THE CORPORATION OF THE CITY OF
ST. THOMAS

City of St. Thomas
Official Plan Amendment No. 66 to the City of St. Thomas Official Plan

APPENDIX XIV

Phase 1 Technical Analysis Report for the Proposed Urban Area Residential Expansion Dated January 2008 Prepared by Dillon Consulting Limited

Phase 1 Technical Analysis For the Proposed Urban Area Residential Expansion City of St. Thomas

January 2008

Submitted by

Dillon Consulting Limited

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1.0 INTRODUCTION

In June of 2007, Council initiated the Work Plan to support the proposed St. Thomas Urban Area Residential Expansion. Over the summer/fall the consultant team has been carrying out the Phase 1 Technical Analysis for the Proposed Urban Area Residential Expansion (UAE). Phase 1 is a high level review of all lands (six areas) that are located within the boundary of the City of St. Thomas but are outside of the urban built area and current Settlement Area of the City as defined by the 2005 Provincial Policy Statement (PPS). The six candidate areas are shown on Figure 1.

The six areas were looked at from a land use planning, natural heritage, water and sanitary servicing, road and transit access and municipal finance perspective as directed by the Provincial Policy Statement. Due to the extensive scope of work and associated costs, it was decided that the required subwatershed analysis and stormwater management review would only be carried out for the selected candidate areas in Phase 2 of the Study. Draft Scoped Subwatershed Work Plans have been circulated to the Ministry of Municipal Affairs and Housing (MMAH), Ministry of Natural Resources (MNR), Ministry of the Environment (MOE), Catfish Creek Conservation Authority (CCCA) and Kettle Creek Conservation Authority (KCCA) for comment.

This report makes recommendations based on the findings of Phase 1 Technical Analysis for the six candidate areas. It was presented to the Project Steering Committee on January 3, 2007.

2.0 PROVINCIAL POLICY CONTEXT FOR THE URBAN RESIDENTIAL AREA EXPANSION

The 2005 Provincial Policy Statement (PPS) applies to all planning applications, matters or proceedings commenced on or after March 1, 2005. That means that all decisions of St. Thomas Council that pertain to planning matters "shall be consistent with" the PPS.

As mandated by the Planning Act, the City is preparing a new updated Official Plan to address the PPS. As part of that review, the City is undertaking or has completed the following basic foundation studies to address the PPS:

- Updating of the 20 Year Population and Housing Projections – Completed
- Updating of the 20 Year Targets for Affordable Housing – Underway
- Updating of the 20 Year Employment Projections – Completed
- Updating of the 20 Year Housing Land Supply Requirements – Completed
- Updating of the 20 Year Employment Land Supply Requirements – Underway
- Preparation of an Intensification and Redevelopment Capacity Assessment for the Built-up Areas – Completed

- Updating the Regional Commercial System Study – Completed

- Preparation of the Planning Consistency Study to demonstrate Official Plan consistency with the PPS – Underway

- Preparation of the updated Official Plan – Underway

The Urban Area Expansion Study must be conducted as a Comprehensive Review process and within the context of the PPS. For the Urban Area Expansion to be consistent with the PPS:

- St. Thomas may only identify or allow an urban area expansion at the time of a comprehensive review of its Official Plan.

- St. Thomas must demonstrate that:

  - sufficient opportunities for growth are not available through intensification, redevelopment and current designated growth areas to accommodate the projected 20 year growth;

  - the existing or planned infrastructure and public service facilities are suitable for the proposed development;

  - there are no reasonable alternatives which avoid prime agricultural areas and there are no reasonable alternatives on lower priority agricultural lands in prime agricultural areas; and

  - impacts from the expanding urban areas on agricultural operations that are adjacent or close to the urban areas are mitigated to the extent possible.

- St. Thomas in determining the most appropriate direction for its urban area residential expansion, must evaluate that expansion against the policies in Section 2 – Wise Use and Management of Resources and Section 3 – Protecting Public Health and Safety of the PPS.

3.0 METHODOLOGY

The Proposed Urban Area Residential Expansion (UAE) is being carried out as a separate Comprehensive Review process, in parallel with the development of the new St. Thomas Official Plan to be consistent with the PPS. The above-noted foundation studies that have been prepared for the Official Plan Review have confirmed the need for the designation of additional residential lands beyond what is currently designated in the City's Official Plan to meet their projected 20 year housing requirements.

Additional foundation analysis is required to assess the suitability of the six candidate expansion areas for urban development within the context of the PPS. To address Policy 1.1.3.9 of the PPS, the analysis will be undertaken in two phases. Phase 1 is a high level technical analysis of the six candidate urban expansion areas using selected screening criteria, which have been

developed based on the requirements of the PPS. The selected screening criteria are outlined in more detail in Section 7.0 of this Report.

Phase 2 will be a more detailed PPS based analysis of the preferred growth areas determined by Phase 1. Specifically, the Phase 2 analysis will include a detailed investigation of water supply, sanitary sewer, transportation, transit, subwatershed analysis, stormwater management, parks, trails and recreation requirements and municipal financial impacts of residential development on the City for the preferred areas.

4.0 PROVINCIAL CONSULTATION

An initial meeting was held on July 5, 2007 with representatives from the Ministry of Municipal Affairs and Housing (MMAH), staff and the consultant team. The purpose of this meeting was to confirm the Proposed Urban Area Residential Expansion process. MMAH confirmed that the Urban Area Residential Expansion would be done in parallel to the current Official Plan Review and that the Urban Area Residential Expansion would be through an amendment to the existing Official Plan. The new Official Plan would be updated to include it at the appropriate time.

On September 11, 2007 a second meeting was held with representatives from several Member Ministries regarding the Draft Scoped Subwatershed Work Plans for Phase 2. These plans were previously circulated to the Ministry of Municipal Affairs and Housing (MMAH), Ministry of Natural Resources (MNR), Ministry of the Environment (MOE), Catfish Creek Conservation Authority (CCCA) and Kettle Creek Conservation Authority (KCCA) for comment. A letter documenting this meeting is attached as Appendix F.

5.0 PUBLIC CONSULTATION

As noted in the Introduction, a Public Information Centre was held on October 24, 2007 to:

i) introduce the Urban Area Residential Expansion Study;
ii) describe the planning context for the study;
iii) describe the study process;
iv) describe the study areas; and invite landowners in the study areas to come forward who may be interested in developing their lands.

A Notice of Public Information Centre was advertised in the local newspaper and a separate letter was mailed to all landowners within the six areas. Appendix G contains copies of these notices. Approximately fifty people attended the session. The majority of the attendees were area landowners and members of the general public interested in getting more information about the study. Based on the comments forms submitted to the city following the meeting, some landowners in Areas 1-4 are interested in developing their land. A number of landowners within the subject areas also expressed an interest to review the results of Phase 1 Technical Analysis.

6.0 DESCRIPTION OF CANDIDATE URBAN RESIDENTIAL EXPANSION AREAS

To address the requirements of the PPS, all of the lands in the City of St. Thomas that are outside of the current Settlement Area in the City's Official Plan were included in the Phase 1 Technical Analysis. These six candidate areas are shown on Figure 1 and described below:

Area 1

Area 1 is 252.5 gross hectares (624 gross acres) and 150.5 hectares (372 net acres) of Agricultural designated land comprised of multiple properties, located on the west side of the City, west of the main branch of the Kettle Creek and north of Fingal Line. The lands that have been removed in the gross to net conversion are Kettle Creek valley lands.

For analysis purposes, the Planning Department estimated that Area 1 could accommodate a future population of approximately 5,345 based on a gross calculation of the net area and low densities. Area 1 lands are primarily used for agriculture.

It is noted that population information used in this analysis is based on "Population, Housing and Employment Projections: St. Thomas, 2006-2026" prepared by Lapointe Consulting (May 2006). The populations were estimated based on an assumption of net developable area, average number of people per household (2.39 people per household), and low density housing (6 units per acre).

Area 2

Area 2 is 235.5 hectares (582 gross acres) and 133 hectares (329 net acres) of Agricultural designated land comprised of multiple properties, located at the west side of the City, west of the main branch of the Kettle Creek and south of Fingal Line. The lands that have been removed in the gross to net conversion are Kettle Creek valleylands.

For analysis purposes, the Planning Department estimated that Area 1 could accommodate a future population of approximately 4,717 based on a gross calculation of the net area and low densities. Area 2 lands are primarily used for agriculture.

Area 3

Area 3 is 80.5 hectares (199 acres) of Agricultural designated land comprised of one property, located at the south end of the City, south of Southdale Line. The lands are adjacent to residential development to the north and residential development to the west. Area 3 is primarily used for farming, with a portion of the lands in woodlot.

It is estimated that Area 3 could accommodate a population of approximately 2,853 based on a gross calculation of the net area and low densities with the woodlot being netted out.

Area 4

Area 4 is 123 hectares (304 acres) of Agricultural designated land comprised of four properties, located at the south-east side of the City, north of Southdale Line and east of Fairview Avenue. The lands are adjacent to developing residential lands to the west. Area 4 is primarily used for farming, with a portion in woodlot.

It is estimated that Area 4 could accommodate a population of approximately 4,362 based on a gross calculation of the net area and low densities with the woodlot netted out.

Area 5

Area 5 is 117 hectares (289 acres) of Agricultural designated lands comprised of four properties, located at the north-east side of the City, east of Highbury Avenue. The lands are adjacent to the City's major industrial lands to the west. Area 5 is currently vacant agricultural land, with a portion in woodlot.

It is estimated that Area 5 could accommodate a population of approximately 4,135 based on a gross calculation of the net area and low densities with the woodlot netted out.

Area 6

Area 6 is 2.4 hectares (6 acres) of Agricultural designated land comprised of two properties, located at the north end of the City, south of Ron McNeil Line. Specifically, Area 6 contains two small remnant parcels that each contains a residential dwelling and is adjacent to developing residential lands to the south.

It is estimated that Area 6 could accommodate a population of approximately 74 based on a gross calculation of the net area and low densities.

7.0 SUMMARY OF PHASE 1 CANDIDATE AREA ANALYSIS

Attached Table 1. Summary of Phase 1 Screening Criteria, provides a summary analysis of the six candidate urban expansion areas based on the following selected screening criteria:

1) Proximity to Existing Built-Up Area
2) Proximity to Other Planned Areas, Facilities, Parks and Open Spaces
3) Land Use Compatibility
4) Housing
5) Natural Heritage Issues
6) Surface and Groundwater
7) Agricultural Impacts
8) Mineral and Petroleum Resources
9) Mineral and Aggregate Resources
10) Cultural Heritage and Archaeology
11) Natural Hazards
12) Human-Made Hazards
13) Transit
14) Road Improvement Costs
15) Water System Improvement Costs
16) Sanitary Sewer System Costs
17) Overall Gross Capital Costs.

These criteria have been developed based on the requirements of the PPS. Information related to water supply, sanitary sewage collection, roads, transit and impact on municipal finance was drawn from technical reports attached as Appendices A to E in this Phase 1 Report. The following is a summary of the major findings for each of the candidate areas.

Area 1

- Area 1 is not adjacent to the existing built-up area and will require extension of infrastructure and service facilities.

- Located adjacent to sensitive natural features and subject to the Kettle Creek Conservation Authority's new regulation entitled "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06".

- There is currently no trunk municipal water or sanitary servicing available west of Kettle Creek valley.

- Extension of sanitary and water services would require a crossing of the Kettle Creek valley.

- Water system improvement capital costs are estimated at $4.6 million and sanitary system improvement capital costs are estimated at $3.4 million. Area 1 is the least preferred from a water and sanitary servicing perspective.

- Road improvement costs are estimated are at $9.7 million and Areas 1 and 2 are the least preferred from a road perspective.

- Areas 1 is one of two areas likely to have the most significant financial and resource impact on the City for transit.

- The overall gross capital costs for Area 1 are estimated at $18.1 million, with existing benefit costs of $1.7 million.

- Preliminary development charge per dwelling unit is estimated to be $7,362, with an annual per capita life cycle cost of $87.

Area 2

- Area 2 is not adjacent to the existing built-up area and will require an extension of infrastructure and service facilities over Kettle Creek.

- Located adjacent to sensitive natural features and subject to the Kettle Creek Conservation Authority's new regulation entitled "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 181/06".

- There is currently no municipal water or sanitary servicing available west of Kettle Creek valley.

- Extension of hard services would require a crossing of the Kettle Creek valley.

- Water system improvement capital costs are estimated at $3.9 million and sanitary system improvement capital costs are estimated at $1.3 million. Area 2 is not preferred from a water and sanitary servicing perspective.

- Road improvement costs are estimated are at $11.8 million and Areas 1 and 2 are the least preferred from a road perspective.

- Areas 1 and 2 are likely to have the most significant financial and resource impact on the City for transit.

- The overall gross capital costs for Area 2 are estimated at $17.6 million, with existing benefit costs of $2.4 million.

- Preliminary development charge per dwelling unit is estimated to be $7,671, with an annual per capita life cycle cost of $113.

Area 3

- Area 3 is adjacent to the existing built-up area and will connect into adjacent infrastructure and service facilities.

- MNR has identified that part of Area 3 has potential for aggregate resources.

- Water system improvement capital costs are estimated at $1.7 million and sanitary system improvement capital costs are estimated at $100,000. Areas 3 and 4 are the most preferred from a water and sanitary servicing perspective.

- Road improvement costs are estimated at $6.6 million.

- The overall gross capital costs for Area 3 are estimated at $8.7 million, with existing benefit costs of $1.5 million.

- Preliminary development charge per dwelling unit is estimated to be $6,103, with an annual per capita life cycle cost of $104.

Area 4

- Area 4 is adjacent to the existing built-up area and will connect into adjacent infrastructure and service facilities.

- Water system improvement capital costs are estimated at $1.6 million and sanitary system improvement capital costs are estimated at $490,000. Areas 3 and 4 are the most preferred from a water and sanitary servicing perspective.

- Road improvement costs are estimated at $7.8 million and this is the preferred area from a transportation perspective.

- The overall gross capital costs for Area 4 are estimated at $10.3 million, with existing benefit costs of $1.6 million.

- Preliminary development charge per dwelling unit is estimated to be $5,325, with an annual per capita life cycle cost of $80.

Area 5

- Area 5 is adjacent to the existing built-up area and will connect into adjacent infrastructure and service facilities.

- The area is adjacent to the City's major industrial area and is a logical expansion area for industrial land uses.

- Water system improvement capital costs are estimated at $2.6 million and sanitary system improvement capital costs are estimated at $2.1 million.

- Road improvement costs are estimated at $8.2 million.

- The overall gross capital costs for Area 5 are estimated at $13.4 million, with existing benefit costs of $1.3 million.

- Preliminary development charge per dwelling unit is estimated to be $6,961, with an annual per capita life cycle cost of $92.

Area 6

- Area 6 is a comprised of two small remnant parcels that each contain a residential dwelling. The area will be connected to the sanitary sewer and watermain system serving the adjacent residential area to the south.

- Any required hard service and road improvement costs will be borne by the owners at the time of development.

- The overall gross capital costs associated with this Area are negligible and financial impact on the City is considered to be minimal.

8.0 CONCLUSIONS

Based on the Phase 1 Technical Analysis, it is concluded that Areas 3, 4 and 6 are the preferred areas. The following table summarizes the findings based on the selected screening criteria:

Screening Criteria	Preferred Area(s)
1) Proximity to Existing Built-Up Area	3, 4, 5, 6
2) Proximity to Other Planned Areas, Facilities, Parks and Open Spaces	3, 4, 6
3) Land Use Compatibility	1, 2, 3, 4, 6
4) Housing	3, 4, 5, 6
5) Natural Heritage Issues	3, 4 (have undergone env. review)
6) Surface & Groundwater	3, 4 (have undergone env. review)
7) Agricultural Impacts	All areas are Class 2 lands
8) Mineral & Petroleum Resources	N/A
9) Mineral Aggregate Resources	1, 2, 4, 5, 6 have no potential for Aggregate Resources
10) Cultural Heritage & Archaeology	N/A
11) Natural Hazards	Areas 3 and 4 have no flood or erosion hazards based
12) Human-Made Hazards	N/A
13) Transit	3, 4, 6 have lowest costs
14) Road Improvement Costs	3, 4, 6 have lowest costs
15) Water System Improvement Costs	3, 4, 6 have lowest costs
16) Sanitary Sewer System Costs	3, 4, 6 have lowest costs
17) Overall Gross Capital Costs	3, 4, 6 have lowest overall costs

9.0 RECOMMENDATIONS

Based on the results of the Phase 1 Technical Analysis, it is recommended that:

1. Areas 3, 4 and 6 be carried forward to Phase 2 for more detailed review in accordance with the approved Work Plan and Budget.

2. The City authorize staff and the consultant team to proceed with Phase 2 of the Urban Area Residential Expansion Study.

3. The City authorize staff and the consultant team to initiate the required Official Plan Amendment process.

4. The Steering Committee meet with landowners within Areas 3, 4 and 6 to confirm their interest in developing their lands and their agreement to pay the upfront costs for the required planning and technical studies in Phase 2 as well as the hard infrastructure required to facilitate the development of their lands. Furthermore, those landowners who expressed interest to develop during the public consultation process be invited to the meeting of landowners to be appraised of the Phase 1 findings and recommendations.

5. The Phase 2 analysis include a detailed investigation of water supply, sanitary sewer, transportation, transit, subwatershed analysis, stormwater management, parks, trails and recreation requirements and municipal financial impacts of residential development in Areas 3, 4 and 6 as proposed in the Work Plan.

6. Based on the findings of the Stage 2 analysis, a Summary Report be presented to Council recommending which lands within the preferred areas (3, 4 and 6) to redesignate for Residential land uses in the Official Plan.

TABLE 1 – SUMMARY OF PHASE 1 SCREENING CRITERIA

Phase 1 - Screening Criteria	*Study Areas*	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Preferred Area(s)
	Net Land Area	150.5 ha (372 acres)	133 ha (329 acres)	80.5 (199 acres)	123 ha (304 acres)	177 ha (269 acres)	2.4 ha (6 acres)	
	Estimated Population	5,345	4,717	2,853	4,362	4,135	74	
1. PROXIMITY TO EXISTING BUILT-UP AREA	*Is the urban expansion area adjacent to the existing built-up area to allow for the efficient use of land, infrastructure and public service facilities?*	• Not adjacent to existing built-up area	• Not adjacent to existing built-up area	• Adjacent to existing built-up area	• Adjacent to existing built-up area	• Adjacent to existing built-up area	• Adjacent to existing built-up area	• Areas 3, 4, 5 and 6 are adjacent to the existing built-up area and allow for the efficient use of land, infrastructure and public service facilities
2. PROXIMITY TO OTHER PLANNED AREAS FACILITIES, PARKS & OPEN SPACES	*Does the urban expansion area support closer live/work/ play connections?*	• Not close to major commercial or employment areas • No parks on west side of Kettle Creek • Not in close proximity to local parks and schools • No parks on west side of Kettle Creek • 1 km to V.A. Barrie Park	• Not close to major commercial or employment areas • No parks on west side of Kettle Creek • Not in close proximity to local parks and schools • No parks on west side of Kettle Creek • 1 km to V.A. Barrie Park	• Not close to major commercial or employment areas • Adjacent to City Ed Rec Complex • Accessible to local parks and schools • < 0.5 km to Douglas J. Tarry Sports Complex	• Moderate proximity to major commercial and employment areas • In close proximity to City Ed Rec Complex • Accessible to local parks and schools • 0.5 km from Douglas J. Tarry Sports Complex • < 0.5 km to Applewood Park	• Adjacent to major employment area • In close proximity to major commercial area • In proximity to major KCCA recreational area • Not in close proximity to local parks and schools • 1.5 km to Burwell Road Park	• Adjacent to major employment area • In close proximity to major commercial area • In close proximity to City park and major KCCA recreational area • Accessible to local parks and schools • < 0.5 km to Burwell Road Park	• Areas 3, 4 and 6 best support closer live/ work/play connections • Areas 3 and 4 are most accessible to neighbourhood level and community level parks and open space facilities
3. LAND USE COMPATIBILITY	*Is the urban expansion area appropriately buffered/ separated from industries and other major facilities/ infrastructure to prevent adverse environmental effects and minimize risk to public health and safety?*	• Adjacent to farmlands & Kettle Creek valley	• Adjacent to farmlands & Kettle Creek valley	• Adjacent to residential and farmlands	• Adjacent to residential and farmlands	• Adjacent to major industrial area	• Adjacent to residential, farmlands & Kettle Creek valley	• Areas 1 to 4 and 6 are buffered/well separated from industrial uses
4. HOUSING	*Are the existing and/or planned infrastructure services and public service facilities suitable for the development of the urban expansion area for residential uses?*	• Require major extension of piped infrastructure across Kettle Creek as well as new public facilities to serve a new urban development area on the west side	• Require major extension of piped infrastructure across Kettle Creek as well as new public facilities to serve a new urban development area on the west side	• Connecting into existing piped infrastructure network and public service facilities in area	• Connecting into existing piped infrastructure network and public service facilities in area	• Connecting into existing piped infrastructure network in area • No public service facilities in area	• Connecting into existing piped infrastructure network and public service facilities in area	• Areas 3, 4, 5 and 6 connect into the existing piped infrastructure network and public service facilities in their areas

TABLE 1 – SUMMARY OF PHASE 1 SCREENING CRITERIA

Phase 1 - Screening Criteria	*Study Areas* *Net Land Area* *Estimated Population*	Area 1 150.5 ha (372 acres) 5,345	Area 2 133 ha (329 acres) 4,717	Area 3 80.5 (199 acres) 2,853	Area 4 123 ha (304 acres) 4,362	Area 5 177 ha (289 acres) 4,135	Area 6 2.4 ha (6 acres) 74	Preferred Area(s)
5. NATURAL HERITAGE ISSUES	*Does the urban expansion area contain/avoid significant natural features and areas?*	▪ Subwatershed study is required to determine the existence of significant endangered or threatened species, significant woodlands, significant valleylands, significant wildlife habitat or fish habitat in the Dodds Creek drainage area ▪ Significant natural features and areas would be designated as "no development" and/or "development subject to EIS" as per the PPS	▪ South Block Subwatershed Study identified significant woodlands and valleylands and fish habitat ▪ Significant natural features and areas would be designated as "no development" and/or "development subject to EIS" as per the PPS	▪ South Block Subwatershed Study identified woodlands which are subject to an EIS to determine permitted level of encroachment by adjacent development	▪ South Block Subwatershed Study identified woodlands in the Kettle Creek drainage area which are subject to an EIS to determine permitted level of encroachment by adjacent development ▪ Subwatershed study is required to determine the existence of significant endangered or threatened species, significant woodlands, significant valleylands, significant wildlife habitat or fish habitat in the Catfish Creek drainage area	▪ Subwatershed study is required to determine the existence of significant endangered or threatened species, significant woodlands, significant valleylands, significant wildlife habitat or fish habitat in the Catfish Creek drainage area ▪ Significant natural features and areas would be designated as "no development" and/or "development subject to EIS" as per the PPS	▪ Small remnant tableland parcel is adjacent to/part of the adjacent Dalewood residential neighbourhood	▪ Area 3 and the portion of Area 4 in the Kettle Creek drainage area have undergone natural heritage environmental review through the South Block Subwatershed Study
6. SURFACE & GROUNDWATER	*Does the urban expansion area contain (drain to/potential impact on) sensitive and/or vulnerable surface water features and groundwater features?*	▪ Surface water and ground water features have not been classified through a Subwatershed Study	▪ Adjacent to and drains directly to several sensitive surface water features ▪ Adjacent to groundwater discharge areas and portions are within a sensitive groundwater recharge area	▪ Drains to a sensitive surface water feature, though not directly ▪ Sensitive ground water recharge area located at south limit ▪ Located within aquifer with moderate to high susceptibility (based on regional estimates)	▪ Lands in Kettle Creek drainage area drains to a sensitive surface water feature ▪ Portion of site located within an aquifer with low to moderate susceptibility (based on regional estimates) ▪ Lands in Catfish Creek drainage area have not been classified through a Subwatershed Study	▪ Surface water and ground water features have not been classified through a Subwatershed Study	▪ Small remnant parcel were part of the planning process for the Dalewood development area	▪ Area 3 and the portion of Area 4 in the Kettle Creek drainage area have undergone natural environmental review through the South Block Subwatershed Study
7. AGRICULTURAL IMPACTS	*Does the urban expansion area avoid prime agricultural lands or contain lower priority prime agricultural lands? Is the urban expansion area adjacent to or in close proximity to existing agricultural operations?*	▪ Class 2 lands ▪ Are within 300 m of a potential existing livestock facility	▪ Class 2 lands ▪ Are within 300 m of a potential existing livestock facility	▪ Class 2 lands ▪ Are within 300 m of a potential existing livestock facility	▪ Class 2 lands ▪ Are within 300 m of a potential existing livestock facility	▪ Class 2 lands ▪ Are within 300 m of a potential existing livestock facility	▪ Class 2 lands ▪ Are within 300 m of a potential existing livestock facility	▪ Class 2 lands in all areas ▪ All areas are within 300 m of a potential existing livestock facility (More detailed analysis will be conducted during Phase 2)
8. MINERAL & PETROLEUM RESOURCES	*Does the urban expansion area contain mineral or petroleum resources?*	▪ None identified	▪ None identified	▪ None identified	▪ None identified	▪ None identified	▪ None identified	▪ No mineral or petroleum resources identified

TABLE 1 – SUMMARY OF PHASE 1 SCREENING CRITERIA

Phase 1 - Screening Criteria	*Study Areas*	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Preferred Area(s)
	Net Land Area	150.5 ha (372 acres)	133 ha (329 acres)	80.5 (199 acres)	123 ha (304 acres)	177 ha (269 acres)	2.4 ha (6 acres)	
	Estimated Population	5,345	4,717	2,853	4,362	4,135	74	
9. MINERAL AGGREGATE RESOURCES	*Does the urban expansion area contain mineral aggregate resources?*	• None identified	• None identified	• Potential for aggregate resources identified by MNR	• None identified	• None identified	• None identified	• Area 3 identified as having potential for aggregate resources
10. CULTURAL HERITAGE & ARCHAEOLOGY	*Does the urban expansion area contain significant built heritage resources or significant cultural heritage landscapes?*	• None identified	• None identified	• None identified	• None identified	• None identified	• None identified	• No areas contain significant built heritage resources or significant cultural heritage landscapes
11. NATURAL HAZARDS	*Is the urban expansion area subject to flooding, erosion or other natural hazards?*	• Partially located within KCCA regulatory limits; subject to the KCCA's new regulation entitled "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 161/06".	• Partially located within KCCA regulatory limits; subject to the KCCA's new regulation entitled "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 161/06".	• No flood or erosion hazards	• No flood or erosion hazards within Kettle Creek portion of the area • Flooding/erosion hazard in Catfish Creek portion to be determined through Subwatershed Study	• Flooding/erosion hazard to be determined through Subwatershed Study	• Partially located within KCCA regulatory limits; subject to the KCCA's new regulation entitled "Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation 161/06".	• No flood or erosion hazards in Areas 3 and 4 as confirmed by South Block Subwatershed Study
12. HUMAN-MADE HAZARDS	*Does the urban expansion area contain human made hazards?*	• None identified	• None identified	• 2 former/closed gravel pits located in this area	• None identified	• None identified	• None identified	• Areas contain no human made hazards
13. TRANSIT	*Can the urban expansion area be efficiently served by existing or future/planned transit service?*	• New 9 km transit route required to serve the area • Existing transit routes may need to be altered to accommodate expanded transit service at potential additional annual operating costs • Additional $90,000 to $380,000 capital cost for a bus and annual operating costs of $160,000 or more	• New 9 km transit route required to serve the area • Existing transit routes may need to be altered to accommodate expanded transit service at potential additional annual operating costs • Additional $90,000 to $380,000 capital cost for a bus and annual operating costs of $160,000 or more	• Reconfiguration of Route #2 with the addition of a new route • Additional $90,000 to $380,000 capital cost for a bus and annual operating costs of $160,000 or more	• Reconfiguration of Route #2 with the addition of a new route • Additional $90,000 to $380,000 capital cost for a bus and annual operating costs of approximately $160,000 or more	• Reconfiguration of Route #1 with the addition of a new route • Additional $90,000 to $380,000 capital cost for a bus and annual operating costs of approximately $160,000 or more	• Due to small number of houses in this area the cost of extending service would not be justified	• Transit service to Areas 1 to 5 will require a new route and a new bus
14. ROAD IMPROVEMENT COSTS	*Can the urban expansion area be efficiently served by the municipal road network?*	• Not directly accessible to existing urban road network • Road improvement costs estimated at $9.7 million	• Not directly accessible to existing urban road network • Road improvement costs estimated at $11.8 million	• Direct access to existing urban road network • Road improvement costs estimated at $6.6 million	• Direct access to existing urban road network • Road improvement costs estimated at $7.8 million	• Not directly accessible to existing urban road network • Road improvement costs estimated at $8.2 million	• Direct access to existing urban road network • Minor road improvement costs; small remnant area will be connected to existing road network	• Area 3 has the lowest capital cost for road improvements followed by Area 4

