

<div>Pathway for Tributary to Welland River (Site 53)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No		
Use of industrial equipment								X	See Use of industrial equipment pathway					
Use of herbicides								X	Yes - (SBR58)	No	N/A	No		
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No		

Pathway for Tributary to Welland River (Site 54)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 54)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No		
Use of industrial equipment								X	See Use of industrial equipment pathway					
Use of herbicides								X	Yes - (SBR58)	No	N/A	No		
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No		

Pathway for Tributary to Welland River (Site 55)	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Excavation	Grading	Riparian Planting	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Change in light penetration	X													Yes - (G3, G4, G6, SBR58, SBR510, OM1, OM2, OM3, OM4, OM5, TM3, TM4, TM5, TM6, DP3)	No	N/A	No	Serious harm to fish is not anticipated. However, based on the potential presence of grass pickerel (i.e., <i>SARA</i> listed species), additional field studies in spring 2016 will be conducted to assess whether serious harm to fish may occur. At that time, a recommendation will be made concerning the need for regulatory review pursuant to the <i>Fisheries Act</i> .
Change in nutrient inputs	X													Yes - (G3, G4, G6, SS2, ESC1, SBR52, SBR58, SBR59, SBR510)	No	N/A	No	
Resuspension and entrainment of sediment	X													Yes - (G3, G4, ESC1, ESC2, SBR51, SBR52)	No	N/A	No	
Dewatering		X												Yes – (T2, T3, T4, T5, TM6)	Yes – displacement or stranding of fish and change in migration/access to habitats	Yes – (FP2, FP3, I2, I3, I4, I5, DP2, DP3, DP5, SAR1, SAR2)	No	
Bank erosion		X												Yes – (T5, SS2, SS3, ESC1, SBR51, SBR52, SBR53, SBR54, SBR55, SBR56, SBR59, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No	
Scouring of channel beds		X												Yes – (T4, SS3, SBR52, SBR55, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No	
Change in water temperature		X												Yes – (SBR51, SBR53, SBR54, SBR59, DP3)	No	N/A	No	
Change in contaminant concentrations		X												Yes – (G3, G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBR54, SBR57, OM5, OM6, I7, DP1, DP4, DP6, SB1)	No	N/A	No	
Change in nutrient concentrations		X												Yes – (SS2, SBR51, SBR58, DP3, DP4)	No	N/A	No	
Obstruction (dam, instream structure)			X											Yes – (G2, DP1, SB4)	Yes – downstream passage of fish, upstream passage of fish	Yes – (I2, I3, I4, T1, T2, T3, FP1, FP2, FP3, FP4, SAR1, SAR2)	No	
Change in water chemistry			X											Yes – (CSM5, ESC1, ESC2, SBR51, SBR52, SBR53, SBR54, SBR59)	No	N/A	No	
Change in water temperature			X											Yes – (SBR51, SBR52, SBR53, SBR54, DP3, DP5, DP6)	No	N/A	No	
Flow alteration (timing, duration, intensity)			X											Yes – (DP2, DP3, TM4, FP1)	No	N/A	No	
Diversion Channels			X											Yes (DP5, G6)	No	N/A	No	
Partial constriction of flow (e.g., rip-rap, piers, piles, fill)				X										Yes – (TM1, FP1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBR55)	No	
Complete constriction of flow (e.g., dams)				X										See Changes in timing, duration, and frequency of flows pathway				
Thermal loading					X									Yes – (G2, I5, DP5)	No	N/A	No	
Nutrient loading					X									Yes – (G2, I5, DP5, SBR58)	No	N/A	No	

