1. **PRELIMINARY WORK PLAN**

1.1 **PUBLIC INVOLVEMENT**

<table>
<thead>
<tr>
<th>1.1.1 Public Involvement – Form Committees and Notify Public</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
</tr>
</tbody>
</table>
| **Tasks** | - Prepare and issue Notice of Study Commencement  
- Prepare and issue initial contact letter to technical/reviewing agency contacts with invitation to join the TAG  
- Develop TAG membership from responses to initial contact letter  
- Develop terms of reference for the CAG  
- Prepare report to Project Team (PT) to ratify CAG terms of reference  
- Prepare and publish notification in local newspapers inviting expressions of interest for the CAG  
- Compile list of CAG applicants  
- Prepare report to PT to ratify CAG membership and advise of TAG membership  
- Develop mailing list for CAG and TAG  
- Prepare and send out invitations to initial CAG meeting, with membership questionnaire  
- Prepare and send out invitations to initial TAG meeting  
- Hold initial CAG / TAG meetings and prepare summary notes  
- Prepare and issue public service announcements such as flyers and bulletins  
- Prepare and distribute Newsletter #1 – Study Introduction  
- Develop material and initiate STMP website  
- Respond to e-mail, telephone and written requests for information |
| **Deliverables** | - Notice of Study Commencement  
- TAG / CAG terms of reference and formation  
- Newsletter #1 – Study Introduction  
- Advertisement #1 – Notice of Study Commencement and CAG Formation  
- Website and e-mail address  
- Prepare Study mailing lists and commencement letters  
- CAG Invitations and membership questionnaires  
- Initial CAG and TAG meetings  
- Comprehensive objectives list  
- Summary notes for Technical Memo #1  
- Reports to PT |
1.2  **POLICY DEVELOPMENT**

1.2.1  **Policy Development – Prepare Study Design**

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
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<tbody>
<tr>
<td>The purpose of this activity is to prepare a Study Design to guide the conduct of the STMP Study. The objectives of this task are to set out the approach and proposed conduct of the study, giving details related to rationale, content and timing of the specific study tasks, establish deliverables and schedules, and develop the guideline for monitoring progress, action items and resources. This proposed work plan will form the basis of the Study Design.</td>
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<table>
<thead>
<tr>
<th>Tasks</th>
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<tbody>
<tr>
<td>• Prepare draft Study Design</td>
</tr>
<tr>
<td>• Circulate and discuss the document</td>
</tr>
<tr>
<td>• Finalize and distribute final Study Design</td>
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<tr>
<td>• Prepare summary for the SC</td>
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<table>
<thead>
<tr>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Final Study Design</td>
</tr>
<tr>
<td>• Summary Study Design</td>
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</table>

1.3  **PLANNING AND ANALYSIS**

1.3.1  **Planning and Analysis – Demand Forecasting Workshop**

<table>
<thead>
<tr>
<th>Rationale</th>
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<tbody>
<tr>
<td>The forecasts of future travel growth by mode and area will dictate the extent and nature of the future transportation needs. An assessment of future peak tourist demands is also required. The demand forecasts must reflect the projected growth in the City of Niagara Falls and surrounding areas within the Region. Fundamental to the forecasting of future growth, is the development of a reliable, flexible and traceable demand forecasting process. The update of the Regional Niagara TransCad demand forecasting model is an integral part of this requirement. The City’s Paramics model will also be investigated to determine its potential use, especially for the tourist areas modeling. The inputs to the models require significant effort in terms of development and consensus between economic, socio-economic and transportation environments/disciplines.</td>
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<th>Tasks</th>
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<tbody>
<tr>
<td>Demand Forecasting Workshop</td>
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<tr>
<td>• The update of the demand forecasting model requires extensive resources related to time and cost. A Workshop with the City and the Region staff to discuss the requirements to update the Regional Niagara TransCad model and the status of the City’s Paramics model will determine the appropriate approach to achieve the objectives of the transportation modeling such as developing projections to 2031 and properly reflecting projected tourism</td>
</tr>
<tr>
<td>• Items of discussion:</td>
</tr>
<tr>
<td>• Travel Survey for the tourist area– need for, design, detail, implementation</td>
</tr>
<tr>
<td>• Model development – objectives, strategy</td>
</tr>
<tr>
<td>• Traffic counts – availability, locations, durations, types</td>
</tr>
<tr>
<td>• Land Use Forecasts – availability, detail, scenarios</td>
</tr>
<tr>
<td>• Model Maintenance</td>
</tr>
<tr>
<td>• Local Staff Resources and Data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Development of Demand Forecasting Process</td>
</tr>
<tr>
<td>• Workshop Meeting Summary</td>
</tr>
</tbody>
</table>
### 1.3.2 Planning and Analysis – Land Use Assessment Workshop

**Rationale**

The purpose of this activity is to identify the major issues facing the City of Niagara Falls in managing future growth and related transportation demands through a workshop setting.

**Tasks**

- Obtain and review general directions for growth as set out by the City of Niagara Falls in their Growth Management Strategy (in progress). The current City OP directions for growth, including local and regional population and employment forecasts and economic development strategies, and recently completed planning studies will serve as the basis for this work;
- Compare City and regional forecasts (for the City) and directions with policies and objectives identified in the Provincial Growth Plan;
- Identify the major growth management issues facing the City;
- Confirm area by area density targets for both population and employment;
- Assemble comments and discussions from the ongoing consultation program including the public opinion survey;
- Review and confirm supportiveness of land use/growth scenarios to basic transportation service and infrastructure goals and objectives for the City;
- Confirm short-term, mid-term, and long term growth outlooks to be used for both base scenarios and alternative (risk assessment) scenarios

**Deliverables**

- Development of Land Use Foundations and Principles and Confirmation of Growth Objectives Process
- Workshop Meeting Summary

### 2. ISSUE SCOPING AND MOBILITY VISIONING

#### 2.1 Public Involvement

**2.1.1 Public Involvement – Conduct Vision Focus Group**

**Rationale**

We propose to conduct a focus group with randomly selected members of the general public who have not previously participated in a formal consultation opportunity re: the STMP. The focus group is an important means of gathering input from City residents who were unable or not inclined to participate in the formal consultation process (i.e. the silent majority). They will allow for a relatively in-depth exploration of issues related to policy framework and the land use and transportation vision.

