

Local Traffic and Roads

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Presentation by

Dave Rushton, Project Manager, Municipality of South Bruce

Andres Baez Rodriguez, Morrison Hershfield

Deven Bhatla, Morrison Hershfield

Henry Centen, R.J. Burnside & Associates Ltd.

Agenda

1. Local Transportation Network

2. Transportation Associated with the Project

- Anticipated Commuter Traffic
 - Anticipated Truck Transportation
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3. Traffic Management, Safety and Monitoring

4. Road, Bridge and Culvert Upgrades and Improvements

Local Traffic Study Report and Road Conditions Study Report

The purpose of these preliminary studies was to estimate:

- How much and what kind of traffic would the Project bring?
- What traffic impacts will the Project have?
- Would local roads and bridges need to be upgraded to accommodate the Project?

The Local Traffic Study Report (I23) and Road Conditions Study (I24) are NWMO-led studies and available for download at

<https://www.southbruce.ca/en/municipal-government/studies-and-reports.aspx>

Local Traffic Study Report and Road Conditions Study Report

It's important to note that:

- The entrance to the Site has not been determined
- The location of Excavated Rock Management Area (ERMA) has not been determined
- Specific haul routes will be determined once the Site design has been developed and the location of the ERMA has been determined
- Transport of used nuclear fuel is addressed in more detail in the NWMO Transportation Conceptual Design Report (<https://www.nwmo.ca/en/Reports>)

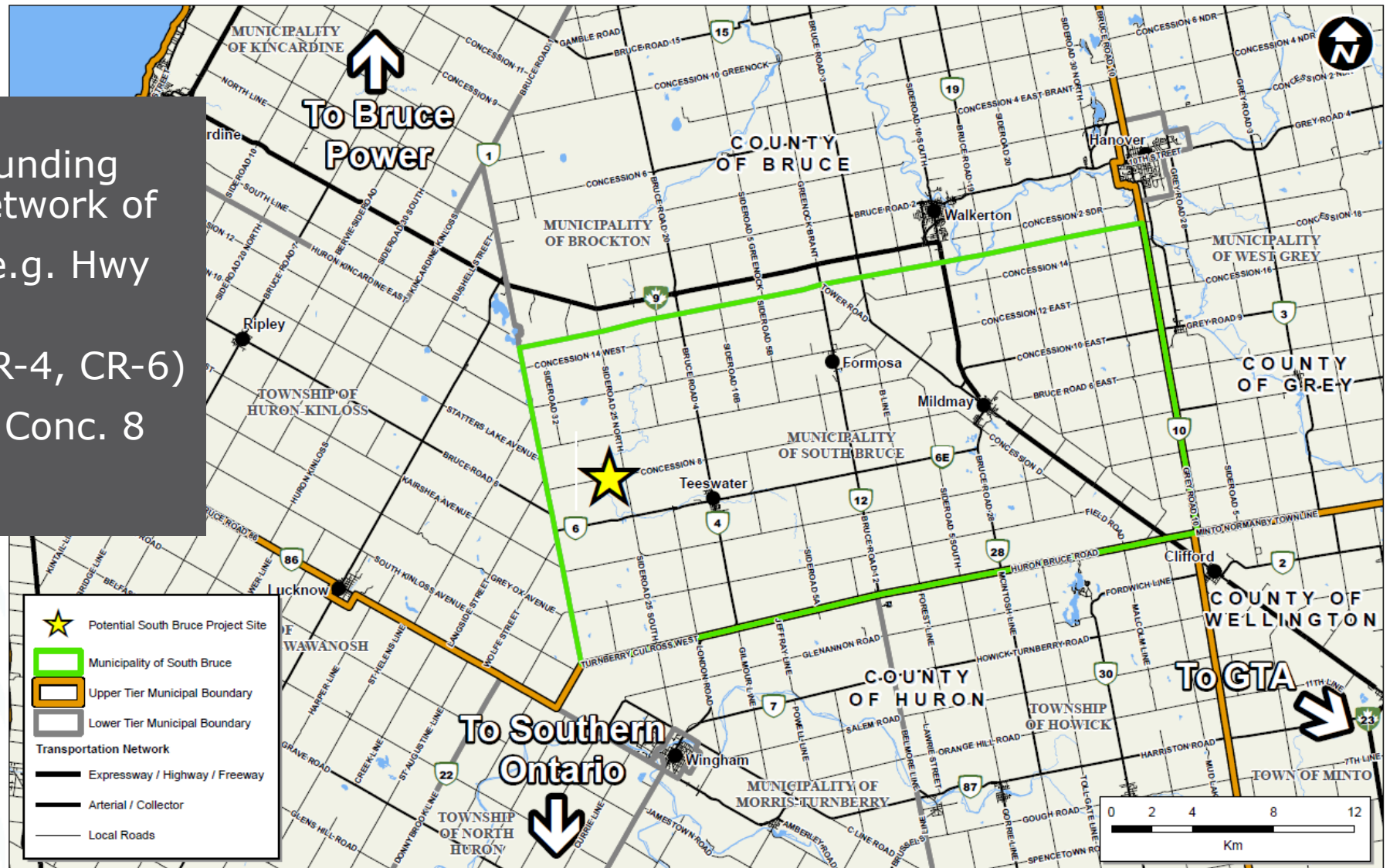
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Local Transportation Network

