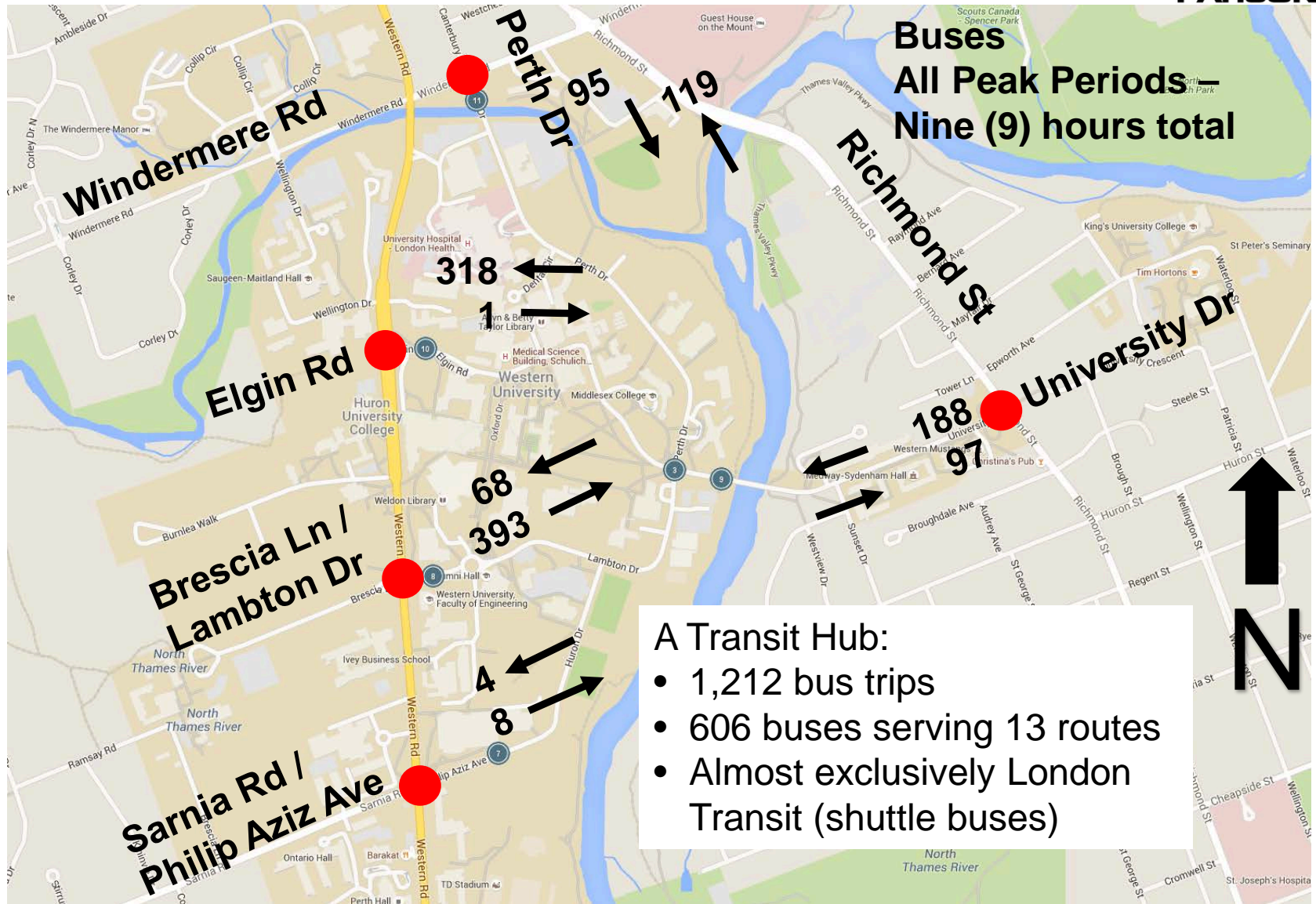
A City Within a City:

- 13,500 inbound vehicles
- 12,278 outbound vehicles
- More daily traffic than the City of Port Colborne (Niagara Region – Urban Pop. 13,000)