**Tasks**

- Discussion guide preparation
- Participant recruitment
- Group facilitation
- Analysis of findings
- Preparation of a summary report

**Deliverables**

- Discussion guide
- Summary notes for Technical Memo #1 and Newsletter #2
### 2.1.2 Public Involvement – Conduct Visioning Workshop

**Rationale**

The purpose of this activity is to provide the PT, TAG and the CAG an opportunity to discuss, identify and ratify key study issues. The objectives of this task are to disseminate information of relevance regarding long-term growth perspectives, stimulate and facilitate discussion, and arrive at a shared future growth vision.

**Tasks**

- Prepare draft Visioning questionnaire
- Circulate, discuss and finalize questionnaire
- Facilitate Visioning Session and prepare summary notes
- Prepare reports to PT, TAG and CAG on results

**Deliverables**

- Visioning questionnaire and process
- Summary notes for Technical Memo #1

### 2.1.3 Public Involvement – Design and Conduct Public Survey

**Rationale**

The purpose of this activity is to obtain the general public’s opinion on a wide variety of issues relating to transportation and growth through a statistically valid telephone opinion survey.

We would retain a specialist firm to conduct telephone survey research among 400 adult residents of the City of Niagara Falls. We have assumed for costing purposes that this survey will be approximately 15 minutes in length and will closely track the results of an earlier survey, conducted by Angus-Reid, from July 1995. In order to ensure that the results of the current research are traceable with those of the earlier study, this methodology intends to duplicate in large part that of the 1995 study. For the overall sample of 400 gathered during this research, it is possible to say with 95% certainty that the survey results are ±5.7 percentage points of what they would be if all the City’s residents were polled.

**Tasks**

- Advise PT and TAG
- Prepare draft questionnaire
- Circulate, discuss and finalize questionnaire
- Design sample for unbiased representation from the general household population in the City
- Pre-test surveys
- Conduct telephone interviews

**Deliverables**

- Survey questionnaire
- Component of Technical Memo #1 as it relates to the design, conduct, findings and analysis of the public opinion survey

### 2.1.4 Public Involvement – Public Open House #1

**Rationale**

The purpose of this activity is to introduce the study, the planning process, study objectives and goals, and present the results of the study to-date including the results of the public opinion survey to the public to obtain their comments. The objective of this task is to engage the public and obtain their input, satisfy statutory requirements, and confirm and establish project direction. This is the first of three public open houses, and is primarily to receive public input. Note that Public Open House discussions may include an outreach program that includes more than a single event.
## Tasks

- Arrange date and location for Public Open House No. 1
- Prepare material for presentation and Public Open House (including all displays and questionnaires/comment sheets)
- Prepare and issue advertisement, invitations and news releases for Public Open House
- Hold public open house and prepare summary notes
- Update website and post presentation materials (and questionnaires/comment sheet) on website one day after Public Open House
- Prepare and distribute Newsletter #2
- Prepare report to PT on results

## Deliverables

- Advertisement #2 – Public Open House #1
- Presentation and public open house material
- Technical Memo #1 – Public Involvement Report
- Newsletter #2
- Report to PT

## 2.2 POLICY DEVELOPMENT

### 2.2.1 Policy Development – Identify Existing Policy Framework

**Rationale**

The purpose of this activity is to review existing studies, and document existing policies, objectives and conditions that may be affected by changes to the transportation system and its management, in terms of both operational and statutory policies affecting transportation. Relevant studies and data will be summarized and set in a context with comparisons to similar communities. Policies and plans from the Niagara Parks Commission, Bridge Commission, and federal and provincial governments will be reviewed and examined for conflicting or unique policies.

**Tasks**

- Report on relevant matters pertaining to the study area
- Review policies on parking, zoning, urban growth, corridor management, transit operations, traffic operations, etc.
- Summarize policies and reference documents
- Contact/meet with agency representatives, if necessary, to clarify policies or background
- Identify key components and areas of interest

**Deliverables**

- Component of Technical Memo #2 as it relates to the list of issues and objectives from existing policies and future objectives and conditions

### 2.2.2 Policy Development – Develop Future Growth Vision

**Rationale**

The purpose of this activity is to establish the future land use options for use in the modeling and analysis of transportation network requirements. The options will fall within the ranges and intent of the current City Official Plan, Growth Management Strategy and the Growth Plan. Special attention will be paid to the City’s special initiatives such as the “Land Use Recommendations – Niagara Falls Pilot Project Area”.

**Tasks**

- Document future land use options in terms of population and employment by year,
- Provide compatible and supportive land use data that corresponds to the targets.

**Deliverables**

- Component of Technical Memo #2 as it relates to future land use options to the year 2031.
## 2.2.3 Policy Development – Evaluate Strategic Growth and Land Use Options

### Rationale

The purpose of this activity is to evaluate the vision of future development that will form the basis for developing transportation system improvements. It will provide guidance in the development of growth management strategies and provide the foundation for the recommended implementation plan for the transportation system.

### Tasks

- Define the evaluation criteria
- Undertake an assessment of strategic options
- Conduct an evaluation of the strategic options
- Define the future development and mobility vision for the community
- Identify alternative mobility strategies; mode split targets, and strategies for dealing with alternative modes (people and goods).