The road network surrounding the Site consists of a network of

- Provincial highways (e.g. Hwy 9, Hwy 21)
- County Roads (e.g. CR-4, CR-6)
- Municipal Roads (e.g. Conc. 8 and Conc. 10)



Road Network Hierarchy & Functions

Typical Provincial Highway

HWY 21/Hwy 9



- Connect Urban Centres and Regional attractions
- Traffic movement primary consideration
- Design Speed: 80 - 130 kph
- <12,000 Annual Average Daily Traffic
- Paved / Gravel Shoulder

Typical County Road

County Road 6



- Connect County/Local Municipalities
- Traffic movement and land access of equal importance
- Design Speed: 60 – 110 kph
- 5,000 – 11,500 Annual Average Daily Traffic
- Paved / Gravel Shoulder

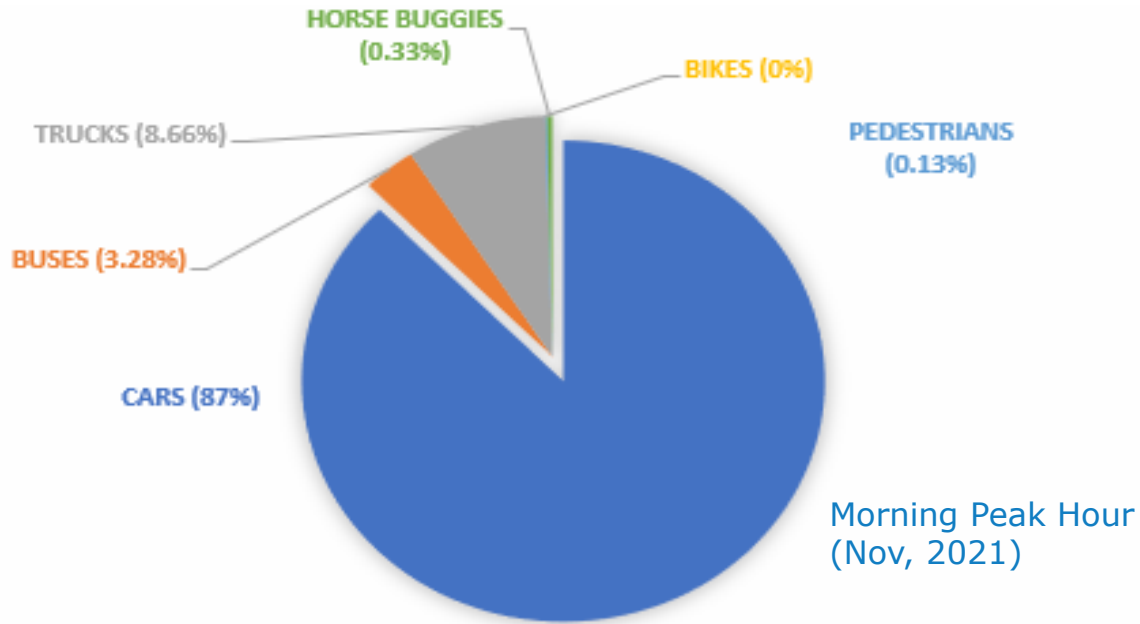
Typical Local Municipal Road

Concession 8



- Links between Land/Properties and County Roads
- Traffic movement secondary consideration
- Design Speed: 50 – 110 kph