Buses and Trucks

PARSONS



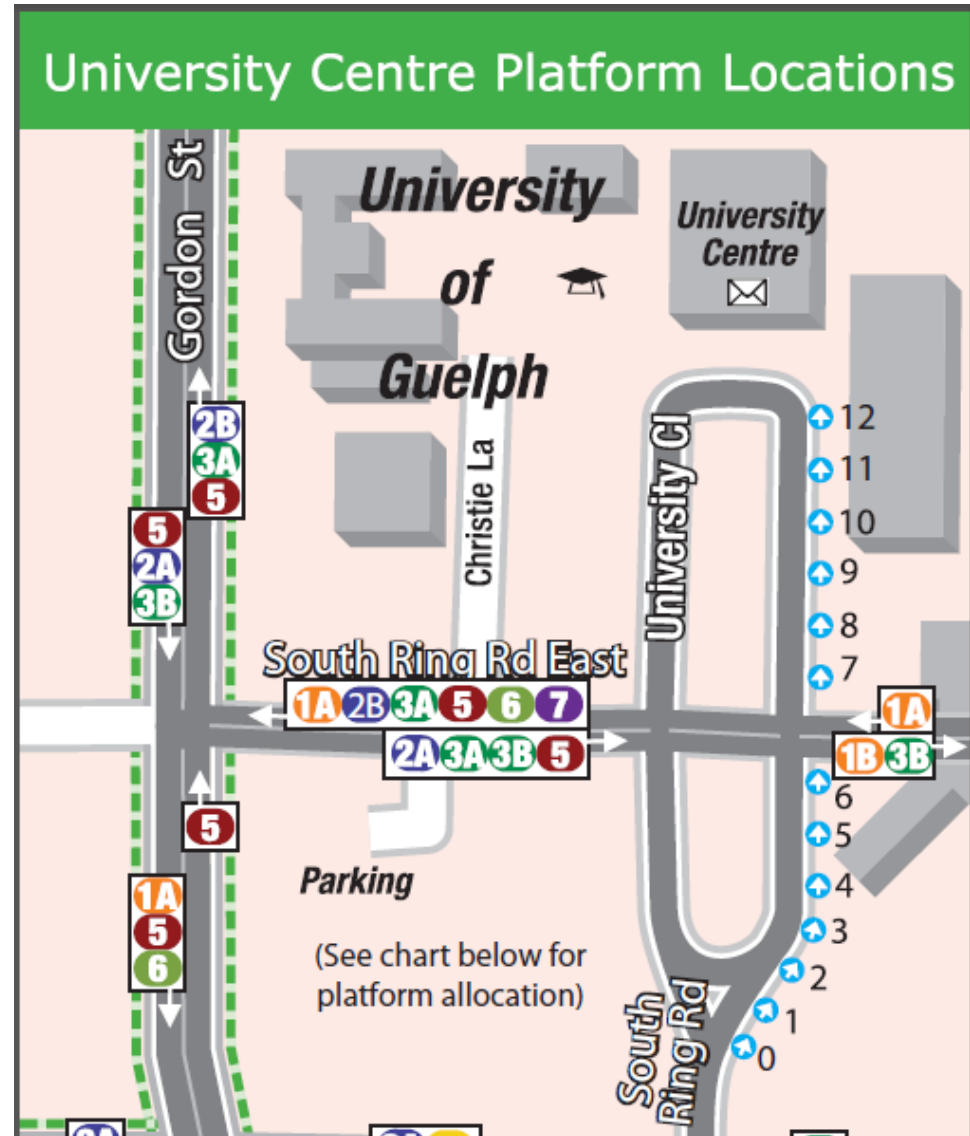


Context – City of Guelph / University

PARSONS

City of Guelph

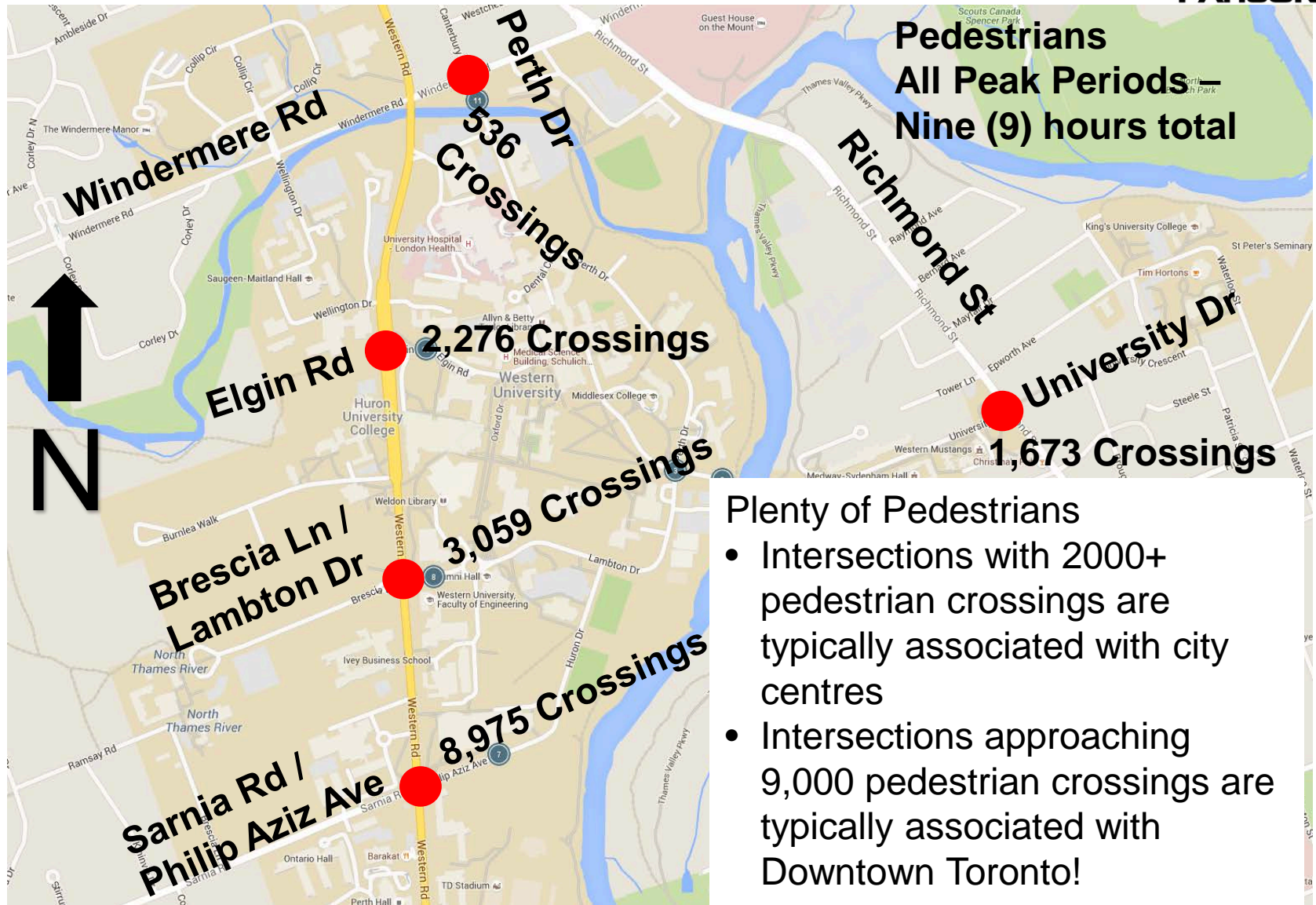
- Pop. 120,000 (2012)
- Total of 26 Transit Routes (plus GO)
- Guelph University Centre – Hub for 13 Routes
- Dedicated platforms and exclusive bus loop