### Deliverables

- Input to Technical Memo #2
- Report to PT.

## 2.2.4 Policy Development – Confirm Mode Share Targets

### Rationale

The confirmation of transit markets must provide insight into the various segments of the travel market in terms of demographics, magnitude of the demand and the spatial orientation. This information is essential both to establish the current position of transit and to provide a basis for the selection of reasonable market penetration targets and associated timelines. We would conduct an efficient tourism survey under the direction of Ray Tillman to ensure we had reliable and representative data on the travel patterns and transportation choices of this important segment of the City’s economic success.

It is understood that there is a Transit Strategic Business Plan and Ridership Growth Strategy Study currently underway. The results of this Study are expected to form the basis of this activity that will lead to confirmation of the transit mode share in the future horizon years.

### Tasks

- Assemble and review background information including results of Transit Strategic Business Plan and Ridership Growth Strategy Study. The information will be discussed with staff from the City and Region to confirm the format and level of detail. The key reports and related data will be assembled and reviewed to ensure an understanding of the material.
- Develop, test, and conduct a tourism survey.
- Analyze survey results

### Deliverables

- Technical Memo #2 – Vision, Policy and Issues including statements on future transit modal share and tourism travel in future horizon years
## 2.3 PLANNING AND ANALYSIS

### 2.3.1 Planning and Analysis – Review and Summarize Relevant Reports, Including 1999 STMP and 2003 Update

**Rationale**
The purpose of this activity is to review existing studies, and document existing policies, objectives and conditions that may be affected by changes to the transportation system and its management. In particular, an assessment of the 1998 Niagara Transportation Master Plan and its 2003 update.

**Tasks**
- Identify and collect relevant documents including:
  - 1998 Niagara Falls Transportation Master Plan and Update in 2003
  - City of Niagara Falls Official Plan
  - Niagara 2031 – A Growth Management Strategy
  - Region of Niagara Bikeways Master Plan
  - NGTA Niagara to GTA Corridor Planning and Environmental Assessment
  - Transit Strategic Business Plan and Ridership Growth Strategy Study
  - Region of Niagara Arterial Road System Plan
  - Relevant Traffic and Parking Impact Studies
  - Active EAs and Functional Planning Studies
  - City of Niagara Falls Wayfinding Signing Plan
  - People Mover System status
  - Assemble bibliography of all documents reviewed
  - Interact with consultants from Transit Strategic Business Plan
  - Identify possible data sources of interest
  - Identify contact person(s) for each agency, including NIITEC and MTO regarding ATMS initiatives being considered
  - Itemize data requests by agency and department
  - Send out formal requests for information
  - Prepare an index and summary of data obtained and available
  - Develop and assemble relevant data and information bases

**Deliverables**
- Component of Technical Memo #3 as it relates to the synthesis of relevant reports

### 2.3.2 Planning and Analysis – Analyze Public Survey and Focus Group Results

**Rationale**
The purpose of this activity is to summarize the findings of the public opinion survey, determine the statistical relevance of the responses and examine the patterns and attitudes observed. As well, to review and summarize the results of the focus group.

**Tasks**
- Summarize public opinion survey findings
- Analyze data based on a number of factors, including:
  - by municipality
  - by urban versus rural
  - by those working in the City or outside the City
  - by mode of transportation
  - by other relevant considerations
- Summarize results of the Focus Group questionnaire

**Deliverables**
- Component of Technical Memo #3 and Newsletter #2
### 2.3.3 Planning and Analysis – Assemble and Analyze Data Inventory

**Rationale**

The purpose of this activity is to collect, itemize and summarize data, other than reports, that may be of benefit to the Strategic Transportation Master Plan.

**Tasks**

- Develop template for summarizing key information
- Identify possible data sources which may include:
  - Region – digital mapping, traffic data, air photos, land use, environmental inventories
  - TTS 2006
  - Statistics Canada – Census Place of Work
- Identify contact person(s)
- Prepare formal requests
- Conduct traffic counts
- Analyze and summarize data
- Prepare index of available information
- Prepare relational databases using GIS data

**Deliverables**

- Technical Memo #3 Relevant Reports and Data Sources
- GIS database
- Report to PT

### 2.3.4 Planning and Analysis – Refine, Update and Enhance Transportation Demand Forecasting Model

**Rationale**

The purpose of this activity is to review, update, validate and enhance the transportation demand forecasting modeling procedures and approach to ensure this useful tool will produce reasonable and relevant results.

**Tasks**

- Finalize land use scenarios and modeling approach (analysis period, base year, networks, internal and external zone systems, etc.)
- Refine auto networks including detailing road network links, capacity assumptions, volume / delay equations, zone connections, etc.
- Develop tourist travel patterns and demands and update transit networks to reflect transit service
- Review potential of People Mover System and liaise with Niagara Parks Commission
- Review TTS data (2006 as available or 1996 if required) for peak hour trip generation and distribution characteristics for all travel modes
- Assign base year peak hour auto trip matrix to network
- Conduct screenline analysis for base year of model versus actual to identify inconsistencies
- Rectify and rationalize inconsistencies to arrive at an acceptable base year calibration for future forecasting
- Prepare for forecasts to and from external zones

**Deliverables**

- The synthesis and documentation of transportation demand forecasting modeling procedures and approach for updating and producing forecasts
- Calibrated base year model for peak hour
3. TRAVEL DEMAND AND LAND USE ANALYSIS

