Addendum to:

Town of St. Marys Development Charge Background Study

DRAFT for Staff Review

November 7, 2017

Watson & Associates ECONOMISTS LTD.

Plaza Three
101–2000 Argentia Rd.
Mississauga, Ontario
Canada L5N 1V9

Phone: (905) 272-3600

Fax: (905) 272-3602

e-mail: info@watson-econ.ca

www.watson-econ.ca

Planning for growth

List of Acronyms and Abbreviations

cu.m.	Cubic metre
D.C.	Development Charge
D.C.A.	Development Charges Act, 1997, as amended
E.A.	Environmental Assessment
F.I.R.	Financial Information Return
G.F.A.	Gross floor area
P.P.U.	Persons per unit
P.S.	Pumping Station
S.D.E.	Single detached equivalent
S.D.U.	Single detached unit
sq.ft.	Square foot

Addendum Report to September 29, 2017 Development Charges Background Study

1. Background

Commensurate with the provisions of the Development Charges Act, 1997, as amended (D.C.A.), the Town has undertaken a Development Charges (D.C.) Background Study and released the study in accordance with the D.C.A. The following provides a summary of the key dates in the development charge by-law process:

September 29, 2017 -	Release of the D.C. Background Study and draft by-law
September --, 2017 -	Notice of Public Meeting and notice of release of study
October 16, 2017 -	Conference call discussion with representatives from Stratford Area Homebuilders Association
October 24, 2017 –	Public Meeting
November 28, 2017 –	Anticipated Passage of Development Charges By-law

The purpose of this addendum report is to provide for clarification to the September 29, 2017 D.C. Background Study, as discussed at the October 16, 2017 conference call with the Stratford Area Homebuilders Association and confirmed during the Public Meeting on October 24, 2017. These clarifications are in relation to:

a. Providing further detail with regard to the change in residential/non-residential shares for wastewater treatment from the 2013 background study to the current background study;
b. Providing further detail with regard to the calculations for the water storage facility reservoir; and
c. Further refinements to the Local Service Policy.

These clarifications do not provide for changes to the calculations, therefore the draft by-law, as provided in the September 29, 2017 background study has not been amended at this time.

2. Discussion

This section of the addendum report provides an explanation of the clarifications noted above. It is noted that the clarifications have not impacted the calculated development charges.

2.1 Change in Residential/Non-residential Share for Wastewater Treatment

Upon discussion with the Stratford Area Homebuilders Association, it was determined that further clarification be included in the report regarding the shift in the residential/non-residential shares from the previous D.C. background study to the current background study.

Previously, the growth-related wastewater treatment costs were split between residential and non-residential development based on existing billable flows from the Town's water/wastewater billing system. This resulted in a 55% residential share and a 45% non-residential share. At the time the study was completed in 2013, this was the best information available to Town staff.

For the current study, more information was available as the Town's engineering consultants, BM Ross, undertook work related to the future needs of the water and wastewater systems in St. Marys. BM Ross looked at the future needs of the Town by modelling future flows based on existing per capita and per employee usage. For their existing flows, BM Ross removed large industrial users from their calculations as these users would not be representative of the future users within the Town. Through this work, it was determined that, on average, one person generated the same wastewater flows as one employee. As a result, the residential/non-residential shares have now been proportioned based on the anticipated future population to employment growth.

The capital needs required for the wastewater treatment facility have incorporated the forecasted growth to buildout of the Town. Therefore, the population to employment ratio is calculated based on the growth anticipated to occur at buildout of the Town. Schedule 4 on Page A-8 of the September 29, 2017 D.C. Background Study provides for the buildout population growth forecast. The "Net Population Increase, Mid-2017 to Buildout" provides for an increase in population of 1,948. Schedule 9b on page A-15 provides the employment and gross floor area buildout growth forecast. The incremental change in employment to buildout totals 732. Therefore, the ratio of population to employment would be calculated as follows:

Population	1,948
Employment	+ 732
Total Population and Employment	2,680

Population ÷ Total Population and Employment = 73%

Employment ÷ Total Population and Employment = 27%

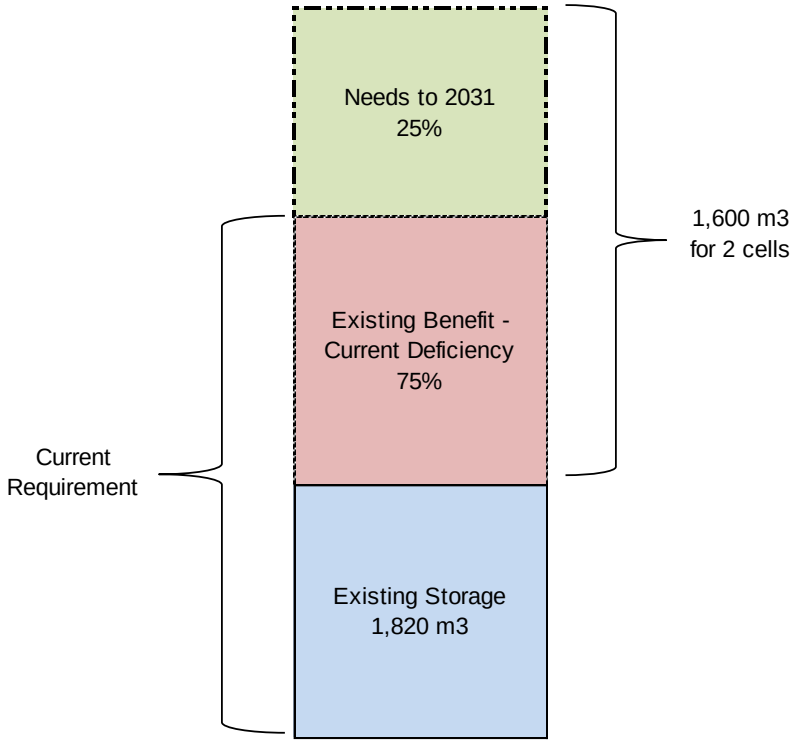
2.2 Calculations for the Water Storage Facility Reservoir

Similar to wastewater, a request was made by the Homebuilders Association to provide a more detailed explanation regarding the allocation of the water facility cost to growth. Based on a BM Ross memo to staff discussing the Town's water needs for the future, it was identified that Town would need an additional two storage cells for their reservoir to service growth to 2031. Our calculations have provided for the capital costs for two cells, therefore, all costs would be considered in-period and no post-period benefit deduction is required.

In the memo to staff, it was identified that there is a current deficiency in the system of 1,228 cu.m. and the Town's current storage provides for 1,820 cu.m. These are indicated in red and blue in Figure 1. The addition of two cells would provide the Town with an additional 1,600 cu.m. of storage capacity. This would allow the Town to provide capacity for their existing deficiency, as well as provide approximately 372 cu.m. of capacity for the growth-related needs for the population to 2031.

Therefore, of the total gross capital cost of $2,352,000, $1,765,000 (or 75%) has been deducted from the calculations for the amount that benefits existing development, resulting in a growth-related amount of $588,000.

Figure 1
Calculation of Water Storage Facility Reservoir Benefits



2.3 Local Service Policy

During the presentation at the Public Meeting by the representatives of the Homebuilders Association, a request was made to update the local service policy to include communication ducts and wiring/fiber to the definition of Services Related to a Highway. This information has been added to page E-2 of the Local Service Policy.

2.4 Changes to the Background Report

Based upon the above, the following revisions are made to the pages within the background study (new pages are appended to this report):

a. Page (5-21 and 5-22) – updated discussion on details of water facilities calculation.
b. Page (5-23 to 5-27) – updated page numbers.
c. Page (5-30) – updated discussion on details of residential/non-residential share calculation
d. Page (E-2) – updated Local Service Policy definition for Services Related to a Highway

Amended Pages

5.3.4 Water Services (Treatment, Storage, and Distribution)

Water Facilities

Based on the growth identified, an additional water storage facility reservoir is required to service growth to 2031. The gross cost of this project is $2.35 million of which 75% or $1.76 is attributable to existing development (discussed further below). A deduction for the 2016 year-end reserve fund balance of $46,778 has been made resulting in a net growth related amount of $541,222 for inclusion in the D.C. calculations.