Pedestrians and Cyclists

PARSONS



Pedestrians
All Peak Periods –
Nine (9) hours total

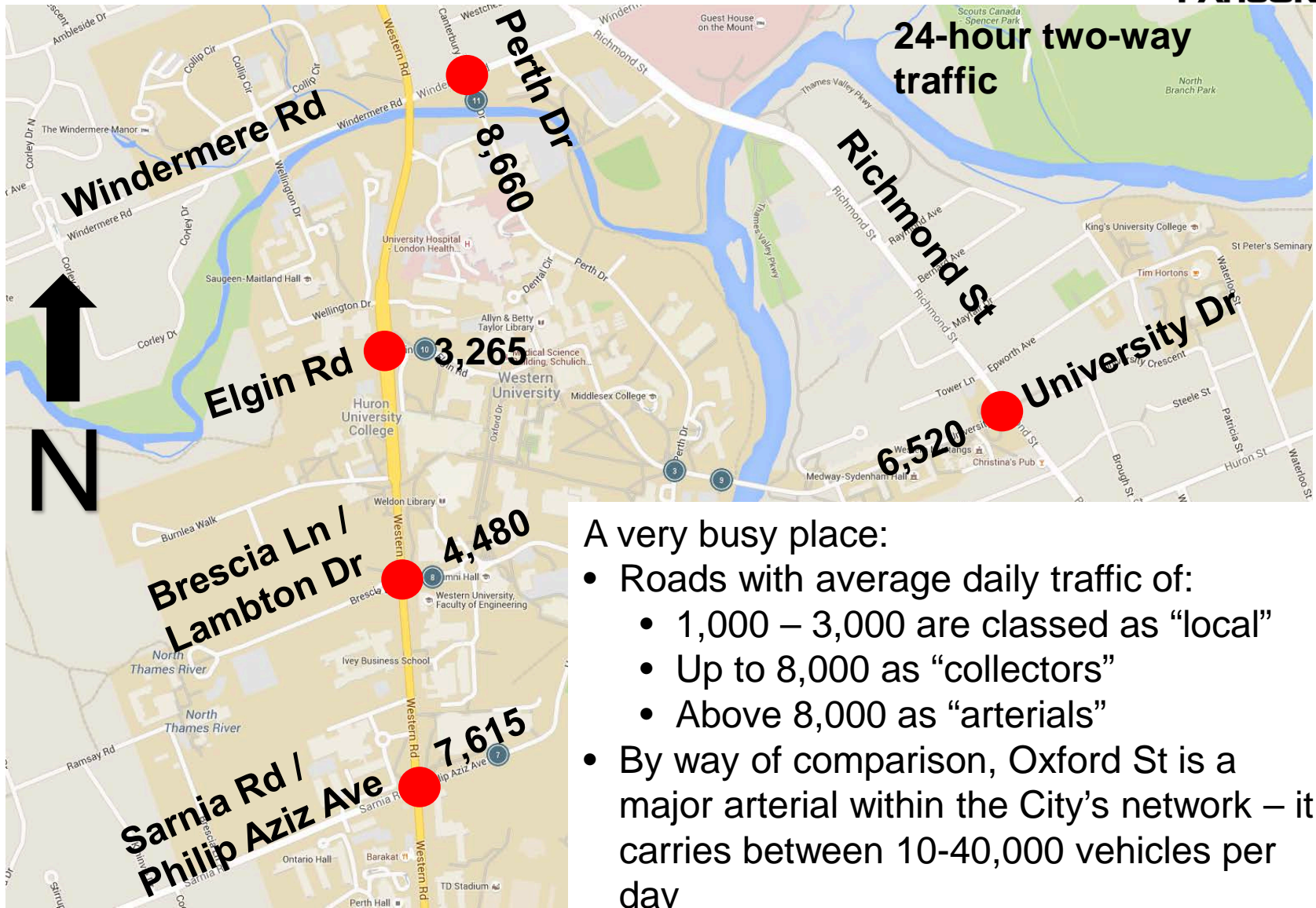
Plenty of Pedestrians

- Intersections with 2000+ pedestrian crossings are typically associated with city centres
- Intersections approaching 9,000 pedestrian crossings are typically associated with Downtown Toronto!



Average Daily Traffic (Road Sections)

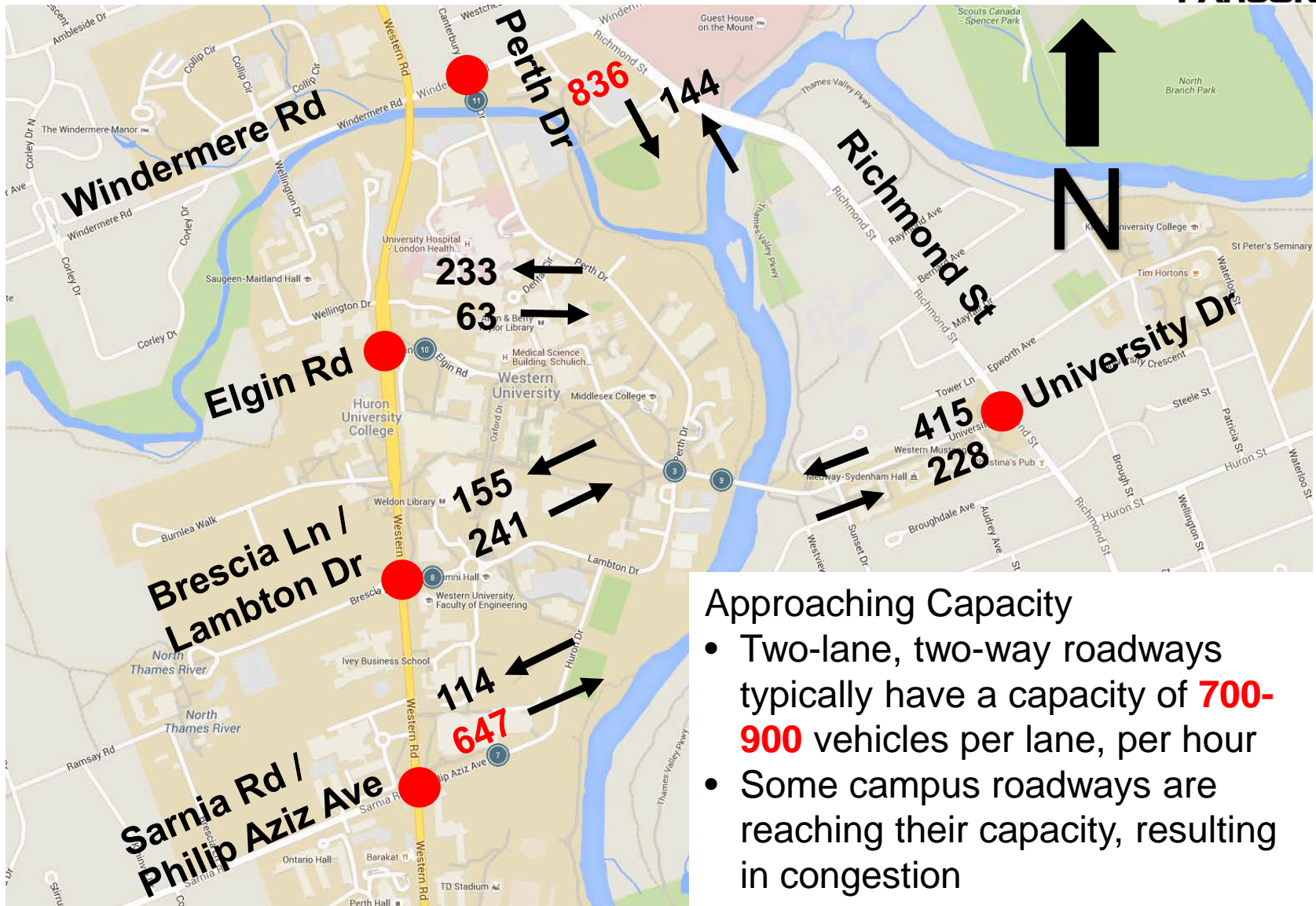
PARSONS





AM Peak Hour (08:00-09:00)

