

Table 1: Summary of the Advantages and Disadvantages for the Short List of Alternative Water Reclamation Centre Sites

+ Denotes an advantage for an alternative site relative to another alternative site - Denotes an disadvantage for an alternative site relative to another alternative site

Category	Site 24	Site 30	Site WH 1 West	Site WH 1 East	Site WH 2
Technical	Most Preferred (Tied)ⁱ + Carbon Dioxide (CO ₂) Equivalent Footprint estimated at 2,783 tonnes CO ₂ e/year	Least Preferred (Tied) - Carbon Dioxide (CO ₂) Equivalent Footprint estimated at 2,808 tonnes CO ₂ e/year	Most Preferred (Tied) + Carbon Dioxide (CO ₂) Equivalent Footprint estimated at 2,783 tonnes CO ₂ e/year	Least Preferred (Tied) - Carbon Dioxide (CO ₂) Equivalent Footprint estimated at 2,808 tonnes CO ₂ e/year	Most Preferred (Tied) + Carbon Dioxide (CO ₂) Equivalent Footprint estimated at 2,783 tonnes CO ₂ e/year
Natural Environment	Most Preferred (Tied) + No watercourses on the site + Temporary ⁱⁱ change to aquatic habitat at 2 watercourse crossings along the conveyance infrastructure routes + Loss of an estimated 0.3 ha of low quality deciduous hedgerow communities + Removal of an estimated 19.0 ha of suitable habitat for Bobolink and Savannah Sparrow - Loss of 1 barn providing nesting Barn Swallow habitat	Least Preferred - Permanent loss of an ephemeral watercourse on the site - Temporary change to aquatic habitat at 5 watercourse crossings along the conveyance infrastructure routes - Loss of an estimated 1.2 ha of low quality deciduous hedgerow communities - Removal of an estimated 25.0 ha of suitable habitat for Bobolink, Barn Swallow and Cliff Swallow, and loss of an estimated 2.5 ha of moderate quality swamp, cultural meadow and meadow marsh communities - Loss of 1 building providing nesting Barn Swallow habitat - Loss of a shallow dug pond, estimated at 0.3 ha, providing habitat to bullfrogs	Most Preferred (Tied) + No watercourses on the site + Temporary change to aquatic habitat at 2 watercourse crossings along the conveyance infrastructure routes + Loss of an estimated 0.5 ha of low quality deciduous hedgerow communities + Removal of an estimated 22.0 ha of suitable habitat for Bobolink - Loss of 1 barn providing nesting Chimney Swift habitat	Moderately Preferred - Permanent loss of an ephemeral watercourse on the site - Temporary change to aquatic habitat at 5 watercourse crossings along the conveyance infrastructure routes - Loss of an estimated 1.5 ha of low quality deciduous hedgerow communities - Removal of an estimated 44.0 ha of suitable habitat for Bobolink and Savannah Sparrow + No loss of barns or buildings containing nesting bird habitat	Most Preferred (Tied) + No watercourses on the site + Temporary change to aquatic habitat at 2 watercourse crossings along the conveyance infrastructure routes + Loss of an estimated 0.6 ha of low quality deciduous hedgerow communities + Removal of an estimated 22.0 ha of suitable habitat for Bobolink, Savannah Sparrow and Eastern Meadowlark - Loss of 1 barn providing nesting Barn Swallow habitat
Built Environment	Moderately Preferred + Temporary disruption to accesses for approximately 99 residences and 8 agricultural facilities adjacent to the conveyance infrastructure routes + Temporary increase in vibration at approximately 41 buildings within 250m ⁱⁱⁱ of the proposed Water Reclamation Centre and adjacent to the conveyance infrastructure routes + Temporary disruption to an estimated 3.7 km of roadway along the conveyance infrastructure routes - Loss of an estimated 32.0 ha of active agricultural operations and loss of 1 retired agricultural facility	Least Preferred - Temporary disruption to accesses for approximately 125 residences and approximately 16 agricultural facilities adjacent to the conveyance infrastructure routes - Temporary increase in vibration levels at approximately 78 buildings within 250m of the proposed Water Reclamation Centre and adjacent to the conveyance infrastructure routes - Temporary disruption to an estimated 8.1 km of roadway along the conveyance infrastructure routes - Loss of an estimated 44.0 ha of active agricultural operations and loss of 1 horse farm	Most Preferred + Temporary disruption to accesses for approximately 105 residences and 11 agricultural facilities adjacent to the conveyance infrastructure routes + Temporary increase in vibration levels at approximately 47 buildings within 250m of the proposed Water Reclamation Centre and adjacent to the conveyance infrastructure routes + Temporary disruption to an estimated 4.2 km of roadway along the conveyance infrastructure routes + Loss of an estimated 31.0 ha of active agricultural operations and no loss of agricultural facilities	Less Preferred - Temporary disruption to accesses for approximately 126 residences and 16 agricultural facilities adjacent to the conveyance infrastructure routes - Temporary increase in vibration levels at approximately 80 buildings within 250m of the proposed Water Reclamation Centre and adjacent to the conveyance infrastructure routes - Temporary disruption to an estimated 8.3 km of roadway along the conveyance infrastructure routes + Loss of an estimated 21.0 ha of active agricultural operations and no loss of agricultural facilities	More Preferred + Temporary disruption to accesses for approximately 99 residences and 8 agricultural facilities adjacent to the conveyance infrastructure routes + Temporary increase in vibration levels at approximately 53 buildings within 250m of the proposed Water Reclamation Centre and adjacent to the conveyance infrastructure routes + Temporary disruption to an estimated 3.6 km of roadway along the conveyance infrastructure routes + Loss of an estimated 30.0 ha of active agricultural operations and no loss of agricultural facilities