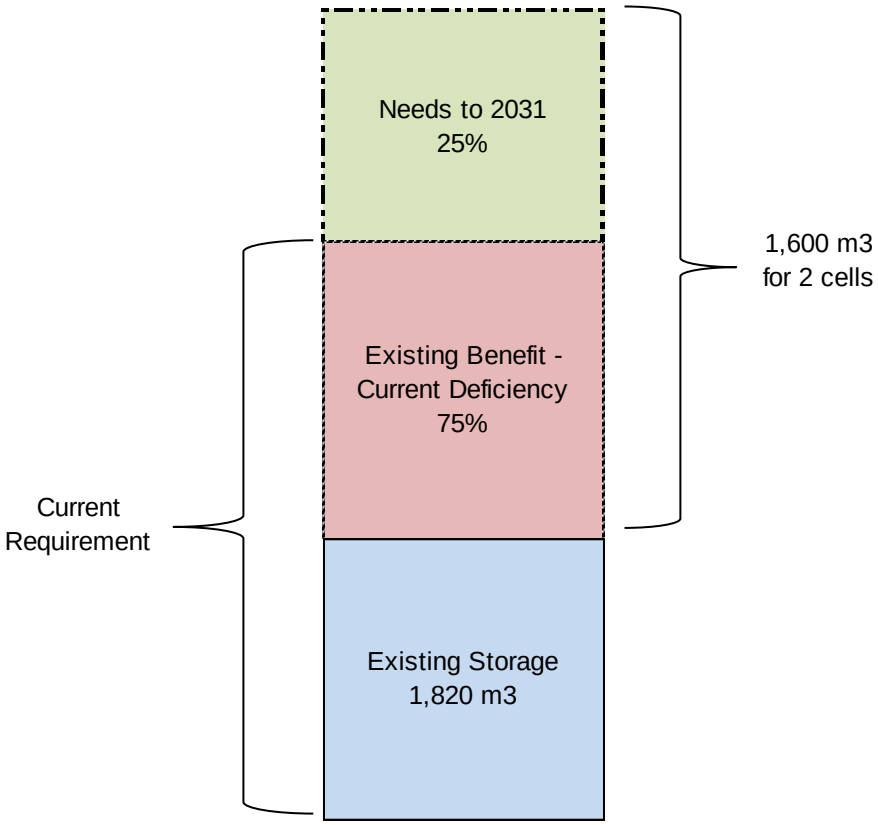
Based on a BM Ross memo to staff discussing the Town's water needs for the future, it was identified that Town would need an additional two storage cells for their reservoir to service growth to 2031. Our calculations have provided for the capital costs for two cells, therefore, all costs would be considered in-period and no post-period benefit deduction is required.

In the memo to staff, it was identified that there is a current deficiency in the system of 1,228 cu.m. and the Town's current storage provides for 1,820 cu.m. These are indicated in red and blue in Figure 1. The addition of two cells would provide the Town with an additional 1,600 cu.m. of storage capacity. This would allow the Town to provide capacity for their existing deficiency, as well as provide approximately 372 cu.m. of capacity for the growth-related needs for the population to 2031.

The allocation between residential and non-residential growth is calculated based on incremental growth in population to employment, for the 15-year forecast period for water services. This results in an allocation of 69% to residential and 31% to non-residential.

Figure 1

Calculation of Water Storage Facility Reservoir Benefits



Water Distribution

Based on the growth identified, the Town has identified eight water distribution projects that are required to service growth to 2031. In total, the gross capital costs are estimated to be $1,032,800. Benefit to existing amounts totalling $308,500 have been deducted, as well as $335,000 in grants. The net D.C. recoverable amount of $389,300 has been included in the D.C. calculations.

As noted above, the allocation between residential and non-residential growth is calculated based on incremental growth in population to employment, for the 15-year forecast period for water services. This results in an allocation of 69% to residential and 31% to non-residential.

INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION

Town of St. Marys
Service: Water Facilities

Prj.No	Increased Service Needs Attributable to Anticipated Development 2017-2031	Timing (year)	Gross Capital Cost Estimate (2017$)	Post Period Benefit	Other Deductions	Net Capital Cost	Less:		Potential DC Recoverable Cost		
							Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 69%	Non-Residential Share 31%
1	Additional Water Storage Facility Reservoir	2017-2021	2,352,000	-		2,352,000	1,764,000		588,000	405,720	182,280
	Reserve Fund Balance						46,778		(46,778)	(46,778)	
	Total		**2,352,000**	**-**	**-**	**2,352,000**	**1,810,778**	**-**	**541,222**	**358,942**	**182,280**

INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION

Town of St. Marys
Service: Water Distribution

Prj.No	Increased Service Needs Attributable to Anticipated Development 2017-2031	Timing (year)	Gross Capital Cost Estimate (2017$)	Post Period Benefit	Other Deductions	Net Capital Cost	Less:		Potential DC Recoverable Cost		
							Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 69%	Non-Residential Share 31%
1	Wellington St N (Queen to Bridge)	2018-2020	125,000	-		125,000	83,300		41,700	28,773	12,927
2	Wellington St. Bridge WM	2017-2018	100,500	-		100,500	-		100,500	69,345	31,155
3	Ingersoll N (Queen to Widder)	2020-2030	62,800	-		62,800	41,900		20,900	14,421	6,479
4	James St. N (Trailside to Glass) (replace 6")	2017-2022	125,000	-		125,000	83,300		41,700	28,773	12,927
5	Egan Avenue (Church to Wellington)	2018-2023	226,600	-		226,600	2,900	215,050	8,650	5,968	2,681
6	Wellington St. N. (Parkview to Egan)	2021-2025	153,000	-		153,000	38,300		114,700	79,143	35,557
7	Emily St (Thamesview Cres. To Overpass)	2017	239,900	-		239,900	58,800	119,950	61,150	42,194	18,957
	Total		**1,032,800**	**-**	**-**	**1,032,800**	**308,500**	**335,000**	**389,300**	**268,617**	**120,683**

5.3.5 Wastewater Services (Transmission and Plant-related Equipment)

Wastewater Transmission

Growth-related wastewater capital projects for additional transmission works to service the anticipated growth over the buildout forecast period have been identified. The Town has identified costs for the Inflow and infiltration Program as well as the Emily Street sewer. The gross capital costs are estimated to be $263,900. A benefit to existing component has been identified for both projects and totals $83,700. This amount, as well as anticipated grant funding in the amount of $95,100, have been deducted from the calculations. The net total of $85,100 has therefore, been included in the D.C. calculation.

The allocation between residential and non-residential growth is calculated based incremental growth in population to employment, over the 15-year forecast period for wastewater services. These allocations result in a residential/non-residential split of 69%/31%.

Wastewater Facility-related Equipment

The Town has identified a generator as required to service the anticipated growth over the 15-year forecast period has been identified. The gross capital cost of the generator, as well as the discounted growth-related interest costs for the debt related to the generator are estimated to be $307,995. A benefit to existing component in the amount of $57,563 and a grant in the amount of $230,250 have been deducted from the capital costs. The net total of $13,926 has therefore, been included in the D.C. calculation.

As noted above, the allocation between residential and non-residential growth is calculated based incremental growth in population to employment, over the 15-year forecast period for wastewater services. These allocations result in a residential/non-residential split of 69%/31%.

INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION

Town of St. Marys
Service: Wastewater - Sewers

Prj.No	Increased Service Needs Attributable to Anticipated Development 2017-2031	Timing (year)	Gross Capital Cost Estimate (2017$)	Post Period Benefit	Other Deductions	Net Capital Cost	Less:		Potential DC Recoverable Cost		
							Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 69%	Non-Residential Share 31%
1	Inflow and Infiltration Program	2020	100,000	-		100,000	50,000		50,000	34,500	15,500
2	Emily St (Thamesview Cres. To Overpass)	2017	163,900	-		163,900	33,700	95,100	35,100	24,219	10,881
	Total		**263,900**	**-**	**-**	**263,900**	**83,700**	**95,100**	**85,100**	**58,719**	**26,381**