PARSONS



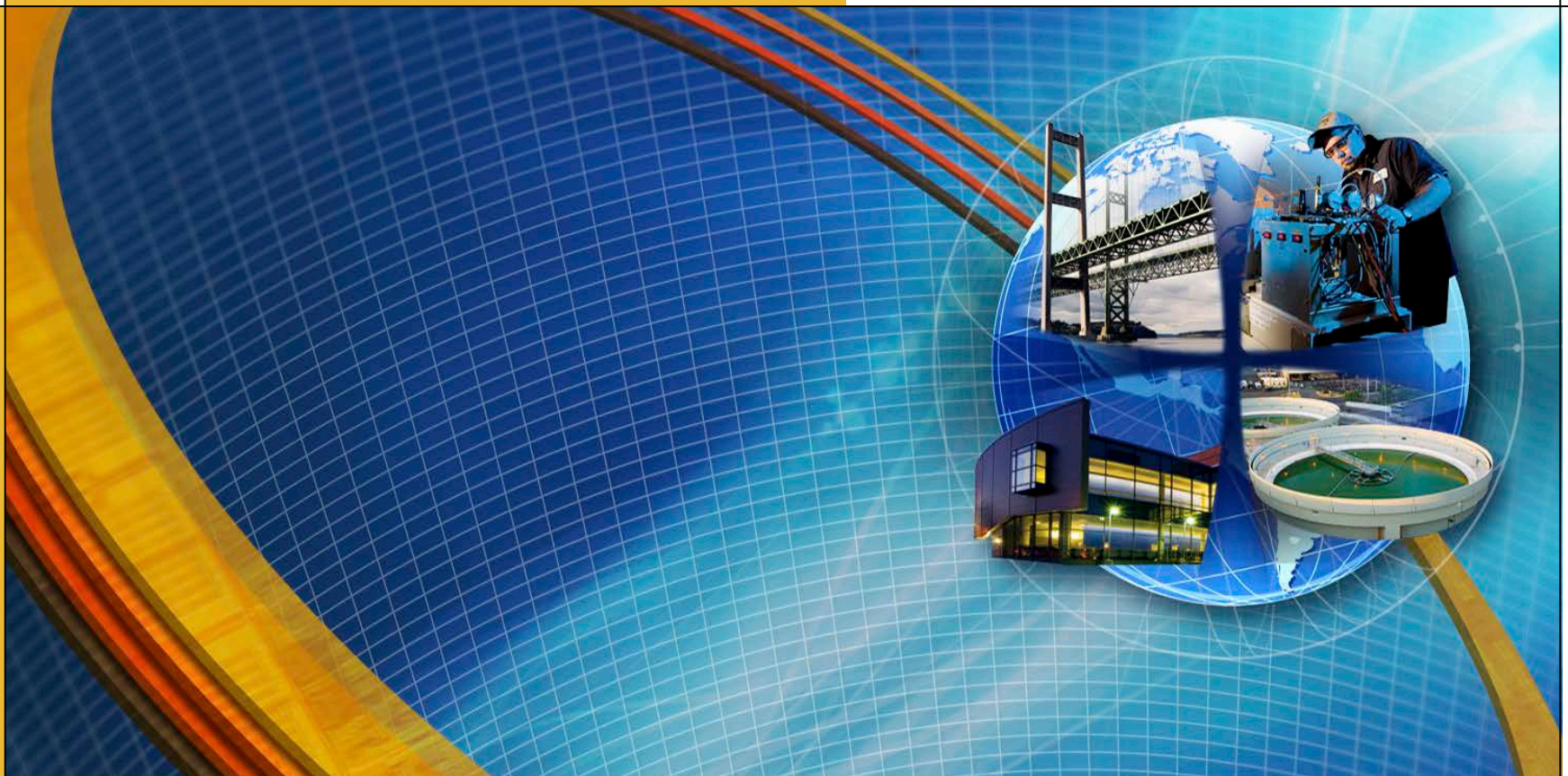
Approaching Capacity

- Two-lane, two-way roadways typically have a capacity of **700-900** vehicles per lane, per hour
- Some campus roadways are reaching their capacity, resulting in congestion

FINDINGS

Vehicle Tracking

07:00-10:00; 12:00-14:00; and 15:00-17:00
Nine (9) Hours





Origin-Destination Tracking

PARSONS

- Matched inbound and outbound movements of vehicles which entered / left campus within nine (9) hour study period
 - Entering time and location
 - Departing time and location
 - Derived “dwell” time on-campus



Definitions

PARSONS



“Linked” or Multi-purpose Trips – (thought to include **“Kiss-n-Ride”** (i.e. person picked-up or dropped-off on-campus))

- In-and-out
- Origin and destination off-campus
- Short dwell time on-campus





Definitions

PARSONS



- “Cut-through” or Short-cutting Trips,
 - No “business” on-campus
 - Pass-through (origin and destination off-campus)
 - Very short dwell time on-campus
- Cannot separate from linked trip w/o interview