3.1 PUBLIC INVOLVEMENT

<table>
<thead>
<tr>
<th>3.1.1 Public Involvement – Public Open House #2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
</tr>
<tr>
<td>The purpose of this activity is to present the findings of the Issues Scoping tasks to the public to obtain their comments. The objectives of this task are to engage CAG and the public and obtain their input, satisfy statutory requirements, and confirm and establish project direction. This is the second of four public open houses, and is primarily to receive public input.</td>
</tr>
<tr>
<td><strong>Tasks</strong></td>
</tr>
<tr>
<td>- Arrange for public open house meetings</td>
</tr>
<tr>
<td>- Arrange date and location for CAG meeting</td>
</tr>
<tr>
<td>- Prepare material for presentation and meetings</td>
</tr>
<tr>
<td>- Prepare and issue advertisements, invitations and news releases for meetings</td>
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<tr>
<td>- Hold public open house meeting and prepare summary notes</td>
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<tr>
<td><strong>Deliverables</strong></td>
</tr>
<tr>
<td>- Advertisement #3 – Public Open House #2</td>
</tr>
<tr>
<td>- Presentation and public open house material</td>
</tr>
<tr>
<td>- Summary notes for Technical Memo #4</td>
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<tr>
<td>- Report to PT</td>
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3.2 POLICY DEVELOPMENT

<table>
<thead>
<tr>
<th>3.2.1 Policy Development – Identify and Assess TDM Strategies</th>
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<tbody>
<tr>
<td><strong>Rationale</strong></td>
</tr>
<tr>
<td>The purpose of this activity is to identify and assess the range of Transportation Demand Management (TDM) strategies that have the potential to reduce auto trip generation in the City. Initially, reasonable levels or targets for various non-auto modes must be developed. These targets will be used to develop a hybrid trip matrix that reflects reduced trip rates for auto.</td>
</tr>
<tr>
<td><strong>Tasks</strong></td>
</tr>
<tr>
<td>- Identify a range of TDM strategies, based on input from the Transit Strategic Business Plan, the public opinion survey, and best practices research</td>
</tr>
<tr>
<td>- Select target usage levels (i.e. mode splits) for transit, carpooling, bicycling and pedestrian activity</td>
</tr>
<tr>
<td>- Research and assess potential for new technologies to reduce travel demands or accommodate demands on new vehicles or transport systems</td>
</tr>
<tr>
<td>- Research and assess opportunities for Intelligent Transportation System (ITS) applications to ensure the cost effective use of existing facilities and services</td>
</tr>
<tr>
<td>- Compare opportunities to implement TDM strategies in the City to other cities of comparable characteristics in Ontario</td>
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<tr>
<td>- Establish bicycle and pathway policies and principles</td>
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<tr>
<td><strong>Deliverables</strong></td>
</tr>
<tr>
<td>- Component of Technical Memo #4 and Newsletter #3 as it relates to transit and TDM Strategies, including bicycle and pathway principles</td>
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</tbody>
</table>
3.2.2 Policy Development – Modal Split Confirmation

Rationale
In past investigations there appears to have been a disconnect between the establishment of the transit mode share targets and land use development, road expansion and parking policies. With reliance on the Transit Strategic Business Plan, this analysis will focus on describing the appropriate land use planning and transportation planning policies applicable within the urban area necessary to support the increase use of public transit.

Tasks
- Current Practice: The current land use policies will be assembled. In addition, the considerable material available in the US as part of the MIS investigations will be canvassed and summarized under the following headings:
  - Smart Growth Principles
  - Transit Supportive Development Policies;
  - Joint Development Principles;
  - Parking Policy
  - Street Design Guidelines;
  - Zoning/Implementation Guidelines; and
  - Funding Strategies.
- Suggested Policy Framework: A comparison of the context of the policies introduced in other jurisdictions with the forecast situation in the City of Niagara Falls will be prepared. In addition, the demonstrated or inferred impact that the various policy initiatives have had on transit mode share increases will be highlighted. Based on this analysis, a mode split target based on transit supportive policies will be prepared.

Deliverables
- Component of Technical Memo #4 and Newsletter #3 as it relates to mode split targets and policies.

3.2.3 Policy Development – Develop Evaluation Criteria (Land Use and Network)

Rationale
The purpose of this activity is to establish the evaluation process and criteria before proceeding with the analysis of possible alternatives. Criteria, in particular, must be established so that the data needed for quantifying the criteria indicators can be obtained and the required analysis can be completed as the study progresses. This activity is to ensure that all trade-offs are considered in the review of potential improvement options through an effective screening process. Without an effective screening process and recognition of natural, social, and economic impacts, projects that may have a significant environmental impact may appear to be more feasible / viable.

Tasks
- Identify and summarize preliminary evaluation criteria, based on input from the visioning exercise, public opinion survey, and best practices research
- Outline proposed evaluation process
- Confirm evaluation criteria, which could include, but may not be limited to:

<table>
<thead>
<tr>
<th>Transportation Service Criteria Group</th>
<th>Natural Environment Criteria Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criteria</strong></td>
<td><strong>Criteria</strong></td>
</tr>
<tr>
<td>Travel Costs</td>
<td>RSA/PSA’s</td>
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<tr>
<td>Emergency Service</td>
<td>Vegetation(Urban/Rural)</td>
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<tr>
<td>System Continuity</td>
<td>River Crossings</td>
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<tr>
<td>Growth Support</td>
<td>Vehicle Emissions</td>
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<td></td>
<td>Auto Energy</td>
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<tr>
<td><strong>Indicator</strong></td>
<td><strong>Indicator</strong></td>
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<tr>
<td>Vehicle Hours</td>
<td>Major/Moderate/Minor</td>
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<tr>
<td>Average Speed</td>
<td>Major/Moderate/Minor</td>
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<td>Good/Fair/Poor</td>
<td>Major/Moderate/Minor</td>
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<tr>
<td>Good/Fair/Poor</td>
<td>kg of CO</td>
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<td></td>
<td>Litres of Fuel</td>
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### Economic Criteria Group