- <1,000 Annual Average Daily Traffic
- Chipseal/Gravel (No shoulders)

Local Transportation Network



Most roads and intersections in the area are well below capacity. (6% to 22% capacity utilization)

However two-lane rural roads can operate poorly before capacity is reached, because vehicles have limited passing opportunities, leading to bunching.

Increased traffic on two-lane roads may lead to unsafe conditions, particularly for vulnerable road users like buggies, cyclists, pedestrians, and school buses



Local Transportation Network

Traffic in general 20% higher in the summer.

The area has significant truck traffic >8%, including agricultural vehicles.

In particular Cons Rd 8 likely associated with agricultural activity and adjacent farmland.

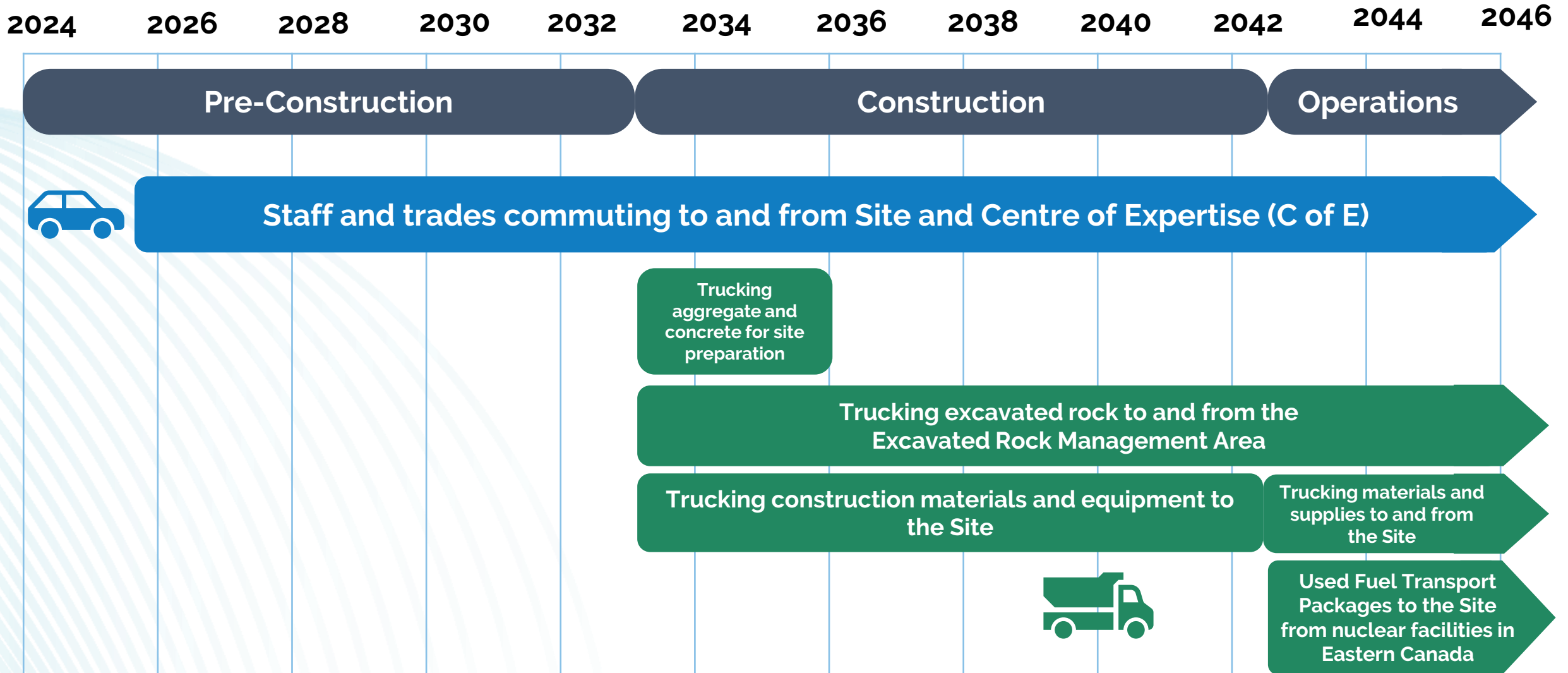
Bruce County identified CR-6 west of Ripley, CR-1 north of Hwy 9 as future cycling tour route.