TABLE 1 – SUMMARY OF PHASE 1 SCREENING CRITERIA

Phase 1 - Screening Criteria	*Study Areas* *Net Land Area* *Estimated Population*	Area 1 159.5 ha (372 acres) 5,345	Area 2 133 ha (329 acres) 4,717	Area 3 80.5 (199 acres) 2,853	Area 4 123 ha (304 acres) 4,362	Area 5 177 ha (289 acres) 4,135	Area 6 2.4 ha (6 acres) 74	Preferred Area(s)
15. WATER SYSTEM IMPROVEMENTS COSTS	*Can the urban expansion area be efficiently serviced with municipal water services?*	▪ Require trunk watermain extension of 1,730 m ▪ Also requires 1,770 m creek crossing ▪ Water system improvement capital costs estimated at $4.6 million	▪ Requires trunk watermain extension of 2,950 m ▪ Also requires 765 m creek crossing ▪ Water system improvement capital costs estimated at $3.9 million	▪ Requires trunk watermain extension of 1,970 m ▪ Water system improvement capital costs estimated at $1.7 million	▪ Requires trunk watermain extension of 1,885 m ▪ Water system improvement capital costs estimated at $1.6 million	▪ Requires trunk watermain extension of 2,845 m ▪ Water system improvement capital costs estimated at $2.6 million	▪ Requires no trunk watermain extension; remnant area serviced through adjacent local network	▪ Areas 3, 4 and 6 have the lowest capital cost for municipal water services ▪ It is noted that an upgrade to the Albert Robert Booster Station may be required to address pressure concerns at a cost of $1.1 million
16. SANITARY SEWER SYSTEM COSTS	*Can the urban expansion area be efficiently serviced with municipal sanitary sewage services?*	▪ Requires 1,700 m of new trunk sewer ▪ Requires 2 new pumping stations & upgrades to existing PS6 ▪ Sanitary system improvement capital costs estimated at $3.4 million	▪ Requires 1,000 m of new trunk sewer ▪ Requires 1 new pumping station ▪ Sanitary system improvement capital costs estimated at $1.3 million	▪ No new trunk sewer required ▪ Requires upgrade to existing PS7 ▪ Sanitary system improvement capital costs estimated at $100,000	▪ Requires new forcemain ▪ Requires 1 new Pumping Station at Elm St. & upgrades to existing PS7 ▪ Sanitary system improvement capital costs estimated at $490,000	▪ Requires 1,000 m of trunk sewer extension, 1800 m of trunk sewer upgrades and a new 3,000 m forcemain ▪ Requires 1 new Pumping Station & upgrades to existing PS8 ▪ Sanitary system improvement capital costs estimated at $2.1 million	▪ No trunk sewer extension required; remnant area serviced through adjacent local network ▪ No pumping stations upgrades required	▪ Areas 3, 4 and 6 have the lowest capital cost for municipal sanitary sewage services
17. OVERALL GROSS CAPITAL COSTS	*Is development of the urban expansion area financially sustainable over the long term?*	▪ Gross Capital costs of $16.1 million ▪ Existing Benefit costs of $1.7 million ▪ Preliminary Development charge of $7,362 per dwelling unit ▪ Annual per capita life cycle cost of $87	▪ Gross Capital costs of $17.6 million ▪ Existing Benefit costs of $2.4 million ▪ Preliminary Development charge of $7,671 per dwelling unit ▪ Annual per capita life cycle cost of $113	▪ Gross Capital costs of $8.7 million ▪ Existing Benefit costs of $1.5 million ▪ Preliminary Development charge of $6,103 per dwelling unit ▪ Annual per capita life cycle cost of $104	▪ Gross Capital costs of $10.3 million ▪ Existing Benefit costs of $1.6 million ▪ Preliminary Development charge of $5,325 per dwelling unit ▪ Annual per capita life cycle cost of $60	▪ Gross Capital costs of $13.4 million ▪ Existing Benefit costs of $1.3 million ▪ Preliminary Development charge of $6,961 per dwelling unit ▪ Annual per capita life cycle cost of $92	▪ No additional servicing costs identified	▪ Areas 3, 4 and 6 are the preferred areas for expansion based on financial impact on the City

FIGURE 1

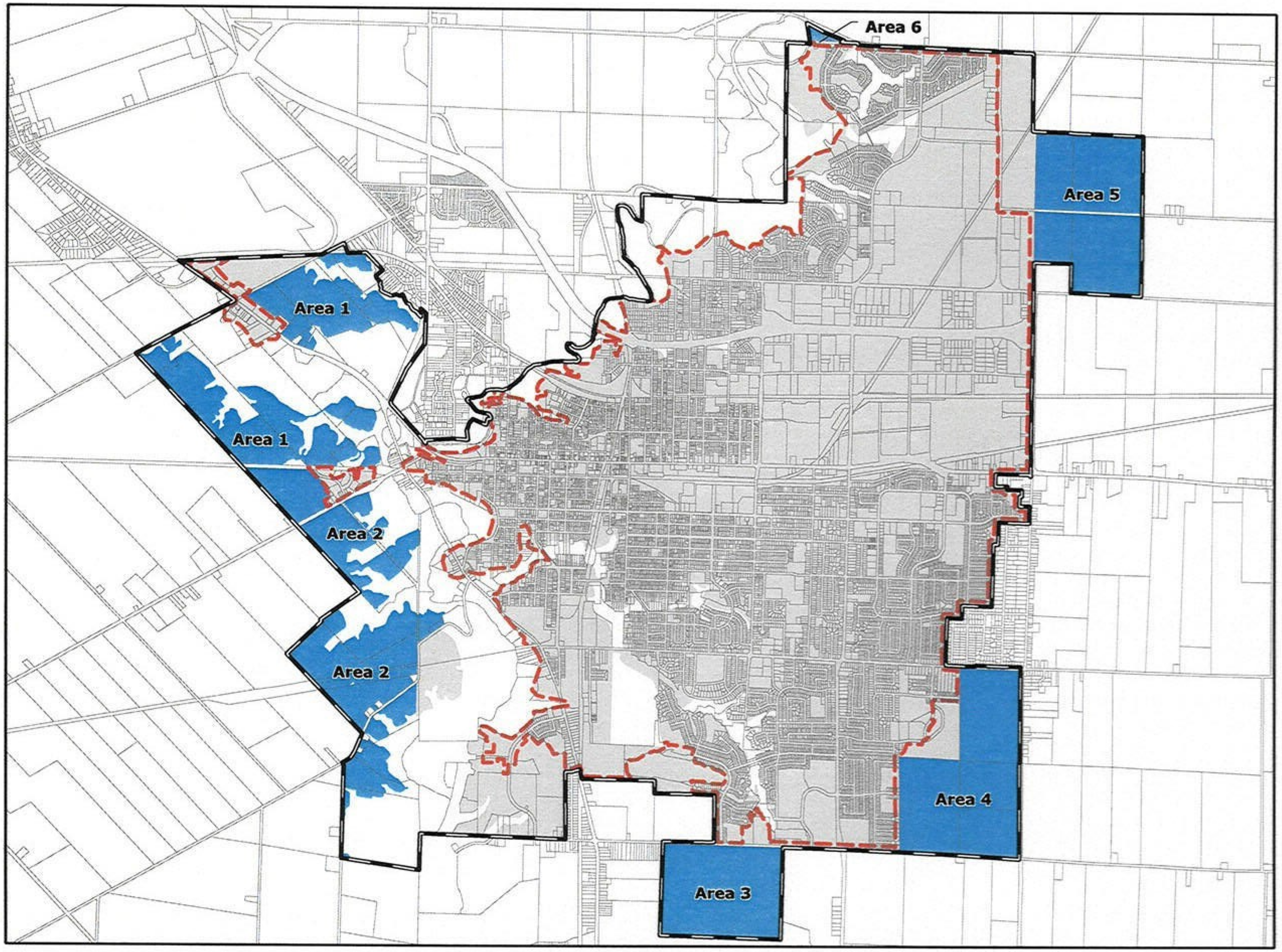


Figure 1

Candidate Study Areas

City of St Thomas

- Candidate Study Areas
- Limits of Urban Built Area
- Settlement Area
- Open Space Limits
- Municipal Boundary

N W E S

500 0 500 1000

Metres

January 2008

Phase 1 Technical Analysis For the Urban Area Residential Expansion City of St Thomas

FIGURE 2

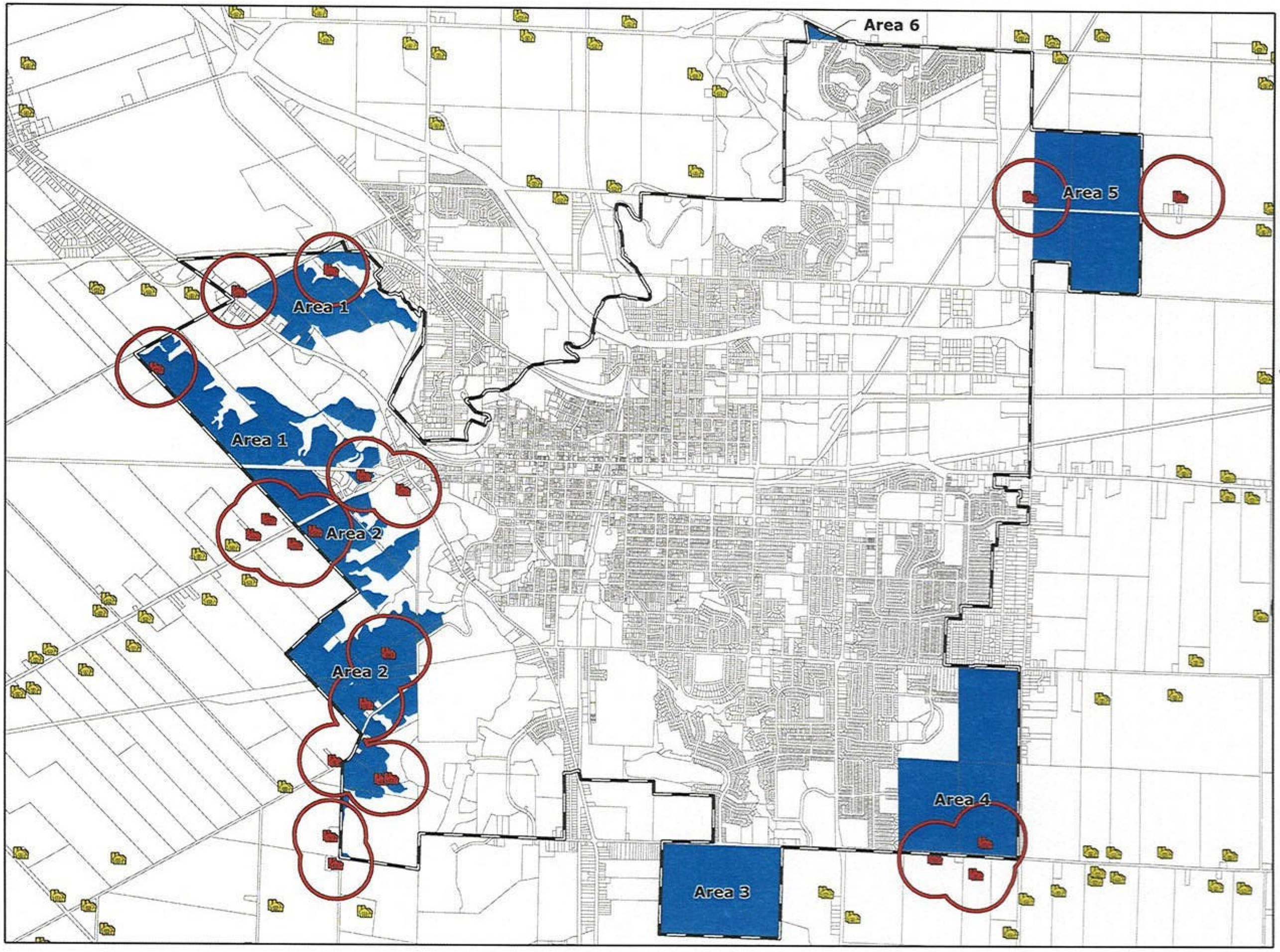


Figure 2

Location of Potential Livestock Facilities

City of St Thomas

- Candidate Study Areas
- Potential Livestock Facilities
- Potential Livestock Facilities Within 300 metres of Candidate Study Areas
- Municipal Boundary

N W E S

500 0 500 1000

Metres

January 2008

APPENDIX "A"

Dillon Supporting Documentation for Phase 1 Sanitary Servicing Analysis

MEMO

DILLON CONSULTING

TO: **Ron Shishido**

FROM: Kyle Edmunds

DATE: Tuesday, September 11, 2007

SUBJECT: St. Thomas Urban Area Expansion – Stage 1 – Sanitary

PROJECT NO: 07-8048-3000

Process of Analysis

With information acquired from the City of St. Thomas' GIS system, a trunk sewer network was mapped to include sewers with sizes 250mm diameter and larger. With this information drainage boundaries were formed around the trunk sewer network.

Capacities of the existing trunk sewers were calculated by overlaying the drainage areas on a land use map provided by the City of St. Thomas. An estimated percentage of land use for each area was determined and a composite population quantity was developed for each area (see Figure 3.0).

Provided on the St. Thomas standard sewer design sheet, the network of trunk sewers and pump stations was inputted and sewer existing sewer capacities was determined. A design sheet was set up for three of the proposed urban expansion areas and one for the combination of Area 3 and Area 4.

From these sewer design sheets, capacity constraints were identified (see Figures 6.0, 7.0, 8.0 and 9.0).

In our analysis, using the standard design sheet and based on the identified drainage areas the existing pump stations were assumed to discharge at the peak flows calculated from its drainage area.

Recommendations

GENERAL

The recommendations below are based on theoretical flows and suitable soil conditions. Modifications may occur to the recommendations below resulting from geo-technical reports, flow monitoring, existing pump station discharge flow rates and a more refined analysis of the drainage areas.

Flow monitoring in strategic locations may be recommended and will be determined in Stage 2 of this study.

Recommended sewer improvements were based on dry flow capacities.

Methods of minimizing the wet weather infiltration will need to be studied further.

A summary of the recommendations and costing has been provided in Table 1.

AREA 1

Area 1 is 624 acres in size and located in the north-west section of the City (see Figure 4.0). This expansion area would be considered to be a Greenfield development and was modeled using a zoning of Low Density Residential. Area 1 can be serviced with the construction of a new trunk sewer (450mm diameter), approximately 1700m from Area 1 to the Walnut Street PS (PS6). Because of the distance between Area 1 and the Walnut Street PS and possible poor soil conditions, the recommendations include 2 intermediate pumping stations.
The Walnut Street PS will require upgrading to handle the additional flows (approx. 350 l/s) and a twinning of the existing forcemain.

AREA 2

Area 2 is 582 acres and is located to the west and south-west of the City (see Figure 5.0). Similar to Area 1 this would be a Greenfield Development and zoned as Low Density Residential. To service the two portions of Area 2, two smaller trunk sewers (450mm diameter) would be constructed

AREA 3 (199 Acres)

A 450mm diameter trunk sewer (Sewer 14) is located at the boundary of the expansion area. It has a depth of 6.7m and a capacity adequate to receive the flows from Area 3. Trunk sewer 14 discharges to the Axford Parkway PS (PS 7), which currently is designed to discharge flows from a 300 acre drainage area, but can be upgraded to ultimately discharge flows from a 900 acre drainage area (see Figure 6.0)

To develop this area, minor improvements to the pump station will have to be undertaken (improvements such upgrading the pump impellers or installing new pumps). The structure of the pump station has been designed and constructed for a drainage area of 900 acres.

AREA 4 (304 Acres)

The flows from this area should be split between trunk sewer 11 and trunk sewer 13, because the Axford Parkway PS (PS 7) only has a drainage area of 900 acres. The proportioning that was used for this analysis was 1/3 of the area (101 acres additional 20 l/s) to sewer 11 and 2/3 (203 acres – additional 35 l/s) to sewer 13. Similar to Area 3, minor improvement would have to be made to the pumps of the Axford Parkway PS (PS 7) (see Figure 7.0).

The City of St. Thomas is aware potential capacity issues portions of trunk sewer 13. Insitu flow monitoring is recommended to assess if there is any spare capacity or if upgrades will be required.

Trunk sewer 11 is at a depth of approximately 3.0 meters which would not be deep enough to accept the flows from the Area 4. Therefore a pumping station would be required, including 1200m of forcemain along Elm Street to Rhonda Court, where sewer 11 has been previously been twined.

AREA 3 AND 4

Improvements for the development of both Area 3 and Area 4 would be as noted above. The only difference would be the improvement to the pumps at the Axford Parkway PS (PS 7). A larger pump capable of handling the increased flows from both developments would have to be installed (see Figure 8.0).

AREA 5 (289 Acres)

Area 5 has been split into two separate drainage areas (see Figure 9.0). The north third of the development will be directed towards the newly installed trunk sewer along Dennis Road. This sewer would have to be extended from Highbury Road east to the boundary of the development. This flow is then pumped by the Burwell Road PS (PS 1). Upgrades to the pump station will be required to accommodate the newly increased flows. Due to current downstream constraints, the outlet from the Burwell Road PS (PS 1) will now be via a new 250mm forcemain. The forcemain will discharge to the First Avenue trunk sewer (sewer 7) at Raden Street (approx. 3km).

The remaining 203 acres will be directed to the Harper Road PS (PS 8). Currently trunk sewer 12 (375mm) located on South Edgeware Road will need to be extended to the south boundary of Area 5 along Edgeware Line.

3200 Deziel Drive, Suite 608, Windsor, Ontario, N8W 5K8 Phone (519) 948-5000 Fax (519) 948-5054

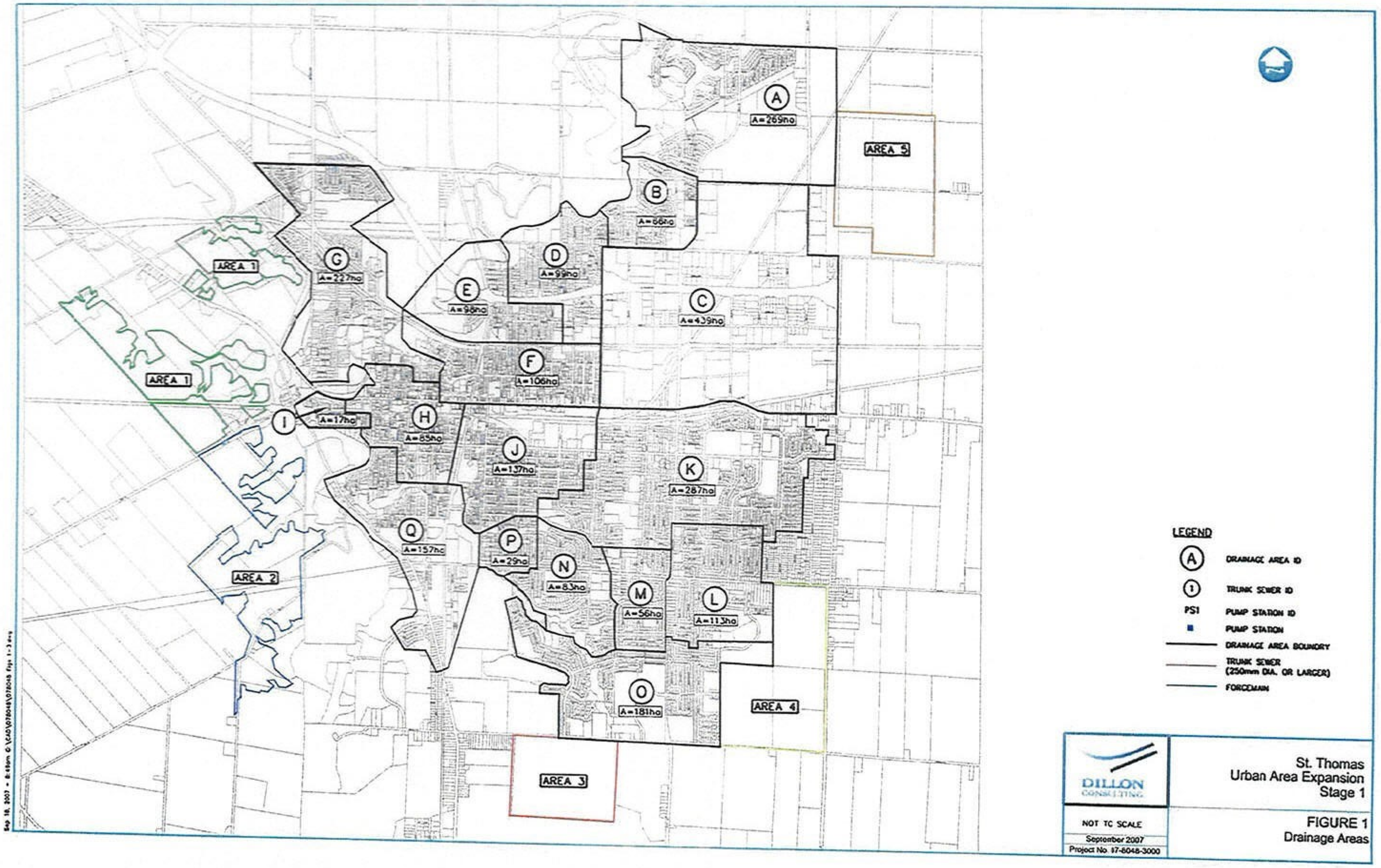
St. Thomas Urban Area Expansion
- Stage 1 -

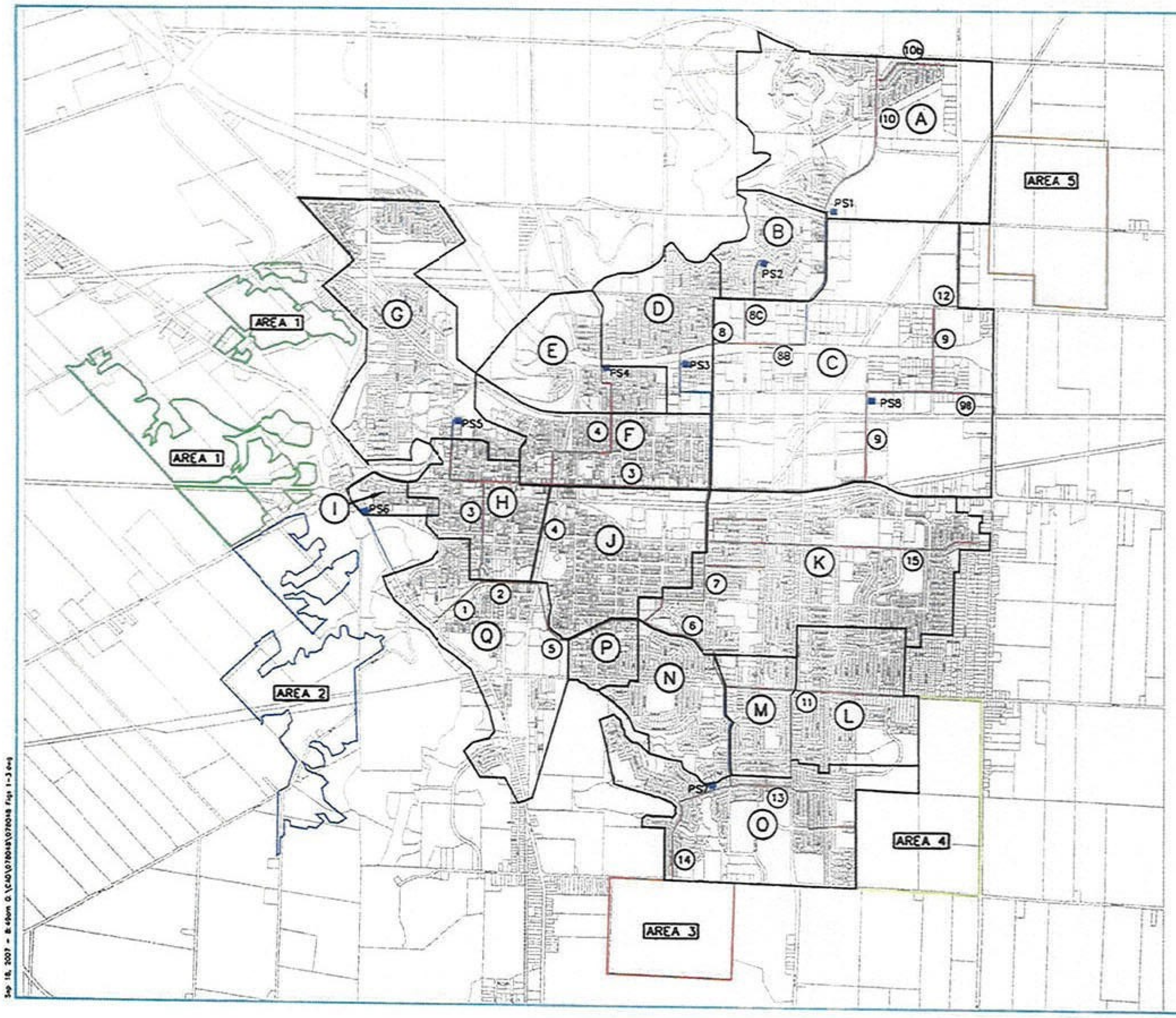
Sanitary Sewer Servicing of Proposed Development Areas