Turn-over Rate

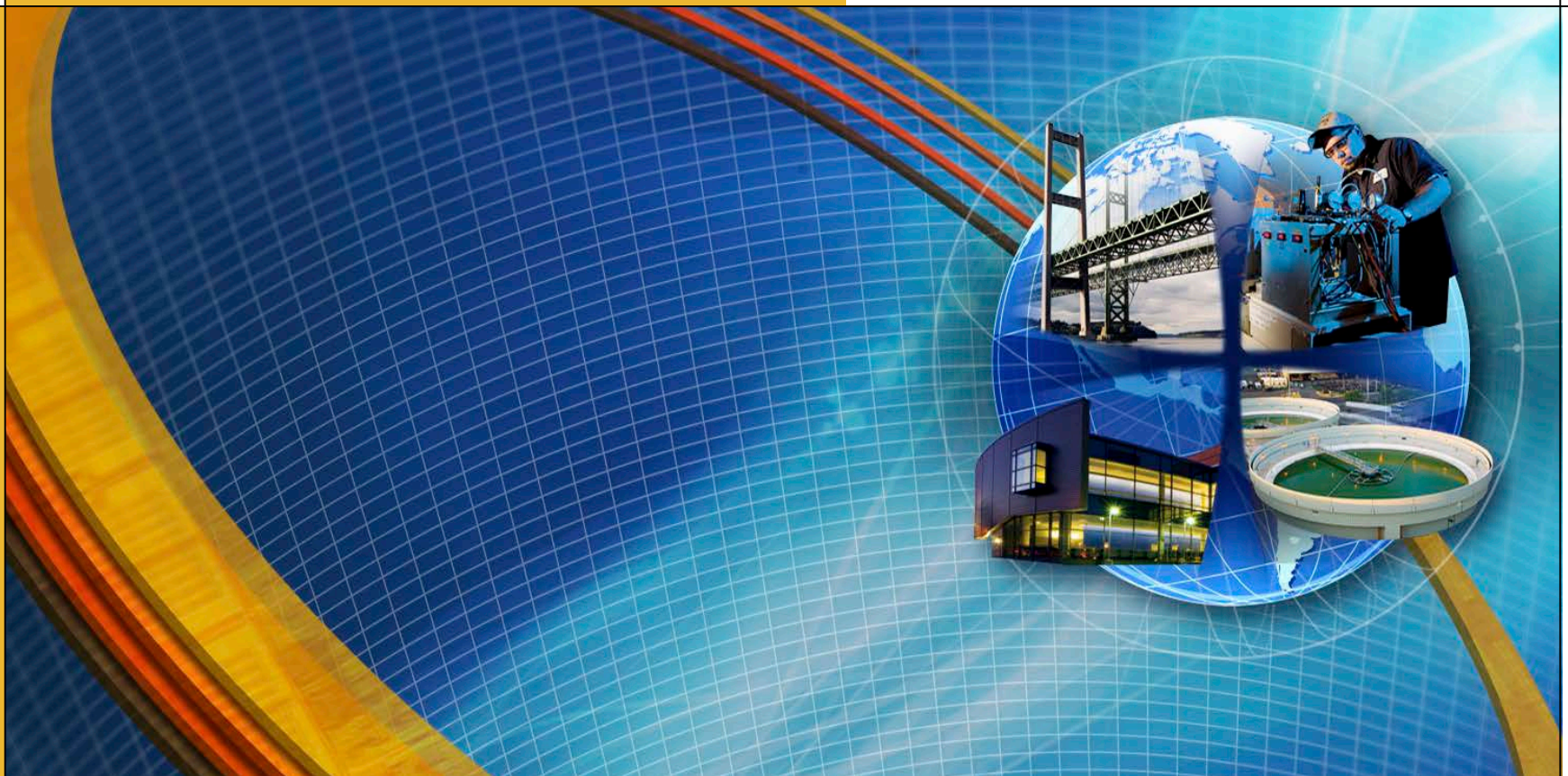
PARSONS

- **Turn-over rate** - about nine of ten vehicles (89%) arriving during the study period, also left during the study period
- When vehicles arriving on-campus which left less than twenty (20) minutes later are isolated, they represent about 51% of all trips
- In other words, about half of all vehicle trips into and out of campus have a duration of less than 20 minutes