INFRASTRUCTURE COSTS COVERED IN THE DC CALCULATION

Town of St. Marys
Service: Wastewater Facilities & Related

Prj.No	Increased Service Needs Attributable to Anticipated Development 2017-2031	Timing (year)	Gross Capital Cost Estimate (2017$)	Post Period Benefit	Other Deductions	Net Capital Cost	Less:		Potential DC Recoverable Cost		
							Benefit to Existing Development	Grants, Subsidies and Other Contributions Attributable to New Development	Total	Residential Share 69%	Non-Residential Share 31%
1	Wastewater Generator	2017	307,000	-		307,000	57,563	230,250	19,188	13,239	5,948
2	Wastewater Generator - Discounted Growth Related Interest	2018-2022	995	-		995	-		995	687	308
	Total		**307,995**	**-**	**-**	**307,995**	**57,563**	**230,250**	**20,183**	**13,926**	**6,257**

5.4 Service Levels and Buildout Capital Costs for St. Marys' D.C. Calculation

This section evaluates the development-related capital requirements for wastewater treatment over the buildout growth forecast period.

5.4.1 Wastewater Treatment

In the 2011 Development Charges Background Study, as amended by O.M.B. decision DC130004 (note, the amending by-law was passed in January, 2012), the Town identified a wastewater treatment expansion with a total gross capital cost estimate of $9.68 million. Of this amount, $1.67 million was deemed benefit to existing and $2.48 million was deemed to benefit development in the post-forecast period. Therefore, the net growth-related D.C. amount to be included in the calculations was approximately $5.53 million. Through the O.M.B. hearing, the details of the expansion were provided by Conestoga-Rovers Associates (C.R.A.). These details are provided in Figure 5-1 along with a breakdown of benefit to existing, post-period, grant, and total D.C. eligible (in-period) amounts.

Recently the Town conducted an optimization study to analyse their wastewater system. As a result of this analysis, as well as actual tenders being awarded, some of the capital costs have been adjusted. The updated table is provided in Figure 5-2. The details of the updates to the capital costs are provided below:

Projects 2 and 12 – Administration Building and Detritor

The C.R.A. information identified that $600,000 was required for the administration building ($540,000 for maintenance and $60,000 required for expansion). This item has been identified as requiring upgrades now and is currently out for tender for design services. A new administration building is to be designed along with a new inlet works (detritor) as well as odour control system(s) – see project 12.

The C.R.A. information identified that $940,000 was required for improvements and enhancements related to the inlet works (i.e. detritor). Of that, $56,400 was related to maintenance and $883,600 was related to capacity expansion. The inlet works have been identified as being a critical project for completion at the treatment plant. As such the completion of this project has been proposed to be moved forward. A tender is currently being administered for design services related to the replacement of this unit, along with the Administration building, and odour control systems. This project is tabled for completion between 2017 and 2019 and will be submitted as a project for a grant

application of up to $1.5 million. A 2017 estimate, based on similar projects completed in the area was $3 million, which included the inlet works, admin building and odour control systems. As such, this project has been combined with the administration building project. Please note that the scope of this item has changed since the C.R.A. information was completed and now consists of a replacement to benefit from newer technologies. The grant will be submitted to be applied against this benefit to existing amount, leaving the same amount (indexed to 2017 $) to be D.C. recoverable and included in the D.C. calculations.

Project 5 – New Turbo Blowers

In 2015, the Town of St. Marys purchased and installed one (150 HP) turbo blower as a replacement for existing blowers at a cost of $215,000. When additional aeration basins are required, one additional unit will be required to accommodate the required capacity. The 2013 C.R.A. information had identified two turbo blowers, therefore the growth-related capital costs have been reduced to reflect the capital cost of one new turbo blower (based on the 2015 purchase value, indexed to 2017 values).

Project 13 – Sludge Pumping

The C.R.A. information identified a portion of the expansion, in the amount of $155,000, for sludge pumping capabilities, odour control, electrical, etc. This project is currently being completed and has been awarded to a contractor for $243,000. It will be fully completed by December 2017. As such, the capital cost for this project has been updated to $243,000.

All Projects

A post period benefit deduction has been applied to all projects with a growth-related cost component. The detailed calculations on calculating the post period benefit share in the previous study, as well as this study, are provided in Figure 5-3 and Figure 5-4, respectively. The post period benefit share is based on the amount of growth anticipated to benefit from the treatment plant expansion that is outside of the D.C. buildout growth forecast. As per the Town's engineering consultant, the treatment plant would provide capacity for an additional 3,234 population (from 6,655 people in 2011 to 9,889 in 2064). The D.C. growth forecast anticipates the buildout population to be 9,117 people. Therefore there is approximately 772 people outside of the D.C. forecast that would benefit from the expansion, or 24%.