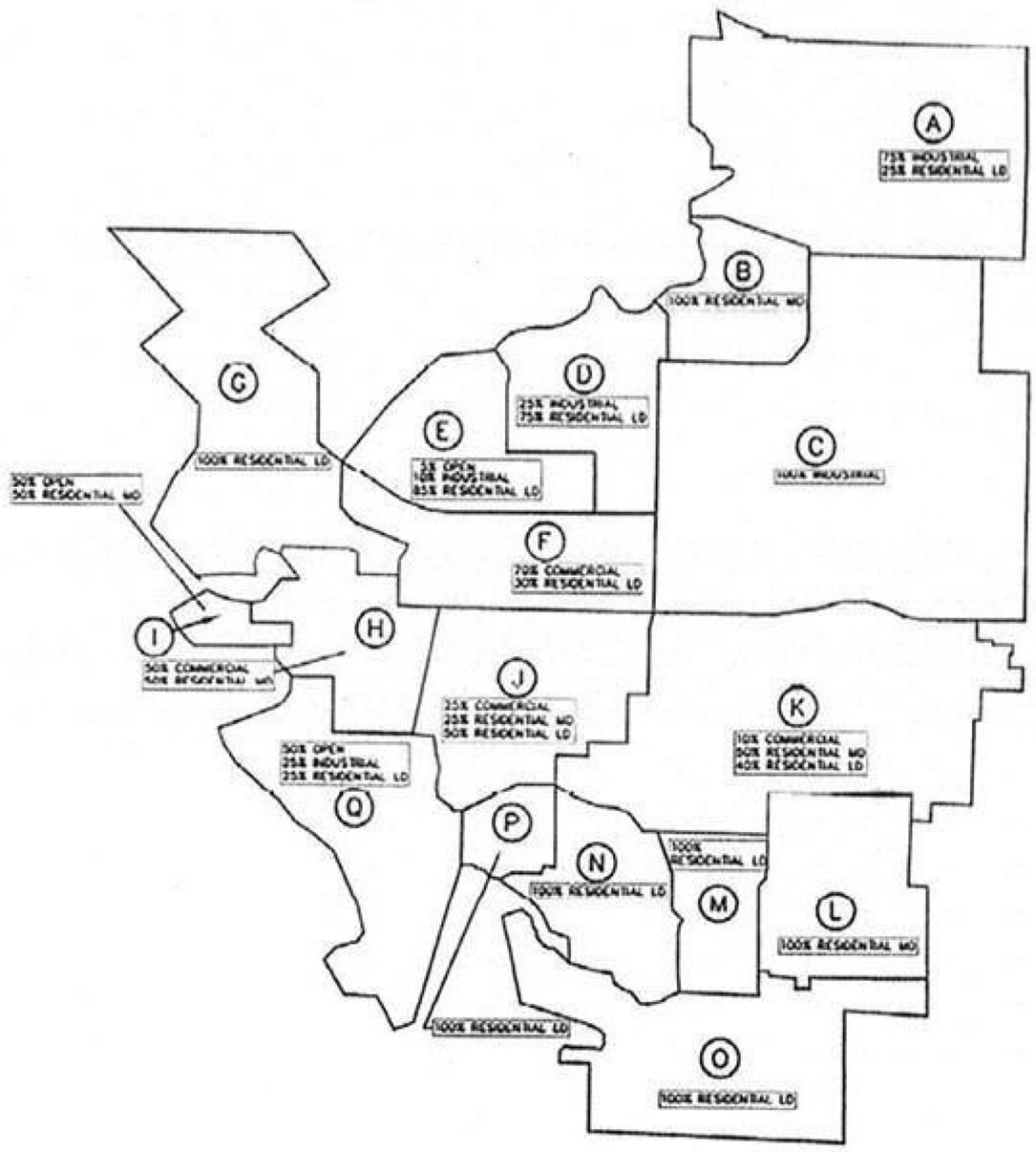
TABLE 1
Anticipated Upgrades and Associated Costs

DEVELOPMENT AREA	OPTIONS TO DEVELOP LANDS	ESTIMATED COST TO UPGRADE	TOTALS
1	· Construction of new 450mm diameter trunk sanitary sewer (approx. 1700m)	$ 620,000.00	
	· Construction of 2 new PS (design flow of 350 l/s)	$ 2,000,000.00	
	· Upgrades to PS 6 (Walnut Street P.S.) (including new forcemain)	$ 750,000.00	
			$ 3,370,000.00
2	· Construction of new 450mm diameter trunk sanitary sewer (approx. 500m)	$ 150,000.00	
	· Construction of new 525mm diameter trunk sanitary sewer (approx. 500m)	$ 175,000.00	
	· Construction of new PS (design flow of 320 l/s)	$ 1,000,000.00	
			$ 1,325,000.00
3	· *Sewer at boundary of development area (450mm @ 0.15%, 6.7m depth)*		
	· Upgrades required to PS 7 (Axford Parkway P.S.)	$ 100,000.00	
			$ 100,000.00
4	· *Drainage area split into 1/3 to trunk sewer 11 and 2/3 to trunk sewer 13*		
	· Upgrades required to PS 7 (Axford Parkway P.S.)	$ 100,000.00	
	· New PS located at Elm St.	$ 150,000.00	
	· New 150mm forcemain along Elm St. to Rhonda Crt. (approx. 1200m)	$ 240,000.00	
	· *Trunk sewer 13 at 76% (dry capacity), possible additional capacity available*		
			$ 490,000.00
3 & 4	· *Same comments as above from Area 3 and Area 4*		
	· Upgrade to PS 7 (Axford Parkway P.S.)	$ 175,000.00	
	· Elm St. PS and forcemain to Rhonda Crt.	$ 390,000.00	
			$ 565,000.00
5	· Upgrades required to PS 1 (Burwell Road P.S.) (incl. 3000m of 250mm forcemain)	$ 1,000,000.00	
	· Extention of Dennis Road trunk sewer (350m of 375mm)	$ 225,000.00	
	· extention of Edgeware Road trunk sewer (750m of 375mm)	$ 105,000.00	
	· Upgrades required to PS 8 (Harper Road P.S.)	$ 250,000.00	
	· Upgrades required to trunk sewer 9 (approx. 1800m)	$ 540,000.00	
			$ 2,120,000.00

**The combination of developing Area 3 and Area 4 would reduce cost associated with upgrades to PS 7 (Axford Parkway PS) compaired to developing Area 3 and Area 4 at different times. The reduction in costs is a result of only upgrading the pumps, controls and hardware once.*


A
A=269ha
AREA 5
B
A=66ha
G
A=227ha
AREA 1
D
A=99ha
E
A=98ha
C
A=439ha
F
A=106ha
AREA 1
I
A=17ha
H
A=85ha
J
A=137ha
K
A=287ha
Q
A=157ha
P
A=29ha
N
A=83ha
M
A=56ha
L
A=113ha
AREA 2
O
A=181ha
AREA 4
AREA 3
LEGEND
A DRAINAGE AREA ID
1 TRUNK SEWER ID
PS1 PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDRY
TRUNK SEWER (250mm DIA. OR LARGER)
FORCEMAIN
DILLON CONSULTING
NOT TO SCALE
September 2007
Project No. 97-6048-3000
St. Thomas
Urban Area Expansion
Stage 1
FIGURE 1
Drainage Areas


10c
10
A
AREA 5
PS1
B
PS2
12
8C
8
9
8B
C
D
G
E
PS4
PS3
AREA 1
PS8
9B
9
PS5
4
F
3
AREA 1
I
PS6
3
H
4
J
K
15
7
2
1
Q
6
5
P
N
M
11
L
AREA 2
PS7
13
O
14
AREA 4
AREA 3
LEGEND
A
DRAINAGE AREA ID
1
TRUNK SEWER ID
PS1
PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDRY
TRUNK SEWER
(250mm DIA. OR LARGER)
FORCEMAIN
DILLON
CONSULTING
NOT TO SCALE
September 2007
Project No. 07-8048-3000
St. Thomas
Urban Area Expansion
Stage 1
FIGURE 2
Drainage Areas and
Trunk Sewers



LEGEND

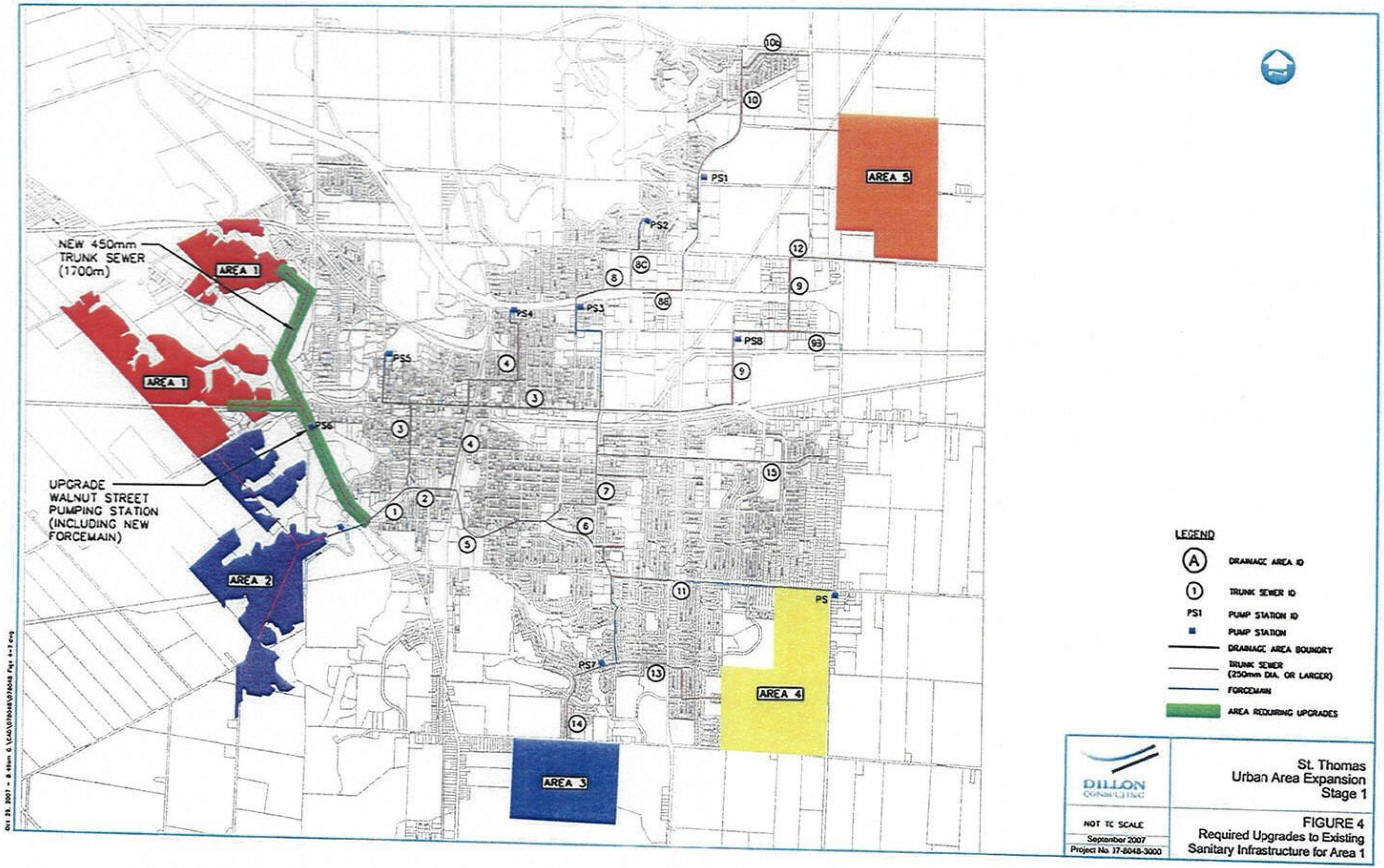
- A — DRAINAGE AREA ID
- 1 — TRUNK SEWER ID
- PS1 — PUMP STATION ID
- PUMP STATION
- DRAINAGE AREA BOUNDARY
- TRUNK SEWER (250mm DIA. OR LARGER)
- FORCEMAIN

DILLON CONSULTING

St. Thomas
Urban Area Expansion
Stage 1

NOT TO SCALE
September 2007
Project No 07-6046-5000

FIGURE 3
Drainage Areas and
Land Use


NEW 450mm TRUNK SEWER (1700m)
UPGRADE WALNUT STREET PUMPING STATION (INCLUDING NEW FORCEMAIN)
AREA 1
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
PS1
PS2
PS3
PS4
PS5
PS6
PS7
PS8
PS
LEGEND
A DRAINAGE AREA ID
1 TRUNK SEWER ID
PS1 PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDRY
TRUNK SEWER (250mm DIA. OR LARGER)
FORCEMAIN
AREA REQUIRING UPGRADES
DILLON CONSULTING
NOT TO SCALE
September 2007
Project No. 07-8048-3000
St. Thomas Urban Area Expansion Stage 1
FIGURE 4
Required Upgrades to Existing Sanitary Infrastructure for Area 1

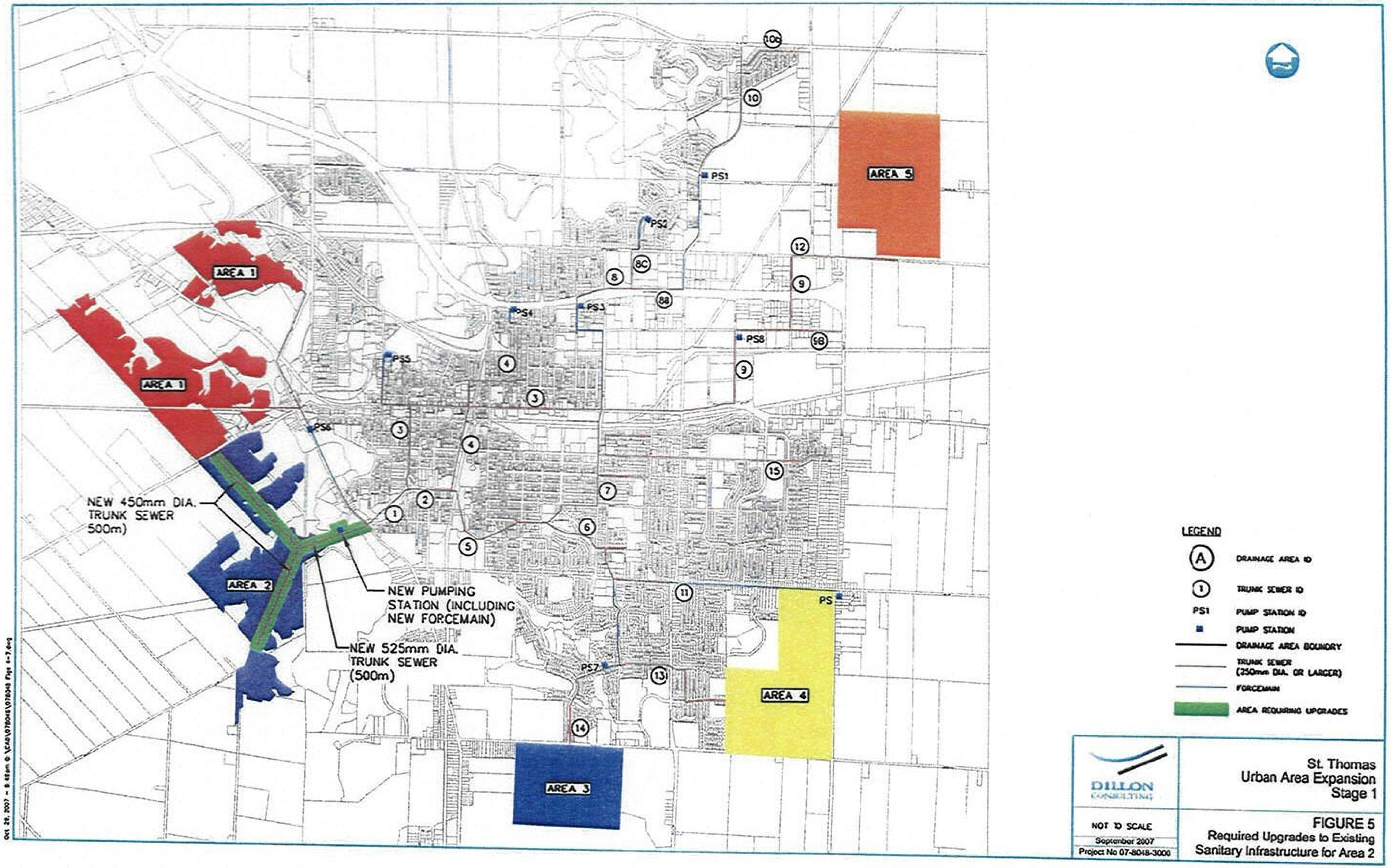
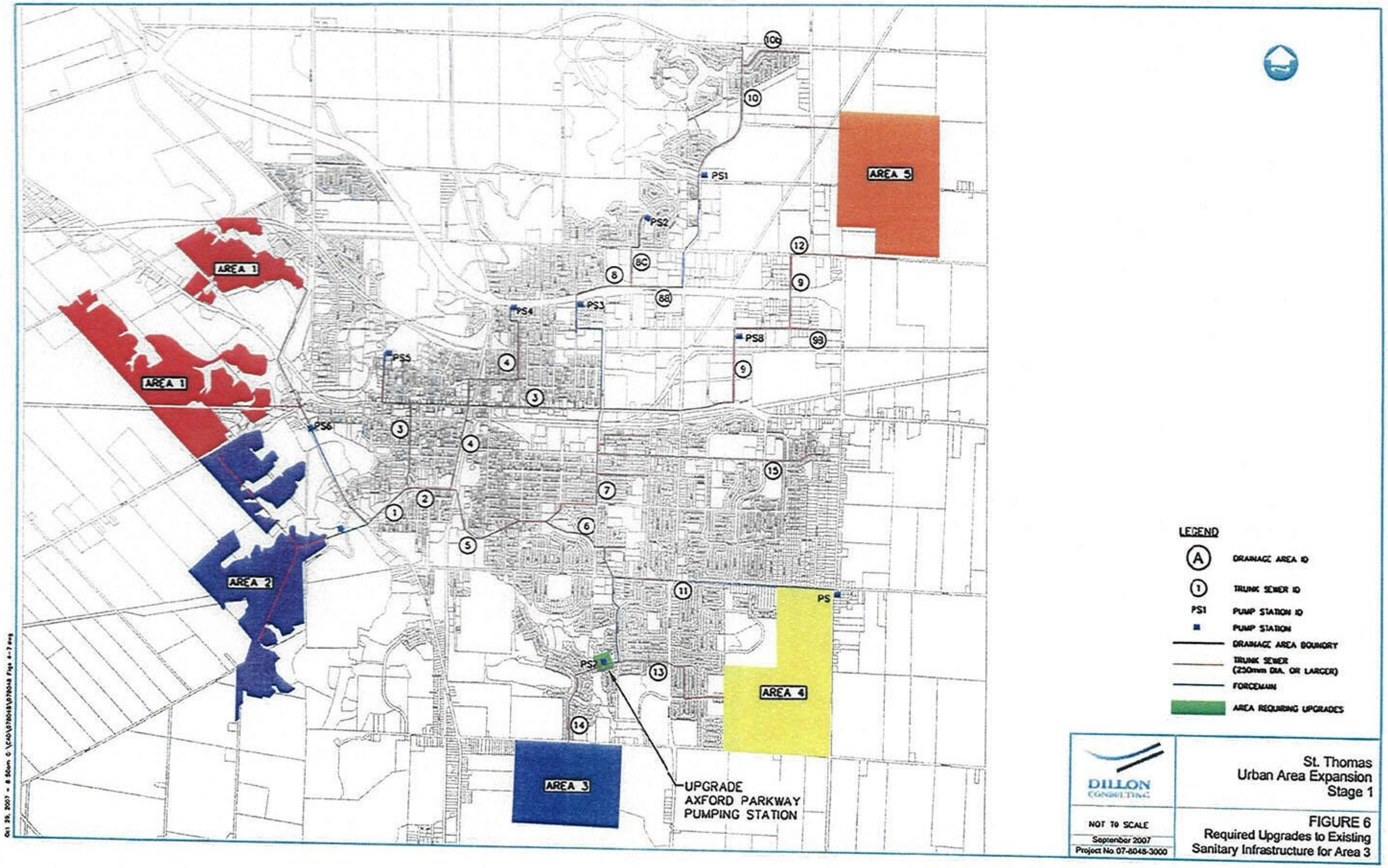
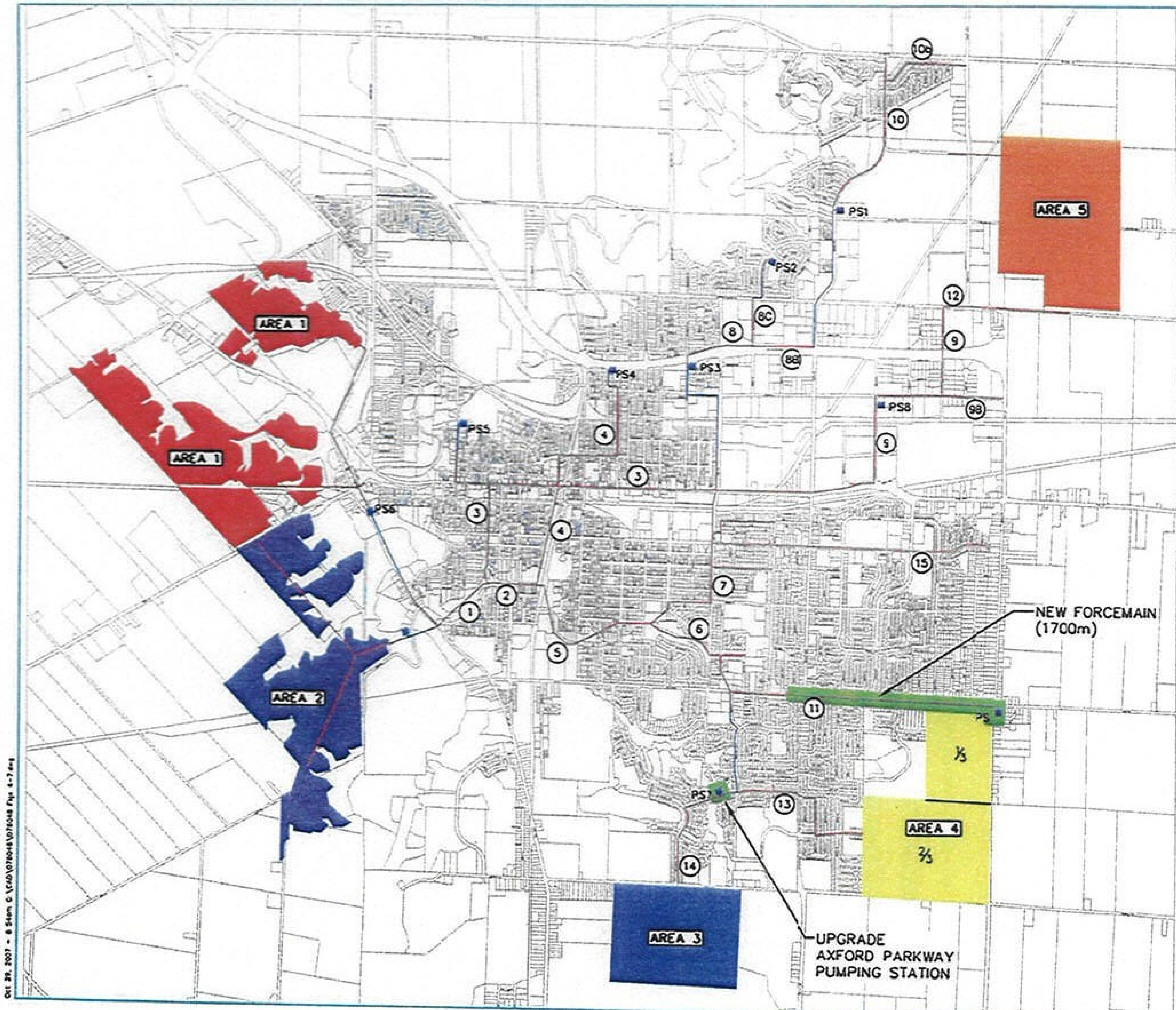

AREA 1
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
NEW 450mm DIA. TRUNK SEWER 500m)
NEW 525mm DIA. TRUNK SEWER (500m)
NEW PUMPING STATION (INCLUDING NEW FORCEMAIN)
PS1
PS2
PS3
PS4
PS5
PS6
PS7
PS8
PS
LEGEND
DRAINAGE AREA ID
TRUNK SEWER ID
PS1 PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDARY
TRUNK SEWER (250mm DIA. OR LARGER)
FORCEMAIN
AREA REQUIRING UPGRADES
DILLON CONSULTING
NOT TO SCALE
September 2007
Project No 07-8048-3000
St. Thomas
Urban Area Expansion
Stage 1

FIGURE 5
Required Upgrades to Existing Sanitary Infrastructure for Area 2


AREA 1
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
PS1
PS2
PS3
PS4
PS5
PS6
PS8
PS
PS2
10C
10
12
9
8C
8
8B
9B
9
4
3
3
4
15
7
6
5
2
1
11
13
14
UPGRADE
AXFORD PARKWAY
PUMPING STATION
LEGEND
A
DRAINAGE AREA ID
1
TRUNK SEWER ID
PS1
PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDRY
TRUNK SEWER
(250mm DIA. OR LARGER)
FORCEMAIN
AREA REQUIRING UPGRADES
DILLON
CONSULTING
NOT TO SCALE
September 2007
Project No 07-8048-3000
St. Thomas
Urban Area Expansion
Stage 1
FIGURE 6
Required Upgrades to Existing
Sanitary Infrastructure for Area 3