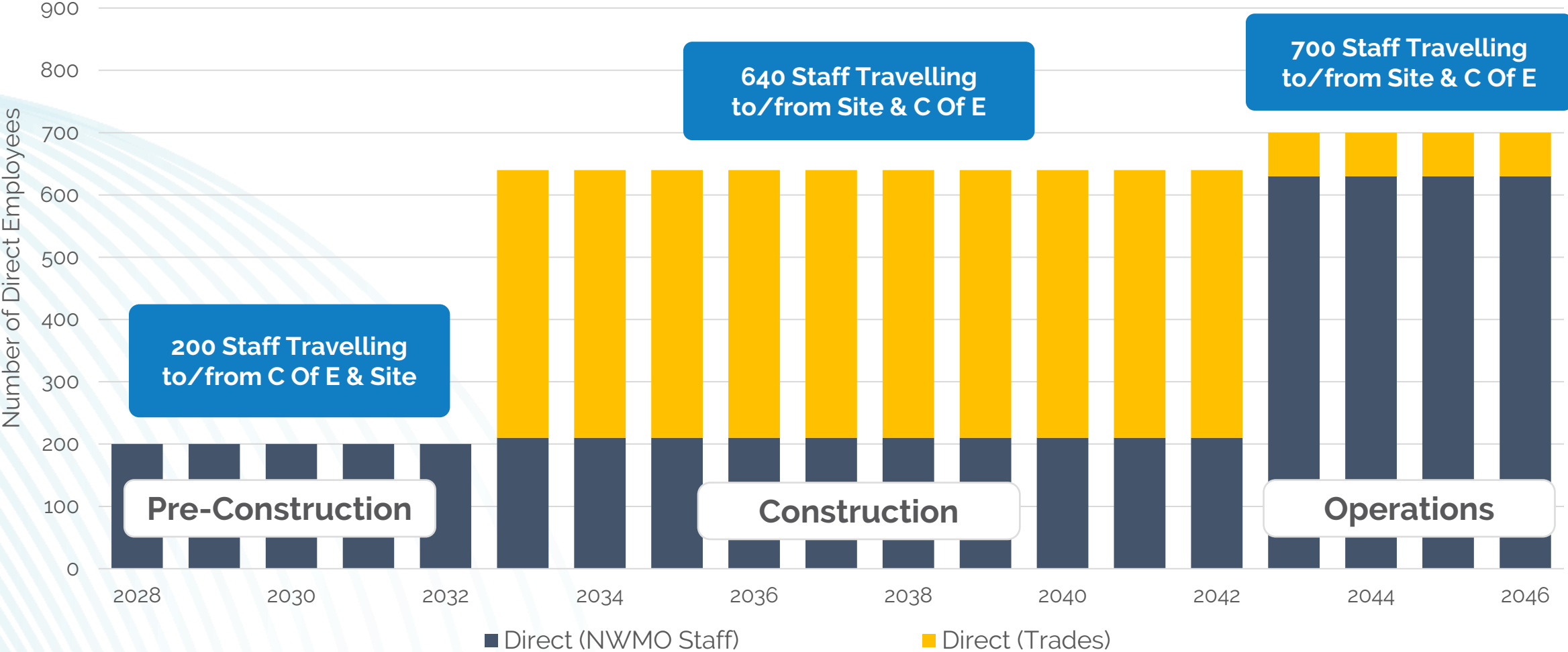
Mennonite buggy traffic concentrated near Holyrood, Ripley and Kinloss along CR-6 and CR-1 roads.