<div>Pathway for Tributary to Welland River (Site 55)</div> <div>First Tier Project Impacts</div>	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Excavation	Grading	Riparian Planting	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Input of contaminants					X									Yes – (G2, G3, G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6, SB1)	No	N/A	No	Serious harm to fish is not anticipated. However, based on the potential presence of grass pickerel (i.e., SARA listed species), DFO review is recommended.
Pathogen, disease, vectors, exotics					X									Yes – (G2, G3, G4,G6, OM1)	No	N/A	No	
Placement of materials in water						X								See Placement of material or structures in water pathway				
Reduced flow						X								See Changes in timing, duration, and frequency of flows pathway				
Entrainment in pumps/machinery						X								Yes – (SS4, FP1, FP2, FP4, I6, DP1, DP3)	No	N/A	No	
Use of heavy machinery						X								See Use of industrial equipment pathway				
Change in flow regime							X							See Changes in timing, duration, and frequency of flows pathway				
Change in channel morphology or shoreline morphometry							X							Yes – (T5, SS1, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4. DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No	
Resuspension and entrainment of sediment							X							Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6, SSM1)	No	N/A	No	
Washing, cleaning, sweeping, sandblasting, etc.								X						Yes - (SB1, SB4)	No	N/A	No	
Alteration of groundwater flows to surface waters									X					Yes - (DP3, DP5)	No	N/A	No	
Creation of pond, pit or trench									X					Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, FP2, FP3, FP4, SSM1, DP1, DP4))	No	
Removal of top soil									X					No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No	
Addition or removal of in stream organic structure										X				Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No	
Bank stability and exposed soils										X				Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No	
Change in slope										X				Yes- (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No	
Site preparation											X			Yes – (SBRS1)	Yes – bank stability and exposed soils, increased erosion potential, change in sediment concentrations	Yes – (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	
Use of fertilizers											X			Yes- (SBRS8)	No	N/A	No	

<div>Pathway for Tributary to Welland River (Site 55)</div> <div>First Tier Project Impacts</div>	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Excavation	Grading	Riparian Planting	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Increase in riparian and bank vegetation											X			Yes- (SBR59, TM7)	No	N/A	No	Serious harm to fish is not anticipated. However, based on the potential presence of grass pickerel (i.e., SARA listed species), DFO review is recommended.
Change in vegetation species composition											X			Yes- (SBR59, SBR510, TM7)	No	N/A	No	
Use of mobile industrial equipment												X		Yes – (OM1, OM2, SS1)	Yes – potential mortality of fish/eggs/ova from equipment, bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	
Use of immobile industrial equipment												X		Yes – (OM1, OM2, SS1)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment													X	See Use of industrial equipment pathway				
Use of herbicides													X	Yes- (SBR58)	No	N/A	No	
Alteration of riparian vegetation													X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils, change in shade	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

<div>Pathway for Tributary to Welland River (Site 56)</div> <div>First Tier Project Impacts</div>	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Excavation	Grading	Riparian Planting	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Change in light penetration	X													Yes - (G3, G4, G6, SBR58, SBR510, OM1, OM2, OM3, OM4, OM5, TM3, TM4, TM5, TM6, DP3)	No	N/A	No	Serious harm to fish is not anticipated. However, based on the potential presence of grass pickerel (i.e., <i>SARA</i> listed species), additional field studies in spring 2016 will be conducted to assess whether serious harm to fish may occur. At that time, a recommendation will be made concerning the need for regulatory review pursuant to the <i>Fisheries Act</i> .
Change in nutrient inputs	X													Yes - (G3, G4, G6, SS2, ESC1, SBR52, SBR58, SBR59, SBR510)	No	N/A	No	
Resuspension and entrainment of sediment	X													Yes - (G3, G4, ESC1, ESC2, SBR51, SBR52)	No	N/A	No	
Dewatering		X												Yes – (T2, T3, T4, T5, TM6)	Yes – displacement or stranding of fish and change in migration/access to habitats	Yes – (FP2, FP3, I2, I3, I4, I5, DP2, DP3, DP5, SAR1, SAR2)	No	
Bank erosion		X												Yes – (T5, SS2, SS3, ESC1, SBR51, SBR52, SBR53, SBR54, SBR55, SBR56, SBR59, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No	
Scouring of channel beds		X												Yes – (T4, SS3, SBR52, SBR55, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No	
Change in water temperature		X												Yes – (SBR51, SBR53, SBR54, SBR59, DP3)	No	N/A	No	
Change in contaminant concentrations		X												Yes – (G3, G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBR54, SBR57, OM5, OM6, I7, DP1, DP4, DP6, SB1)	No	N/A	No	
Change in nutrient concentrations		X												Yes – (SS2, SBR51, SBR58, DP3, DP4)	No	N/A	No	
Obstruction (dam, instream structure)			X											Yes – (G2, DP1, SB4)	Yes – downstream passage of fish, upstream passage of fish	Yes – (I2, I3, I4, T1, T2, T3, FP1, FP2, FP3, FP4, SAR1, SAR2)	No	
Change in water chemistry			X											Yes – (CSM5, ESC1, ESC2, SBR51, SBR52, SBR53, SBR54, SBR59)	No	N/A	No	
Change in water temperature			X											Yes – (SBR51, SBR52, SBR53, SBR54, DP3, DP5, DP6)	No	N/A	No	
Flow alteration (timing, duration, intensity)			X											Yes – (DP2, DP3, TM4, FP1)	No	N/A	No	
Diversion Channels			X											Yes (DP5, G6)	No	N/A	No	
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)				X										Yes – (TM1, FP1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBR55)	No	
Complete constriction of flow ( <i>e.g.</i> , dams)				X										See Changes in timing, duration, and frequency of flows pathway				
Thermal loading					X									Yes – (G2, I5, DP5)	No	N/A	No	
Nutrient loading					X									Yes – (G2, I5, DP5, SBR58)	No	N/A	No	

