Welcome to the
Ottawa-Trussler Area
Sewage Facility
Class Environmental Assessment
Public Open House

September 25, 2013
Welcome

The purpose of this second Public Open House is to:

- Present the study objectives and study area
- Confirm the alternative solutions taken forward for evaluation
- Discuss the potential environmental effects of the alternatives
- Summarize the results of the evaluation of alternatives
- Obtain feedback on the preliminary preferred alternative
- Highlight the next steps in the EA process

Public Open House #1 was held on May 7, 2013. No public or agency comments were received following the open house.
Problem/Opportunity Statement

To support the development of the Laurentian West Phase 3b Community and surrounding area, sanitary sewage servicing is being planned. Servicing may require a pumping station, forcemain, and downstream upgrades to convey the flow.
Project Objectives

- Identify alternatives for wastewater collection and pumping
- Identify alternatives for forcemain and routing
- Review the downstream capacity of existing sanitary collection system and the Borden Trunk
- Recommend collection, pumping capacity, pumping station location and forcemain route, and any upgrades required in the existing downstream collection system

- Protect the environment, as defined in the Environmental Assessment Act, through the wise management of resources. This objective will be met through monitoring, mitigation, and extensive consultation with all affected and interested parties
- Involve the participation of a broad range of stakeholders in the study through a variety of methods including public notices, local newspaper advertisements and open houses
During the development of alternatives it was determined that a larger study area was needed to account for potential infrastructure and associated environmental impacts.

The following areas were subsequently incorporated within the revised study area:

- Mannheim Estates
- Areas to the north and south of Ottawa Street, west of David Bergey Drive
Class EA Process

Under current provincial legislation, the planning and design of municipal water and wastewater projects must be in accordance with Ontario Environmental Assessment Act. The Municipal Class EA describes the process that proponents (in this case, City of Kitchener) must follow to meet the requirements of the Act, which includes public consultation. This project is identified as a ‘Schedule B project’ and includes two Public Open Houses. This process reflects the following key principles:

• Consideration of a reasonable number of alternatives, including the "do nothing" alternative.

• Consultation with all affected parties, including the public, relevant governmental review agencies, other affected municipalities and utility companies.

• Identification and consideration of the effects of each alternative on all aspects of the environment, i.e. the impact on the natural, social, cultural, technical and economic/financial environment.

• Systematic evaluation of alternatives in terms of their advantages and disadvantages with respect to all aspects of the environment.

• Provision of clear and complete documentation of the planning process followed, to allow "traceability" of decision-making with respect to the project.
EA Phases

Class EA Phase 1
- Identify Problem or Opportunity
  - Identify Need
  - Initiate Consultation
    - Community
    - Agencies
- Background Review
  - Obtain and review background documentation and initiate agency contact
  - Identify data gaps to be addressed during the site inventory / investigations

Class EA Phase 2
- Site Inventory / Investigation
  - Undertake natural heritage investigation
  - Undertake geotechnical / hydrological investigation
  - Undertake hydrology / hydraulics investigation
  - Aquatic habitat assessment
  - Incidental wildlife surveys
  - Fluvial geomorphology
  - Identify opportunities and constraints
- Evaluation of Alternatives
  - Identify alternatives
  - Public Information Centre (PIC) #1
  - Evaluate alternatives
  - Complete impact assessment
  - Select preferred alternative
- Preliminary Design / Project File Report
  - Implementation Plan
  - Preliminary design of preferred alternative
  - Recommendations on further study if required
  - PIC #2
  - Develop a monitoring, maintenance and mitigation plan

Documentation
- Project File Report (PFR)
  - Prepare first draft PFR
  - Revise and prepare second draft PFR
  - Finalize PFR
  - Notice of Completion
  - 30 day Public Review
  - Approval by council

Ottawa-Trussler Sewage Facility Class Environmental Assessment
Further analysis of the proposed alternatives presented in the first Open House led to Alternatives 3 and 6 being discounted from further assessment.