CR-6 near Ripley and Holyrood, as well as CR-1 near Lucknow have been identified previously as collision 'hot-spots'

Transportation Associated with the Project



Commuters Associated with the Project



Commuters Associated with the Project

Commuters are expected to travel to and from the Site and Centre of Expertise from communities throughout the Local Study Area.

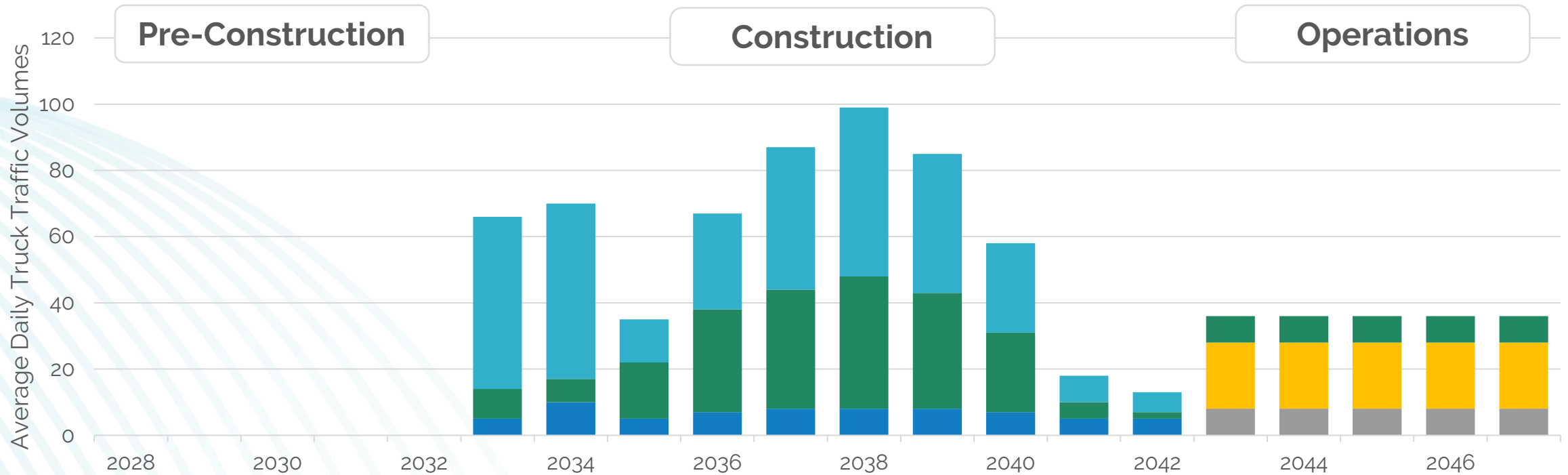
Potential to reduce commuter traffic through commuter parking lots and shuttle busses.

Commuters will be directed to avoid Mennonite community roads.

Staff will have staggered shifts.



Truck Transportation Associated with the Project



Excludes construction traffic for off-site infrastructure upgrades, such as road and bridge construction.

Truck traffic volumes are expected to be variable. Averages are shown for illustrative purposes.