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicator</th>
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<tbody>
<tr>
<td>Capital Costs</td>
<td>$ Millions</td>
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<tr>
<td>Property Requirements</td>
<td>Major/Moderate/Minor</td>
</tr>
<tr>
<td>Rural Connectivity</td>
<td>Positive/Neutral</td>
</tr>
<tr>
<td>Goods Movement</td>
<td>Good/Fair/Poor</td>
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</table>

### Socio/Cultural Criteria Group

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicator</th>
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</thead>
<tbody>
<tr>
<td>Community Impacts</td>
<td>Major/Moderate/Minor</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>System Integration</td>
<td>Good/Fair/Poor</td>
</tr>
<tr>
<td>Heritage Districts</td>
<td>Major/Moderate/Minor</td>
</tr>
</tbody>
</table>

- Identify data to be inventoried – natural, social, economic
- Contact MOEE, MNR, conservation authorities and other agencies to obtain information relative to environmental criteria
- Determine/confirm format for presentation of environmental information

### 3.2.4 Policy Development – Develop Environmental Screening Criteria

#### Rationale

The purpose of this activity is to assemble, consolidate and map updated Natural Heritage information, develop environmental screening criteria, undertake a natural environment evaluation of transportation planning options in the context of this secondary source information, and to document the findings.

#### Tasks

- Assemble, consolidate and map Natural Heritage information for the City (including agency liaison);
- Develop environmental screening criteria and review with the project team;
- Evaluate the various transportation initiative options using the environmental screening criteria, and review the findings in a working session with the project team;
- Document the above activities as a report deliverable.
- Inputs Required from Others:
  - Mapping showing all identified transportation improvement options and initiatives
  - Summary text describing the above, and assumptions concerning general footprint impacts
  - Updated natural heritage resource information (such as GIS data layers,) from the City and Region of Niagara, MNR, and Niagara Region Conservation Authority (for example; designated areas, wetland regulated areas, flood and fill line mapping, wetland mapping layers, Natural Heritage Information Centre [NHIC] data, rare species element occurrence data).

#### Deliverables

- Consolidated Natural Heritage environmental map (that includes, for example, current regional policy areas, MNR/CA designated areas, Environmentally Sensitive Landscape areas, evaluated and unevaluated wetlands, watercourses and valley lands, groundwater source protection and well protection areas)
- Technical Memo #4 Travel Demand and Analysis including environmental screening evaluation tables and supporting documentation.
- Newsletter #3
- Report to PT.
## 3.3 PLANNING AND ANALYSIS

### 3.3.1 Planning and Analysis – Select Land Use Scenarios

#### Rationale

The purpose of this activity is to review and select land use (population and employment) scenarios by traffic zone for forecasting future transportation system demands.

#### Tasks

- Review local and regional population and employment forecasts in detail. Major assumptions will be examined and evaluated. Factors that could affect the distribution of growth will also be examined, for instance expansions and upgrades to the existing transportation network
- Trip generation and distribution information (TTS data)
- Based on the results of this detailed review, a set of growth scenarios will be selected.
- For each scenario population and employment forecasts will be allocated to Waterloo traffic zones.
- Select and utilize population and employment forecasts for external zones
- Working meetings with study team and Regional staff

#### Deliverables

- Component of Technical Report #5 as it relates to the synthesis and documentation of the land use (population and employment) forecasts
- Population and employment forecasts by traffic zone

### 3.3.2 Planning and Analysis – Identify Network Deficiencies (Do Nothing)

#### Rationale

The purpose of this activity is to identify the problem areas on the transportation system resulting from the travel demands generated by a specific land use/growth scenario, both with and without TDM/Transit strategies in effect.

#### Tasks

- Develop both baseline and TDM/Transit scenarios for land use scenarios (base and auto reduction trip matrix)
- Prepare trip matrices based on these scenarios
- Assign trips to base network
- Conduct screenline (sub area) analysis for each scenario
- Identify constraints in each scenario
- Develop network alternatives to satisfy constraints
- Assign trips to alternative networks
- Conduct screenline (sub area) analysis for each network alternative
- Refine forecasts based on evaluation of scenarios and alternatives
- Undertake traffic assignments for networks and individual improvement options using auto reduction trip matrices
- Conduct screenline analysis for alternatives
- Compare alternatives on screenline/link basis to identify future problem areas

#### Deliverables

- Component of Technical Report #5
3.3.3 Planning and Analysis – Evaluate Land Use Options

Rationale

The purpose of this activity is to assess the ability of base transportation network to accommodate the demand associated with a specific land use option (including associated auto reduction potentials resulting from the specific land use option, i.e. high density corridor in urban areas). The objective of the task is to refine the land use such that the performance of the base network in response to the land use option has been maximized.

Tasks

- Assess network performance
- Evaluate network performance based on evaluation (land use and network) criteria
- Refine/modify land use at strategic level to address potential under performance of transportation network
- Re-assess network performance

Deliverables

- Technical Report #5 Land Use Options and Network Deficiencies
- Report to PT

4. TRANSPORTATION PLAN FORMULATION AND REVIEW

4.1 PUBLIC INVOLVEMENT

4.1.1 Public Involvement – Public Open House #3

Rationale

The purpose of this activity is to present the recommended improvement priority plan to obtain their comments. The objectives of this task are to engage TAG, CAG and the public and obtain their input, satisfy statutory requirements, and confirm and establish project direction. This is the third of four public open houses, and is primarily to receive public input.