DILLON CONSULTING

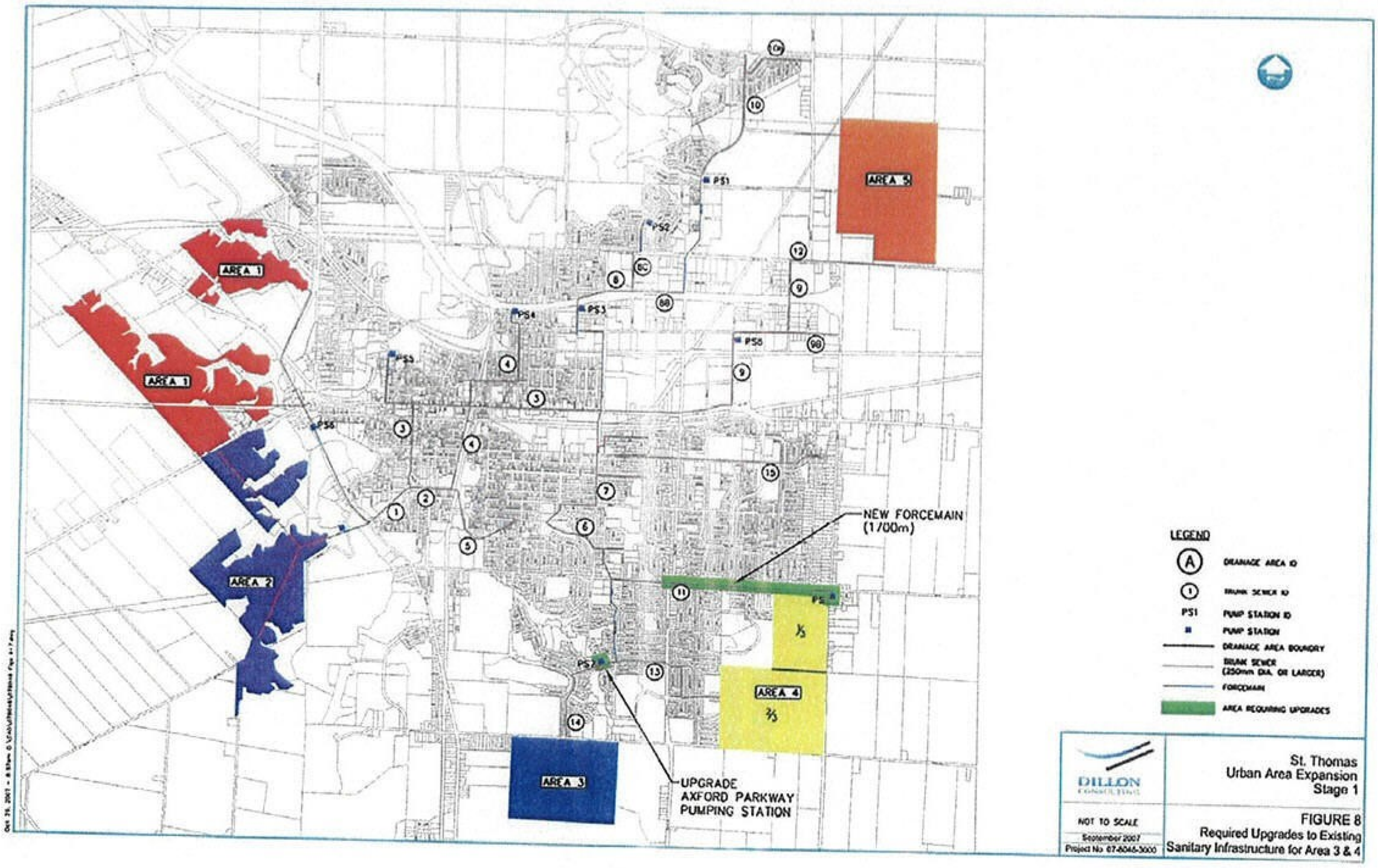
NOT TO SCALE

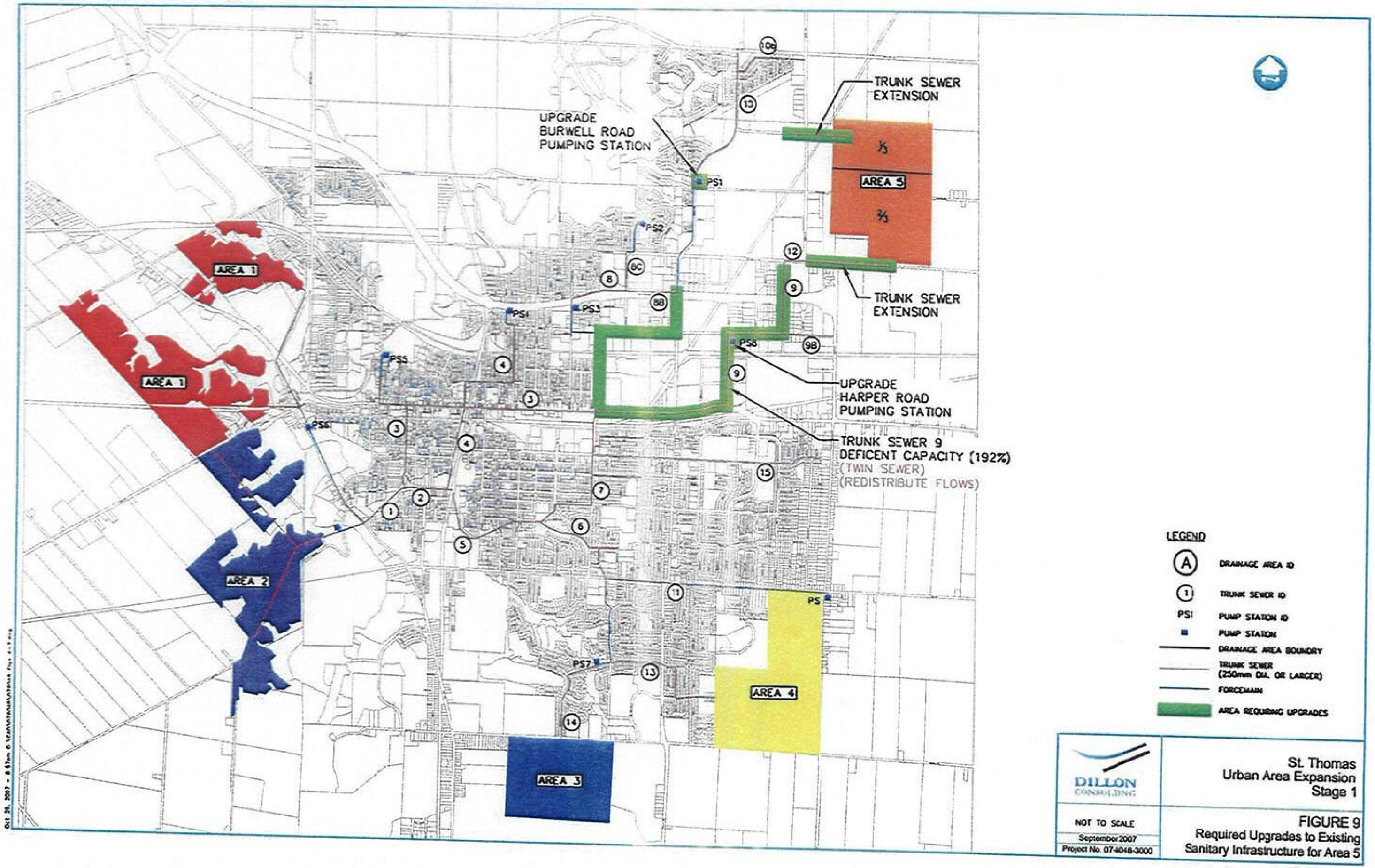
September 2007

Project No. 07-8048-3000

St. Thomas
Urban Area Expansion
Stage 1

FIGURE 7
Required Upgrades to Existing Sanitary Infrastructure for Area 4


AREA 1
AREA 1
AREA 2
AREA 3
AREA 4
1/3
2/3
AREA 5
PS1
PS2
PS3
PS4
PS5
PS6
PS7
NEW FORCEMAIN
(1700m)
UPGRADE
AXFORD PARKWAY
PUMPING STATION
LEGEND
DRAINAGE AREA ID
TRUNK SEWER ID
PS1 PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDRY
TRUNK SEWER
(250mm DIA. OR LARGER)
FORCEMAIN
AREA REQUIRING UPGRADES
DILLON CONSULTING
NOT TO SCALE
September 2007
Project No. 07-6046-3000
St. Thomas
Urban Area Expansion
Stage 1
FIGURE 8
Required Upgrades to Existing
Sanitary Infrastructure for Area 3 & 4


UPGRADE
BURWELL ROAD
PUMPING STATION
TRUNK SEWER
EXTENSION
1/3
AREA 5
2/3
TRUNK SEWER
EXTENSION
UPGRADE
HARPER ROAD
PUMPING STATION
TRUNK SEWER 9
DEFICENT CAPACITY (192%)
(TWIN SEWER)
(REDISTRIBUTE FLOWS)
AREA 1
AREA 1
AREA 2
AREA 3
AREA 4
PS1
PS2
PS3
PS4
PS5
PS6
PS7
PS8
PS
LEGEND
DRAINAGE AREA ID
TRUNK SEWER ID
PUMP STATION ID
PUMP STATION
DRAINAGE AREA BOUNDRY
TRUNK SEWER
(250mm DIA. OR LARGER)
FORCEMAIN
AREA REQUIRING UPGRADES
DILLON
CONSULTING
St. Thomas
Urban Area Expansion
Stage 1
NOT TO SCALE
September 2007
Project No. 07-4048-3000
FIGURE 9
Required Upgrades to Existing
Sanitary Infrastructure for Area 5

APPENDIX "B"

EarthTech Supporting Documentation for Phase 1 Water Distribution Analysis

EarthTech

A tyco International Ltd. Company

THE CORPORATION OF THE CITY OF
ST. THOMAS

City of St.Thomas
Proposed Urban Area Expansion
Phase 1 – Water Servicing Analysis

Prepared for:

Corporation of the City of St. Thomas
P.O Box 520
545 Talbot Street
St. Thomas, ON
N5P 3V7

Prepared by:

Earth Tech Canada Inc.
Suite 300,
285 King Street,
London, Ontario
N6B 3M6

Project No. 101073

September 2007

EarthTech
A tyco International Ltd. Company

Date: October 30, 2007 Project No. 101073

To: Heather Mahaney, Ron Shishido

cc: John Dewancker, City of St.Thomas
Gerald Reu, City of St. Thomas
Paul Adams, Earth Tech

From: John Haasen / Julia Koycheva

Subject: Proposed Urban Area Expansion
Phase 1 – Water Servicing Analysis

To facilitate proposed urban area expansion, the City of St. Thomas initiated a number of background studies to confirm those areas best suited for expansion beyond the current urban area designated by the City's Official Plan. For water servicing purposes the City of St. Thomas retained the services of Earth Tech Canada Inc. to undertake a two phase analysis.

- Phase 1 involves a review of water servicing needs for the various growth areas to determine if one can be more effectively served versus others, and if there are any major issues that would have to be addressed to provide such servicing;

- Phase 2 involves developing a servicing plan for each area to be considered for expansion of the current urban growth area as designated by the City's OP. This will involve the confirmation of both: current proposed and ultimate servicing requirements, and related transmission, pumping and/or storage components.

This memo provides the outputs for Phase 1 of the project.

1.0 Background

With the growing interest to develop lands within the City of St. Thomas, an assessment of the City's existing water infrastructure and the need for new water infrastructure to service six proposed growth areas was required. These six potential growth areas are shown by Figure 1 attached. In this regard, Earth Tech conducted an analysis as per our June 11, 2007 work program submission. Initially existing water system operations and deficiencies were confirmed using the City's Water Gems model. Then the six growth areas were assessed using the Water Gems model and design planning criteria for alternative growth needs. This included assessing the serviceability and compatibility of the growth areas with the City's existing water system. Finally, estimated water servicing costs were determined for each growth area to support the selection of preferred growth areas.

2.0 Existing Conditions

The City of St. Thomas provided Earth Tech with an up-to-date hydraulic model in Water GEMS (September 5, 2007). Earth Tech evaluated the existing model for connectivity and found some orphaned junctions and pipes. These were identified and removed from the model. It was also noticed that water demand values were not assigned for several nodes. These nodes were also eliminated from the model runs to avoid inappropriate conclusions. It is recommended the City confirm and assign these demands for the next stage of the project. Existing model calibration was presumed as being complete, accurate and suited for analysis purposes.

The existing system was analyzed for headlosses, velocity and pressure. No significant head losses were detected in the existing water system. The majority of the headlosses were estimated at less than 2m/km. Velocities were in the range of 0.5 to 1.6 m/s, as required by City of St. Thomas design standards, which decreases water age and assures better water quality of the water delivered to customers. However, when analyzing pressure conditions, an area located in the eastern portion of St. Thomas (just west of Centennial Avenue, between Talbot Street to the north and Elm Street to the south), experiences low pressures in the range of 275 to 345 kPa (40 to 50 Psi) See Figure 1.

The problem in this area is a combination of relatively high ground elevation, insufficient watermain looping and low initial HGL. The problem gets worse when there are demand peaks. The oversized water services help but the problems is not enough pressure at the supply point, so this won't solve the problem in these problematic areas as demand is added.

3.0 Future Conditions

The existing water system model was updated to address additional information provided by the City, of St. Thomas. This included various developments recently completed to the south and west, and the City's latest capital planning information. **New development demand information was not provided and will be needed for Phase 2 of the project.**

In addition, the City of St. Thomas provided Earth Tech with area information for the six growth areas and future population information as prepared by Lapointe Consulting (see Table 1). The population projections were used to confirm future water supply needs, and were further used for

the determination of future water demands for each area. The estimated water demand values were imported into the updated water model and the model was run to generate future conditions and evaluate system performance and expansion needs.

3.1 Population/Water Demand Projections

Population Projections

Lapointe Consulting provided long term population, housing and employment projections (including population equivalents), for the period for 2006 to 2026. The populations were estimated based on an assumption of net developable area, average number of people per household (2.39 people per household), and low density housing (6 units per acre). As for employment, it is not anticipated that this will be a large component in any of the areas. There is currently no demand for expanding commercial.

Water Demand Projections

Domestic Water Demand

According to the City of Thomas' Waterworks Design and Construction Standards, the average domestic demand varies between 270 and 450 L/d per capita. This demand varies with location and projected future land use. For the purpose of this analysis, the Domestic Water Demand was taken as an average value of 300 Lpcd (liters per capita per day), which is a reasonable estimate used for projecting future demands for planning purposes when servicing large areas of a city.

Average Daily, Maximum Daily and Maximum Peak Hourly Demand were calculated as described below.

Average Day Demand (ADD)

The Average Day Demand is estimated by multiplying the domestic water demand with the estimated population for a given area. This value represents water to be pumped and distributed from the City's water system on an average daily basis.

Maximum Daily Demand (MDD)

The maximum daily water demand is estimated by multiplying the maximum daily peaking factor and the domestic water demand. For the purposes of evaluating water supply alternatives, the MOE standard for maximum day factor of 1.75 for the projected population was applied. This is appropriate for servicing large areas of a City, notwithstanding the City design standard factor of 3.5.

Maximum Peak Hourly Demand (PHD)

The maximum peak hourly demand is estimated by multiplying the maximum hour peaking factor and the domestic water demand. The maximum hour peaking factor used is 3.5 to again reflect servicing for a large portion of the City, notwithstanding the City design peak hour factor of 7.8.

The population and water demand projections for each of the proposed growth areas are provided in Table 1.

Table 1

Population and Water Demand Projections of St. Thomas (new developing areas)

	City Standards [1]	Recommended [2]
Total Water Demands (average per capita):	450 L/d	300 L/d
Domestic Water Demands (average per capita):	270-450 L/d	300 L/d
Maximum daily peaking factor:	3.6	1.75
Maximum hour peaking factor:	7.8	3.5

No.	Area (ha) [3]	Area (ha) [3]	Area (acres) [3]	Area (acres) [3]	Density [3]	Estimated Population [3]	Growth Demands (ML/D)		
	Gross	Net	Gross	Net			ADDw	MDD	PHD
1	252.60	150.85	624.67	372.76	2236.6	5345.4	1.60	2.81	5.61
2	235.62	133.12	582.22	328.95	1973.7	4717.1	1.42	2.48	4.95
3	80.62	80.61	198.97	198.95	1193.7	2853.0	0.86	1.50	3.00
4	123.12	123.12	304.23	304.23	1825.4	4362.7	1.31	2.29	4.58
5	116.80	116.70	288.61	288.38	1730.3	4135.4	1.24	2.17	4.34
6	2.21	2.08	5.47	5.13	30.8	73.6	0.02	0.04	0.08

(1) Section 3: Design and Layout of Watermains,
Environmental Services, Engineering Design and Construction Standards
City of St. Thomas, June, 2002

(2) Recommended Planning Criteria for Large Service Area

(3) Data provided by City of St.Thomas (based on Lapointe Consulting projections, 2008)

ADDw (Average Daily Water Demand) = Popul.*DWD
MDD (Maximum Daily Water Demand) = max daily peaking factor * DWD
PHD (peak hourld demand) = max hour peaking factor * DWD

3.2 Hydraulic Analysis

The existing water distribution system was expanded to meet future growth needs for each of the six selected areas. Water distribution system servicing was determined based on a review of topographical, physical and land use features to reduce environmental impact; determine the most cost effective solution for crossing terrain; and connecting to existing primary water distribution system or secondary transmission mains. The estimated water demand values were assigned to the points with the highest elevation in each area to consider the most conservative approach.

Seven scenarios were created: six of them with only one assigned demand (one scenario for each growth area), and one scenario including all demands simultaneously. The modeling showed that adding new demands to the existing system independently did not show any significant change in water transmission, pumping or storage needs of the existing watermain network. Moreover no

significant transmission or storage changes were observed when adding all six demands at the same time. The modeling did show that the low pressure problem in the Centennial area did become worse. This therefore triggers the need to increase pumping head at the Albert Roberts Boosting Station by at least 30m. This will result a total head of 310m and will solve the existing pressure problems in the vicinity of the station, and service the additional water demand.

The high water level at the Ford Storage Tower is at 280 m and we suggest boosting pressure from Albert Roberts BS to about 310 m to increase pressure in the east side of the system. Therefore the FS tower may, in fact, overflow. The pressure near the FS Tower could be regulated, so that it won't overflow via an altitude valve.

Something else to consider is that there is approximately 6 km of pipe network between the Albert Robert BS at the Ford Storage Tower which will generate high head losses. This suggests that the PRV/Pump setting at the Albert Robert BS could safely set be above 280m. How high would need to be determined by more hydraulic modeling. We would recommend adding in the model the actual pumps and not the fictitious reservoirs so that some pump controls could be added. With pump controls the system can be better managed and work more efficiently.

The third option is to separate a portion of the City (like areas 1&2) and set up a separate zone there. The problem would still exist in the Centennial Road Area, but wouldn't get worse. Similar Altitude, Pressure Sustaining/ Reducing valve, or pump controls would have to be implemented, likely at 2 to 3 times the cost of increasing pressure and control at Albert Robert B.S. maintaining one pressure zone.

3.3 Estimated Costs

Cost Estimates for the six growth areas and the suggested booster station improvement are shown by Table 2 for an estimated total of **$15,506,563**, that consists of **$14,414,563** for the required water servicing of the five new expansion areas, and **$1,092,000** for upgrading the existing boosting station to meet the new demand requirement, and resolve the existing pressure problems in the Centennial Road area. No expansion costs are included for the Area #6 due to the small number of projected people and serviced area required. The estimated costs include Construction Costs and 30% for Engineering and Contingency allowances (15% each). Unit Pipe Costs were based on the "City of St. Thomas Water Needs and Financial Study Report", 2006.

3.4 Compaction Summary

Table 3 summarizes key servicing characteristics for each of the proposed growth areas (area; length of proposed water infrastructure and diameter; estimated growth requirements; estimated costs; and comparative costs based on net area, average day demand, and on the capita basis. Areas #1 and #2 are relatively difficult to service due to the valley crossings for Dodd and Kettle Creeks. Areas #3 and #4 are relatively easy to service due to the terrain, and recent construction of a 400mm watermain along Southdale line. Area #5 is also relatively easy to service due to proximity to the St. Thomas Pumping Station. Finally Area #6 is the easiest to service due to the small area, low demand and proximity to existing water system infrastructure.

Table 2

Estimated Costs

Water 2027 Scenario

Cost Table							
Watermain Upgrades							
W1a (Area #1)	200 mm	1730	m	$ 675	$ 1,167,750	$ 350,325	$ 1,518,075
W1a (Area #1)	200 mm (creek crossing)	1770	m	$ 1,350	$ 2,389,500	$ 716,850	$ 3,106,350
						Sub-Total	**$ 4,624,425**
W2a (Area #2)	200 mm	2950	m	$ 675	$ 1,991,250	$ 597,375	$ 2,588,625
W2b (Area #2)	200 mm (creek crossing)	765	m	$ 1,350	$ 1,032,750	$ 309,825	$ 1,342,575
						Sub-Total	**$ 3,931,200**
W3 (Area #3)	150 mm	1970	m	$ 650	$ 1,280,500	$ 384,150	$ 1,664,650
						Sub-Total	**$ 1,664,650**
W4 (Area #4)	150 mm	1885	m	$ 650	$ 1,225,250	$ 367,575	$ 1,592,825
						Sub-Total	**$ 1,592,825**
W5b (Area #5)	200 mm	1230	m	$ 675	$ 830,250	$ 249,075	$ 1,079,325
W5a (Area #5)	300 mm	1615	m	$ 725	$ 1,170,875	$ 351,263	$ 1,522,138
						Sub-Total	**$ 2,601,463**
W6 (Area #6) [3]		0	m				0
						Sub-Total	0
					ALL AREAS	**Sub-Total**	**$ 14,414,563**
Boosting Station Capacity							
BS	*Albert Robert BS*	12	ML/d	$70,000.00	$ 840,000.00	$ 252,000	$ 1,092,000
						Sub-Total	**$ 1,092,000**

2027 Total $ 15,506,563

(1) "City of St.Thomas Water Needs and Financial Study Report", 2006, EarthTech
(2) Engineering and Contingency at 15% each (30% total).
(3) No infrastructure expenses were considered for Area #6 given the small number of people served and area required

Table 3

Expansion Lands Characteristics

		Area #1		Area #2		Area #3		Area #4		Area #5		Area #6	
Area (Net):	ha		150.85		133.12		80.51		123.12		116.70		2.08
Area (Gross):	ha		252.80		235.62		80.52		123.12		116.80		2.21
Demand:	ML/D	ADD	1.6	ADD	1.42	ADD	0.86	ADD	1.31	ADD	1.24	ADD	0.02
	ML/D	MDD	2.81	MDD	2.48	MDD	1.5	MDD	2.29	MDD	2.17	MDD	0.04
	ML/D	PHD	5.61	PHD	4.95	PHD	3	PHD	4.58	PHD	4.34	PHD	0.08
Population	capita		5345.4		4717.1		2853		4362.6		4135.4		73.6
Density			2236.6		1973.7		1193.7		1825.4		1730.3		30.8
Demand Node Elevation	m		233		236		236		249.5		257		235.5
New Infrastructure		200 mm	1730	200 mm	2950	150 mm	1970	150 mm	1885	200 mm	1230	N/A	N/A
	m	200 mm (cros	1770	200 mm (cros	765					300 mm	1615		
Estimated Cost	$		$ 4,624,425		$ 3,931,200		$ 1,664,650		$ 1,592,825		$ 2,601,463		N/A
Estimated Cost/ha	$/ha		$ 30,656		$ 29,531		$ 19,784		$ 21,129		$ 22,292		N/A
Estimated Cost/ADD	$/L/D		$ 7.40		$ 5.58		$ 1.43		$ 2.09		$ 3.23		N/A
Estimated Cost/capita	$/capita		$ 865		$ 833		$ 558		$ 596		$ 629		N/A
Comment:		Difficult Crossing of Dodd Creek Valley		Difficult Crossing of Kettle Creek Valley		Relatively easy to service; Southdale WTM already in place		Relatively easy to service; Southdale WTM already in place		Relatively easy to service; Close to St.Thomas PS.		Easy to service	

Prepared and Submitted by

Earth Tech Canada

John Haasen, P. Eng.

Julia Koycheva, P.Eng.

P:\PROJECTS\101073 St Thomas Water Servicing\GenCor\Reports\WDS Analysis City of St.Thomas Proposed Urban Area Expansion_20Sept.doc

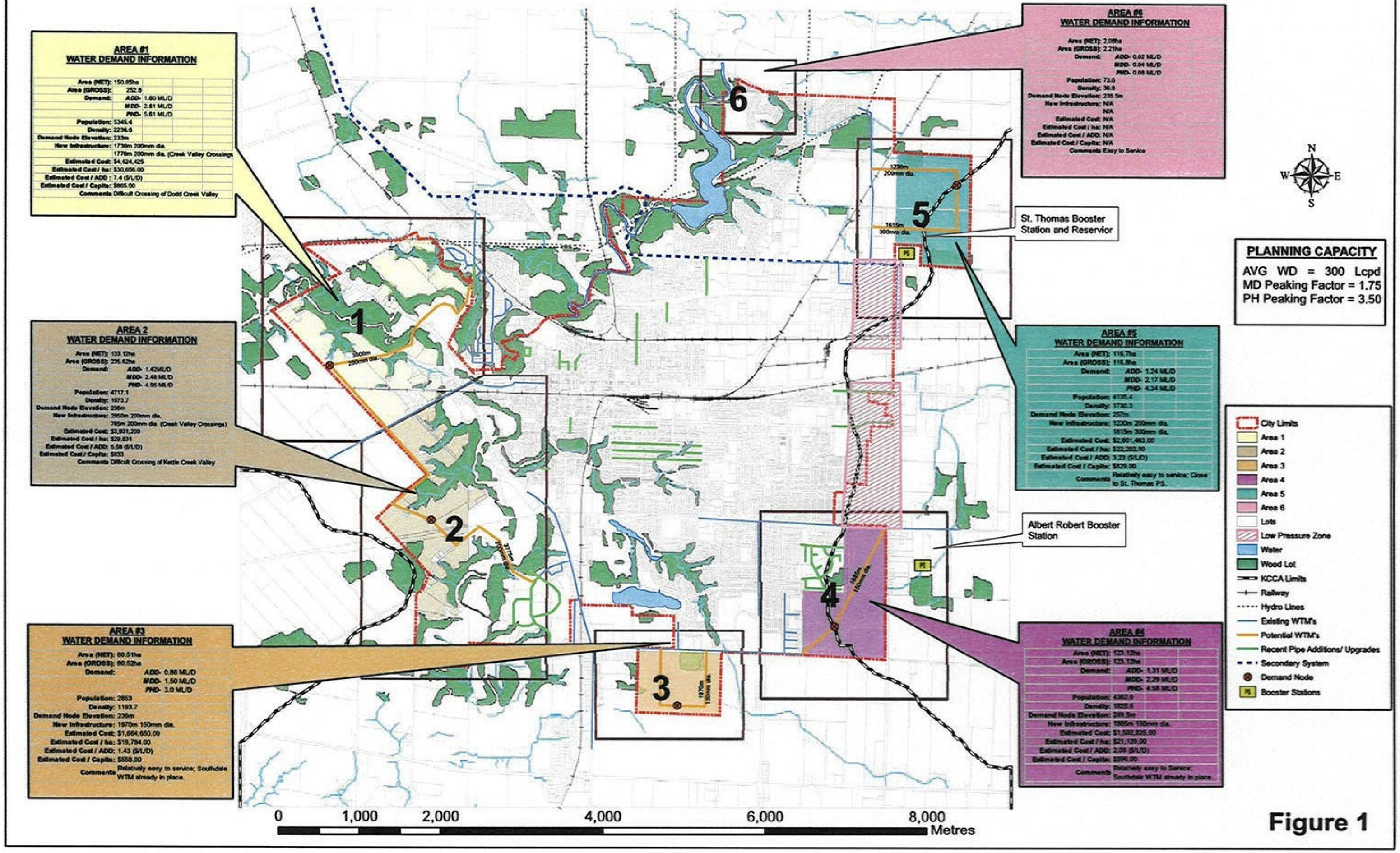

AREA #1
WATER DEMAND INFORMATION
Area (NET): 150.85ha
Area (GROSS): 252.8
Demand: ADD- 1.60 ML/D
MDD- 2.61 ML/D
PHD- 5.61 ML/D
Population: 5345.4
Density: 2236.6
Demand Node Elevation: 233m
New Infrastructure: 1730m 200mm dia.
1770m 200mm dia. (Creek Valley Crossings
Estimated Cost: $4,624,425
Estimated Cost / ha: $30,656.00
Estimated Cost / ADD : 7.4 ($/L/D)
Estimated Cost / Capita: $865.00
Comments Difficult Crossing of Dodd Creek Valley
AREA 2
WATER DEMAND INFORMATION
Area (NET): 133.12ha
Area (GROSS): 235.62ha
Demand: ADD- 1.42ML/D
MDD- 2.48 ML/D
PHD- 4.95 ML/D
Population: 4717.1
Density: 1973.7
Demand Node Elevation: 236m
New Infrastructure: 2950m 200mm dia.
785m 200mm dia. (Creek Valley Crossings)
Estimated Cost: $3,931,200
Estimated Cost / ha: $29,531
Estimated Cost / ADD: 5.58 ($/L/D)
Estimated Cost / Capita: $833
Comments Difficult Crossing of Kettle Creek Valley
AREA #3
WATER DEMAND INFORMATION
Area (NET): 80.51ha
Area (GROSS): 80.52ha
Demand: ADD- 0.86 ML/D
MDD- 1.50 ML/D
PHD- 3.0 ML/D
Population: 2853
Density: 1193.7
Demand Node Elevation: 236m
New Infrastructure: 1970m 150mm dia.
Estimated Cost: $1,664,650.00
Estimated Cost / ha: $19,784.00
Estimated Cost / ADD: 1.43 ($/L/D)
Estimated Cost / Capita: $558.00
Comments Relatively easy to service; Southdale WTM already in place.
AREA #6
WATER DEMAND INFORMATION
Area (NET): 2.09ha
Area (GROSS): 2.21ha
Demand: ADD- 0.02 ML/D
MDD- 0.04 ML/D
PHD- 0.08 ML/D
Population: 73.6
Density: 30.8
Demand Node Elevation: 235.5m
New Infrastructure: N/A
N/A
Estimated Cost: N/A
Estimated Cost / ha: N/A
Estimated Cost / ADD: N/A
Estimated Cost / Capita: N/A
Comments Easy to Service
AREA #5
WATER DEMAND INFORMATION
Area (NET): 116.7ha
Area (GROSS): 116.8ha
Demand: ADD- 1.24 ML/D
MDD- 2.17 ML/D
PHD- 4.34 ML/D
Population: 4135.4
Density: 1730.3
Demand Node Elevation: 252m
New Infrastructure: 1230m 200mm dia.
1615m 300mm dia.
Estimated Cost: $2,601,463.00
Estimated Cost / ha: $22,292.00
Estimated Cost / ADD: 3.23 ($/L/D)
Estimated Cost / Capita: $629.00
Comments Relatively easy to service; Close to St. Thomas PS.
AREA #4
WATER DEMAND INFORMATION
Area (NET): 123.12ha
Area (GROSS): 123.12ha
Demand: ADD- 1.31 ML/D
MDD- 2.29 ML/D
PHD- 4.58 ML/D
Population: 4362.6
Density: 1825.6
Demand Node Elevation: 249.5m
New Infrastructure: 1885m 150mm dia.
Estimated Cost: $1,592,825.00
Estimated Cost / ha: $21,129.00
Estimated Cost / ADD: 2.98 ($/L/D)
Estimated Cost / Capita: $596.00
Comments Relatively easy to Service; Southdale WTM already in place.
St. Thomas Booster Station and Reservior
Albert Robert Booster Station
PLANNING CAPACITY
AVG WD = 300 Lcpd
MD Peaking Factor = 1.75
PH Peaking Factor = 3.50
City Limits
Area 1
Area 2
Area 3
Area 4
Area 5
Area 6
Lots
Low Pressure Zone
Water
Wood Lot
KCCA Limits
Railway
Hydro Lines
Existing WTM's
Potential WTM's
Recent Pipe Additions/ Upgrades
Secondary System
Demand Node
Booster Stations
N
W
E
S
0
1,000
2,000
4,000
6,000
8,000
Metres

Figure 1

APPENDIX "C"

Paradigm Supporting Documentation for Phase 1 Transportation Analysis

Memorandum

Paradigm
Transportation Solutions Limited

DATE: **September 24, 2007**

TO: **JOHN DEWANCKER/PAT KEENAN**

FROM: **PHIL GRUBB, P.ENG.**

RE: **URBAN AREA EXPANSION AREAS - TRANSPORTATION ASSESSMENT**

This memorandum documents our overview assessment of the six alternative growth areas being considered for urban residential expansion as shown below.