FINDINGS

Short-term Inbound – Outbound Activity

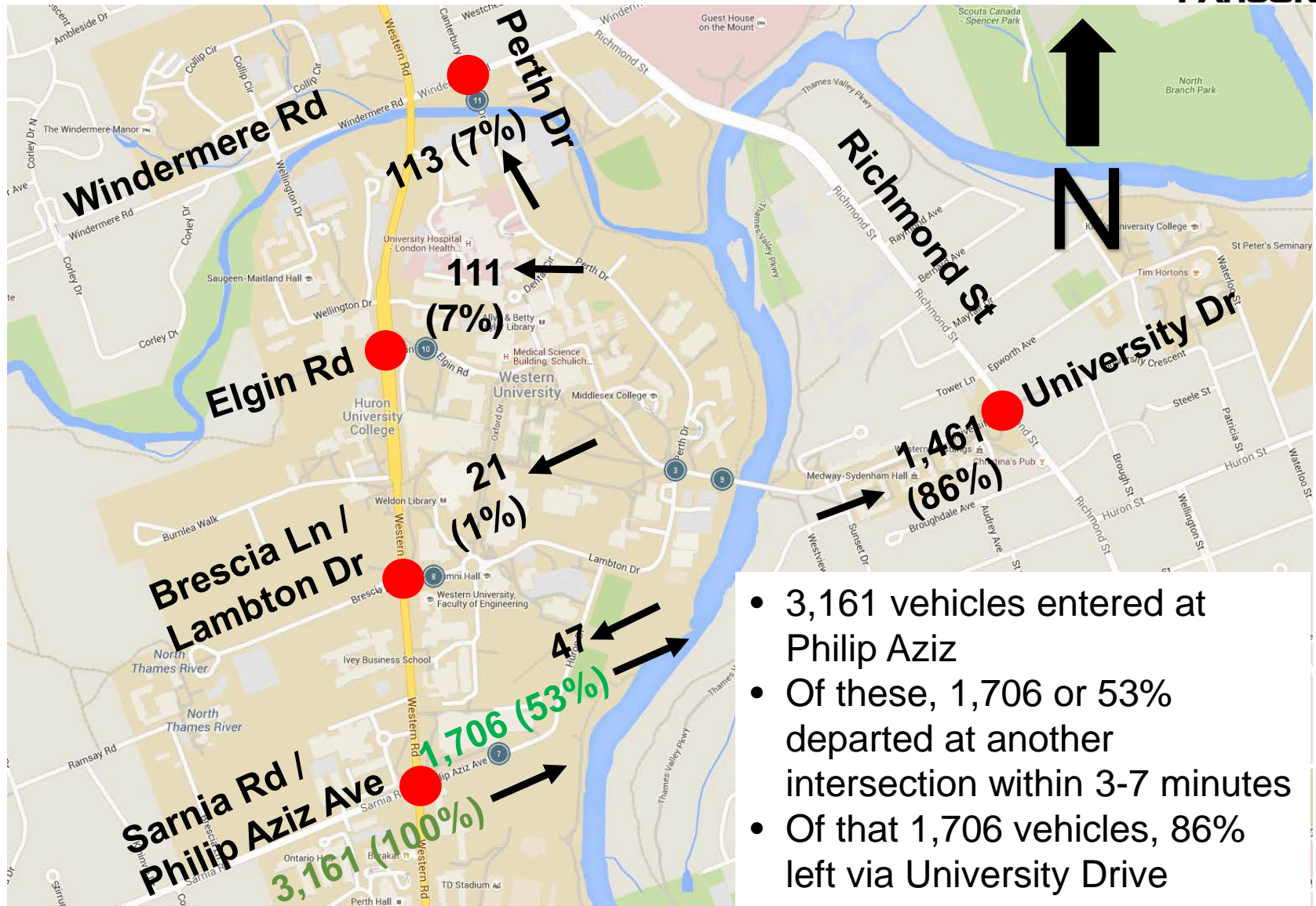
3-7 minutes dwell time





Inbound @ Philip Aziz Avenue

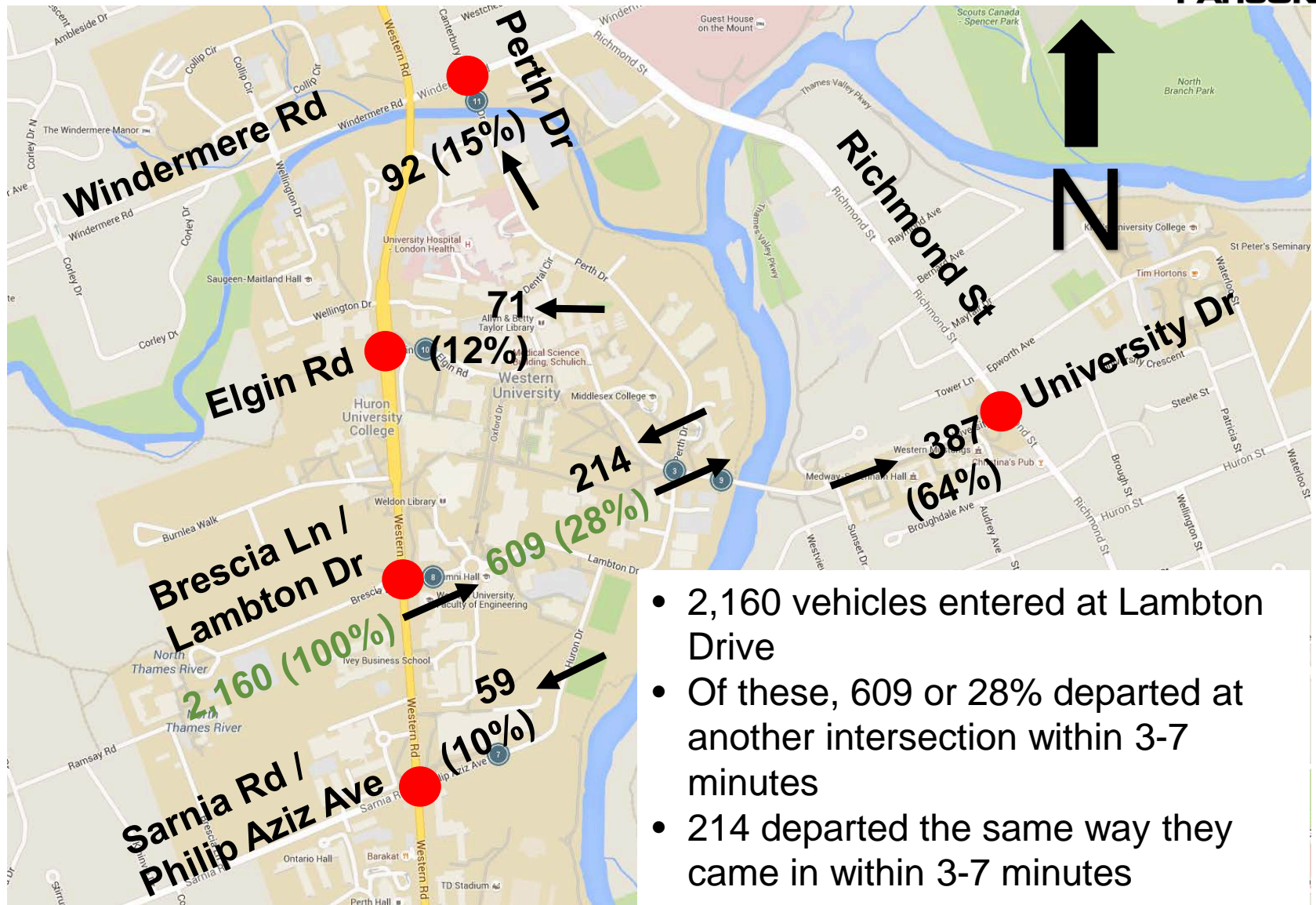
PARSONS



- 3,161 vehicles entered at Philip Aziz
- Of these, 1,706 or 53% departed at another intersection within 3-7 minutes
- Of that 1,706 vehicles, 86% left via University Drive



Inbound @ Lambton Drive

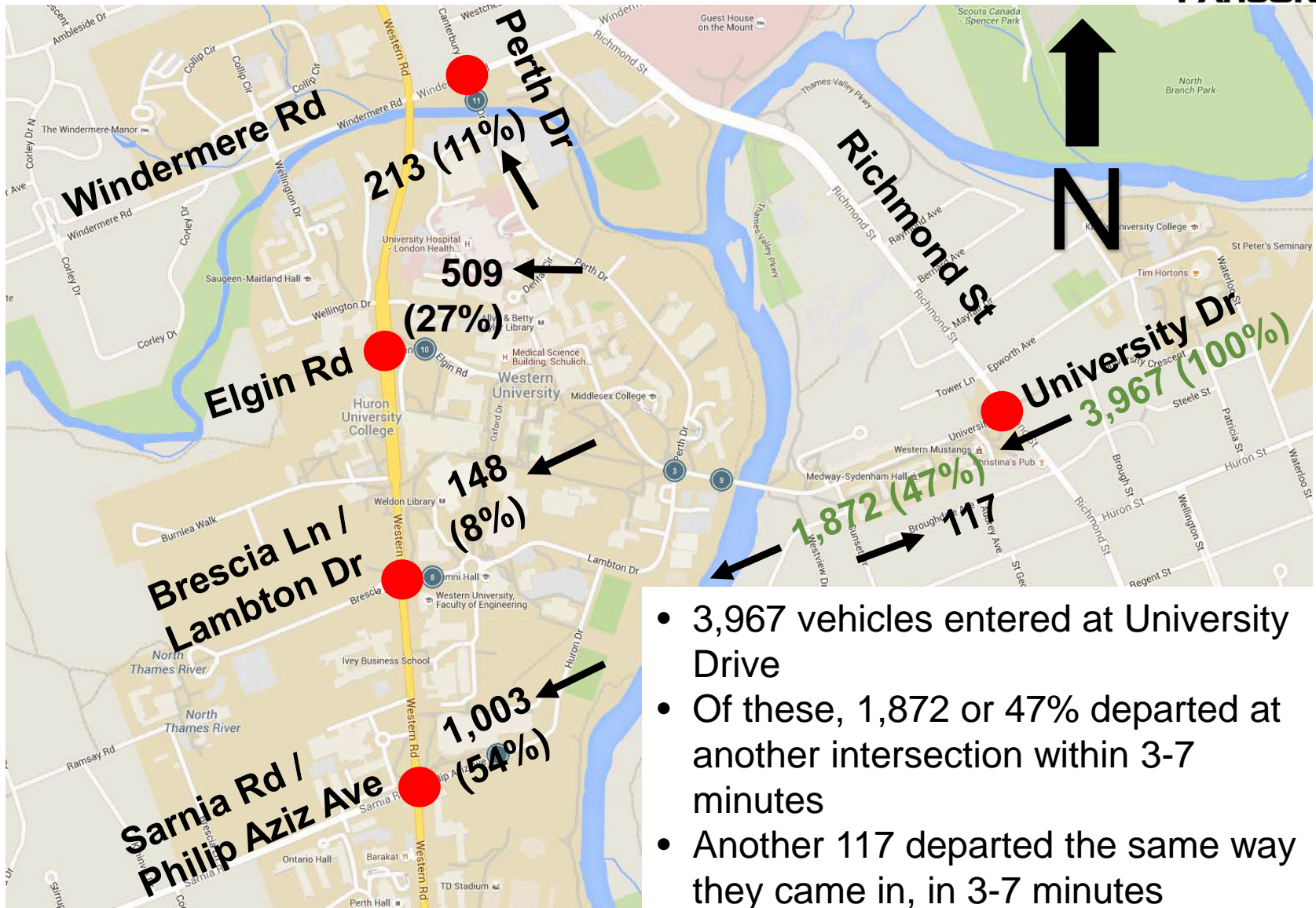


- 2,160 vehicles entered at Lambton Drive
- Of these, 609 or 28% departed at another intersection within 3-7 minutes
- 214 departed the same way they came in within 3-7 minutes