The defining characteristic of Alternatives 3 and 6 was the development of a new pumping station on Trussler Road. This is not considered to be feasible for the following reasons:

- Site constraints
- Future development of Trussler Road
- Installation of a major new Union Gas natural gas pipeline along Trussler Road
- Ability to accommodate the proposed subdivision design

As a result, only Alternatives 1, 2, 4 and 5 were taken forward for evaluation.
Evaluation of Alternatives

Alternative 1: Do Nothing
- No servicing to support future development
- Existing servicing would remain as is

Alternative 2:
- New pumping station in Activa Trussler North Subdivision
- Existing Mannheim Estates Pumping Station & Forcemain unchanged

Alternative 2-A
- New forcemain through Activa Trussler North Subdivision

Alternative 2-B
- New forcemain along Trussler Rd & Ottawa St

Alternative 4:
- New gravity sewer from Activa Trussler North Subdivision along Trussler Rd to Existing Mannheim Estates system
- Existing Mannheim Estates Pumping Station upgraded

Alternative 4-A
- New forcemain through Activa Trussler North Subdivision & abandon forcemain on Ottawa St

Alternative 4-B
- New forcemain along Trussler Rd & Ottawa St

Alternative 5:
- New pumping station in Activa Trussler North Subdivision
- Existing Mannheim Estates Pumping Station & Forcemain to be upgraded to pump to new pumping station & abandon forcemain on Ottawa St

Alternative 5-A
- New forcemain through Activa Trussler North Subdivision

Alternative 5-B
- New forcemain along Trussler Rd and Ottawa St
Evaluation Process

Detailed Evaluation Criteria were developed in consultation with the City and the public for the following categories:

- Natural Environment
- Socio-Cultural Environment
- Construction / Financial / Technical

Discipline specialists in ecology, planning, engineering, cultural heritage and archaeology undertook a comparative evaluation of the alternatives – scoring each alternative based upon its likely potential environmental impacts (from most preferred to least preferred).

The evaluation matrix clearly identifies a preferred alternative solution.

*The Do Nothing Alternative is used in the evaluation as a benchmark by which to evaluate viable Alternatives. Crucially, the Do Nothing does not address the study objectives or wider growth objectives of the City, and therefore cannot be considered the preferred alternative.*
# Evaluation Criteria

## Natural Environment
- Impact on designated natural areas (e.g., environmentally significant policy areas [ESPAs] and provincially significant wetlands [PSWs])
- Impact on natural heritage features (e.g., wetlands, woodlands, valleylands, wildlife, wildlife habitat)
- Impact on fisheries and aquatic habitat
- Impact on Species at Risk (SAR) or SAR habitat
- Overall ability to meet regulatory constraints

## Socio-Cultural
- Potential for disruption / inconvenience to adjacent properties and buildings
- Impact on local businesses
- Potential for loss or disruption to community / recreational features
- Change in community character
- Consistency with current land use designations, policies and development plans
- Ability to blend site into surrounding landscape
- Impact on heritage resources (archaeological, built heritage and cultural heritage landscape)
- Impact on agricultural and rural areas

## Construction
- Ease of excavation and need for dewatering during construction
- Potential for disruption to local traffic during construction
- Potential for noise, dust and vibration during construction
- Construction constraints (permitting requirements, land acquisition)
- Impact on existing utilities and services (mains sewers, gas, electric)

## Financial
- Capital costs (pumping station, forcemains, sewers)
- Operations and maintenance costs
- Property acquisition costs
- Restoration costs
- Total Lifecycle Costs

## Technical
- Effectiveness and reliability in achieving study objectives
- Time required to implement
- Soil conditions and groundwater table impacts
- Potential for leakage into Well Head Protection Zone
- Ease of maintenance
- Flexibility to institute changes if targets are revised or improvements required
- Overall constructability
Natural Environment Features

Designated Natural Heritage Areas in the study area:

- A portion of Laurentian West Wetland Complex (Locally Significant Wetland)
- Three forested areas mapped as ‘core areas’ in the Regional Official Plan Greenlands Network
- Seven small unevaluated wetland pockets in the study area

Species at Risk (SAR) or SAR habitats in the study area:

- Barn Swallow (threatened; confirmed presence – flyover only)
- Eastern Meadowlark (threatened; confirmed presence – potential habitat)
- Milksnake (special concern; potential habitat)
- Eastern Ribbonsnake (special concern; potential habitat)
- Snapping turtle (special concern; confirmed habitat)
Natural Environment – Potential Effects

Impact on designated natural areas:
- Negligible difference between Alternatives 2, 4 and 5
- Potential for sediment release into the adjacent Locally Significant Wetland if the forcemain is constructed on the south side of Ottawa St
- No impacts during regular operation – low risk of forcemain rupture and release of sewage into Laurentian West Wetland Complex