<div>Pathway for Tributary to Welland River (Site 56)</div> <div>First Tier Project Impacts</div>	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Excavation	Grading	Riparian Planting	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Input of contaminants					X									Yes – (G2, G3, G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6, SB1)	No	N/A	No	Serious harm to fish is not anticipated. However, based on the potential presence of grass pickerel (i.e., SARA listed species), DFO review is recommended.
Pathogen, disease, vectors, exotics					X									Yes – (G2, G3, G4,G6, OM1)	No	N/A	No	
Placement of materials in water						X								See Placement of material or structures in water pathway				
Reduced flow						X								See Changes in timing, duration, and frequency of flows pathway				
Entrainment in pumps/machinery						X								Yes – (SS4, FP1, FP2, FP4, I6, DP1, DP3)	No	N/A	No	
Use of heavy machinery						X								See Use of industrial equipment pathway				
Change in flow regime							X							See Changes in timing, duration, and frequency of flows pathway				
Change in channel morphology or shoreline morphometry							X							Yes – (T5, SS1, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4. DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No	
Resuspension and entrainment of sediment							X							Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6, SSM1)	No	N/A	No	
Washing, cleaning, sweeping, sandblasting, etc.								X						Yes - (SB1, SB4)	No	N/A	No	
Alteration of groundwater flows to surface waters									X					Yes - (DP3, DP5)	No	N/A	No	
Creation of pond, pit or trench									X					Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, FP2, FP3, FP4, SSM1, DP1, DP4))	No	
Removal of top soil									X					No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No	
Addition or removal of in stream organic structure										X				Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No	
Bank stability and exposed soils										X				Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No	
Change in slope										X				Yes- (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No	
Site preparation											X			Yes – (SBRS1)	Yes – bank stability and exposed soils, increased erosion potential, change in sediment concentrations	Yes – (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	
Use of fertilizers											X			Yes- (SBRS8)	No	N/A	No	



<div>Pathway for Tributary to Welland River (Site 56)</div> <div>First Tier Project Impacts</div>	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Excavation	Grading	Riparian Planting	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Increase in riparian and bank vegetation											X			Yes- (SBR59, TM7)	No	N/A	No	Serious harm to fish is not anticipated. However, based on the potential presence of grass pickerel (i.e., SARA listed species), DFO review is recommended.
Change in vegetation species composition											X			Yes- (SBR59, SBR510, TM7)	No	N/A	No	
Use of mobile industrial equipment												X		Yes – (OM1, OM2, SS1)	Yes – potential mortality of fish/eggs/ova from equipment, bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	
Use of immobile industrial equipment												X		Yes – (OM1, OM2, SS1)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment													X	See Use of industrial equipment pathway				
Use of herbicides													X	Yes- (SBR58)	No	N/A	No	
Alteration of riparian vegetation													X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils, change in shade	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 57)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
														First Tier Project Impacts
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 57)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 58)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
														First Tier Project Impacts
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 58)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 59)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 59)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 60)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		