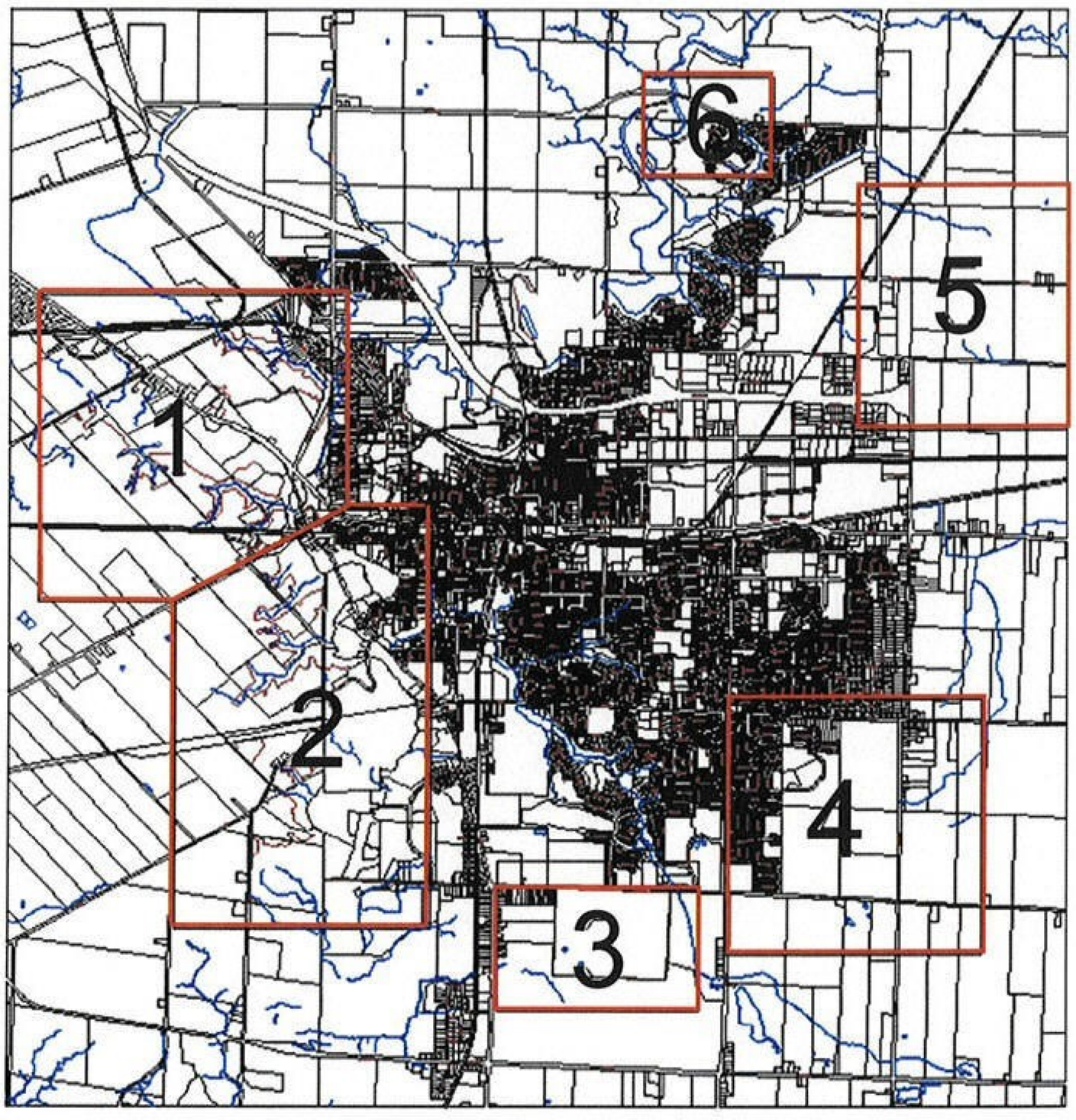


Figure 1: Alternative Growth Areas

45 Grosvenor Lane, Cambridge, Ontario N1R 8N2 Ph: 519.896.3163 Fax: 1.866.722.5117

Estimates of future potential population within these growth areas are as follow shown in Table 1. Based on a vehicle trip rate of 3 per person per day based on the 1996 Household Travel Survey, the areas could generate between 200 and 16,000 vehicle trips or a total of 64,500 vehicle trips for all areas combined.

Table 1: Potential Residential Growth and Travel Demands

Development Area	Dwelling Units	Estimated Population	Daily Vehicle Trips
Area 1	2236	5345	16035
Area 2	1974	4717	14151
Area 3	1194	2853	8559
Area 4	1826	4363	13089
Area 5	1730	4135	12405
Area 6	31	74	222
Total	8990	21487	64461

Five criterion were used to assess the growth areas from a transportation perspective. These include:

1. Proximity to major commercial and industrial employment areas.
2. Accessibility by existing road network.
3. Use of available roadway capacity.
4. Road improvement costs.
5. Road improvement impacts.

The following provides our over view assessment of the various growth areas based on these criterion.

1. Proximity to Major Commercial and Industrial Areas

This criterion considers the distance from major employment and shopping areas in the community. Closer proximity to these areas reduces travel distances and associated environmental impacts (i.e. fuel consumption, emission levels, safety etc.) and increases the potential for increased utilitarian walking and cycling trips. The primary employment and commercial areas in the City are located along Talbot Street and in the northeast part of the community.

Table 2: Rank Based on Proximity

Area	Rank	Comments
1	6	Least Preferred
2	4	
3	5	
4	3	
5	1	Preferred
6	2	

Based on straight line travel distances between the development, employment and commercial (downtown and east commercial areas) centroids of these areas, the adjacent table shows the ranking from the perspective of this criterion showing Areas 4, 5 and 6 as most preferred over the others.

2. Accessibility by Existing Road Network

This criterion considers how accessible the area is by road from existing parts of St. Thomas based on the number of routes to the area and approach directions. More route options provide alternatives for emergency vehicles, transit and during periods when blockages occur on a route to the area (i.e. road closure, construction). Areas 1 and 2 rely upon one road (either Sunset Road or Sunset Drive) to approach the area and the only way to approach the area from St. Thomas is from the east. Furthermore, Areas 1 and 2 would likely not be interconnected due to topography constraints without extensive cost. Area 3 is served by three corridors (Centennial Road, Fairview Road, Sunset Drive) but must be approached from the north, Area 4 is served by two corridors (Centennial Road, Fairview Road) and can be approached from the north and west, Area 5 relies upon Highbury Road primarily from the south and Area 6 by both Burwell Road and Highbury Road from the south.

Table 3: Rank Based on Accessibility

Area	Possilbe Routes	Number of Routes	Rank	Comments
1	Sunset Drive or Sunset Road	1	3	
2	Sunset Drive or Sunset Road	1	3	
3	Sunset Drive, Fairview and Centennial	3	1	Preferred
4	Fairview and Centennial, Elm	3	1	Preferred
5	Highbury	1	3	Least Preferred
6	Highbury and Burwell	2	2	

Based on the above, Areas 3 and 4 are considered to have better accessibility from various parts of St. Thomas.

3. Use of Available Peak Hour Road Capacity

While route options may be available as noted above, surplus roadway capacity may not be available during peak hours. Daily roadway counts provided by the City of St. Thomas indicate that several corridors are approaching capacity and will soon be in need of improvements to provide for future growth areas. These are shown in Figure 2.

Accessibility to most growth areas will be affected by existing peak hour capacity constraints. Areas 1 and 2 will be affected by the lack of peak hour capacity in the east-west direction on Talbot Street, Wellington Street and Elm Street. Area 3 accessibility will be constrained by the lack of capacity on Fairview Avenue. Accessibility to Area 4 will be most affected by capacity constraints on Fairview Avenue and Elm Street. However, Centennial Avenue provides an alternative route with surplus capacity to the area. Areas 5 and 6 have capacity constraints associated with Burwell Road and Highbury Avenue.

All areas have capacity related constraints in obtaining access to the major destination areas in the City. However, Area 3 and Area 4 have available system capacity on Centennial Avenue to/from major destination areas within the City. Therefore, they are preferred on the basis of available peak hour capacity.

Table 4: Rank Based on Existing Capacity Constraints

Area	Traffic Constraints	Number of Routes	Rank	Comments
1	Talbot, Wellington, Elm	1	3	
2	Talbot, Wellington, Elm	1	3	
3	Sunset Drive, Fairview	3	2	
4	Fairview	2	1	Preferred
5	Highbury, Burwell	1	4	Least Preferred
6	Highbury and Burwell	2	4	Least Preferred

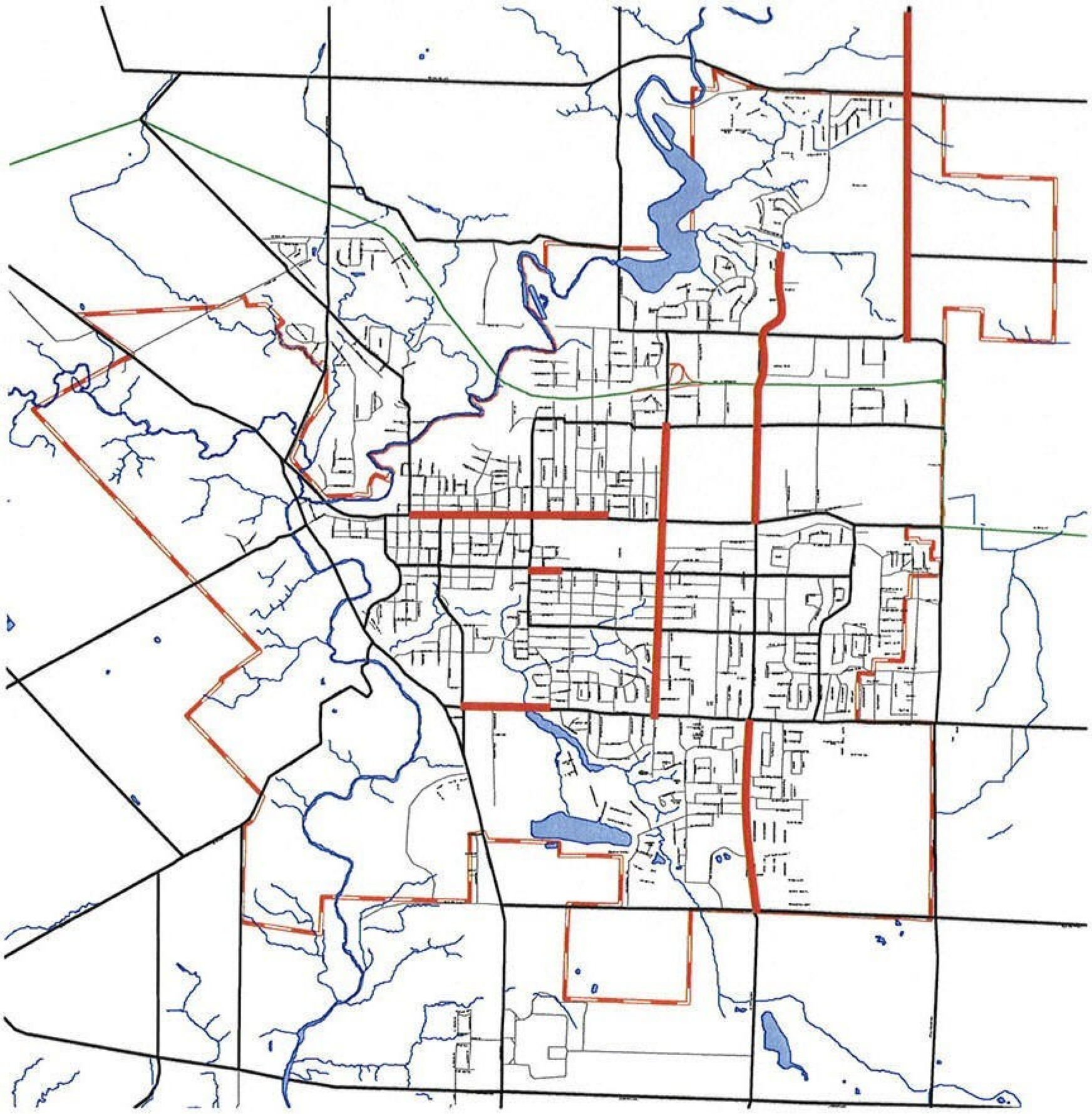


Figure 2: Roadways Approaching Capacity (Existing)

4. Road Improvement Costs

The 2004 Transportation Master Plan Update identified some roadway deficiencies that will require improvements based on anticipated growth. Those improvements are required with or without the inclusion of growth from any of the potential new growth areas being considered in this analysis. It is therefore assumed that the previous improvements identified in the 2004 study will proceed regardless of development of the subject lands. For each Planning Area, additional potential arterial road infrastructure costs not included in the 2004 Transportation Master Plan have been identified to provide a comparison between the various areas from a transportation perspective. Within Areas 1 or 2, it is assumed that the potential developable lands would not be interconnected due to rail and topography constraints but they would simply obtain access from existing immediately adjacent roadways.

Table 5 summarizes very preliminary potential order of magnitude costs associated with possible road improvement requirements based on the projected population for the areas.

Table 5: Potential Road Improvement Order-of-Magnitude Cost

Area	Road	Improvement	From	To	Length (m)	Unit Cost ($/m)	Cost
Area 1	Major Line	New 2 Lane Road	West Limits Area 1	Sunset Road	850	$ 2,000	$ 1,700,000
	Major Line	Reconstruct 2 Lane Road	Sunset Road	Ford Road	1500	$ 2,000	$ 3,000,000
	Ford Road	Reconstruct 2 Lane Road	Major Line	Wellington Road	400	$ 2,000	$ 800,000
	Talbot Street	Widen - 2 to 4 Lanes	Stanley Street	Flora Street	1240	$ 2,000	$ 2,480,000
	Wellington Road	Widen - 2 to 4 Lanes	Ford Road	Hwy 3	840	$ 2,000	$ 1,680,000
Subtotal - Area 1							$ 9,660,000
Area 2	Wellington Street	Widen - 2 to 4 Lanes	Stanley Street	Fifth Avenue	1500	$ 2,000	$ 3,000,000
	Wellington Street	Reconstruct 2 Lane Road	Manor Road	Highview Dr.	300	$ 1,500	$ 450,000
	Wellington Street	New 2 Lane Road	Extension to Centennial Ave.		100	$ 1,500	$ 150,000
	Talbot Street	Widen - 2 to 4 Lanes	Stanley Street	Flora Street	1240	$ 2,000	$ 2,480,000
	Bush Line	Reconstruct 2 Lane Road	Rieger Road	Sunset Road	2300	$ 2,500	$ 5,750,000
Subtotal - Area 2							$ 11,830,000
Area 3	Southdale Line	Reconstruct 2 Lane Road	Sunset Drive	Fairview Road	2100	$ 2,000	$ 4,200,000
	Fairview Avenue	Widen - 2 to 4 Lanes	Southdale Line	Elm Street	1600	$ 1,500	$ 2,400,000
							$ 6,600,000
Area 4	Fairview Avenue	Widen - 2 to 4 Lanes	Southdale Line	Elm Street	1600	1500	$ 2,400,000
	Elm Street	Widen - 2 to 4 Lanes	Manor Road	Centennial Avenue	1000	2000	$ 2,000,000
	Centennial Avenue	Reconstruct 2 Lane Road	Elm Street	Talbot Street	1700	2000	$ 3,400,000
							$ 7,800,000
Area 5	Burwell Road	Widen - 2 to 4 Lanes	South Edgware Road	Talbot Street	1550	2000	$ 3,100,000
	Burwell Road	New 4 Lane Bridge	Widen Hwy 3 Overpass		24000	100	$ 2,400,000
	Edgeware Line	Reconstruct 2 Lane Road	Highbury Avenue	East Limits Area 5	1250	2000	$ 2,500,000
	South Boundary Road	New Road	Centennial Avenue	East Limits Area 5	940	200	$ 188,000
Sub-total - Area 5							$ 8,188,000
Area 6	No Improvements - Insignificant Additional Growth						$ -
Note: Land cost not included							

Briefly, Areas 1 and 2 have the most significant cost associated with road infrastructure improvements. Note that land costs have not been included. Based on this, the rating of Development Areas in terms of road construction cost is as follows:

Table 6: Ranking in Terms of Roadway Construction Costs

Area	Construction Cost	Rank	Comments
1	$ 9,660,000	5	
2	$ 11,830,000	6	Least Preferred
3	$ 6,600,000	2	Preferred
4	$ 7,800,000	3	
5	$ 8,188,000	4	
6	$ -	1	Preferred

5. Road Improvement Impacts

There will be more significant natural environment and social impacts associated with road improvements for Areas 1 and 2. The residential and business impacts related to the widening of Talbot Street and Wellington Street are considered more significant than improvements related to other growth areas where road rights of ways and front yard setbacks are larger in residential areas or improvements are required adjacent to less sensitive rural and industrial areas. The ranking based on this criterion is shown in Table 7.

Table 7: Roadway Improvement Impact Rating

Area	Road Widening Impacts	Rank	Comments
1	Talbot, Wellington	4	Least Preferred
2	Talbot, Wellington	4	Least Preferred
3	Fairview	2	
4	Fairview, Elm	3	
5	Burwell	2	
6	N/A	1	Preferred

6. Summary

By combining the above noted criterion and averaging the rankings, a general indication of the relative rating of the Development Areas can be obtained as shown in Table 8 below:

Table 8: Summary Overall Transportation Rating

Area	Proximity	Accessibil	Capacity	Cost	Impacts	Average	Rank	Comments
1	6	3	3	5	4	4.3	6	Least Preferred
2	4	3	3	6	4	4.0	5	Least Preferred
3	5	1	2	2	2	2.5	3	
4	3	1	1	3	3	2.0	2	Preferred
5	1	3	4	4	2	3.0	4	
6	2	2	4	1	1	2.3	1	Preferred

The table indicates that Areas 1 and 2 are rating least preferred due to their high ranking in terms of proximity, accessibility, costs and impacts. Area 6 is preferred as it is a small area and therefore has minimal cost and impacts associated with road capacity improvements. Of the more significant potential growth areas, Area 4 is preferred from a transportation perspective.

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Phil Grubb, P.Eng.

President

Transportation Assessment.doc

APPENDIX "D"

IBI Supporting Documentation for Phase 1 Transit Analysis

MEMO

To:	Ron Shishido, Chair, Study Team	Date:	October 10, 2007
From:	Chris Prentice, Senior Associate, IBI Group	Steno:	cp
cc:	L. Sims	File No:	TO-15097

Subject: ***City of St. Thomas - Urban Area Expansion - Preliminary Scoping - Public Transit***

This memorandum provides a preliminary review and assessment of the impact on the City of St. Thomas municipal transit services for each of the six proposed potential urban expansion areas. The six expansion areas are illustrated in Exhibit 1.

This review includes an overview of the existing conventional (St. Thomas Transit) and specialized (St. Thomas Paratransit) transit services and summarizes the key planning policies, service standards and operational status of the services.

1.0 CURRENT SITUATION

1.1 Transit Services

The City of St. Thomas provides conventional, fixed route and specialized, demand-responsive public transit service to residents and businesses within the existing urban area. The conventional transit service consists of four routes operated by four buses while the specialized transit service cover the urban area with two buses. Service is provided from approximately 7:15AM to 6:45PM, Monday to Friday and from 9:15AM and 6:45PM on Saturdays. The conventional transit system carried approximately 320,000 riders in 2006 while the specialized transit service handled 20,000 rides. A total of 13,600 revenue-hours of service are operated annually. Specialized transit service hours are equivalent to those of the conventional transit. The conventional transit routes are illustrated in Exhibit 2.