Tasks

- Arrange date and location for TAG and CAG meetings
- Arrange date and location for public open house
- Prepare material for presentation and meetings
- Prepare and issue advertisement, invitations and news releases for meetings
- Hold TAG, CAG and public open house meetings and prepare summary notes
- Prepare and distribute Newsletter #4
- Update website and post public open house material on website on the day following the public open house
- Respond to inquiries received before and after meetings
- Prepare report to PT on results

Deliverables

- Advertisement #4 – Public Open House #3
- Presentation and public open house material
- Newsletter #4
- Summary notes
- Report to PT
4.2 **POLICY DEVELOPMENT**

### 4.2.1 Policy Development – Develop Development Guidelines

**Rationale**
The purpose of this activity is to identify development guidelines that support the Transportation Vision and enhance opportunities for creating a balanced transportation system and determine how to implement the guidelines.

**Tasks**
- Confirm preferred growth scenario and mode split objectives
- Assess potential policy direction and implementation guidelines for transit supportive development consistent with the transportation vision
- Prepare development guidelines to encourage increased use of non-auto/active transportation modes.

**Deliverables**
- Component of Technical Memo #6 as it relates to recommendations regarding development/corridor guidelines and potential modifications to the development review process.

### 4.2.2 Policy Development – Develop Corridor Management Strategies

**Rationale**
The purpose of this activity is to establish strategies that ensure the appropriate management of urban and rural roadways to achieve the functional objectives of each hierarchical category.

**Tasks**
- Identify preferred Regional road network (jurisdictional responsibilities)
- Confirm roadway hierarchical structure and a level of service policy and ROW requirements
- Develop access control guidelines using access management guidelines from MTO, Region and the City
- Develop corridor management objectives and guidelines, including safety, environmental, aesthetics.
- Identify typical cross-sections and streetscaping opportunities with special attention to accommodating and embracing active transportation modes.
- Establish an inventory and policy for the retention of unopened road allowances

**Deliverables**
- Component of Technical Memo #6 as it relates to recommendations regarding corridor management strategies and guidelines, and the network significant facilities.

### 4.2.3 Policy Development – Develop Infrastructure Preservation/Asset Management Strategies

**Rationale**
The purpose of this activity is to define the asset management strategies required for the City to preserve investment in the City’s transportation system and to ensure that facilities are maintained in a good state of repair, at the least cost.

**Tasks**
- Review current asset management and rehabilitative strategies and assessments
- Examine the type and nature of deficiencies identified in the Road Needs studies and pavement and structure management systems
- Research best practices of other municipalities
- Develop and assess alternative infrastructure preservation strategies
- Recommend an approach, program and next steps

**Deliverables**
Component of Technical Memo #6 as it relates to recommendations regarding infrastructure preservation strategies
## 4.2.4 Policy Development – Examine Financing and Funding Opportunities and Alternative Delivery Strategies

### Rationale

The purpose of this activity is to identify funding sources for various infrastructures and service potentials and assess the merit of alternative financing opportunities.

### Tasks

- Review current financing levels and methods (including the Development Charge practices for the funding of improvements)
- Research and assess other methods of financing improvements to identify possible opportunities
- Summarize findings of research

### Deliverables

- Component of Technical Memo #6 including recommendations regarding financing opportunities and constraints for the recommended improvement plans and the impact on existing programs and rates

## 4.3 PLANNING AND ANALYSIS

### 4.3.1 Planning and Analysis – Confirm Non-Structural Improvements, including TDM

### Rationale

The purpose of this activity is to identify means of reducing the need for structural improvements, through measures related to policy, transportation demand management, transit improvements, alternative modes (cycling, pedestrian, etc.) and traffic operations. These improvements must satisfy the STMP Study goals and objectives.

### Tasks

- Prepare list of non-structural improvements and assess their impacts on travel demand
- Review and evaluate list of non-structural improvements
- Identify preferred improvements
- Identify costs associated with the preferred improvements

### Deliverables

- Component of Technical Memo #6 as it relates to documentation of the non-structural improvement analysis
- List of preferred non-structural improvement alternatives

### 4.3.2 Planning and Analysis – Identify Potential Corridor Structural Improvements

### Rationale

The purpose of this activity is to identify the network needs and possible improvements for further evaluation and testing.

### Tasks

- Prepare list of structural transportation corridor improvements
- Review and evaluate list of transportation corridor improvements
- Identify list of improvements to be considered
- Develop network alternatives based on screenline analysis

### Deliverables

- Component of Technical Memo #6 as it relates to documentation of the road improvement alternatives and the required Property Requirement Report
- List of transportation corridor improvement alternatives
### 4.3.3 Planning and Analysis – Conduct Initial Screening and Project Evaluations

#### Rationale

The purpose of this activity is to review the list of transportation corridor improvement alternatives against major evaluation criteria to eliminate those alternatives that do not satisfy specific criteria or are not technically feasible.

#### Tasks

- Prepare screening evaluation of transportation corridor improvement alternatives based on process and criteria (Develop Evaluation and Environmental Screening Criteria and Processes)
- Finalize list of transportation corridor improvement alternatives to be carried forward to network evaluation stage

#### Deliverables

- Component of Technical Memo #6 as it relates to documentation of the transportation corridor improvement alternatives to be carried forward, the screening process, and to the documentation of the specific impacts and issues associated with each alternative
- List of screened transportation corridor improvement options to be carried forward

### 4.3.4 Planning and Analysis – Develop Parking Strategy

#### Rationale

Ongoing parking supply and management issues in the Fallsview area and identifying potential funding sources, cash-in-lieu, public/partnership, off-site parking facilities for hotels, and tour bus parking.

#### Tasks

- Establish goals and objectives for the parking strategy review;
- Obtain and review existing parking studies undertaken in the City;
- Obtain parking inventory data – secondary source;
- Obtain and assess parking supply indices/rates by land use type;
- Identify parking demands within the downtown and tourist centres;
- Assess opportunities to address current and future parking needs;
- Assess how parking supply will affect:
  - Transit Use/Economic Growth/Traffic Operations
  - Develop parking strategy, including recommended management strategy
  - Consult with local businesses to obtain feedback on parking strategy

#### Deliverables

- Component of Technical Memo #6 as it relates to a parking strategy and implementation plan.