Inbound @ University Drive

PARSONS

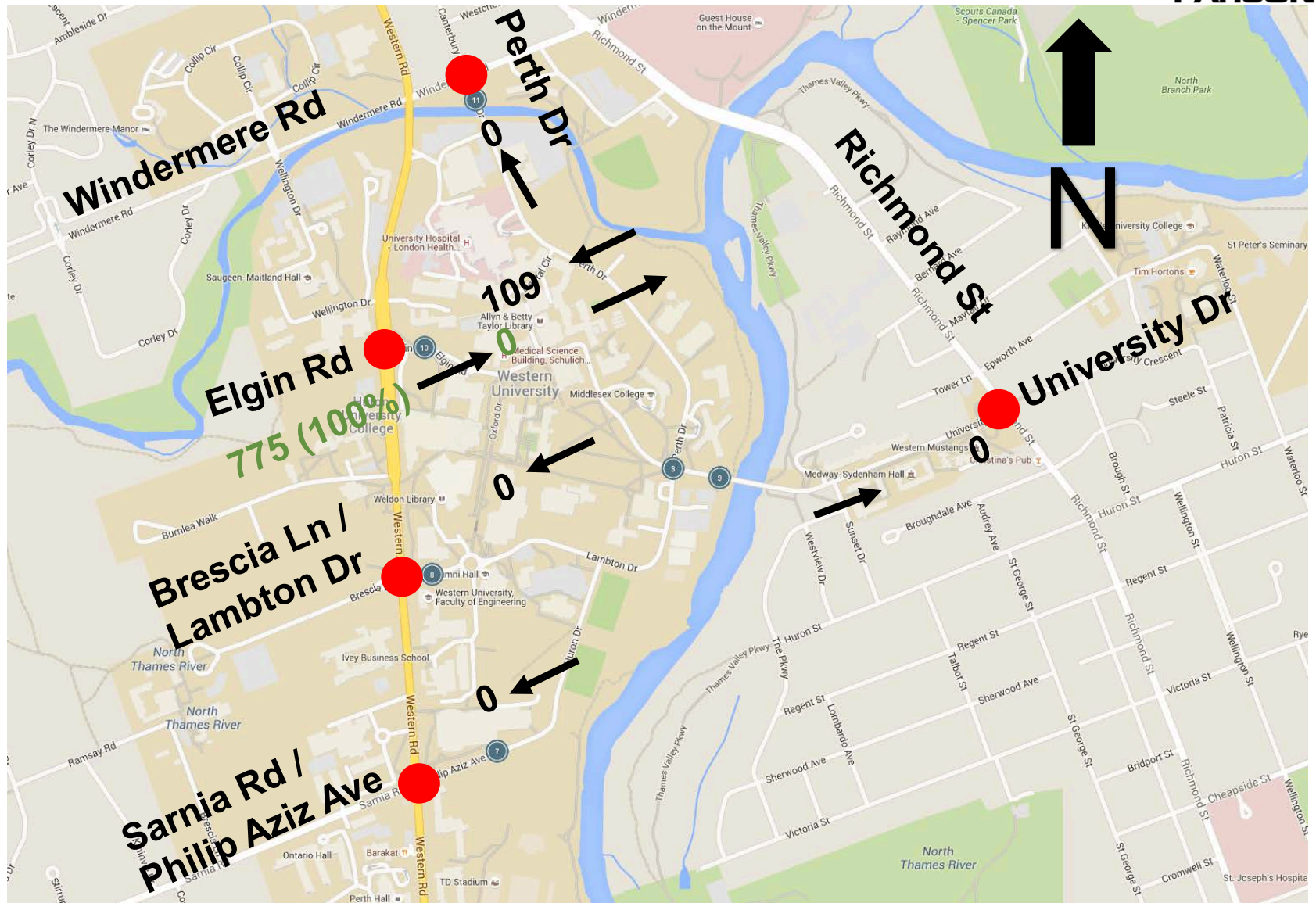


- 3,967 vehicles entered at University Drive
- Of these, 1,872 or 47% departed at another intersection within 3-7 minutes
- Another 117 departed the same way they came in, in 3-7 minutes



Inbound @ Elgin Road

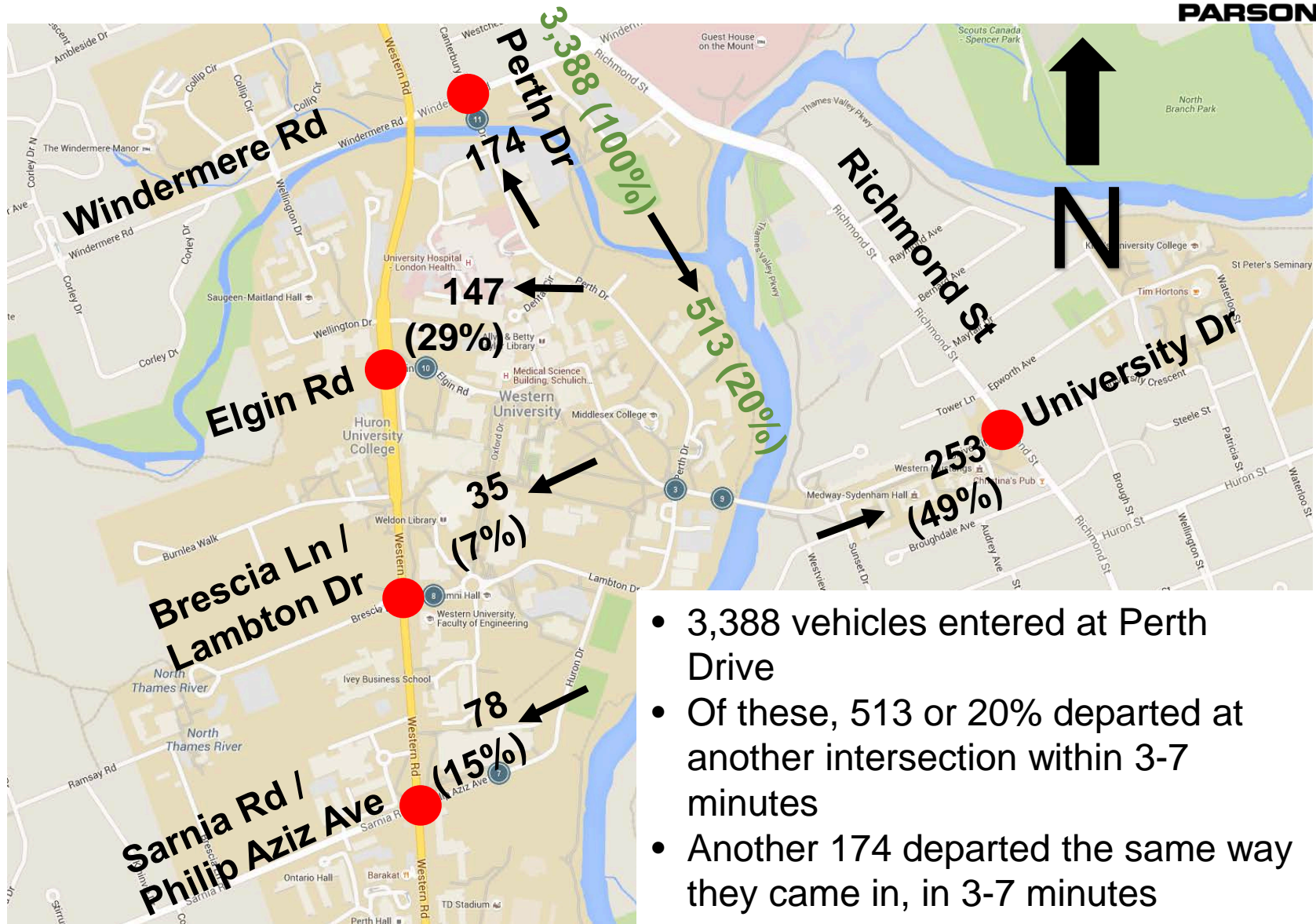
PARSONS





Inbound @ Perth Drive

PARSONS



- 3,388 vehicles entered at Perth Drive
- Of these, 513 or 20% departed at another intersection within 3-7 minutes
- Another 174 departed the same way they came in, in 3-7 minutes