Impact on natural heritage features:
- Negligible difference between Alternatives 2, 4 and 5
- Pumping station will remove a portion of a hedgerow and cultural vegetation mosaic Forcemain installation will require temporary disturbance of roadside cultural meadow
- No impacts during regular operation

Impact on fisheries and aquatic habitat:
- Negligible difference between Alternatives 2, 4 and 5
- Potential for sediment release into pond (assumed fish habitat) if forcemain is constructed on the south side of Ottawa Street
- No impacts during regular operation – low risk of forcemain rupture and release of sewage into fish habitat (part of Locally Significant Wetland)

Impact on Species at Risk (SAR) or SAR habitat:
- Negligible difference between Alternatives 2, 4 and 5
- Potential for sediment release into adjacent Locally Significant Wetland if forcemain is constructed on the south side of Ottawa Street
- Potential SAR turtle injury/mortality risk if construction is conducted during hibernation period – no in-water works or works that may alter water levels within the Locally Significant Wetland or adjacent stormwater management pond should be conducted from October to April
- Potential SAR turtle injury/mortality risk if turtles enter construction zone – wildlife fencing will be installed prior to construction
- No impacts during regular operation – low risk of forcemain rupture and release of sewage into Laurentian West Wetland Complex

Overall ability to meet regulatory constraints:
- Negligible difference between Alternatives 2, 4 and 5
- For all Alternatives, the Locally Significant Wetland provides protected habitat for Blanding’s turtle – this species is designated as Threatened under the Endangered Species Act
- A permit or registration may be required
| Impact on designated natural areas (e.g. ESPAs and PSWs) during construction and operation | Alternative 1 | Alternative 2 | Alternative 4 | Alternative 5 |
| Do Nothing | 2A | 2B | 4A | 4B | 5A | 5B |
| Impact on natural heritage features (e.g. wetlands, woodlands, valleylands, wildlife and wildlife habitat) during construction and operation | | | | | |
| Impact on fisheries and aquatic habitat during construction and operation | | | | | |
| Impact on Species at Risk (SAR) or SAR habitat during construction and operation | | | | | |
| Overall ability to meet regulatory constraints | | | | | |

Excluding the Do Nothing, there is a negligible difference from a natural environment perspective between Alternatives 2, 4 and 5.
Socio-Cultural Environment – Potential Effects

Potential for disruption/inconvenience to adjacent properties and buildings:

- Alternative 2A performs marginally better than Alternatives 2B, 4 and 5
- All Alternatives have minor/temporary disruption to adjacent properties accessed from Ottawa Street during construction
- Additional minor/temporary disruption to adjacent properties within Mannheim Estates for Alternatives 4 and 5 during construction

Impact on local businesses:
- No impact during construction or regular operation as the surrounding area is primarily residential

Potential for loss or disruption to community/recreational features:
- No loss or disruption associated with Alternative 2
- Potential minor/temporary disruption and loss of adjacent parkland in Alternatives 4 and 5 if existing Mannheim Estates Pumping Station is expanded

Change in community character:
- No change in community character for all Alternatives

Consistency with current land use designations, policies and development plans:
- Do Nothing does not support wider growth policies, plans and objectives for the City
- All other Alternatives are consistent with land use designations and development policies

Ability to blend into surrounding landscape:
- Alternative 2 – new pumping station will have a minor visual impact but can be designed to blend into proposed landscape within the subdivision
- Alternative 4 – may have minor visual impact to existing landscape depending on the extent of the upgrade to the existing Mannheim Estates Pumping Station
- Alternative 5 – combination of a new pumping station and upgrade to the existing Mannheim Estates Pumping Station will have a marginally greater visual impact

Impact on heritage resources:
- The impact to archaeological and built heritage resources is considered to be low for all Alternatives

Impact on agricultural and rural areas:
- The surrounding area is designated as an urban area and will be developed for residential land use; therefore none of the Alternatives will have an impact
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Excluding the Do Nothing, Alternative 2A is the preferred alternative from a socio-cultural environment perspective.
Construction – Potential Effects and Evaluation Results

Ease of excavation and need for dewatering during construction:
- Alternatives 2A and 5A are both located in greenfield sites within the proposed development and involve the minimum level of linear works

Potential for disruption to local traffic during construction:
- Alternatives 2A and 5A linear works are largely limited to within a greenfield site and along Ottawa Street South

Potential for noise, dust and vibration during construction:
- Alternative 2A is located within a greenfield site with the minimum level of linear works along Ottawa Street South