### 4.3.5 Planning and Analysis – Develop Cycling and Active Transportation Plan

#### Rationale

The key to a vibrant and liveable city is providing the communities with alternative transportation choices and a continuous and reliable network such as ‘Complete Streets’ that promotes cycling use and other active transportation.

#### Tasks

- Establish goals and objectives for the alternative transportation strategy review;
- Obtain and review existing studies undertaken in the City and by others;
- Obtain routing data and ROW requirements;
- Examine possibility of utility -corridor facilities more strongly as transportation infrastructure that happen to also fulfill a recreational function;
- Identify demands for these modes;
- Assess opportunities to address current and future routes on-street and off-street and urban and rural settings including crossings of highways and rail lines which should include a review or
### 4.3.6 Planning and Analysis – Develop Signing Plan and Develop Detour Routing Plan

**Rationale**

The tourist activities and opportunities in the City are numerous and directing visitors efficiently to their destinations requires a consistent, understandable, and coordinated signing plan. When the City has special events, those too require a plan for signing detour routing.

**Tasks**

- Review existing City and other government signing policies and detour routing plans;
- Obtain signing inventory data;
- Develop signing strategy, including recommended management strategy
- Consult with local businesses to obtain feedback on signing and detour routing strategy

**Deliverables**

- Component of Technical Memo #6 as it relates to a signing and detour routing strategy and implementation plan.

### 4.3.7 Planning and Analysis – Develop Alternative Networks

**Rationale**

The purpose of this activity is to develop alternative networks to permit the testing of different improvement and staging strategies between provincial, regional and city transportation corridors.

**Tasks**

- Develop alternative networks to be tested with special attention on the many issues identified in the Issues Understanding table provided in Appendix A of this proposal
- Prepare traffic demand forecasts for each horizon years 2016, 2026, and 2031
- Review network performance for each improvement and staging alternative

**Deliverables**

- Component of Technical Memo #6 as it relates to documentation of the alternative networks
- List of Alternative networks to be evaluated

### 4.3.8 Planning and Analysis – Evaluate Alternative Networks

**Rationale**

The purpose of this activity is to complete a detailed assessment of the technical and environmental issues related to each network to determine the preferred alternative. In order to complete the assessment, it is necessary to organize data on the alternatives and criteria to compare the assessment from each alternative and undertake sensitivity testing to accommodate the opinions of all stakeholders.

**Tasks**

- Summarize network impacts by criteria and indicator, including costs
- Evaluate networks using appropriate criteria
- Confirm findings with stakeholders

**Deliverables**

- Technical Memo #6 – Alternative Network Plan, as it relates to documentation of the alternative network evaluation and special parking, alternative transportation, and signing plans
- Report to PT
### 4.3.9 Planning and Analysis – List Technically Preferred Improvements

**Rationale**
The purpose of this activity is to assemble a consolidated list of the technically preferred non-structural and structural improvements in the transportation corridor for reassessment against financial and jurisdictional constraints and rehabilitation requirements.

<table>
<thead>
<tr>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assess priority plan</td>
</tr>
<tr>
<td>• Identify collective cost to implement plan</td>
</tr>
<tr>
<td>• Assess benefits of cost</td>
</tr>
<tr>
<td>• Prepare consolidated list of technically preferred non-structural and structural improvements</td>
</tr>
</tbody>
</table>

**Deliverables**
- List of technically preferred non-structural and non-structural improvements
- Component of Technical Memo #7 as it relates to documentation of the technically preferred improvements

### 4.3.10 Planning and Analysis – Project Costing

**Rationale**
The purpose of this activity is to assess the cost of each of the individual components of the technically preferred improvements.

<table>
<thead>
<tr>
<th>Tasks</th>
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</thead>
<tbody>
<tr>
<td>• Review the 5 and 10 year Road Improvement Program and Road Needs Studies</td>
</tr>
<tr>
<td>• Cross reference programmed improvements/rehabilitation work with technically preferred improvements</td>
</tr>
<tr>
<td>• Compare reconstruction/widening costs to potentially deferred rehabilitation costs</td>
</tr>
<tr>
<td>• Recommend operating and maintenance strategies for infrastructure preservation</td>
</tr>
<tr>
<td>• Prepare life cycle costs for infrastructure</td>
</tr>
<tr>
<td>• Assign costs to all improvement alternatives</td>
</tr>
<tr>
<td>• Assign costs to widenings, upgrading operational improvements, and planning and engineering support.</td>
</tr>
</tbody>
</table>

**Deliverables**
- Component of Technical Memo #7 as it relates to documentation of recommended improvement priority plan and its financial constraints

### 4.3.11 Planning and Analysis – Improvement Program Resource Requirements

**Rationale**
The purpose of this activity is to identify supporting measures required to facilitate the effective implementation of the preferred improvements.

<table>
<thead>
<tr>
<th>Tasks</th>
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</thead>
<tbody>
<tr>
<td>• Review all elements of the transportation service associated with the preferred implementation plan</td>
</tr>
<tr>
<td>• Identify supporting programs and infrastructure required to maximize benefit of these improvements</td>
</tr>
<tr>
<td>• Identify policies required to implement these supporting measures / programs (advertising /marketing/promotion)</td>
</tr>
<tr>
<td>• Identify cost supporting programs</td>
</tr>
<tr>
<td>• Confirm feasibility of individual elements of the implementation plan</td>
</tr>
</tbody>
</table>

**Deliverables**
- Component of technical Memo #7 as it relates to documentation of recommended improvement priority plan
## 4.3.12 Planning and Analysis – List Financially Constrained Improvements

### Rationale

The purpose of this activity is to assess the technically preferred improvements against any financial constraints. It may be necessary to re-analyze networks at this stage if some components of the network are not financially feasible.