The conventional transit routes operate every 30 minutes. The North Side route was extended north on Burwell Road to Riverbank Drive and the Elgin Mall route south to Bill Martin Pkwy in 2004. The routes generally provide good coverage of the city in a north-south, east-west pattern with walking distances to a transit route being no more than 300 metres for approximately 95% of the population. At the same time, in order to cover as much of the city with a minimum number of vehicles, three of the four routes are lengthy and are difficult to operate on schedule. In other words, the routes have been stretched to or, in several instances, beyond accepted transit operating guidelines. The route lengths and resulting average operating speed are as follows:

Exhibit 1: Proposed Urban Area Expansion – Candidate Areas

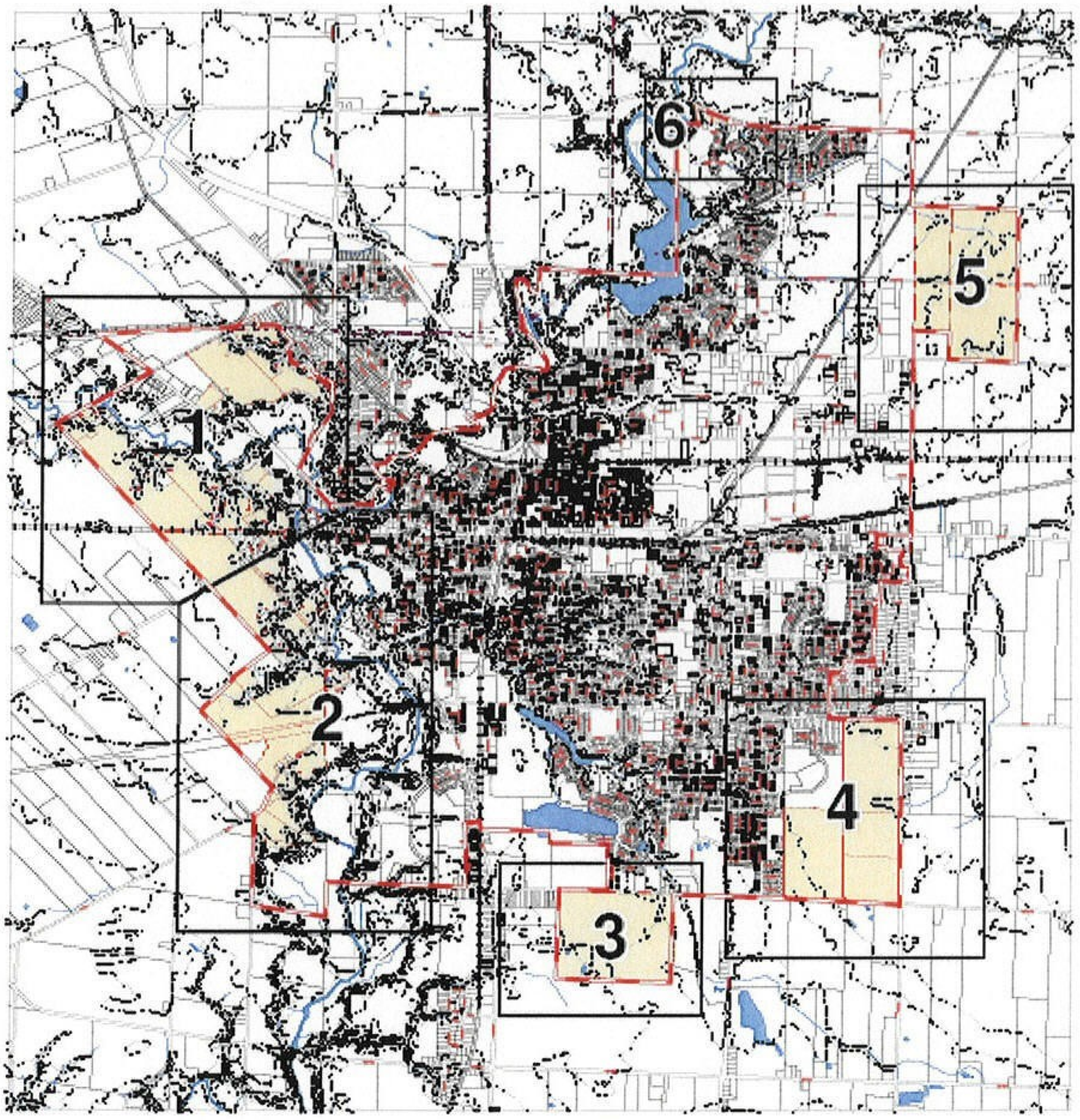


Exhibit 2: Existing Conventional Transit Routes

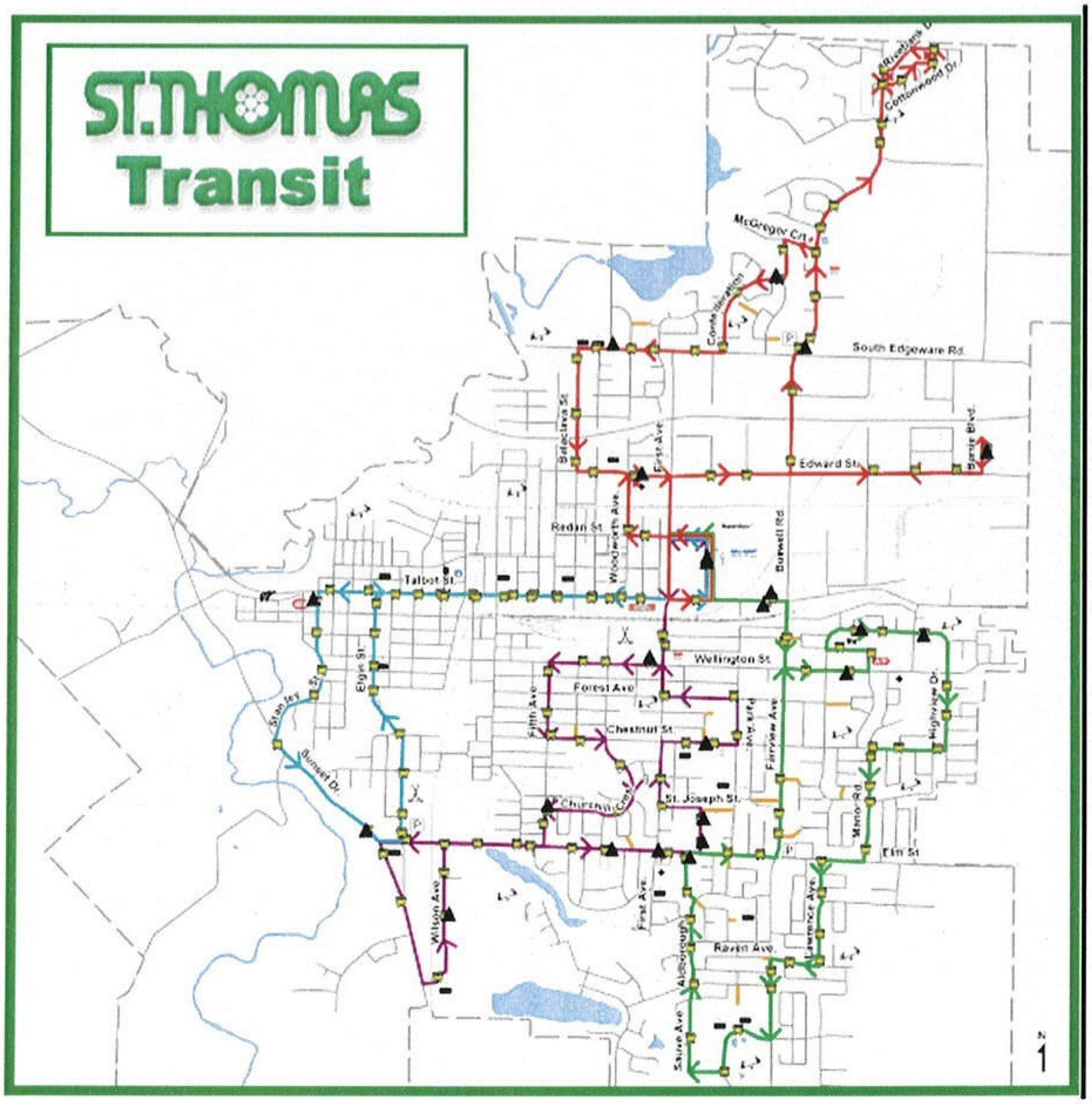


Exhibit 3: Summary of Route Lengths and Average Speed

Route	Length (km)	Average Speed (km/hr)
1 – North Side	12.2	24.4
2 – Elgin Mall	11.85	23.7
3 – Talbot	7.5	15.0
4 – Hospital	11.74	23.5

Accepted industry guidelines for route planning and reliable on-time performance is a route length of 11 kilometres (for a 30 minute round-trip) and an average speed of 22 km/hr. Clearly, the 1-North Side, 2-Elgin Mall and 4-Hospital routes are beyond these guidelines while the 3-Talbot route is below. *This information indicates that there is no capability to extend three of the four existing transit routes into new areas.*

St. Thomas Paratransit service is not faced with the same constraints as the conventional service due to the nature of its operation (i.e. demand-response) and thus no operational deficiencies have been identified although its current clientele registration and booking patterns fully utilize the existing vehicle resources.

1.2 Contract Operation

Operation of both services is contracted to a private firm, Aboutown Transportation Limited. The contractor is responsible for the operation of the service including the supply and training of bus drivers and supervisors and for servicing, cleaning and maintaining the bus fleet and facilities. Maintenance of the vehicles is sub-contracted to local repair companies. The City handles overall planning, marketing, budgetary control, revenue and contract management for the transit services.

1.3 Fares

Transit users have a choice of paying a fare by cash or purchasing tickets and monthly passes in advance. The conventional transit fares are currently as follows:

Exhibit 4: Transit Fare Structure

	Cash	Tickets	Monthly Pass
Adults	$2.50	$2.00	$60.00
Students	$2.50	$1.50	$50.00
Children	$2.50	$1.50	$50.00
Senior Citizens	$2.50	$1.50	$50.00

The specialized transit fares are uniform for all customer categories at $2.50 cash and 8 tickets for $20.00. All fares were last adjusted in June 2007.

1.4 Infrastructure

The City's transit facilities include the transit terminal on Talbot Street, passenger shelters at various locations throughout the City as well as bus stops.

Transit Terminal

The City owns a transit terminal building on Talbot Street that is leased to the contractor who uses it as its operations headquarters. Within the transit terminal, there is space for vehicle storage, cleaning and washing as well as offices and lunchroom for the bus drivers and supervisors and a waiting area for transit users. To the rear of the building, there is a fuel island for refuelling buses.

Shelters

The 27 passenger shelters are of a standard frame and glass design although the newest shelters at the new transfer point at the Wal-Mart mall are of a more attractive design. However, the percentage of bus stops where a shelter is located is approximately 13%. The City has a target shelter location objective of 30% of bus stop locations.

Bus Stops

Bus stop signage incorporates route and schedule information as well as corporate identification and a telephone number for customer information. Signs are maintained by the City's public works department.

Transit Transfer Point – Wal-Mart

In collaboration with Smart Centres mall development, the City established a new transit transfer point at the new Wal-Mart development at First and Talbot Streets in 2005. This terminal has space for 4 buses to park at one time (since the four routes operate on a timed transfer basis and connect at the mall at the same time) and includes two large shelters.

1.5 Annual Transit Budget

The net annual operating budget for St. Thomas' conventional and specialized transit services is approximately $820,000 based on expenditures of $1.2 million and fare revenues of $380,000. Capital costs are additional to this budget and vary according to the timing of major purchases such as for buses or facilities.

1.6 Ridership Growth Plan

The City prepared a Ridership Growth Plan in 2005 as required by the Ministry of Transportation Ontario for receipt of the gas tax allocation for transit. The key objectives of the plan are summarized below and the City has been in the process of actioning this plan.

- to maintain its market share, currently represented by a rides per capita rate of 9.4
- re-structuring routes to provide more direct routing by reducing the size of one-way loops
- consider adding early morning and evening service Monday to Saturday
- consider introducing Sunday service
- enhancing the appeal of transit use by improving customer amenities; and,
- Improved and expanded marketing and promotion of transit with emphasis on seniors and the 20-44 age group
- St. Thomas Paratransit will respond to the needs of persons with disabilities who are unable to use the conventional transit service as demonstrated by the demand for this service on an on-going basis

1.7 Transit Service Standards

As a basis for both planning and managing the transit services, service standards and policies were adopted. These detail hours and frequency of service, walking distance to transit (300 metres), coverage (% of population within the walking distance standard), justification for new service, schedule adherence, location of bus stops and shelters and financial performance.

1.8 Accessibility Plan

In accordance with Provincial requirements associated with the Accessibility for Ontarians with Disabilities Act (AODA), the City adopted an Accessibility Plan. This plan identifies how the City will implement changes to the transit system and its infrastructure to meet the needs of persons with disabilities. These changes extend to providing accessible buses on transit routes as well as reviewing the design and location of bus stops, shelters, terminals and transit vehicles.

1.9 Subdivision Planning Guidelines

A subdivision approvals guideline was adopted which highlighted the need to include transit-specific needs when considering new subdivisions or re-zoning applications. This policy, which was drafted as both a policy as well as a process, was designed to emphasize the need to consider transit when preparing and finalizing development plans by recognizing that public transit needs are distinctly different from those of the automobile in the following ways:

1. The design of the road network is critical to the efficient operation of a transit service. Good transit planning prefers a grid network of roads. Circuitous, or an incomplete road network leads to indirect transit routes;
2. Higher density housing should be located on arterial roads;
3. New development should be contiguous to existing development, not "leap-frog" or disjointed;

4. Walking distance to transit services should be minimized (a maximum of 300 metres) through the provision of walkways;

5. Commercial areas should be located so that they can be efficiently linked by transit routes to the residential areas;

6. Recreational and social facilities should be similarly located so that they can be efficiently linked by transit routes to the residential areas.

New residential areas should be designed and their construction staged with due consideration to the ability to efficiently serve them by public transit. Early in the planning process, the design of the street network should give preference to the needs of public transit in order to permit efficient route planning and the use of walkways to promote good accessibility to transit service. Also, consideration should be given to the ability to place bus stops conveniently and to minimize intrusion. Finally, higher density developments, which are traditional sources for transit use, should be located on streets with transit service, or where transit service would be operated. Similarly, commercial and industrial developments should not be located in areas remote from residential areas and on road networks largely inaccessible to transit.

2.0 PRELIMINARY ANALYSIS OF PROPOSED URBAN EXPANSION AREAS ON TRANSIT SERVICES

As indicated above, the existing conventional and specialized transit service resources are fully committed to serving the existing urban area of St. Thomas. There is no ability to extend the existing routes or resources to serve new areas. Therefore, in general, any expansion of the urban envelope will result in a requirement to increase transit resources and costs.

2.1 Key Transit Service Planning Standards

The key planning and service design guidelines for the transit services in the City are:

- transit service within 300 metres of 95% of residents
- transit service operated every 30 minutes

2.2 Implications of New Development Areas on Transit Service Needs

An initial review of the proximity of each of the proposed new development areas to existing transit routes indicates the following. The areas are numbered counter-clockwise beginning with the development in the northwest:

- Area 1 – 1.7 kilometres from the nearest transit route (3 – Talbot Street)
- Area 2 – 0.9 kilometres from the nearest transit route (4 – Hospital)
- Area 3 – 0.8 kilometres from the nearest transit route (4 – Hospital)
- Area 4 – 0.9 kilometres from the nearest transit route (2 – Elgin Mall)
- Area 5 – 1.4 kilometres from the nearest transit route (2 – Elgin Mall)
- Area 6 – 0.8 kilometres from the nearest transit route (1 – Northside)

Based on the City's primary transit planning service standards and subdivision planning policies noted above, the addition of any of these development areas to the City's urban area would require extension of the conventional and specialized transit services into these areas. And, since the existing transit services are at their operating limits, additional resources would be required to serve these new areas. Preliminary estimates to serve the new areas with transit are outlined below:

Area 1

- a new transit route of approximately 9 km in length, measured from the location of the nearest existing bus route, would be required along with extension of the specialized transit service. The new service to this area would require integration into the existing transit fixed route network and may result in changes to the existing route structure and potential additional resources

- one additional bus would need to be acquired for the service subject to any required changes to the existing conventional transit route network. Estimated cost – minimum $90,000 to $380,000 (depending on vehicle type and size) plus miscellaneous capital costs for stops and shelters

- annual operating hours would be a minimum of approximately 3,850; operating cost - $230,000; estimated net municipal cost at 30% cost recovery = $160,000.

Area 2

- a new transit route of approximately 9 km in length, measured from the location of the nearest existing bus route, would be required along with extension of the specialized transit service. The new service to this area would require integration into the existing transit fixed route network and may result in changes to the existing route structure and potential additional resources

- one additional bus would need to be acquired for the service subject to any required changes to the existing conventional transit route network. Estimated cost – minimum $90,000 to $380,000 (depending on vehicle type and size) plus miscellaneous capital costs for stops and shelters

- annual operating hours would be a minimum of approximately 3,850; operating cost - $230,000; estimated net municipal cost at 30% cost recovery = $160,000.

Area 3

- an approximate 3 km extension of route 2 into the area would be required along with extension of specialized transit service. Since route 2 (the nearest route) is at its operating limit, a reconfiguration of route 2 with the addition of a new route would be required

- one additional bus would need to be acquired for the service. Estimated cost - $90,000 to $380,000 (depending on vehicle type and size) plus miscellaneous capital costs to be determined

- annual operating hours would be approximately 3,850; operating cost - $230,000; estimated net municipal cost at 30% cost recovery = $160,000

Area 4

- an approximate 4 km extension of route 2 into the area would be required along with extension of specialized transit service. Since route 2 (the nearest route) is at its operating limit, a reconfiguration of route 2 with the addition of a new route would be required to serve this area

- one additional bus would need to be acquired for the service. Estimated cost - $90,000 to $380,000 (depending on vehicle type and size) plus miscellaneous capital costs to be determined

- annual operating hours would be approximately 3,850; operating cost - $230,000; estimated net municipal cost at 30% cost recovery = $160,000.

Area 5

- an approximate 4 km extension to route 1 from the nearest point on Edward Street into the area would be required along with extension of specialized transit service. Since route 1 is at its operating limit, a reconfiguration of the route will be required and is projected to require the creation of a new route to serve this area

- one additional bus would need to be acquired for the service. Estimated cost - $90,000 to $380,000 (depending on vehicle type and size) plus miscellaneous capital costs to be determined

- annual operating hours would be approximately 3,850; operating cost - $230,000; estimated net municipal cost at 30% cost recovery = $160,000.

Area 6

- an approximate 2 km extension to route 1 from its nearest point at Riverbank Drive to the area would be required along with extension of specialized transit service to serve the development. Since route 1 is at its operating limit, a reconfiguration of the route would be necesssary which is projected to require the creation of a new route to serve this area. However, since the proposed development area would include a small number of homes (6), it would be difficult to justify extension of transit service to the area. At the same time, there is a large new development area south of this development area that may require transit service in the near future. Extending service into this area would serve the Area 6 development as well.

- If transit service was extended to the area south of Ron McNeil Lane, one additional bus would need to be acquired for the service. Estimated cost - $90,000 to $380,000 (depending on vehicle type and size) plus miscellaneous capital costs to be determined. Annual operating hours would be approximately 3,850; operating cost - $230,000; estimated net municipal cost at 30% cost recovery = $160,000.

2.3 Conclusions

As indicated above, each of the new development areas would require an extension of transit services into the area and each would require an additional vehicle at a cost of approximately $90,000 to $380,000 depending on vehicle type as well as miscellaneous capital costs for bus stops and shelters, with resulting added minimum annual operating costs of approximately $230,000 and estimated additional net municipal cost of $160,000 plus capital costs. Areas 1 and 2, to the northwest and west of the existing urban area, may result in additional changes to the existing conventional transit route network with resulting additional resource (physical and financial) implications. In this regard, areas 1 and 2 are likely to have the most significant financial and resource impact on the City. Further, the population and employment potential of each site along with an analysis of the impact of the proposed road network and likely travel patterns on transit ridership and route structure, will need to be conducted in the next phase in order to determine which of the sites is most "transit-friendly" and compatible to the existing urban form and development from a transit perspective as well as to confirm likely transit cost implications.

C. H. (Chris) Prentice
Senior Associate
IBI GROUP

APPENDIX "E"

Watson & Associates Supporting Documentation for Phase 1 Municipal Finance Analysis

Watson & Associates ECONOMISTS LTD.

4304 Village Centre Court
Mississauga, Ontario
Canada L4Z 1S2
Phone: (905) 272-3600
Fax: (905) 272-3602
e-mail: info@watson-econ.ca

MEMORANDUM

To:	Ron Shishido	Fax	☐
From:	Andrew Grunda	Courier	☐
Date:	October 19, 2007	Mail	☐
Re:	City of St. Thomas - Proposed Urban Area Expansion - Stage I	e-mail	☒

The City of St. Thomas has initiated a number of background studies to assess the areas most suitable for expansion of the current urban area as designated by the City's Official Plan. The evaluation process consists of two stages; Stage I considers 6 separate development areas for possible expansion and the preliminary servicing requirements for each, Stage II narrows the development area options with a more detailed assessment being undertaken to determine the preferred expansion area(s). Watson & Associates Economists Ltd. has been retained by the City to review the financial components of the Stage I background studies for input into the decision making process. The Stage II analysis will consist of a detailed fiscal impact review of the short-listed development areas.

The background studies reviewed for input into our Stage I assessment include:

- "City of St. Thomas Urban Area Expansion – Stage I – Sanitary, September 11, 2007" prepared by Dillon Consulting
- "City of St. Thomas Proposed Urban Area Expansion Phase I – Water Servicing Analysis, September 2007" prepared by Earth Tech Canada Inc.
- "Urban Area Expansion Areas – Transportation Assessment, September 24, 2007" prepared by Paradigm Transportation Solutions Limited
- "City of St. Thomas – Urban Area Expansion – Preliminary Scoping – Public Transit, September 24, 2007" prepared by IBI Group

The City provided site characteristics and anticipated population for the 6 development area, which have been utilized by the respective consultants to identify servicing needs. This information was prepared by Lapointe Consulting and is used in our analysis to assess the Development Charge and the per capita lifecycle cost impacts for the proposed developments. Table 1 summarizes the anticipated size, dwelling units and population for each development area.

Table 1
Anticipated Residential Growth Forecast by Development Area

Development Area	Area (acres)	Dwelling Units	Population
1	624.7	2,236	5,345
2	582.2	1,974	4,717
3	199.0	1,194	2,853
4	304.2	1,826	4,363
5	288.6	1,730	4,135
6	5.5	31	74

To assess the financial impacts associated with potentially expanding the urban area into the 6 identified development areas our analysis considered four areas of measurement. These measurements consist of the following:

1. Gross capital costs of servicing (Table A-1)
2. Existing benefit costs of servicing (Table A-1)
3. Development charge impacts (Table A-1)
4. Per capita lifecycle cost impacts (Table A-2)

It should be noted, that in reviewing the background reports no additional servicing costs were identified for Development Area 6. Therefore, this development area has not been included in the assessment as there would appear to be no significant fiscal impacts associated with its development.

Gross Capital Costs of Servicing

The gross capital costs of providing services to the potential expansion areas are an important measurement of affordability. While the majority of these costs are growth-related and eligible for recovery from development, the magnitude of the costs may have a fiscal impact for the City relating to the requirements for interim financing. With hard services requiring construction prior to development, and assuming constant rates of development for all potential development areas, the areas with higher gross capital costs will place greater demands on interim financing sources (i.e. internal borrowing or debt) and thereby consume municipal financial resources that could be utilized for other purposes. These interim financing costs may be lessened with the participation in front-ending agreements by developers, whereby the developers would assume the cashflow impacts of new infrastructure, but for the purposes of this assessment it is assumed that the City would be required to interim finance the works.

Table 2 summarizes the gross capital costs for all services by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement. Based on this measurement, Development Area 3 would be preferred and Development Area 1 would be least preferred.

Table 2
Gross Capital Costs of Servicing Ranking

Description	Gross Capital Cost ($)	Ranking
Development Area 1	18,162,004	5
Development Area 2	17,561,753	4
Development Area 3	8,745,145	1
Development Area 4	10,340,325	2
Development Area 5	13,355,336	3

Existing Benefit Costs of Servicing

As noted previously the majority of the capital costs identified for servicing will be borne by development however, some of the capital works identified in the background studies will also provide benefits to the existing community. As an example, in the Paradigm Study there are a number of road widening projects that have been identified; at the time of widening of these roads the existing surface will be replaced thereby extending the useful life of the existing road. If the City was not undertaking to widen the road to facilitate development, tax-based funding would have to provide for the eventual resurfacing of the road. Therefore as requirement of the Development Charges Act capital costs that would provide benefits to existing development can not be included in Development Charges and must therefore be deducted from the calculation and funded by some other source (i.e. taxes, user fees). Moreover, the Development Charges Act also requires that capital costs for transit services must be discounted by 10% before being included in the charge.

The existing benefit deductions have been estimated based on standard industry practices. Where industry information is not available a general recognition of costs has been identified. These costs will be reviewed in further detail in the Stage II fiscal impact assessment. The implication of this measurement is that areas with higher existing benefit components will require greater municipal financial resources. The development timing for these projects may also accelerate the initiation of asset replacement.

Table 3 summarizes the existing benefit costs for all services by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement. Based on this measurement, Development Area 5 would be preferred and Development Area 2 would be least preferred.

Table 3
Existing Benefit Costs of Servicing Ranking

Description	Existing Benefit Cost($)	Ranking
Development Area 1	1,699,758	4
Development Area 2	2,419,555	5
Development Area 3	1,458,049	2
Development Area 4	1,565,750	3
Development Area 5	1,313,587	1

Development Charge Impacts

In addition to reviewing the municipal fiscal impacts, this measurement considers the impact of the growth-related servicing costs on development. This is measure is important because, all else being equal (i.e. land costs, construction costs, market prices, etc.), higher development charges could potentially impact pricing/developer margins negatively. If the higher development charges are transferred directly to housing prices this may have an impact on the competitiveness of the development and therefore the pace of growth. This measure calculates the preliminary area-specific development charges that would be levied on development in the respective development areas. This area-specific development charge approach is consistent with existing policies of the City. These calculations represent preliminary estimates and will be developed in greater detail with the identification of a preferred expansion area. Moreover, the subsequent analysis will also consider if there are any impacts on existing area-specific DC bylaws where works identified therein may provide benefits to the proposed expansion development area, as well as the benefits conferred upon non-residential development.

Table 4 summarizes that estimated development charge per dwelling unit by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement.

Based on this measurement, Development Area 4 would be preferred and Development Area 2 would be least preferred.

Table 4
Development Charge Impacts Ranking

Description	Preliminary DC ($ per Dwelling Unit)	Ranking
Development Area 1	7,362	4
Development Area 2	7,671	5
Development Area 3	6,103	2
Development Area 4	5,325	1
Development Area 5	6,961	3

Per Capita Lifecycle Cost Impacts

The last measure considered in the Stage I review is the anticipated lifecycle costs of servicing. This measure identifies the annual costs associated with the lifecycle replacement of the assets identified in the various background studies. While the initial emplacement of these assets will be predominately paid for by development, once constructed these works will have to be maintained and ultimately replaced by other municipal financial sources (i.e. taxes, user fees). To accurately measure the lifecycle impacts, these costs have been identified on a per capita basis to acknowledge the differences in the funding base due to the size of development. The calculations are based on a sinking fund approach earning 2% net interest annually over the estimated useful life of the asset. Industry useful life estimates have been applied for calculation purposes. Based on this measure development areas with higher lifecycle costs will impose greater financial demands on municipal sources than areas with lower lifecycle costs.

Table 5 summarizes that estimated per capita lifecycle cost impacts by development area and ranks the development areas from preferred (1) to least preferred (6) based on this measurement. Based on this measurement, Development Area 4 would be preferred and Development Area 2 would be least preferred.

Table 5
Per Capita Lifecycle Cost Impacts Ranking

Description	Annual Per Capita Lifecycle Costs ($)	Ranking
Development Area 1	87	2
Development Area 2	113	5
Development Area 3	104	4
Development Area 4	80	1
Development Area 5	92	3

Summary

Table 6 combines the above referenced measures and averages the rankings to provide an overall indication as to the preferred development area. Based on the cumulative results of the four measures considered, Development Area 4 and Development Area 3 would be the two most preferable areas for expansion of the urban area. Development Area 2 would be the least preferable.

Table 6
Summary of Financial Measures Ranking

Description	Gross Capital Cost ($)	Existing Benefit Cost($)	Preliminary DC ($ per Dwelling Unit)	Annual Per Capita Lifecycle Costs ($)	Overall Average Ranking
Development Costs					
Development Area 1	18,162,004	1,699,758	7,382	87	
Development Area 2	17,561,753	2,419,555	7,671	113	
Development Area 3	8,745,145	1,458,049	6,103	104	
Development Area 4	10,340,325	1,665,760	5,326	80	
Development Area 5	13,355,336	1,313,587	6,961	92	
Ranking					
Development Area 1	5	4	4	2	3.75
Development Area 2	4	5	5	5	4.75
Development Area 3	1	2	2	4	2.25
Development Area 4	2	3	1	1	1.75
Development Area 5	3	1	3	3	2.50

We trust that the foregoing is satisfactory for your purposes. We would be pleased to provide any additional information or answer any questions you may have on this matter.

Yours very truly,

WATSON & ASSOCIATES ECONOMISTS LTD.