Summary

PARSONS

- **5,361 vehicles (40%) left within 3-7 minutes**
 - 4,701 (35%) left by a different entrance
 - 660 (5%) left by the same entrance
- This cohort is assumed to include:
 - **“Linked” or Multi-purpose (Kiss-n-Ride) Trips** - pick-up and drop-offs on-campus
 - **“Cut-through” or Short-cutting Trips**, with no “business” on-campus



Observations

PARSONS

- If **all linked trips and cut-through trips** were eliminated, campus traffic would be reduced by almost 5,400 vehicles per day, or 40%.
- If **all transit trips** were shifted to peripheral roads, with curb-side stops, campus traffic would be reduced by another 600 trips or 5%.
- In total, this would represent a **45% reduction in vehicles using campus roads.**



Observations

PARSONS

- Moving these trips onto public streets (i.e. Western Road, Windermere Road, and Richmond Street) may add to congestion on these roads – particularly at key intersections
- Turn-outs for stopping/standing on these roads, and/or an off-road transit hub and/or kiss-n-ride facility would be needed to
 - Preserve / free up road capacity; and
 - Improve the safety of vulnerable road users boarding and alighting from vehicles.



Possibilities

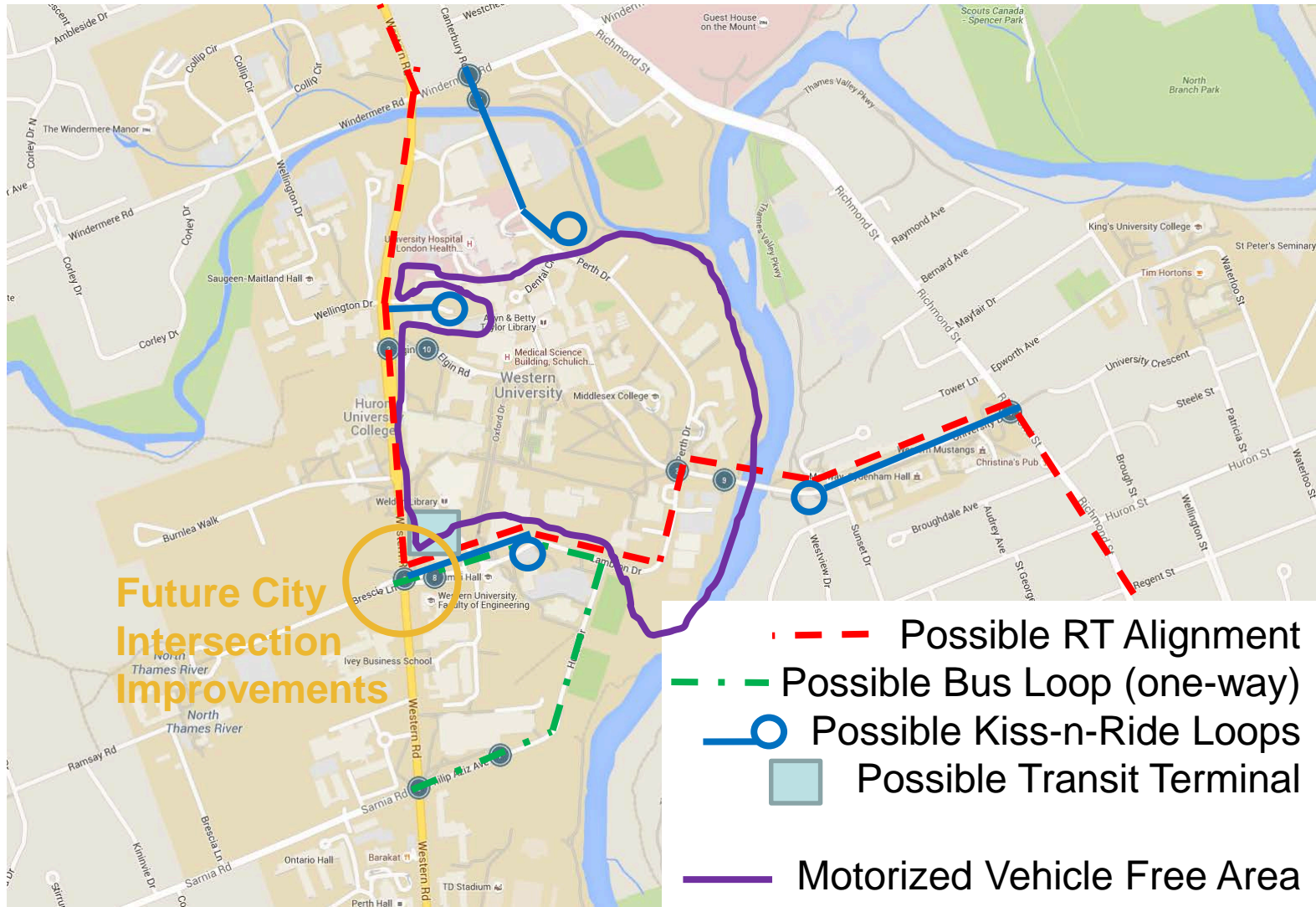
PARSONS

1. **Existing linked trips and cut-through traffic** could “go around” campus via Western Road, Windermere Road, and Richmond Street **(-5,360 trips)**
2. **Pick-ups / drop-offs** could occur at the (improved) curb on public roadways or at a dedicated Kiss-n-Ride Loop **(-660 trips)**
3. **Transit vehicles** could also go around, and pick-up and drop-off along public roadways or at a dedicated bus loop **(-606 trips)**
4. **Movements on-campus between points of access could be restricted** (e.g. to / from University Dr. @ Richmond St.)
 - The remaining motorized traffic entering / exiting campus would then consist of:
 1. Those permitted to park in on-campus, located at the periphery of a motor-vehicle-free zone (enter / exit at same location)
 2. Deliveries (enter / exit at same location)
 3. Campus vehicles (unrestricted)
 4. Emergency vehicles (access provisions)



Possibilities (Consultant Blue-sky)

PARSONS





Shared Opportunities

PARSONS

- The University, LHSC, the City, and London Transit all have a stake in safe and efficient traffic operations on and off-campus
- Coordinated planning and execution is essential to the success of:
 - Western's Master Plan goals,
 - LHSC's expansion aspirations, and
 - the City and Transit Authority's introduction / integration of Rapid Transit.