### Tasks

- Assess the implications of financial constraints on the list of technically preferred improvements
- Identify timing of improvements based on priorities, traffic demands and costs, for the following periods:
  - 0 to 5 years
  - 5 to 10 years
  - 10 to 20 years
  - 20 years plus
- Prepare prioritized list of financially constrained improvements
- Adjust improvements or timings and re-analyze networks, as required
- Finalize list

### Deliverables

- Component of Technical Memo #7 as it relates to documentation of recommended improvement priority plan and its financial constraints
- List of financially constrained improvements and associated costs

## 4.3.13 Planning and Analysis – Development Charges Impacts

### Rationale

The purpose of this activity is to identify funding capability relative to the implementation of the Recommended Improvement Priority Plan, determine, if any, impacts on the Development Charge By-law.

### Tasks

- Cost all improvement alternatives
- Cost widenings, upgrading operational improvements, etc.
- Assess funding, budget and future implications on the Development Charges By-law
- Develop a range of funding strategies to finance growth and non-growth related transportation improvements

### Deliverables

- Funding strategies for future improvement plan
- Technical Memo #7 - Recommended Improvement Priority Plan
- Report to PT
5. **CONFIRMATION AND DOCUMENTATION**

### 5.1 PUBLIC INVOLVEMENT

#### 5.1.1 Public Involvement – Present Final TMP to City Council

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose of this activity is to inform the public on progress and to obtain City Council endorsement and regional Committee support for the final STMP.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tasks</th>
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<tbody>
<tr>
<td>● Prepare Newsletter #5</td>
</tr>
<tr>
<td>● Prepare material for presentation</td>
</tr>
<tr>
<td>● Make presentation to City Council and Regional Committees and respond to questions</td>
</tr>
<tr>
<td>● Make any requested changes to the final draft STMP based on input</td>
</tr>
<tr>
<td>● Finalize and distribute the document</td>
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</table>

<table>
<thead>
<tr>
<th>Deliverables</th>
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</thead>
<tbody>
<tr>
<td>● Newsletter #5</td>
</tr>
<tr>
<td>● Presentation material/City Council-approved STMP</td>
</tr>
<tr>
<td>● Advertisement # 5 – Notice of Completion</td>
</tr>
</tbody>
</table>

### 5.2 POLICY DEVELOPMENT

#### 5.2.1 Policy Development – Develop Monitoring Process

<table>
<thead>
<tr>
<th>Rationale</th>
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</thead>
<tbody>
<tr>
<td>The purpose of this activity is to ensure that the process developed as part of the STMP Study can be integrated into normal transportation planning activities at the City. In addition, there is a need to define how effective the various mobility strategies have been in achieving the policy goals and objectives established earlier.</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Tasks</th>
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</thead>
<tbody>
<tr>
<td>● Define report updating procedures and data requirements</td>
</tr>
<tr>
<td>● Define evaluation period</td>
</tr>
<tr>
<td>● Define monitoring procedures and criteria for system elements e.g. what are the mode split targets and how well have they been achieved</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Deliverables</th>
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</thead>
<tbody>
<tr>
<td>● Component of Technical Memo #7 as it relates to the monitoring process and program</td>
</tr>
</tbody>
</table>

#### 5.2.2 Policy Development – Develop Process – Strategic to Tactical

<table>
<thead>
<tr>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>The STMP will result in the identification of policies, strategic plans and initiatives required to protect for a sustainable transportation system. Staff of the City will be charged with converting strategic plans to tactical plans to realize this plan over time. (i.e. implementing structural and non-structural elements of the plan in the context of a financially and politically constrained environment)</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Tasks</th>
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</thead>
<tbody>
<tr>
<td>● Compare priority list of transportation corridor improvements with planning and transportation policies</td>
</tr>
<tr>
<td>● Identify short term, mid-term and long term priorities</td>
</tr>
<tr>
<td>● Prepare business plan for ensuring that required policies are endorsed and that find available in Regional budget to implement improvement plan as required.</td>
</tr>
<tr>
<td>● In conjunction with monitoring plan, ensure that budgetary and temporal considerations are in place to facilitate implementation of initiatives</td>
</tr>
</tbody>
</table>
### 5.2.3 Policy Development – Develop Sustainability Report Card

#### Rationale

The purpose of this activity is to provide an assessment check list of the policies and initiatives required for the successful implementation of the preferred plan.

#### Tasks

- Prepare list of required land use and transportation policies used in developing selected land use option
- Prepare list of transportation objectives for people and goods movement
- Identify strategic staging plan and monitoring process
- Prepare template for check list of short-term, mid-term, and long-term initiatives as implemented
- Prepare guide for application and interpretation of check list, to be used as an annual report card on the degree to which horizon year goals with respect to policies and initiatives are being achieved.

#### Deliverables

- Sustainability Report Card
- Technical Memo #7 - Study Completion

### 5.3 PLANNING AND ANALYSIS

#### 5.3.1 Planning and Analysis – Study Documentation

**Rationale**

The purpose of this activity is to document the findings and prepare the final STMP. A Draft Final report will be prepared and submitted to the City for review for a sufficient time for a proper review and based on input received, prepare Final STMP and necessary EA documentation.

**Tasks**

- Prepare reports consolidating and summarizing the findings of the Public Involvement Work stream activities
- Prepare the Draft Final and Final STMP by synthesizing the findings of all Technical Reports
- Review Final STMP with stakeholders
- Finalize report

**Deliverables**

- Final STMP