- Trucking aggregate and concrete for site preparation
- Trucking excavated rock to and from the Excavated Rock Management Area
- Trucking construction materials to the Site
- Trucks carrying materials and supplies to and from the Site
- Used Fuel Transport Packages from nuclear facilities in Eastern Canada

Truck Transportation for Project

Trucking associated with the project will include:

- Trucks carrying construction materials and equipment to the Site during construction
- Trucks transporting excavated rock to and from the Excavated Rock Management Area, to be located on NWMO optioned lands. Specific location to be determined.
- Trucks carrying materials and supplies to and from the Site during operation
- Trucks and escort vehicles carrying Used Fuel Transport Packages (UFTP) to the Site from nuclear facilities in Eastern Canada



“Last Mile” roads connecting the Site to Provincial Highways will need to be 13m (42’) wide - 4m (13’) lanes, 2.5 m (8’) paved shoulders and roadside ditches – similar to Highway 9

Intersections need to accommodate large truck turns and have appropriate stop control, such as stop signs or traffic lights, and lane configuration

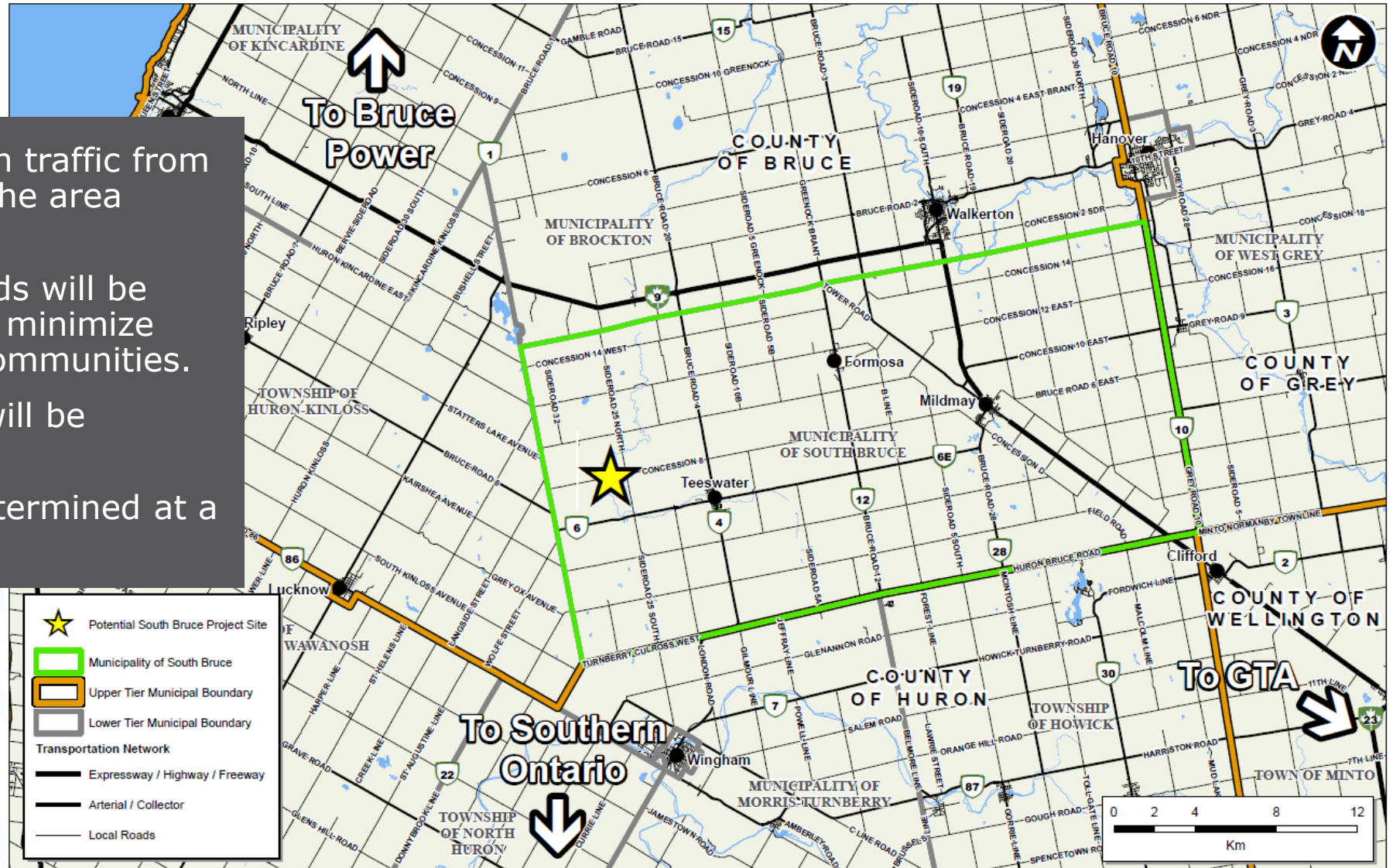
Material and Aggregate Trucking

There will be an increase in traffic from trucks and commuters in the area surrounding the Site.