Notes:

ⁱ In situations, where the application of an evaluation criterion resulted in no difference in potential effects between the five alternative sites, then the comparative results associated with that criterion were excluded from this summary table.

ⁱⁱ Temporary or short-term effects are considered to occur only during construction of the proposed Water Reclamation Centre; long-term or permanent effects are considered to occur only during operation of the proposed Water Reclamation Centre. Mitigation measures would be applied to minimize effects.

ⁱⁱⁱ A 250 m distance was considered a suitable experience-based screening distance to identify points-of-reception for assessment of potential vibration.

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Category	Site 24	Site 30	Site WH 1 West	Site WH 1 East	Site WH 2
	<ul style="list-style-type: none"> - Permanent displacement of 1 residence - Acquisition of 1 entire private property with an estimated 40.0 ha property area, from an unwilling seller 	<ul style="list-style-type: none"> - Permanent displacement of 1 residence - Acquisition of 1 entire private property with an estimated 60.0 ha property area 	<ul style="list-style-type: none"> + No displacement of residences + Acquisition of a portion of 1 vacant private property with an estimated 36.0 ha property area, from a Willing Host owner^{iv} 	<ul style="list-style-type: none"> + No displacement of residences + Acquisition of a portion of 1 vacant private property with an estimated 40.0 ha property area, from a Willing Host owner 	<ul style="list-style-type: none"> + No displacement of residences + Acquisition of a portion of 1 vacant private property with an estimated 42.0 ha property area from, a Willing Host owner - Permanent displacement of the Holland Landing Snowmobile Club snowmobile route
Social Environment	<p style="text-align: center;">More Preferred</p> <ul style="list-style-type: none"> + Temporary change to approximately 102 private groundwater wells adjacent to conveyance infrastructure routes + Approximately 5 odour sensitive receptors^v within 250 m^{vi} of the proposed Water Reclamation Centre - Temporary increase in noise and vibration levels at approximately 20 sensitive receptors^{vii} within 500 m^{viii} of the proposed Water Reclamation Centre and approximately 41 sensitive receptors adjacent to the conveyance infrastructure routes + Partial visibility of the proposed Water Reclamation Centre from approximately 8 residences within 500 m, approximately 5 residences between 500 m to 1000 m and approximately 15 residences more than 1000 m away 	<p style="text-align: center;">Least Preferred</p> <ul style="list-style-type: none"> - Temporary change to approximately 151 private groundwater wells adjacent to conveyance infrastructure routes - Approximately 7 odour sensitive receptors within 250 m of the proposed Water Reclamation Centre - Temporary increase in noise and vibration levels at approximately 50 receptors within 500 m of the proposed Water Reclamation Centre and approximately 68 sensitive receptors adjacent to the conveyance infrastructure routes - Partial visibility of the proposed Water Reclamation Centre from approximately 16 residences within 500 m, approximately 14 between 500 m to 1000 m, and approximately 3 residences more than 1000 m away 	<p style="text-align: center;">Most Preferred</p> <ul style="list-style-type: none"> + Temporary change to approximately 108 private groundwater wells adjacent to conveyance infrastructure routes - Approximately 8 odour sensitive receptors within 250 m of the proposed Water Reclamation Centre + Temporary increase in noise and vibration levels at approximately 10 sensitive receptors within 500 m of the proposed Water Reclamation Centre and approximately 45 sensitive receptors adjacent to the conveyance infrastructure routes + Partial visibility of the proposed Water Reclamation Centre from approximately 9 residences within 500 m, 5 residences between 500 m to 1000 m and 1 residence more than 1000 m away 	<p style="text-align: center;">Less Preferred</p> <ul style="list-style-type: none"> - Temporary change to approximately 151 private groundwater wells adjacent to conveyance infrastructure routes - Approximately 8 odour sensitive receptors within 250 m of the proposed Water Reclamation Centre - Temporary increase in noise and vibration levels at approximately 50 sensitive receptors within 500 m of the proposed Water Reclamation Centre and approximately 69 sensitive receptors adjacent to the conveyance infrastructure routes + Partial visibility of the proposed Water Reclamation Centre from approximately 7 residences within 500 m, 10 residences between 500 m to 1000 m, and 3 residences more than 1000 m away 	<p style="text-align: center;">Moderately Preferred</p> <ul style="list-style-type: none"> + Temporary change to approximately 102 private groundwater wells adjacent to conveyance infrastructure routes + Approximately 6 odour sensitive receptors within 250 m of the proposed Water Reclamation Centre - Temporary increase in noise and vibration levels at approximately 21 sensitive receptors within 500 m of the proposed Water Reclamation Centre and approximately 41 sensitive receptors adjacent to the conveyance infrastructure routes - Partial visibility of the proposed Water Reclamation Centre from approximately 15 residences within 500 m, approximately 4 residences between 500 m to 1000 m, and approximately 15 residences more than 1000 m away

