Workshop Agenda

- 9:00-9:05  Welcome
- 9:05-9:35  Overview of Roundabout Feasibility Process
- 9:35-10:00 Q & A Feasibility Process
- 10:00-10:15 Coffee Break
- 10:15-11:30 Roundabout Screening Tool
- 11:30-12:00 Lunch
- 12:00-1:30  Intersection Control Study
- 1:30-2:00  Q & A all Topics
OVERVIEW OF
ROUNDABOUT FEASIBILITY
PROCESS

ROUNDABOUT
FEASIBILITY WORKSHOP
MAY 7, 2009
Current Policy

- In April 2003 Regional Council passed a by-law stating that roundabouts must be considered when:
  - A new intersection is proposed
  - Traffic signals are warranted
  - Improvements are planned at an existing intersection to address safety or capacity problems
Planning Process Overview

- 3 Phase Process
- Phase 1: Initial Screening
- Phase 2: Feasibility
- Phase 3: Approvals
Planning Process Overview

• Phase 1: Initial Screening
  - Quick assessment of feasibility of a roundabout vs other forms of traffic control based on order-of-magnitude life-cycle cost
  - Review of Screening Tool by Roundabout Coordination Committee (RCC) (Optional)
  - Decision: Proceed to Feasibility or Discard Roundabout as an option
Planning Process Overview

Phase 2: Feasibility

- More detailed comparison of roundabout vs other traffic control using life-cycle cost
- Intersection Control Study (ICS)
- Technical review of ICS by Roundabout Coordination Committee (RCC)
- Decision by RCC: Proceed to obtain approvals for a roundabout or discard roundabout option
Planning Process Overview

Phase 3: Approvals

- Public consultation
- Council approval
- Other EA requirements
What Triggers the Roundabout Planning Process?

- Need for improvements at an intersection to improve safety or capacity
  - Development-related Traffic Impact Study (TIS)
  - Safety counter-measures program
  - Part of a larger corridor improvements project (Class EA)
  - New intersection
Transportation Impact Studies

- TIS guidelines revised in 2008
  - Studies must consider a roundabout at each intersection where any road improvements are recommended
    - Additional turning lanes, through lanes
    - Traffic signals
  - Developers must complete Initial Screening Tool for staff review
  - Intersection Control Study may be required
Safety Countermeasures

- Region conducts an annual collision survey of all intersections and mid-block locations
  - Identifies priority collision locations based on what has occurred VS what is expected
  - Considers severity, type, time of day, weather, etc.
- Top locations are analyzed to determine if safety countermeasures would be beneficial
Corridor Improvements Projects

- Roundabouts are always considered as part of a Class Environmental Assessment (EA) for any improvements on an existing or new road corridor
  - Widening to add through lanes
  - Intersection improvements, etc.
  - New road corridor
Initial Screening Tool

- 5 page questionnaire designed to be completed in a few hours
- Includes proposed configurations for both roundabout and conventional improvements
- Concept sketches of each config.
- 20-Year Life Cycle Cost Estimate
Intersection Control Study

- More detailed comparison of roundabout to another form of traffic control (signals, 4-way stop, etc.)
- Functional design concepts of the alternatives are developed, and the following are looked at quantitatively:
  - Safety performance
  - Operational performance
  - Life cycle costs (including the societal costs of injury crashes)
  - Other criteria are looked at qualitatively
Roundabout Coordination Committee (RCC)

- Consists of Region staff
  - Design and Construction
  - Transportation
  - Transportation Planning
  - Community Planning
- Staff from local municipalities
- Bi-monthly meetings
RCC Mandate

- Develop guidelines for roundabout feasibility
- Develop design standards for roundabout implementation
- Develop roundabout education programs
- Coordinate efforts of Region and local municipalities
- Review feasibility studies and recommend traffic control regimes to staff
RCC Decision

- 20-Year Life Cycle Cost (LCC) is primary criterion
- If Roundabout LCC is within 1.5 times the LCC of the Signals, roundabout is usually recommended
- If intersection is on a Preferred Roundabout Corridor, a roundabout is usually recommended
Why is the 20-Year Life Cycle Cost (LCC) the primary criterion?

- Capital Program cannot afford to install roundabouts at every location
- Focuses capital investment at the priority locations where the greatest collision reduction is expected
- Maximizes the "Collisions Reduced Per Dollar Spent"
Discussion

- In every case so far the construction cost for a roundabout has been higher than for signals
- The question becomes whether this additional cost is outweighed by the societal cost of injury crashes
- Current process favours roundabouts over traffic signals at intersections with 4 legs and high volumes where more injury crashes would be expected
Recent study (2007) by Transport Canada concluded the average injury collision cost in Ontario is $82,000.

RCC recently considered adding the cost of motorist delay to LCC cost. Conclusion: Decided against this criterion because if included RCC would never recommend a signal.
Planning Process Flowchart

PHASE 1 – INITIAL FEASIBILITY

TRANSPORTATION CONSULTANT
- Traffic forecasts
- Operational analysis, signal warrants
- Safety analysis
- Recommend road Improvements
- Initial Screening Tool

TRANSPORTATION PLANNING (LEAD/MANAGE) (Note 1)
- Prepares/reviews traffic study
- Prepares/reviews forecasts
- Recommend road improvements
- Prepares/reviews Initial Screening Tool

TRANSPORTATION ENGINEERING (LEAD/MANAGE) (Note 1)
- Prepares/reviews operational analysis
- Prepares/reviews safety analysis
- Recommend road Improvements
- Prepares/reviews Initial Screening Tool

DESIGN & CONSTRUCTION (INPUT)
- Assists with reviews of operations analysis
- Assists with prep/reviews of Initial Screening Tool

ROUNDABOUT COORDINATION COMMITTEE (INPUT)
- Reviews Initial Screening Tool

NOTES:
1) Leader/Manager will be determined by what is driving the need for improvements. (New development, counter measures, etc.)
2) Need for consultant to be determined by managing division.
3) If location is being reviewed as part of a larger Capital Project the Roundabout Planning Process will be managed by the Division managing the larger project.
**Planning Process Flowchart**

**Phase 2 - Intersection Control Study (ICS)**

**Roundabout Consultant**
- Prepares Intersection Control Study (ICS)
- Functional designs
- Cost estimates
- Recommendation

**Transportation Planning (Lead/Manage) (Note 1)**
- Retains consultant
- Reviews forecasting and operational analysis as required
- Reviews access issues
- Reviews impacts on proposed development
- Prepares submission to Roundabout Coordination Committee

**Design & Construction (Input)**
- Reviews ICS
  - Functional design
  - Cost estimate

**Transportation Engineering (Lead/Manage) (Note 1)**
- Retains consultant
- Reviews operational analysis
- Reviews safety analysis
- Prepares submission to Roundabout Coordination Committee

**Roundabout Coordination Committee** (Decision Maker)
- Reviews recommendation

Proceed to:
- Public Consultation
- Report to Council
- Detailed Design

Roundabout Rejected
Questions?