Provincial and County Roads will be taken as far as possible to minimize impact on residents and communities.

Certain "Last Mile" roads will be identified for haul routes.

Route for UFTPs will be determined at a later date.



Traffic Management, Safety and Monitoring Strategies

The Studies identified several options to improve traffic management and safety

- Greater separation and paved shoulders for cycling routes
- Paved shoulders, off-road trails or pull-off areas for roads frequented by buggies
- Traffic and Road Condition monitoring program
- Potential shuttle for Site staff

The Traffic Study identified various road segments where future background traffic growth unrelated to the Project may bring roads close to their capacity.



Example of a paved shoulder accommodating buggies and cyclists

Source: www.forconstructionpros.com

Road Upgrades and Improvements

Designated haul routes will require upgrades:

- Road reconstruction or rehabilitation, to remove current weight restrictions
- Widening of roads to 13m (42') - 4m (13') lanes, 2.5 m (8') paved shoulders and roadside ditches. This may require additional property.
- Bridge and culvert reconstruction, widening and rehabilitation



Example of suitable road width for haul route (County Road 6)



Example of bridge in South Bruce that may need upgrades (Concession 8)

Road Upgrades and Improvements

Intersections along designated haul routes will also require upgrades:

- Intersection widening
- Traffic controls, such as traffic signals, stop signs or roundabouts.

Traffic signals also recommended for intersection of CR-6/CR-4 in Teeswater to address expected increase in baseline traffic not related to Project growth.



Intersection of Highway 9 and County Road 4



Intersection of County Road 4 and County Road 6 in Teeswater

Peer Review Results and Conclusions

A decorative graphic on the right side of the slide, consisting of numerous thin, light blue curved lines that sweep from the bottom right towards the top right, creating a sense of motion and depth.

Collaborative Peer Review

NWMO led study with
peer review by South
Bruce consultants

Local Traffic Study Report (I23) and Road Conditions Study Report (I24), Morrison Hershfield

Peer reviews conducted by R.J. Burnside & Associates Ltd.

- Future studies should be a more detailed review of operational functionality, safety, and condition of haul routes and commuter routes, including bridges as well as a structural and geotechnical assessment of the Municipal Roads that will be impacted by the Project.
- Operational criteria should address specific needs of “Last Mile” road network, including its ability to accommodate increased truck and commuter traffic, and location-specific impacts (e.g., travel through Teeswater)
- Identify traffic impacts of haul routes to and from aggregate pits supplying the Project, with consideration of the higher truck traffic at the start of construction
- Further assess the impact of excavated rock transport to the Excavated Rock Management Area once locations are established
- Undertake detailed review of safety, including the transport of the Used Nuclear Fuel, emergency response, and impacts to non-vehicles like farm equipment, buggies, cyclists, and pedestrians
- Consideration should be given to a maintenance and monitoring program, especially during higher construction volumes periods.

Summary

- Studies address guiding principles related to protecting the natural environment (#2), safe transportation of nuclear fuel (#3), managing impacts during construction and operation (#7), road upgrade requirements (#30), road use agreement (#31), and project benefits (#36)
- The Project will increase commuter and truck traffic with varying volumes during construction and operation.
- While the local road network is not at technical capacity, the additional traffic will have an impact on the operational functionality, especially when considering road users like farm equipment, cyclists, pedestrians and buggies.
- A haul route for trucking will need to be designated between Provincial highways, County roads and the Site.
- Roads, bridges and intersections along the haul route will need to be upgraded and widened. This may require property acquisition.
- Additional study and assessment required once site access and ERMA location is identified. Scope of study to be determined.

Questions?