Andrew Grunda, MBA, CMA
Associate Director

Table A-1 - Summary of Financial Calculations

Description	Gross Capital Cost ($)	Less: Existing Benefit($)	Net Capital Cost ($)	Preliminary DC per Dwelling Unit
Development Area 1				
Sanitary Sewer				
- Construction of new 450mm diameter trunk sanitary sewer (approx. 1700m)	620,000	-	620,000	
- Construction of 2 new PS (design flow of 350 l/s)	2,000,000	-	2,000,000	
- Upgrades to PS 6 (Walnut Street P.S.) (including new forcemain)	750,000	75,000	675,000	
Sanitary Sewer - Subtotal	***3,370,000***	***75,000***	***3,295,000***	***1,474***
Water				
- W1a 200mm watermain (1,730m)	1,518,075	-	1,518,075	
- W1a 200mm watermain creek crossing (1,770m)	3,106,350	-	3,106,350	
- Albert Robert Booster Station Upgrades (5,345/21,413)	272,579	27,258	245,321	
Water - Subtotal	***4,897,004***	***27,258***	***4,869,746***	***2,178***
Roads				
- Major Line - New 2 Lane Road (West Limits Area 1Sunset Road)	1,700,000	-	1,700,000	
- Major Line - Reconstruct 2 Lane Road (Sunset RoadFord Road)	3,000,000	750,000	2,250,000	
- Ford Road - Reconstruct 2 Lane Road (Major LineWellington Road)	800,000	200,000	600,000	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	372,000	2,108,000	
- Wellington Road - Widen - 2 to 4 Lanes (Ford RoadHwy 3)	1,680,000	252,000	1,428,000	
Roads - Subtotal	***9,660,000***	***1,574,000***	***8,086,000***	***3,616***
Transit				
- One additional bus ($90,000-$360,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***96***
TOTAL - DEVELOPMENT AREA 1	**18,162,004**	**1,699,758**	**16,462,246**	**7,362**
Development Area 2				
Sanitary Sewer				
- Construction of new 450mm diameter trunk sanitary sewer (approx. 500m)	150,000	-	150,000	
- Construction of new 525mm diameter trunk sanitary sewer (approx. 500m)	175,000	-	175,000	
- Construction of new PS (design flow of 320 l/s)	1,000,000	-	1,000,000	
Sanitary Sewer - Subtotal	***1,325,000***	***-***	***1,325,000***	***671***
Water				
- W2a 200mm watermain (2,950m)	2,588,625	-	2,588,625	
- W2b 200mm watermain creek crossing (765m)	1,342,575	-	1,342,575	
- Albert Robert Booster Station Upgrades (4,717/21,413)	240,553	24,055	216,498	
Water - Subtotal	***4,171,753***	***24,055***	***4,147,698***	***2,101***
Roads				
- Wellington Street - Widen - 2 to 4 Lanes (Stanley StreetFifth Avenue)	3,000,000	450,000	2,550,000	
- Wellington Street - Reconstruct 2 Lane Road (Manor RoadHighview Dr.)	450,000	112,500	337,500	
- Wellington Street - New 2 Lane Road (Extension to Centennial Ave.)	150,000	-	150,000	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	372,000	2,108,000	
- Bush Line - Reconstruct 2 Lane Road (Rieger RoadSunset Road)	5,750,000	1,437,500	4,312,500	
Roads - Subtotal	***11,830,000***	***2,372,000***	***9,458,000***	***4,791***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***107***
TOTAL - DEVELOPMENT AREA 2	**17,561,753**	**2,419,555**	**15,142,198**	**7,671**
Development Area 3				
Sanitary Sewer				
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	10,000	90,000	
Sanitary Sewer - Subtotal	***100,000***	***10,000***	***90,000***	***75***
Water				
- W3 150mm watermain (1,970m)	1,664,650	-	1,664,650	
- Albert Robert Booster Station Upgrades (2,853/21,413)	145,495	14,549	130,945	
Water - Subtotal	***1,810,145***	***14,549***	***1,795,595***	***1,504***
Roads				
- Southdale Line - Reconstruct 2 Lane Road (Sunset DriveFairview Road)	4,200,000	1,050,000	3,150,000	
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	360,000	2,040,000	
Roads - Subtotal	***6,600,000***	***1,410,000***	***5,190,000***	***4,347***
Transit				
- One additional bus ($90,000-$380,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***177***
TOTAL - DEVELOPMENT AREA 3	**8,745,145**	**1,458,049**	**7,287,095**	**6,103**

Description	Gross Capital Cost ($)	Less: Existing Benefit($)	Net Capital Cost ($)	Preliminary DC per Dwelling Unit
Development Area 4				
Sanitary Sewer				
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	10,000	90,000	
- New PS located at Elm St.	150,000	-	150,000	
- New 150mm forcemain along Elm St. to Rhonda Crt. (approx. 1200m)	240,000	-	240,000	
Sanitary Sewer - Subtotal	***490,000***	***10,000***	***480,000***	***263***
Water				
- W4 150mm watermain (1,885m)	1,592,825	-	1,592,825	
- Albert Robert Booster Station Upgrades (4,363/21,413)	222,500	22,250	200,250	
Water - Subtotal	***1,815,325***	***22,250***	***1,793,075***	***1,502***
Roads				
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	360,000	2,040,000	
- Elm Street - Widen - 2 to 4 Lanes (Manor RoadCentennial Avenue)	2,000,000	300,000	1,700,000	
- Centennial Avenue - Reconstruct 2 Lane Road (Elm StreetTalbot Street)	3,400,000	850,000	2,550,000	
Roads - Subtotal	***7,800,000***	***1,510,000***	***6,290,000***	***3,445***
Transit				
- One additional bus ($90,000-$360,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***116***
TOTAL - DEVELOPMENT AREA 4	**10,340,325**	**1,565,760**	**8,774,575**	**5,325**
Development Area 5				
Sanitary Sewer				
- Upgrades required to PS 1 (Burwell Road P.S.) (incl. 3000m of 250mm forcemain)	1,000,000	100,000	900,000	
- Extention of Dennis Road trunk sewer (350m of 375mm)	225,000	-	225,000	
- Extention of Edgeware Road trunk sewer (750m of 375mm)	105,000	-	105,000	
- Upgrades required to PS 8 (Harper Road P.S.)	250,000	25,000	225,000	
- Upgrades required to trunk sewer 9 (approx. 1800m)	540,000	54,000	486,000	
Sanitary Sewer - Subtotal	***2,120,000***	***179,000***	***1,941,000***	***1,122***
Water				
- W5b 200mm watermain (1,230m)	1,079,325	-	1,079,325	
- W5a 300mm watermain (1,615m)	1,522,138	-	1,522,138	
- Albert Robert Booster Station Upgrades (4,135/21,413)	210,873	21,087	189,786	
Water - Subtotal	***2,812,336***	***21,087***	***2,791,249***	***1,613***
Roads				
- Burwell Road - Widen - 2 to 4 Lanes (South Edgware Road Talbot Street)	3,100,000	465,000	2,635,000	
- Burwell Road - New 4 Lane Bridge (Widen Hwy 3 Overpass)	2,400,000	-	2,400,000	
- Edgeware Line - Reconstruct 2 Lane Road (Highbury AvenueEast Limits Area 5)	2,500,000	625,000	1,875,000	
- South Boundary Road - New Road (Centennial Avenue East Limits Area 5)	188,000	-	188,000	
Roads - Subtotal	***8,188,000***	***1,090,000***	***7,098,000***	***4,103***
Transit				
- One additional bus ($90,000-$360,000)	235,000	23,500	211,500	
Transit - Subtotal	***235,000***	***23,500***	***211,500***	***122***
TOTAL - DEVELOPMENT AREA 5	**13,355,336**	**1,313,587**	**12,041,749**	**6,961**

Existing Benefit Deductions calcuated based on the following assumptions:
- Sanitary sewer PS and trunk sewer upgrades assumed to predominatley benefit growth with 10% benefit to existing
- Water booster station upgrades assumed to predominatley benefit growth with 10% benefit to existing
- Road widening projects 15% existing benefit to reflect cost of reaurfacing the existing roadway
- Road reconstruction projects 25% existing benefit to reflect cost of increasing existing asset service life
- Transit services 10% statutory deduction under the Development Charges Act

Development Charge calculations based on the following dwelling unit assumptions:
- Development Area 1 - 2,236
- Development Area 2 - 1,974
- Development Area 3 - 1,194
- Development Area 4 - 1,826
- Development Area 5 - 1,730

Table A-2 - Summary of Lifecycle Financial Calculations

Description	Gross Capital Cost ($)	Estimated Useful Life (yrs.)	Lifecycle Sinking Fund Factor	Annual Lifecycle Costs	Annual Per Capita Lifecycle Costs
Development Area 1					
Sanitary Sewer					
- Construction of new 450mm diameter trunk sanitary sewer (approx. 1700m)	620,000	80	0.00516	3,200	
- Construction of 2 new PS (design flow of 350 l/s)	2,000,000	60	0.00877	17,536	
- Upgrades to PS 6 (Walnut Street P.S.) (including new forcemain)	760,000	60	0.00877	6,676	
Sanitary Sewer - Subtotal	***3,370,000***			***27,312***	
Water					
- W1a 200mm watermain (1,730m)	1,518,075	80	0.00516	7,834	
- W1a 200mm watermain creek crossing (1,770m)	3,106,350	80	0.00516	16,031	
- Albert Robert Booster Station Upgrades (5,345/21,413)	272,579	60	0.00877	2,390	
Water - Subtotal	***4,897,004***			***26,255***	
Roads					
- Major Line - New 2 Lane Road (West Limits Area 1Sunset Road)	1,700,000	20	0.04116	69,986	
- Major Line - Reconstruct 2 Lane Road (Sunset RoadFord Road)	3,000,000	20	0.04116	123,470	
- Ford Road - Reconstruct 2 Lane Road (Major LineWellington Road)	800,000	20	0.04116	32,926	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	20	0.04116	102,089	
- Wellington Road - Widen - 2 to 4 Lanes (Ford RoadHwy 3)	1,680,000	20	0.04116	69,143	
Roads - Subtotal	***9,660,000***			***397,674***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 1	**18,162,004**			**464,730**	**87**
Development Area 2					
Sanitary Sewer					
- Construction of new 450mm diameter trunk sanitary sewer (approx. 500m)	150,000	80	0.00516	774	
- Construction of new 525mm diameter trunk sanitary sewer (approx. 500m)	175,000	80	0.00516	903	
- Construction of new PS (design flow of 320 l/s)	1,000,000	60	0.00877	8,768	
Sanitary Sewer - Subtotal	***1,325,000***			***10,445***	
Water					
- W2a 200mm watermain (2,950m)	2,588,625	80	0.00516	13,359	
- W2b 200mm watermain creek crossing (765m)	1,342,575	80	0.00516	6,929	
- Albert Robert Booster Station Upgrades (4,717/21,413)	240,553	60	0.00877	2,109	
Water - Subtotal	***4,171,753***			***22,397***	
Roads					
- Wellington Street - Widen - 2 to 4 Lanes (Stanley StreetFifth Avenue)	3,000,000	20	0.04116	123,470	
- Wellington Street - Reconstruct 2 Lane Road (Manor RoadHighview Dr.)	450,000	20	0.04116	18,521	
- Wellington Street - New 2 Lane Road (Extension to Centennial Ave.)	150,000	20	0.04116	6,174	
- Talbot Street - Widen - 2 to 4 Lanes (Stanley StreetFlora Street)	2,480,000	20	0.04116	102,069	
- Bush Line - Reconstruct 2 Lane Road (Rieger RoadSunset Road)	5,750,000	20	0.04116	236,651	
Roads - Subtotal	***11,830,000***			***486,884***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 2	**17,561,753**			**633,315**	**113**
Development Area 3					
Sanitary Sewer					
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	60	0.00877	877	
Sanitary Sewer - Subtotal	***100,000***			***877***	
Water					
- W3 150mm watermain (1,970m)	1,664,650	80	0.00516	8,591	
- Albert Robert Booster Station Upgrades (2,853/21,413)	145,495	60	0.00877	1,276	
Water - Subtotal	***1,810,146***			***9,866***	
Roads					
- Southdale Line - Reconstruct 2 Lane Road (Sunset DriveFairview Road)	4,200,000	20	0.04116	172,858	
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	20	0.04116	98,776	
Roads - Subtotal	***6,600,000***			***271,634***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 3	**8,745,145**			**296,967**	**104**

Description	Gross Capital Cost ($)	Estimated Useful Life (yrs.)	Lifecycle Sinking Fund Factor	Annual Lifecycle Costs	Annual Per Capita Lifecycle Costs
Development Area 4					
Sanitary Sewer					
- Upgrades required to PS 7 (Axford Parkway P.S.)	100,000	60	0.00877	877	
- New PS located at Elm St.	150,000	60	0.00877	1,315	
- New 150mm forcemain along Elm St. to Rhonda Crt. (approx. 1200m)	240,000	60	0.00516	1,239	
Sanitary Sewer - Subtotal	***490,000***			***3,431***	
Water					
- W4 150mm watermain (1,885m)	1,592,625	60	0.00516	8,220	
- Albert Robert Booster Station Upgrades (4,363/21,413)	222,500	60	0.00877	1,951	
Water - Subtotal	***1,815,325***			***10,171***	
Roads					
- Fairview Avenue - Widen - 2 to 4 Lanes (Southdale LineElm Street)	2,400,000	20	0.04116	98,776	
- Elm Street - Widen - 2 to 4 Lanes (Manor RoadCentennial Avenue)	2,000,000	20	0.04116	82,313	
- Centennial Avenue - Reconstruct 2 Lane Road (Elm StreetTalbot Street)	3,400,000	20	0.04116	139,933	
Roads - Subtotal	***7,800,000***			***321,022***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 4	**10,340,325**			**348,213**	80
Development Area 5					
Sanitary Sewer					
- Upgrades required to PS 1 (Burwell Road P.S.) (incl. 3000m of 250mm forcemain)	1,000,000	60	0.00877	8,768	
- Extention of Dennis Road trunk sewer (350m of 375mm)	225,000	80	0.00516	1,161	
- Extention of Edgeware Road trunk sewer (750m of 375mm)	105,000	80	0.00516	542	
- Upgrades required to PS 8 (Harper Road P.S.)	250,000	60	0.00877	2,192	
- Upgrades required to trunk sewer 9 (approx. 1800m)	540,000	80	0.00516	2,787	
Sanitary Sewer - Subtotal	***2,120,000***			***15,450***	
Water					
- W5b 200mm watermain (1,230m)	1,079,325	60	0.00516	5,570	
- W5a 300mm watermain (1,615m)	1,522,138	60	0.00516	7,855	
- Albert Robert Booster Station Upgrades (4,135/21,413)	210,873	60	0.00877	1,849	
Water - Subtotal	***2,812,336***			***15,274***	
Roads					
- Burwell Road - Widen - 2 to 4 Lanes (South Edgware Road Talbot Street)	3,100,000	20	0.04116	127,586	
- Burwell Road - New 4 Lane Bridge (Widen Hwy 3 Overpass)	2,400,000	20	0.04116	98,776	
- Edgeware Line - Reconstruct 2 Lane Road (Highbury AvenueEast Limits Area 5)	2,500,000	20	0.04116	102,892	
- South Boundary Road - New Road (Centennial Avenue East Limits Area 5)	188,000	20	0.04116	7,737	
Roads - Subtotal	***8,188,000***			***336,991***	
Transit					
- One additional bus ($90,000-$380,000)	235,000	15	0.05783	13,589	
Transit - Subtotal	***235,000***			***13,589***	
TOTAL - DEVELOPMENT AREA 5	**13,355,336**			**381,304**	92

Sinking fund calculation based on assumed net annual interest of 2%

APPENDIX "F"

Provincial Consultation

Ontario

Ministry of Municipal Affairs and Housing

Ministère des Affaires municipales et du Logement

Municipal Services Office - Southwestern
659 Exeter Road, 2nd Floor
London ON N6E 1L3
Telephone: (519) 873-4020
Toll Free: 1-800-265-4736
Fax: (519) 873-4018

Bureau des services aux municipalités - région du Sud-Ouest
659 Exeter Road, 2e étage
London ON N6E 1L3
(519) 873-4020
Sans frais: 1-800-265-4736
Télécopieur: (519) 873-4018

November 26, 2007

Mr. Patrick Keenan
Director of Planning
City of St. Thomas
9 Mondamin Street
St. Thomas, ON, N5P 2T9

Subject: City of St. Thomas Urban Areas Expansion Study
Draft Workplans for Subwatersheds – Dodd Creek, Mill Creek, and Catfish Creeks
Our file No.: 34-DP-0150-07002

Dear Mr. Keenan:

This is further to the meeting with you, Dillon Consultants and Provincial and Conservation Authority representatives on September 11, 2007, concerning the above noted project. The draft workplans were circulated and the following comments are submitted for your consideration.

The **Ministry of Natural Resources (MNR)** has reviewed the following documents:

- Dodd Creek Scoped Subwatershed Studies- Draft Work Plan Outline (Dillon, Sept 2007)
- Mill Creek Subwatershed Study Addendum – Draft Work Plan Outline (Dillon, Sept 2007)
- Catfish Creek Scoped Subwatershed Studies- Draft Work Plan Outline (Dillon, Sept 2007)
- City of St. Thomas Urban Expansion Study Areas Maps (Central Elgin Planning Office, Sept 2007)

MNR advise that they support the natural heritage analysis in Phase 2 and the plan to make recommendations for natural systems linkages and functions and quality management of sensitive and vulnerable areas in Phase 3 of the subwatershed studies. Please clarify what background information for ecological function, existing connections/corridors, and significant habitat will be used for this analysis. How will targets for maintaining/creating system linkages and functions and quality management of sensitive and vulnerable areas be identified?

Section 1.2.11 Terrestrial Ecology indicates that terrestrial biology will be identified in Phase 1. Please clarify what information will be included regarding ecological relationships and functions. Also included in the Terrestrial Ecology component should be an identification of Species at Risk and other natural heritage features listed below in order to be consistent with the PPS (2005). *Please provide clarification as to how natural systems linkages and significant habitat will be determined for the studies.*

In order to be consistent with Provincial Policy Statement (2005), MNR suggests using terminology in the documents that aligns with the PPS (2005). In order to best implement the PPS (2005), the MNR recommends the following natural features be included in the study:

- Provincially Significant Wetlands
- Significant habitat of endangered and threatened species
- Significant woodlands
- Significant valleylands
- Significant areas of natural and scientific interest
- Significant wildlife habitat

The above mentioned features have not been addressed in the scoping and characterization in Phase 1 of the work plans. The MNR can provide mapping of areas that have been identified within the subwatershed study areas as potential Provincially Significant Wetlands or Locally Significant Wetlands. These areas will be scheduled for wetland evaluations in the future.

MNR recommends that the Subwatershed Planning (June 1993) document be used as guidance throughout this process (copy attached).

The **Ministry of the Environment** (MOE) Regional Office advise that they have no objection to the September 11, 2007 Dillon submission. The draft work plan has sufficient detail.

As for the rerouting of surface drainage between the Mill and Catfish Creek subwatersheds, they note that the soils in the area are flat and clay in nature thereby offering low infiltration thus low recharge and low summer flow augmentation. Given the relatively small areas of the diversions, the Regional Water Resources Assessment Unit has no specific concern with the proposed rerouting of stormwater.

The **Catfish Creek Conservation Authority** advise that they support the strategy behind the proposed work plan for Catfish Creek and provide the following detailed edits the City may wish to include:

- Intro. pg 1; paragraph 3: could include the "identification of features and development constraints" as part of the purpose of the exercise; also the resulting plan should provide recommendations as to "IF" development should proceed;

- Sec.1.2.4 pg.3; 2nd paragraph: the detailed geotechnical investigations should fully assess "and define the Hazard Limit" so as to include all potential hazards rather than just the 100 year erosion limit and/or meander belt; and,

- Sec. 1.2.11, pg.5; the text provided should be expanded to ensure that the "identification of natural heritage features (e.g. woodlots, wetlands etc...) including evaluation of form, function and critical supporting habitat (s)" is considered.

The **Kettle Creek Conservation Authority** advise that they have no objection to the proposed plan. Detailed comments will be forwarded when they are available.

The **Lower Thames Valley Conservation Authority** advise that there is a small area under their jurisdiction that is not directly affected by the urban expansion. The KCCA will be the first contact for development review/proposals in this small area.

If you have any questions, please do not hesitate to contact me at 519-873-4031 or by e-mail at Tammie.Ryall@ontario.ca

Yours truly,

Tammie Ryall

Tammie Ryall, MCIP, RPP
Planner
Municipal Services Office – Southwestern

Attachment

Ron Shishido, Dillon Consulting (attachment) ✓
Bob Aggerholm, MOE
Darafeigh Irving, MNR
Tony Difazio, CCCA
Joe Gordon, KCCA
Valerie Towsley, LTVCA

APPENDIX "G"

Public Consultation

Notice of Public Information Centre

City of St. Thomas

Urban Area Expansion Study

October 24th, 2007 5:00 – 7:00 P.M – Timken Centre

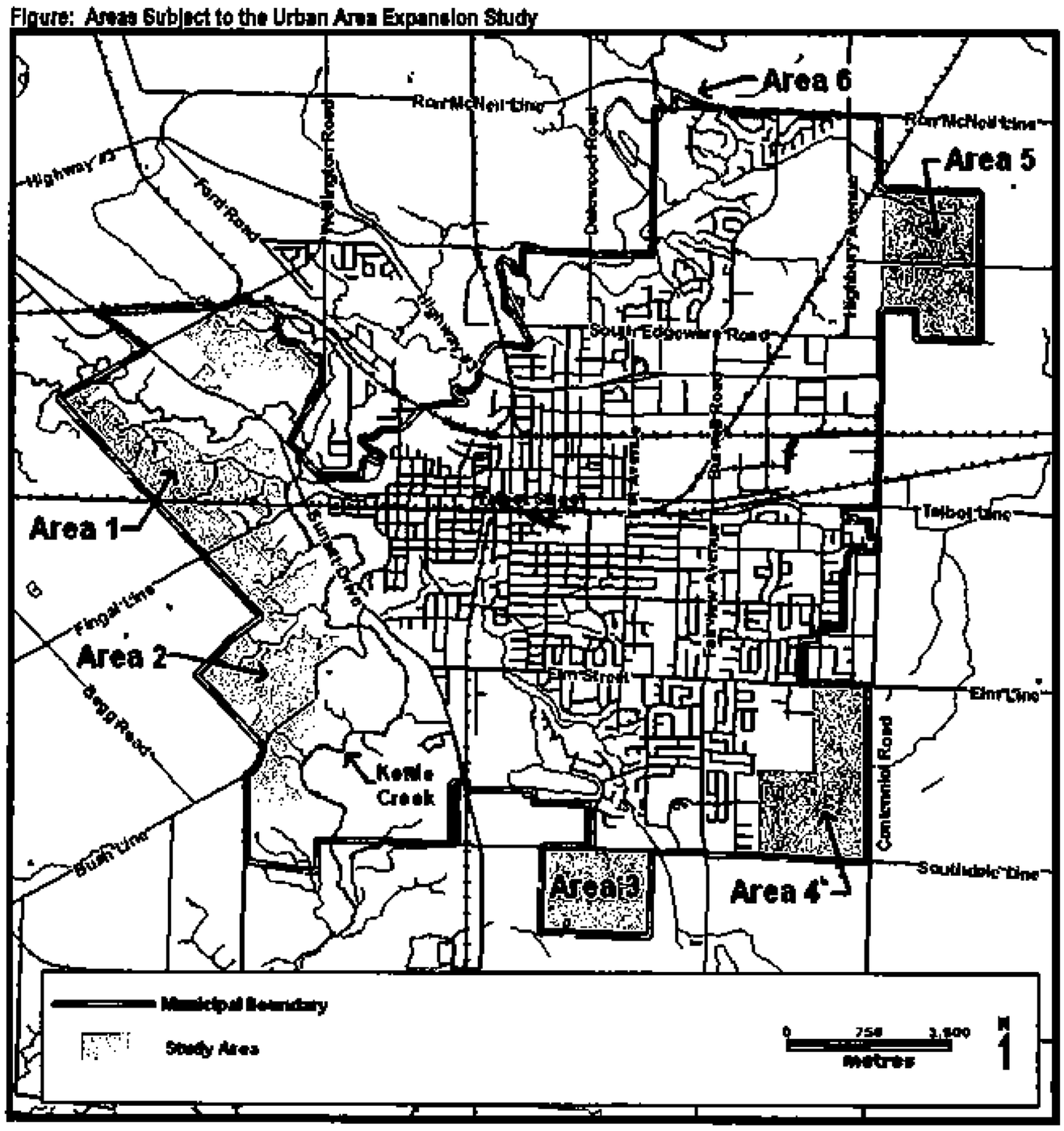
THE CORPORATION OF THE CITY OF ST. THOMAS

DILLON CONSULTING

Background

In 2006 Council initiated a process to review and update the St. Thomas Official Plan. The assessment of the City's future land needs to meet demands for growth is a fundamental component of the Official Plan Review Process. Based on the most current growth projections, it is anticipated that there will be a need to designate additional lands outside the City's current urban growth boundary for residential use to accommodate the forecasted housing demand. In April 2007, the City met with representatives from the local development community to discuss the requirements to adjust the Urban Area Boundary to accommodate new residential growth within the context of the 2005 Provincial Policy Statement. The developers expressed their interest in working cooperatively with the City and agreed in principle to a process where the City prepares the necessary foundation/technical studies and secondary plan/official plan amendment to support Provincial approval of an Urban Area Expansion. The foundation studies have now been completed and the results are ready for review by the public and other interested parties.

Figure: Areas Subject to the Urban Area Expansion Study



Public Information Centre

The results of the foundation / technical studies are being presented at a Public Information Centre on Wednesday October 24, 2007 from 5:00 pm – 7:00 pm at the Timken Community Centre (Douglas Tarry Room) 2 Third Avenue, St. Thomas, ON (Located at the intersection of Third Avenue and Wellington Street). City staff and consultants will be on-hand at the Public Information Centre to answer questions. Based on the findings of this review and comments received from the public at the Public Information Centre, the Official Plan Technical Steering Committee will be making a recommendation to Council regarding future urban area expansion in the City.

For more information on this Project, please contact us at the following:

Patrick Keenan
Director of Planning
City of St. Thomas
9 Mondamine Street
St. Thomas, ON N5P 2T9

(519) 631-1680 Ext. 4211
pkeenan@city.st-thomas.on.ca

Alderman Heather Chapman
Chair, Official Plan Review Project
Technical Steering Committee
172 Fifth Avenue
St. Thomas, ON N5R 4G1

(519) 631-1680 Ext. 4253
hlchapman76@hotmail.com

Ronald Shiehido, MCIP, RPP
Project Manager
Dillon Consulting Limited
235 Yorkland Blvd, Suite 800
Toronto, ON M2J 4Y8

(416) 229-4647 Ex. 2301
rshiehido@dillon.ca

Patrick J. C. Keenan
Director of Planning

THE CORPORATION OF THE CITY OF
ST. THOMAS

All correspondence to be addressed to:
St. Thomas Planning Department
City Hall Annex
9 Mondamin Street
St. Thomas, Ontario N5P 2T9
Telephone: (519) 633-2560
Fax: (519) 633-6581

October 4th, 2007

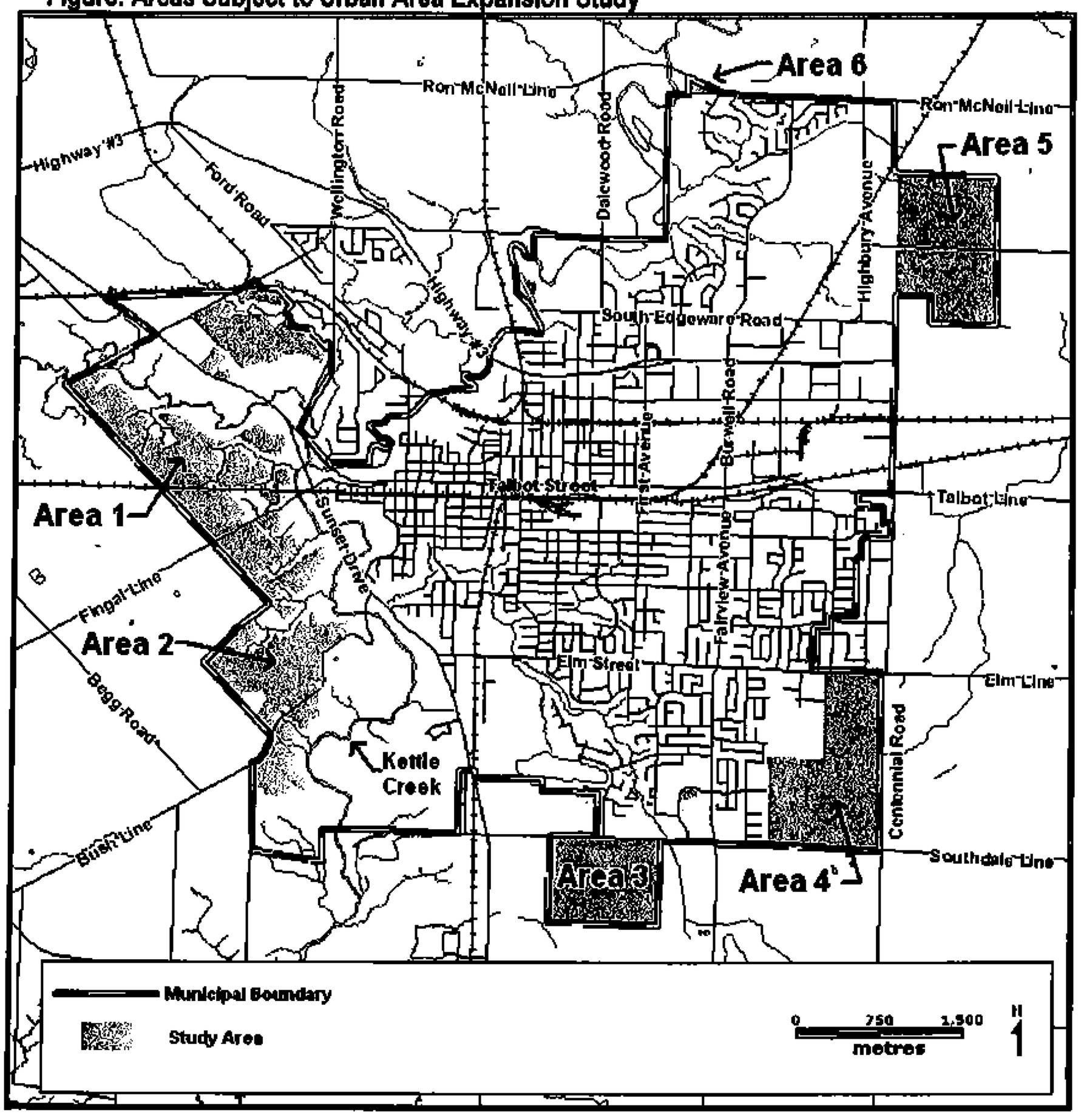
SAMPLE

To Whom it May Concern:

RE: St. Thomas Urban Area Expansion Study

You are receiving this letter because you are an owner of lands located within one of six remaining areas in the City of St. Thomas (see Figure below) that are located within the City's municipal boundary but outside of the existing Urban Area as designated in the City's Official Plan. The City is undertaking a high level review of these areas to assess their suitability for development.