<div>Pathway for Tributary to Welland River (Site 60)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 61)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 61)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No		
Use of industrial equipment								X	See Use of industrial equipment pathway					
Use of herbicides								X	Yes - (SBR58)	No	N/A	No		
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No		

Pathway for Tributary to Welland River (Site 62)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 62)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 63)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 63)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 64)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
														First Tier Project Impacts
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		



<div>Pathway for Tributary to Welland River (Site 64)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No		
Use of industrial equipment								X	See Use of industrial equipment pathway					
Use of herbicides								X	Yes - (SBR58)	No	N/A	No		
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No		

Pathway for Tributary to Welland River (Site 65)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 65)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Welland River (Site 66)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Welland River (Site 66)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

APPENDIX E – DFO SELF-ASSESSMENT

Pathway for Tributary to Twenty Mile Creek (Site 67)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

Pathway for Tributary to Twenty Mile Creek (Site 67)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
First Tier Project Impacts													
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Twenty Mile Creek (Site 68)	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		



<div>Pathway for Tributary to Twenty Mile Creek (Site 68)</div> <div>First Tier Project Impacts</div>	Changes in timing, duration, and frequency of flows	Placement of material or structures in water	Wastewater management	Structure removal	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended.
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Tributary to Twenty Mile Creek (Site 69)	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
									First Tier Project Impacts					
Dewatering	X								Yes – (T2, T3, T4, T5, TM6, DP2, DP3)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Bank erosion	X								Yes – (T5, SS3, ESC1, SBRS1, SBRS2, SBRS4, SBRS5, SBRS6, OM2, OM3, OM4, TM5, I5, DP4)	No	N/A	No		
Scouring of channel beds	X								Yes – (T4, SS3, SBRS2, SBRS5, OM4, TM3, TM5, I5, I6, DP1, DP4, SB4)	No	N/A	No		
Change in water temperature	X								Yes – (SBRS1, SBRS3, SBRS4, SBRS9, DP3)	No	N/A	No		
Change in contaminant concentrations	X								Yes – (G4, T5, SS4, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, OM5, OM6, I7, DP1, DP4, DP6)	No	N/A	No		
Change in nutrient concentrations	X								Yes – (SBRS1, SBRS8, DP3, DP4)	No	N/A	No		
Partial constriction of flow ( <i>e.g.</i> , rip-rap, piers, piles, fill)		X							Yes – (TM1)	Yes – change in channel morphology or shoreline morphometry	Yes – (SBRS5)	No		
Complete constriction of flow ( <i>e.g.</i> , dams)		X							See Changes in timing, duration, and frequency of flows pathway					
Thermal loading			X						Yes – (I5, DP5)	No	N/A	No		
Nutrient loading			X						Yes – (I5, DP5, SBRS8)	No	N/A	No		
Input of contaminants			X						Yes – (G4, T5, CSM1, CSM2, CSM3, CSM4, CSM5, CSM6, CSM7, CSM8, ESC1, SBRS4, SBRS7, I5, I7, OM1, OM5, OM6, DP1, DP4, DP6)	No	N/A	No		
Pathogen, disease, vectors, exotics			X						Yes – (G3, G4, G6, OM1)	No	N/A	No		
Change in flow regime				X					See Changes in timing, duration, and frequency of flows pathway					
Change in channel morphology or shoreline morphometry				X					Yes – (T5, ESC1, OM2, OM3, OM4, DP1, DP2, DP3, DP4, DP5, DP6)	Yes - change in hydraulics, change in channel stability, change in substrate	Yes - (SS2, SS3, SBRS2, SBRS4, SBRS5, SBRS6, TM4, TM5)	No		
Resuspension and entrainment of sediment				X					Yes - (ESC1, ESC2, SBRS2, SBRS4, TM1, TM2, TM3, I7, DP6)	No	N/A	No		
Alteration of groundwater flows to surface waters					X				Yes - (DP3, DP5)	No	N/A	No		
Creation of pond, pit or trench					X				Yes – (T4, T5, SS2, SS4)	Yes – dewatering of pit or trench, bank stability and exposed soils, change in slope or drainage	Yes - (ESC1, ESC2, SBRS4, SBRS5, SBRS6, DP1, DP4)	No		
Removal of top soil					X				No	Yes – exposed soils, spoil material/stockpiles	Yes – (TM1, TM5, SBRS4, ESC1, ESC2, CSM8)	No		
Addition or removal of in stream organic structure						X			Yes - (SBRS1, SBRS2, SBRS3, SBRS9, SS2)	No	N/A	No		
Bank stability and exposed soils						X			Yes - (SBRS1, SBRS2, SBRS4, SBRS9, ESC1, SS3)	No	N/A	No		
Change in slope						X			Yes - (SBRS5, SBRS6, TM4, TM5, TM7)	No	N/A	No		