Notes:

^{iv} A Willing Host owner refers to either of the two properties that met the UYSS project requirements in response to the Request for Expression of Interest issued by York Region's Supplies and Services Department in February 2012.

^v In terms of odour, sensitive receptors include residences, child care facilities, health care facilities, senior citizens' residence, long-term care facilities, schools, and businesses.

^{vi} A 250 m distance was considered a suitable experience-based screening distance to identify points-of-reception for assessment of potential odours.

^{vii} Sensitive receptors from a noise perspective include permanent or seasonal residences, hotels/motels, nursing/retirement homes, rental residences, hospitals, camp grounds, and noise sensitive buildings.

^{viii} A 500 metre separation distance is a typical zone of influence used to identify the nearest off-site sensitive points-of-reception for noise and vibration as referenced by the Ministry of the Environment.

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Category	Site 24	Site 30	Site WH 1 West	Site WH 1 East	Site WH 2
Economic Environment	Most Preferred + No loss of Class 1 soils	Least Preferred - Loss of an estimated 48.0 ha of Class 1 soils	More Preferred + Loss of an estimated 7.5 ha of Class 1 soils	Less Preferred - Loss of an estimated 32.0 ha of Class 1 soils	Moderately Preferred + Loss of an estimated 8.0 ha of Class 1 soils
Cultural Environment	Less Preferred (Tied) - Displacement of 1 cultural heritage resource + Disturbance to an estimated 35.0 ha with archaeological potential	Least Preferred - Displacement of 1 cultural heritage resource - Disturbance to an estimated 41.0 ha with archaeological potential	Most Preferred + No displacement of cultural heritage resources. Disruption to 2 cultural heritage resources + Disturbance to an estimated 27.0 ha with archaeological potential	Less Preferred (Tied) - Displacement of 2 cultural heritage resources + Disturbance to an estimated 30.0 ha with archaeological potential	More Preferred + No displacement of cultural heritage resources. Disruption of 1 cultural heritage resource - Disturbance to an estimated 38.0 ha with archaeological potential
Financial	More Preferred + 50-year Net Present Worth Costs ^{ix} estimated at \$689.7M	Less Preferred - 50-year Net Present Worth Costs estimated at \$790.9M	Moderately Preferred + 50-year Net Present Worth Costs estimated at \$703.2M	Least Preferred - 50-year Net Present Worth Costs estimated at \$793.9M	Most Preferred + 50-year Net Present Worth Costs estimated at \$684.2M
OVERALL	Not Recommended - Higher number of sensitive receptors within 500m of the proposed Water Reclamation Centre temporarily affected - Acquisition of 1 entire private property with an unwilling seller with a higher property area - Displacement of an existing residence - Partial visibility of the proposed Water Reclamation Centre from a higher number of residences more than 1000 m away - Loss of 1 retired agricultural facility - Displacement of a higher number of cultural heritage resources - Disturbance to a higher area of archaeological potential - Higher 50-year Net Present Worth Costs	Not Recommended - Higher Carbon Dioxide (CO ₂) Equivalent Footprint / year - Permanent loss of an ephemeral watercourse - Temporary change to aquatic habitat at a higher number of watercourse crossings along the conveyance infrastructure routes - Loss of moderate quality swamp, cultural meadow and meadow marsh communities - Removal of higher area of suitable habitat for Bobolink, Barn Swallow and Cliff Swallow. Loss of 1 building providing nesting Barn Swallow habitat - Loss of a shallow dug pond providing habitat to bullfrogs - Higher number of residential accesses and agricultural facilities temporarily affected - Higher number of sensitive receptors within 500 m of the proposed Water Reclamation Centre temporarily affected - Acquisition of 1 entire private property with higher property area - Displacement of 1 existing residence	Recommended + Lower Carbon Dioxide (CO ₂) Equivalent Footprint / year + No watercourse crossings on the site and temporary change to aquatic habitat at a lower number of watercourse crossings than sites 30 and WH 1 East along the conveyance infrastructure routes + Loss of a lower area of low quality deciduous hedgerow communities than sites 30, WH 1 East and WH 2 + Removal of a lower area of suitable habitat for Bobolink than sites 30 and WH 1 East + Lower number of accesses to residences and agricultural facilities temporarily affected than sites 30 and WH 1 East + Lower number of sensitive receptors within 500 m of the proposed Water Reclamation Centre temporarily affected + Acquisition of a portion of 1 vacant private property from a Willing Host owner with a lower property area + No displacement of residences + Partial visibility of the proposed Water	Not Recommended - Higher Carbon Dioxide (CO ₂) Equivalent Footprint / year - Permanent loss of an ephemeral watercourse and temporary change to aquatic habitat at a higher number of watercourse crossings along the conveyance infrastructure routes - Loss of a higher area of low quality deciduous hedgerow communities and removal of higher area of suitable habitat for Bobolink and Savannah Sparrow - Higher number of accesses to residences and agricultural facilities temporarily affected - Higher number of sensitive receptors within 500 m of the proposed Water Reclamation Centre temporarily affected - Temporary disruption to a longer length of roadway along the conveyance infrastructure routes - Acquisition of a portion of 1 vacant private property from a Willing Host owner with a higher property area - Loss of a higher area of Class 1 soils - Displacement of a higher number of cultural heritage resources	Not Recommended - Higher number of sensitive receptors within 500 m of the proposed Water Reclamation Centre temporarily affected - Acquisition of a portion of 1 vacant private property from a Willing Host owner with higher property area - Partial visibility of the proposed Water Reclamation Centre from a higher number of residences within 500 m and more than 1000 m away - Disturbance to a higher area of archaeological potential - Permanent displacement of the Holland Landing Snowmobile Club snowmobile route

^{ix} 50-year Net Present Worth Costs associated with the capital investment, land acquisition, and operating and maintenance of the infrastructure, systems and equipment.

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Category	Site 24	Site 30	Site WH 1 West	Site WH 1 East	Site WH 2
		<ul style="list-style-type: none"> - Partial visibility of the proposed Water Reclamation Centre from higher number of residences from within 500 m and between 500 m to 1000 m - Temporary disruption to a longer length of roadway along the conveyance infrastructure routes - Loss of a larger area of Class 1 soils and loss of 1 agricultural facility - Displacement of a cultural heritage resource - Disturbance to a higher area of archaeological potential - Higher 50-year Net Present Worth Costs 	<ul style="list-style-type: none"> Reclamation Centre from lower number of residences between 500 m to 1000 m and more than 1000 m away + Loss of smaller area of Class 1 soils and no loss of agricultural facilities + No displacement of cultural heritage resources + Disturbance to a lower area of archaeological potential + Lower 50-year Net Present Worth Costs than sites 30 and WH 1 East 	<ul style="list-style-type: none"> - Disturbance to a higher area of archaeological potential - Higher 50-year Net Present Worth Costs 	