The total gross capital costs are estimated to be approximately $11.08 million. This amount has been netted down by approximately $1.90 million for the amount the

benefits growth post-buildout, $1.91 million for the amount that benefits existing development, and $1.5 million for grant funding. The reserve fund balance of $285,839 has also been deducted from the capital costs. Therefore, the net D.C. recoverable amount included in the D.C. calculations is $5,770,161.

Previously, the growth-related wastewater treatment costs were split between residential and non-residential development based on existing billable flows from the Town's water/wastewater billing system. This resulted in a 55% residential share and a 45% non-residential share. At the time the study was completed in 2013, this was the best information available to Town staff.

For the current study, more information was available as the Town's engineering consultants, BM Ross, undertook work related to the future needs of the water and wastewater systems in St. Marys. BM Ross looked at the future needs of the Town by modelling future flows based on existing per capita and per employee usage. For their existing flows, BM Ross removed large industrial users from their calculations as these users would not be representative of the future users within the Town. Through this work, it was determined that, on average, one person generated the same wastewater flows as one employee. As a result, the residential/non-residential shares have now been proportioned based on the anticipated future population to employment growth.

The capital needs required for the wastewater treatment facility have incorporated the forecasted growth to buildout of the Town. Therefore, the population to employment ratio is calculated based on the growth anticipated to occur at buildout of the Town. Schedule 4 on Page A-8 of the September 29, 2017 D.C. Background Study provides for the buildout population growth forecast. The "Net Population Increase, Mid-2017 to Buildout" provides for an increase in population of 1,948. Schedule 9b on page A-15 provides the employment and gross floor area buildout growth forecast. The incremental change in employment to buildout totals 732. Therefore, the ratio of population to employment would be calculated as follows:

Population	1,948
Employment	+ 732
Total Population and Employment	2,680

Population	÷	Total Population and Employment	=	73%
Employment	÷	Total Population and Employment	=	27%

Appendix E – Local Service Policy

This Appendix sets out the Town's General Policy Guidelines on Development Charges (D.C.) and local service funding for Services Related to a Highway, Stormwater Management, Transit Bus Stops and Amenities, Parkland Development, and Underground Linear Services. The guidelines outline, in general terms, the size and nature of engineered infrastructure that is included in the study as a development charge project, versus infrastructure that is considered as a local service, to be emplaced separately by landowners, pursuant to a development agreement.

The following policy guidelines are general principles by which staff will be guided in considering development applications. However, each application will be considered, in the context of these policy guidelines as subsection 59(2) of the Development Charges Act, 1997, as amended, on its own merits having regard to, among other factors, the nature, type and location of the development and any existing and proposed development in the surrounding area, as well as the location and type of services required and their relationship to the proposed development and to existing and proposed development in the area.

A. Services Related to a Highway

A highway and services related to a highway are intended for the transportation of people and goods via many different modes including, but not limited to passenger automobiles, commercial vehicles, transit vehicles, bicycles and pedestrians. The highway shall consist of all land and associated infrastructure built to support (or service) this movement of people and goods regardless of the mode of transportation employed, thereby achieving a complete street. A complete street is the concept whereby a highway is planned, designed, operated and maintained to enable pedestrians, cyclists, public transit users and motorists to safely and comfortably be moved, thereby allowing for the efficient movement of persons and goods.

The associated infrastructure to achieve this concept shall include, but is not limited to: road pavement structure and curbs; grade separation/bridge structures (for any vehicles, railways and/or pedestrians); grading, drainage and retaining wall features; culvert structures; storm water drainage systems; utilities; traffic control systems; signage; gateway features; street furniture; active transportation facilities (e.g. sidewalks, bike lanes, multi-use trails which interconnect the transportation network, etc.); transit lanes & lay-bys; roadway illumination systems; boulevard and median surfaces (e.g. sod & topsoil, paving, etc.); street trees and landscaping; parking lanes & lay-bys; (excluding on-street parking in the downtown) and driveway entrances; noise attenuation systems; railings and safety barriers; and ducts for communication, including wiring for fiber or otherwise.