Figure: Areas Subject to Urban Area Expansion Study



As background, in 2006 Council initiated a process to review and update the St. Thomas Official Plan. The assessment of the City's future land needs to meet demands for growth is a fundamental component of the Official Plan Review Process. Based on the most current growth projections, it is anticipated that there will be a need to designate additional lands outside the City's current urban growth boundary for residential use to accommodate the forecasted housing demand. In April 2007, the City met with representatives from the local development community to discuss the requirements to adjust the Urban Area Boundary to accommodate new residential growth within the context of the 2005 Provincial Policy Statement. The developers expressed their interest in working cooperatively with the City and agreed in principle to a process where the City prepares the necessary foundation/technical studies and secondary plan/official plan amendment to support Provincial approval of an Urban Area Expansion.

The foundation / technical studies have now been completed. We invite you to review the results of the studies at a **Public Information Centre (PIC) scheduled for Wednesday October 24th, 2007 from 5:00 pm – 7:00pm at Timken Community Centre (Douglas Tarry Room)**, 2 Third Avenue, St. Thomas. (Located at the intersection of Third Avenue and Wellington Street). The purpose of the PIC is to both present the study results and receive public feedback on the findings. City staff and consultants will be on-hand to answer your questions and to collect your comments.

A notice is also being placed in the St. Thomas Times-Journal on Saturday October 6th, 2007 to notify residents and property owners across the City about this meeting.

We look forward to meeting you at the PIC. If you have any questions, please contact me or Patrick Keenan, Director of Planning at 519-631-1680.

Yours Sincerely,

Alderman Heather Chapman
Chair of the Official Plan Review Project Technical Steering Committee

Received Nov 5/07

THE CORPORATION OF THE CITY OF ST. THOMAS

City of St. Thomas

Proposed Urban Area Expansion

Stage 1 – Analysis of Alternative Directions for Growth
October 24th. 2007

DILLON CONSULTING

COMMENT FORM

Please tell us your ideas / comments:

Development Area #3 -- There are many reasons that this area (south edge of City plus/minus 200 acres) should be considered for immediate urban expansion including some of the following:

Ownership -- Doug. Tarry Limited is the present owner of the said lands and has been active in land development and house construction for over 45 years in the City of St. Thomas.

Location of Lands -- These lands are located on the south side of Southdale Road, adjacent to existing development i.e. Lake Margaret Estates. This development has been very successful as well as being a well-planned development and over 400 housing units have been constructed in this development since 2000.

See schedule attached.

Doug. Tarry Limited
by [signature]
President.

Schedule

Available Services – Services are available immediately to service this subdivision including:

i) sewage pumping station on Axford Parkway
ii) 400 mm watermain on Southdale Road
iii) up-graded hydro services on Southdale Road

Parks – This development would be close to Pinafore Park, Doug. Tarry Complex as well as the walking trails adjacent to Lake Margaret and in the ravines adjacent to Lake Margaret Estates.

External Roads – Southdale Road connects to Sunset Drive, Fairview Avenue and Centennial Avenue as well as Lake Margaret Trail.

Existing Bus Routes – Further studies will review the major bus routes in the City of St. Thomas and in our opinion will disclose the proximity of the Mall Route which connects Wal-Mart to the Wellington Street Mall, Fairview Avenue, Bill Martyn Parkway and Sauve Avenue to Elm Street.

Proposed Development – It is important that if an area is approved for Urban Area Expansion development take place as soon as the necessary approvals are given and Doug. Tarry Limited is prepared to proceed with the planning process immediately to commence development of the said lands in 2009 or early 2010 depending on approvals.

Local Business – Over the years, Doug. Tarry Limited has not only been in the house building business, but has made lots available to local builders. This policy has continued in Orchard Park and will continue in the proposed Area 3 of the Urban Area Expansion.

Schools – the south end of the City is fortunate to have many schools located south of Wellington Street including Parkside Collegiate, Central Elgin Collegiate, St. Joseph's High School, Forest Park Elementary School, Homedale Elementary School, Elgin Court Elementary School, Myrtle Street and Wellington Street as well as two Catholic Elementary Schools, being St. Gabriel's and St. Raphael's. In addition, two Christian schools are located on Fairview Avenue which are Faith Christian Academy and St. Thomas Christian School.

Costs of Urban Area Expansion Studies - Doug. Tarry Limited has already agreed to contribute to Phase I for studies required to support the proposed urban area expansion and further agrees to participate in sharing the costs to complete Phase II of said studies, the total cost of the studies to be $322,100.00 plus any additional cost for any specific studies required for lands owned by Doug. Tarry Limited.

Springwater Developments Inc.
1 Barrie Boulevard
St. Thomas, ON N5P 4B9
(519) 633-2050

November 5, 2007

City of St. Thomas
P. O. Box 520
St. Thomas, Ontario N5P 3V7

Attn: Pat Keenan, Director of Planning, City of St. Thomas

Re: St. Thomas Urban Area Expansion - Comments

Dear Sir,

Thank you for the opportunity to provide comments after the Public Meeting on October 24, 2007.

Springwater Developments Inc. has an interest in a portion (approximately 100-acres, referred to throughout this letter as the Hepburn lands) of the lands in Area #4. We feel strongly that a portion of these lands should be considered for immediate urban area expansion as part of the City's new Official Plan. Our reasoning is noted in point form below:

- Springwater Developments Inc. and Hayhoe Homes have worked collaboratively for over 15 years in developing and building new communities in the City of St. Thomas
- Springwater Developments Inc. has a binding agreement to purchase the Hepburn lands immediately east of our current Wyndfield development. The legal closing for this transaction is November 30, 2007
- Springwater Developments Inc. and Hayhoe Homes have actively developed the 50-acre parcel to the east (Wyndfield) over the course of the last 5 years. This has been a well-received community in a growing area of the City.
- Physical services are available at the lot line, including, sanitary, storm, water, and electrical.
- The Hepburn lands are well served by Arterial Roads, including Fairview Avenue, Southgate Parkway, Southdale Line and Centennial Road
- This area of the City is also in close proximity to a number of schools, including the new 'Mitchell Hepburn Public School' which is being constructed just north of the property limit of the Hepburn lands.
- Springwater Developments Inc. has agreed to share in the costs of the Urban Area Expansion Studies on a proportionate basis. A letter to this affect as well as an undertaking of the same has been provided to the City.

In conclusion, Springwater Developments Inc. appreciates the opportunity to provide comments and we are optimistic that the Hepburn lands will be included in the Urban Area Expansion as set forth in the City's revised Official Plan. Springwater Developments Inc. has completed the servicing of the entire 50-acre Wyndfield Community and we have an immediate need for service lots in the Southeast section of the City. We would appreciate being updated with a proposed timeline of the Official Plan Review and implementation so that we can plan our future home building operations. Thank you again, for this opportunity and we look forward to continuing to work cooperatively with the Official Plan Review Project Technical Steering Committee and the Planning staff throughout the duration of this project.

Yours truly,

Thomas Looby, C.A.
Springwater Developments

C.C: Alderman Heather Chapman, Chair, Official Plan Review Project Technical Steering Committee
Ronald Shishido, MCIP, RPP, Project Manager, Dillon Consulting Limited

THE CORPORATION OF THE CITY OF ST. THOMAS

City of St. Thomas

Proposed Urban Area Expansion

Stage 1 – Analysis of Alternative Directions for Growth
October 24th. 2007

DILLON CONSULTING

COMMENT FORM

Please tell us your ideas / comments:

~~Cont~~

Comments on behalf of Springwater Dev. Inc. (SDI) + Hayhoe Homes.

1. SDI has an Agreement with Bob Hepburn closing Nov. 30, 2007 (100 acres)

2. Our interest is that the Urban Area Expansion include 100 acre 'Hepburn' parcel

3. Hayhoe Homes has built 150+ homes in 2005, 2006 + 2007

4. Demand for homes in vicinity of new Mitchell Hepburn Public School is expected to be @ 100 homes / year for 5+ years

5. 'Hepburn' lands will be serviced by existing gravity sanitary sewer outlet at east end of Southgate Parkway – oversizing and depth of sanitary installed 2001-2006 to accomodate lands to the east.

6. Hepburn lands - 85+ acres drain to the west to Ed / Rec SWM Pond.

7. Hayhoe / Tarry have worked cooperatively for 6 plus years and are currently working cooperatively on interface of Peach Tree Boulevard south to 'Hepburn' lands.

STAMBLER AND MILLS
BARRISTERS & SOLICITORS

MARTIN STAMBLER, Q.C. (Ret.)
RANDOLPH D. MILLS, B.A., L.L.B.

TALBOT CENTRE
Suite 1511
148 Fullarton Street
London, Ontario
N6A 5P3

Telephone: (519) 672-6240
Fax: (519) 433-9593

Please refer to: 40456

October 26, 2007

St. Thomas Planning Department
City of St. Thomas
9 Mondamin Street
St. Thomas, Ontario
N5P 2T9

Attention: Urban Area Expansion Study

Dear Sirs:

Re: The Estate of Stuart Kent Harper

I attended the meeting in the City of St. Thomas on October 24, 2007. I am enclosing the Comment Form. I look forward to hearing from you regarding any further meetings.

Yours very truly

Randolph D. Mills

RDM:sb
Encl.

THE CORPORATION OF THE CITY OF ST. THOMAS

City of St. Thomas

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October 24th. 2007

DILLON CONSULTING

COMMENT FORM

Please tell us your ideas / comments:

I am an Estate Trustee of the estate of Stuart Kent Harper. The Estate of Stuart Kent Harper is the owner of lands consisting of Part of Lots 42, 43, 44 and 45 south of the Talbot Road East, all of the road allowance between Lots 43 and 44, Part of the Road allowance between Southwold and Yarmouth Townships (all in the Township of Southwold), and Part of Lot 1, Concession 8 and Part of the Road allowance between Southwold and Yarmouth Townships (all in the Township of Yarmouth) and all of Lots 26 and 31, Registered Plan 192 in the City of St. Thomas. I attended the meeting on October 24, 2007. It appears that the lands owned by the Estate of Stuart Kent Harper would be logically included in any Urban Area Expansion Study. From my discussions with Mr. Keenan it is apparent that the issue of services is a critical issue that must be discussed. I would be interested in attending meetings on behalf of the Estate of Stuart Kent Harper to discuss the planning status of the said lands.

What steps will the City of St. Thomas be taking in order to close the road allowances that are shown on the lands of the Estate of Stuart Kent Harper that have never been closed by the Township of Southwold or the Township of Yarmouth?

If you have any questions or comments at this time please feel free to contact this writer. I look forward to hearing from you regarding any further meetings.

THE CORPORATION OF THE CITY OF ST. THOMAS

DILLON CONSULTING

City of St. Thomas

Proposed Urban Area Expansion

Stage 1 – Analysis of Alternative Directions for Growth
October 24th. 2007

COMMENT FORM

Please tell us your ideas / comments:

AS THE OWNER OF PROPERTIES IN AREA 2 AND AREA 5 OF YOUR URBAN AREA EXPANSION STUDY, PLEASE KEEP ME INFORMED OF ANY RELEVANT PROPOSALS OR DEVELOPMENTS, INCLUDING ANY STUDIES OF EITHER OF THESE AREAS.

THANK YOU

D. J. IAN BEGG, PRESIDENT
WINDOR FARMS LIMITED

OCT 29

THE CORPORATION OF THE CITY OF ST. THOMAS

DILLON CONSULTING

City of St. Thomas

Proposed Urban Area Expansion

Stage 1 – Analysis of Alternative Directions for Growth
October 24th. 2007

COMMENT FORM

Please tell us your ideas / comments:

PLEASE BE ADVISED THAT WE ARE INTERESTED IN WORKING CO-OPERATIVELY WITH THE CITY OF ST. THOMAS TO ADVANCE THE PLANNING STATUS OF [redacted] OUR LANDS FOR DEVELOPMENT. SPECIFICALLY, WE ARE MOST INTERESTED IN ADVANCING THE PLANNING STATUS OF THE PARCEL COMPRISING APPROXIMATELY 128 ACRES, LEGALLY DESCRIBED AS PART LOT 44, NORTH ON TALBOT ROAD EAST, BEING PARTS 1, 2, 3, 4, 5, 6 AND 7 ON REFERENCE PLAN 11R-4122, THE WHOLE OF PIN 35156-0380(R), FALLING WITHIN PROPOSED URBAN EXPANSION AREA 1.

THE PROPERTY DESCRIBED ABOVE HAS SEVERAL ADVANTAGES FOR URBAN DEVELOPMENT. FIRSTLY, ONLY ABOUT HALF OF THIS PARCEL IS USABLE AS AGRICULTURAL LAND, AND THE USABLE AREAS ARE INTERSPERSED WITH UN-FARMABLE AREAS. THERE IS AN EXISTING ROAD, MUNRO AVENUE, THAT BEGINS AT THE FINGAL ROAD AND COULD BE EXTENDED TO SERVE OUR LANDS; THE EXTENSION WOULD PASS OVER RAILWAY LANDS WHERE THE RAILWAY TRACKS ARE NO LONGER CONNECTED TO ANY LINE. THE HOUSING ALONG MUNRO AVENUE AND IN THE RELATED SUBDIVISION ARE ALREADY BEING SERVED WITH MUNICIPAL WATER AND, IN RESPECT OF STORMWATER MANAGEMENT, DODD CREEK RUNS THROUGH AND ALONGSIDE THE PROPERTY; WE UNDERSTAND THAT STORMWATER MANAGEMENT ON OTHER PROPERTIES IN THE AREA UTILIZE DODD CREEK.

IN SUMMARY, WE BELIEVE THAT THIS PROPERTY IS IDEALLY SUITED FOR URBAN EXPANSION WITHIN THE CITY OF ST. THOMAS BOUNDARIES. PLEASE FEEL FREE TO HAVE YOUR CONSULTANTS CONTACT US AT 519-633-2609 OR 9199 SUNSET DRIVE, ST. THOMAS, ON, N5P 3T2, AS YOU PROCEED WITH THIS PROJECT.

THE ATCHESON FAMILY

City of St. Thomas

Proposed Urban Area Expansion

Stage 1 – Analysis of Alternative Directions for Growth
October 24th. 2007

COMMENT FORM

Please tell us your ideas / comments:

would Appreciate a little more Info, on where this city is heading towards The Fingal [illegible] area / north of Sunset Dr. north of Fingal Line, would app to be involved in future Development meetings of the city where it may affect us for a [illegible] city plan

Dar Chesterfield

THE CORPORATION OF THE CITY OF ST. THOMAS

City of St. Thomas

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October 24th. 2007

DILLON CONSULTING

COMMENT FORM

AREA 3

Please tell us your ideas / comments:

ENSURE THAT A PROPER TRAFFIC STUDY IS DONE, ESPECIALLY SINCE SOUTHDALE LINE IS USED AS SOUTHERN EXPRESS FOR ST THOMAS PRESENTLY (CENTENNIAL ROAD TO SUNSET DRIVE

W K FISCHER
43-45 LAKE MARGARET DR.
ST THOMAS ONT
(519) 637 6242

THE CORPORATION OF THE CITY OF ST. THOMAS

City of St. Thomas

Proposed Urban Area Expansion

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October 24th. 2007

DILLON CONSULTING

COMMENT FORM

Please tell us your ideas / comments:

I feel that the development should continue only one area at a time. Finish one area and move on to the next --- don't start 6 areas and then end up with a lot of unfinished subdivisions if the building "Boom" stops. The order of 1 - 6 seems fine.

Don Marcon

THE CORPORATION OF THE CITY OF ST. THOMAS

City of St. Thomas

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DILLON CONSULTING

COMMENT FORM

Please tell us your ideas / comments:

I own approximately 21 acres adjacent to area #3. I don't object to development but I want to make sure my property has access for future development. I should not want to be landlocked.

I would like to be kept up to date with developments affecting area 3 as well as my lands.

Thank You,

Darrell Francis
347 Sunset Dr.
St. Thomas N5R3C6
e-mail: darrelfrancis@Rogers.com.

THE CORPORATION OF THE CITY OF
ST. THOMAS

City of St. Thomas

Proposed Urban Area Expansion

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October 24th. 2007

DILLON CONSULTING

COMMENT FORM

Please tell us your ideas / comments:

we are interested in working cooperatively with the city in advancing the planning status of our land for development. 39595 FINGAL LINE

Louis Foster

Frances Foster

elgin
st.thomas
health unit

99 Edward Street
St. Thomas, Ontario
N5P 1Y8

Telephone: (519) 631-9900
Toll Free Telephone: 1-800-922-0096
Fax: (519) 633-0468
www.elginhealth.on.ca

October 25, 2007

Heather Chapman
Chair, Official Plan Review Project
Technical Steering Committee
172 Fifth Ave
St. Thomas, ON N5R 4G1

Dear Ms. Chapman:

Re: Urban Area Expansion Study

The Elgin St. Thomas Health Unit has been informed that the City of St. Thomas is considering expanding current city boundaries to accommodate an anticipated need for residential housing. The Health Unit is committed to providing all municipalities in Elgin County with current information on the implications of land-use planning and implementation on community and public health. As such, the Elgin St. Thomas Health Unit would like to provide you with a few recommendations/areas for consideration with other feedback received from the public information centre on October 24th, 2007.

Please consider the following areas of concern from a health protection perspective:

- Reduction and management of standing water in new residential areas to avoid the spread of West Nile Virus
- Safe access to garbage pick-up, hazardous material control and associated waste management
- Backflow prevention programs to avoid contamination of drinking water
- Use of municipal water lines and municipal waste management over well usage and individual septic systems

Please consider the following suggestions from a health promotion perspective:

- Connecting new residential lands to new and existing retail, commercial and other lands by way of well maintained sidewalks and bicycle paths to encourage physical activity and ultimately prevent chronic disease
- Planting trees, installing benches, recycle bins and other aesthetically appealing devices to encourage outdoor activity, prevent injury and support a healthy environment
- Crosswalks, signs and lights for residents to move about safely
- Designation of parklands and recreational areas

Accompanying this letter you will find our *Healthy Communities Statement* as well as an information series produced by the Ontario College of Family Physicians titled *The Health Impacts of Urban Sprawl*. Page five of volume three (Obesity) provides some more specific information and outlines four key features of healthy community design for municipalities and planners to consider. We hope you find this reference useful.

If you have any questions or would like to discuss one of the above mentioned topics in more detail, please contact the Elgin St. Thomas Health Unit at 519-631-9900.

Sincerely,

Dr. Sharon Baker
(A) Medical Officer of Health

elgin
st. thomas
health unit

Healthy Communities Statement

Many Official Plans encourage actions and initiatives that support a healthy community and healthy living by residents. While it is important to include the philosophy of a healthy community in an Official Plan, it is often difficult to operationalize these ideas. To promote healthy living in your community, we encourage you to consider the following actions and initiatives when drafting and reviewing your community's Official Plan:

a) Support intensification in the serviced urban areas throughout the County in order to encourage and facilitate active transportation (i.e. walking, cycling etc.),

b) Locate new public buildings, where appropriate, in areas that encourage and support active transportation; (e.g. bicycle racks provided in safe well-lit, well-traveled areas),

c) Encourage subdivision designs that include suitable open space area and incorporate walkways, sidewalks and green space for active living,

d) Link adjacent residential and commercial areas with open space, where appropriate,

e) Develop recreational facilities, open space areas, and trail systems that cater to the recreation and healthy lifestyle needs of Elgin County residents at little or no cost,

f) Provide adequate and clear signage identifying location of trails and effective maintenance of existing trails and open spaces to encourage use by local residents,

g) Replace each tree that must be cut down with two replenishment trees to provide appropriate shade and support our environment,

h) Establish or expand a public transit system (if applicable) that accommodates the lifestyle (e.g. bike racks on buses, storage facilities for strollers) and scheduling needs of residents who live, work and play in Elgin County,

i) Increase the availability of clean, safe and affordable housing for individuals with lower incomes,

j) Partner with local agricultural groups and farmers to promote consumption of locally grown fresh fruits and vegetables,

k) Enact a by-law that requires builders to install sidewalks,

l) Enact a by-law that requires creation of a multi-use lane (for cyclists, runners, etc.) when new roads are made or old ones are replaced,

m) Encourage upgrading and extension of municipal water and sewer systems,

n) Promote the proper abandonment of neglected private water wells,

o) Promote the fluoridation of municipal water supplies for optimum dental health, and

p) Encourage all communities to implement recycling programs.

MONICA SMITH
41 Meadowvale Drive
St. Thomas, Ontario N5P 4P2
(519) 633-6174
chris.smith077@sympatico.com

November 16, 2007

The City of St. Thomas

Re: Urban Expansion

There has been a great number of new homes and subdivisions built in Ontario in recent years; including, of course, St. Thomas. Cities view this growth as positive, however, it is wise to question: "How much growth is too much?" At what point does a city reap more disadvantages than advantages to excessive, rapid growth?

1. **Increased Consumption of Water**: Last summer the Catfish Creek Conservation Authority asked property owners to reduce their use of water due to low water conditions. Clearly, every new home that is built will have a lawn and garden to water, showers, dishwashers, washing machines installed, etc. An entire subdivision will use an immense amount of water - even if residents try to cut back. If there was already a concern about the amount of water available last summer - what will happen when Dalewood Meadows and other subdivisions are completed - and the building continues? Any efforts on the part of property owners to conserve water are counterbalanced as new homes are built.

If the plan is to make more water available - who will pay for it? It is not right to charge existing residents increasing amounts for the use of their water. Considering other rising prices for food, gas, oil, hydro, property taxes - residents are taxed to the limit. Now, as I understand, property owners are paying an excessively high rate for stormwater run-off, and further increases are probably planned next year - just to pay for new subdivisions! I'm sure St.Thomas had survived for years (and done well enough) with gradual growth and building. The sudden spurt of growth in recent years, and resulting dramatic price increases, must be a great hardship to people on fixed incomes in the city.

2. **Increased Consumption of Electricity and Gas**: Every new home that is built uses more electricity and natural gas - even if it is "energy efficient". Considering the staggering amount of new homes that have been built in Ontario in recent years, it is no wonder that people are now being asked to conserve. Many go through great lengths to conserve energy - suffering through the sweltering heat of the summer or freezing in the winter. Yet any efforts to conserve energy are counterbalanced as new subdivisions are built. Now property owners are paying double for hydro than they did around ten years ago. The so-called "smart-meters" which considers 7:00a.m.-10:00p.m. peak times for electricity use, will force residents to pay double what they are paying now - unless they cook and do their laundry in the middle of the night! Still, their furnace or air conditioner throughout the day will add to the strain of "making ends meet". Also, wealthy people who can easily afford to pay higher prices will continue to use as much energy as they want.

3. **Peak Oil Crisis:** Eventually, as India and China use increasing amounts of oil, while the U.S. continues to consume excessive amounts, there will not be enough oil extracted in the world to meet the demand. Some experts predict that this will happen in around forty years. Most alternative forms of energy still require oil. Without oil, in forty years most of the world might starve. It is not right, therefore, to continue building new subdivisions - just for the sake of money and profit.

.../2

4. **Garbage**: Every new home will contribute more garbage to the landfill site. This counterbalances any efforts to recycle. Will residents eventually be imposed a one-bag limit just to accommodate more growth? Also, builders carelessly litter Tim Horton's cups and other garbage on the building site. The wind blows this garbage onto other homes or into nearby ravines.

5. **Schools are Overcrowded**: Many schools in St. Thomas are overcrowded. St. Joseph Catholic High School, for example, was originally built for only 300-400 students. Now there are nearly 900 students. This year all students have to share lockers. If development continues, eventually three students will have to share one locker. Bathroom facilities, hallways, eating areas, are all overcrowded. Although the schools and its students have done an excellent job of living with these overcrowded conditions - urban expansion will certainly add to the strain. I also wonder if some schools do not have enough textbooks for everyone - if not, then the education of the students in St. Thomas is hindered by urban expansion as well.

6. **Increased Traffic and Pollution**: More cars will pollute the air of St. Thomas and traffic will increase. Recently there has been a dramatic increase in allergies, asthma and other respiratory diseases due to pollution. One solution is to build sidewalks (ie. on Burwell Road) to encourage people to walk from time to time. (This would also help the obesity problem in St. Thomas).

7. **Crime might increase**: It is possible that crime might increase as the population of a city grows.

8. **Small-Town Image is a Benefit**: A number of people are attracted to old historical small towns such as St. Thomas. Some are complaining that London is now becoming more like Toronto. If St. Thomas continues to develop at an excessive rate - eventually it will become more like an extension of London. Overcrowded cities are not pleasant.

Property owners do not have endless supplies of money to pay for further development (through increased utility bills and property taxes). Salaries are fixed for many, due to Canada's Inflation Rate, while other prices (such as food) are going up. Due to the peak oil crisis, some are saying that oil might eventually jump from $100 per barrel to $200 per barrel. If this happens, many will not even be able to afford to drive a car anymore.

Every decision that Council makes with regards to how the city grows and develops impacts current residents, and will have a long-term impact on our children's future.

Sincerely,

Monica Smith

Monica Smith

cc Pat Keenan, Director, Planning