Construction constraints (e.g. permitting requirements and land acquisition)
- Alternative 2A is located within a greenfield site within the proposed development and within the existing Ottawa Street South right-of-way

Impact on existing utilities and services (e.g. mains sewers, gas, electric)
- Alternatives 2A and 5A involve the minimum level of linear works and will be connected to new utilities and services

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Excluding the Do Nothing, Alternative 2A is the preferred alternative from a construction perspective.
Capital costs (e.g. pumping station, forcemain, sewers):
- Alternative 2A requires the lowest capital costs as the pumping station will be located within a greenfield site and the forcemain will require the minimum level of linear works
- Alternative 2A estimated to cost approx. $3.5 million; Alternative 4B (highest capital costs) estimated to cost approx. $4.9 million

Operations and maintenance costs:
- Alternative 2 requires the lowest operations and maintenance costs as only one pumping station and forcemain will be operated

Property acquisition costs:
- Alternatives 2 and 5 are located within the proposed development with no requirement for property acquisition

Restoration costs:
- Alternatives 2A and 5A require the minimum level of infrastructure

Total Lifecycle Costs:
- Alternative 2A requires the lowest capital and operating costs compared to other Alternatives
Technical – Potential Effects and Evaluation Results

Effectiveness and reliability in achieving study objectives:
• The Do Nothing does not support the study objectives; all other Alternatives are supportive

Time required to implement:
• Alternative 2 will be implemented by the City and developer without additional approvals

Soil conditions and groundwater table impacts:
• All Alternatives involve deep excavations, forcemain trenching and dewatering to be carefully controlled in accordance with the geotechnical investigation recommendations

Potential for leakage into Well Head Protection Zone:
• Alternative 4 is located furthest from the Well Head Protection Zone

Potential for noise and/or odour emissions during operation:
• There is a negligible difference between all Alternatives

Ease of maintenance:
• Alternative 4 consolidates maintenance at a single pumping station and forcemain

Flexibility to institute changes if targets revised or improvements required:
• Alternatives 2 and 5 utilize infrastructure that is able to support future changes

Overall constructability:
• Alternative 2A is within a greenfield site and the proposed development and involves the minimum level of linear works
Preferred Alternative – 2A

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Overall, the preferred alternative is Alternative 2A as it scores comparatively better than other Alternatives across all criteria.

Pumping Station Site Development

This is a visual rendering for illustrative purposes only and may be modified during detailed design.
Preferred Alternative – 2A
Preferred Alternative – 2A

Minimum impacts for:

- **Socio-Cultural Environment** – no loss of existing community or recreational features and minimal disruption and inconvenience for local residents
- **Construction** – main site and forcemain is through a greenfield site and has the shortest forcemain length through an existing right-of-way; minimal impacts related to noise and vibration, traffic control and existing utilities
- **Financial** – shortest forcemain length through an existing right-of-way; lowest capital investment, operations/maintenance costs and Total Lifecycle Costs
- **Technical** – overall is the technically preferred alternative; requires the least time to implement and provides flexibility to institute changes if targets are revised or future improvements are required
Mitigation Strategies

Mitigation strategies may include:

- Constrain pipeline construction and staging within existing Ottawa Street South right-of-way
- Where required, to minimize dewatering and the excavation footprint, employ sheet pile and/or close coupled caisson walls during construction
- Siltation control fencing and filter bags or settling ponds for pumped groundwater control during construction
- Traffic safety assessment to address flow/congestion issues during construction
Mitigation Strategies

• Stabilize and re-vegetate exposed surfaces as soon as possible – retain natural vegetation cover where possible to provide erosion control

• GRCA and Agency approvals will be obtained as required

• During Detailed Design - follow MOE’s Guideline B-6 “Guidelines for Evaluating Construction Activities Impacting on Water Resources” and any other applicable municipal and Conservation Authority regulations

• Design and construct noise and odour emission controls to meet site specific and MOE requirements
Next Steps

- There will be a two-week commenting period following this Open House.
- The draft ESR will be presented to Council for approval in October/November 2013.
- Finalize ESR in November 2013.
- File the ESR with MOE for a 30-day public and agency review period in November 2013.
- Providing no Part II Order is requested, the EA will be deemed complete at the end of December 2013 and the project may proceed to implementation (Phase 5 – the final phase of the Class EA process).
Should you have any questions or wish to forward comments please contact:

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THANK YOU FOR ATTENDING