<div>Pathway for Tributary to Twenty Mile Creek (Site 69)</div> <div>First Tier Project Impacts</div>	Addition or removal of aquatic vegetation	Changes in timing, duration, and frequency of flows	Fish passage issues	Placement of material or structures in water	Wastewater management	Water extraction	Structure removal	Cleaning or maintenance of bridges or other structure	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination
Use of mobile industrial equipment							X		Yes – (OM1, OM2, SS1)	Yes – bank stability and exposed soils, resuspension and entrainment of sediment, oil, grease and fuel leaks from equipment	Yes – (OM3, OM4, OM6, CSM2, CSM6, CSM7, SBR57)	No	Serious harm to fish is not anticipated. A DFO review is not recommended.
Use of immobile industrial equipment							X		Yes – (OM1, OM2)	Yes - oil, grease and fuel leaks	Yes – (OM6, CSM1, CSM2, CSM3, CSM4, CSM7, SBR57)	No	
Use of industrial equipment								X	See Use of industrial equipment pathway				
Use of herbicides								X	Yes - (SBR58)	No	N/A	No	
Alteration of riparian vegetation								X	Yes – (SS2, SBR51, SBR52)	Yes – addition or removal of in stream organic structure, bank stability and exposed soils	Yes - (SBR53, SBR54, SBR59, ESC1, SS3, TM7)	No	

Pathway for Sheffield-Rockton wetland complex											
First Tier Project Impacts	Wastewater management	Excavation	Grading	Use of industrial equipment	Vegetation clearing	Mitigation Measures Applied to Reduce First Tier Project Impacts	Remaining Second or Third Tier Impacts	Mitigation Measures Applied to Reduce Second/Third Tier Impacts	Remaining Residual Effects	Serious Harm Determination	
Thermal loading	X					Yes – (TL3, TL4, TL5, TL6)	No	N/A	No	Serious harm to fish is not anticipated. A DFO review is not recommended	
Nutrient loading	X					Yes – (TL3, TL4, TL5, TL6)	No	N/A	No		
Input of contaminants	X					Yes – (CSM1, CSM2, CSM4, CSM5, CSM7, CSM8, ESC1, ESC2, TL3, TL5, TL6)	No	N/A	No		
Pathogen, disease, vectors, exotics	X					Yes – (G3, G4, G6, OM1)	No	N/A	No		
Alteration of groundwater flows to surface waters		X				Yes - (TL1, TL2, TL5)	No	N/A	No		
Creation of pond, pit or trench		X				Yes – (TL1, TL2)	Yes –bank stability and exposed soils, change in slope or drainage	Yes - (TL5, TL6, ESC1, ESC2, SBRS4)	No		
Removal of top soil		X				Yes – (TL1, TL5)	No	N/A	No		
Addition or removal of in stream organic structure			X			Yes – (TL1, TL5)	No	N/A	No		
Bank stability and exposed soils			X			Yes – (TL1, TL5)	No	N/A	No		
Change in slope			X			Yes – (TL1, TL5)	No	N/A	No		
Use of mobile industrial equipment				X		Yes – (TL1, TL5, OM1, OM2, OM5, OM6, SS1, CSM7, SBRS7)	No	N/A	No		
Use of immobile industrial equipment				X		Yes – (TL1, TL5, OM1, OM2, OM5, OM6, SS1, CSM7, SBRS7)	No	N/A	No		
Use of industrial equipment					X	See Use of industrial equipment pathway					
Use of herbicides					X	Yes - (SBRS8)	No	N/A	No		
Alteration of riparian vegetation					X	Yes – (TL1, TL5, TL6)	No	N/A	No		