Publics Services and Procurement Canada

Timiskaming Dam-Bridge of Quebec Replacement Project (Quebec)

Environmental Impact Statement
PART F – Summary of the Environmental Effect Assessment
Chapter 20 Effects on the Human Environment

TETRA TECH

Project number : 715-32760TT
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PUBLIC SERVICES AND PROCUREMENT CANADA

Environmental Impact Statement
Timiskaming Dam-Bridge of Quebec Replacement Project (Quebec)

Our Reference: 32760TT (60ET)

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REVISIONS

Revision nº	Description	Date	By
00	Preliminary Report - Version for comments	March 2022	JR
01	Final Draft – Version for comments	June 2022	JR
02	EIS – Version for the Impact Assessment Agency Review	September 2022	JR
03	EIS – Second Version for the Impact Assessment Agency Review	February 2023	JR

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PART F - SUMMARY OF THE ENVIRONMENTAL EFFECT ASSESSMENT

20 EFFECTS ON THE HUMAN ENVIRONMENT

Table 20.1 presents the potential effects of the Project on features of the human environment, including health and socio-economic conditions, physical and cultural heritage elements including archaeological sites, and current use of lands and resources for traditional purposes. It also summarizes applicable mitigation and enhancement measures and the significance of the potential effects.

During construction, direct and indirect employment, businesses, and skills development opportunities may be potential positive effects. Numerous enhancement measures have been included to support potential project benefits for local Indigenous and non-Indigenous groups. Effects will be managed and monitored through a Socio-economic Management Plan and Indigenous Participation Plans.

Changes in population or demographics during construction may affect community life in positive and potentially negative ways by increasing use of local businesses, including tourism operators, or putting pressure on local health facilities and first responders. Enhancement and mitigation measures have been developed to address these potential impacts.

Should any archaeological resources be discovered during construction, activities will be halted, relevant authorities and/or Indigenous groups will be contacted, and the site will be secured to prevent the destruction of archaeological resources.

Current use of land and resources and cultural heritage values may be affected by construction potentially impacting access to the river and shoreline as well as fish, wildlife, or plant harvesting activities. Mitigation and enhancement measures include installation of signage, the use of alternative habitat offsetting materials, ongoing communications, and future environmental monitoring. The proposed fish ladder may also impact fishing and further mitigations will need to be considered once a fish passage design is confirmed.

All mitigation measures will be included in management plans described in Chapters 22 and 23.

Table 20.1 Summary Table of Environmental Assessment

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
Health and Socio-economic conditions and activities – AN, the AOO, AOPFN. MNO	√ 5(1)c)(i)	Dam construction	Direct and indirect employment and business opportunities	**1.** Prioritize local and Indigenous service providers and workers to optimize direct and indirect employment in the region **2.** Encourage joint ventures when local capacity does not exist to create benefits for local and Indigenous communities **3.** Ensure equal pay and employment opportunities **4.** Encourage contractor to use qualified local and Indigenous-owned services	Positive	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health and Socio-economic conditions and activities – AN, the AOO, AOPFN, MNO	√ 5(1)c)(i)	Dam construction	Barriers to employment	**1.** Institute a zero-tolerance policy for racism and sexism **2.** Provide cultural awareness and sensitivity training **3.** Monitor Indigenous women and marginalized worker concerns and respond to issues as they arise **4.** Institute confidential whistle-blower / grievance system for the workplace **5.** Encourage implementation of workplace diversity measures and incentives **6.** Discuss and address barriers to employment during development of Indigenous Participation Plan (IPP)	Negative	Low	Local	Medium	Continuous	Reversible	Non-significant	N/A
Health and Socio-economic conditions and activities – AN, the AOO, AOPFN, MNO	√ 5(1)c)(i)	Dam construction	Skills and capacity development	**1.** Develop IPP to support economic benefits, and to encourage the contractors to provide training and apprenticeship opportunities **2.** Support environmental monitoring training to local, impacted Indigenous groups **3.** Support creation and long-term sustained use of local Indigenous guardianship initiatives **4.** Share monitoring results with Indigenous and non-Indigenous communities **5.** Implement measures through IPP to ensure opportunities for local Indigenous groups to benefit	Positive	N/A	N/A	N/A	N/A	N/A	Positive	N/A
Health and Socio-economic conditions and activities – AN, MNO [Confirm KFN, TFN, WLFN]	√ 5(1)c)(i)	Dam construction	Decreased participation in cultural events /activities and traditional economy	**1.** Provide cultural awareness and sensitivity training **2.** Discuss cultural leave, and flex scheduling with Indigenous employees **3.** Encourage wellness and family leave policies **4.** Implement measures through IPP	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A
Health and Socio-economic conditions and activities – AN, AOPFN, MNO [Confirm KFN, TFN, WLFN]	√ 5(1)c)(i)	Dam construction	Increased land use by non-Indigenous workers	**1.** Give preference to local and Indigenous workers to minimize changes to harvesting **2.** Provide cultural awareness and sensitivity training **3.** Ensure all workers are aware of, and follow, provincial rules and regulations regarding hunting and fishing; work with provincial conservation officers to monitor/enforce rules	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A
Health and Socio-economic conditions and activities – Non-Indigenous	√ 5(1)c)(i)	Dam construction	Direct and indirect employment and business opportunities	**1.** Prioritize local and Indigenous service providers and workers to optimize direct and indirect employment in the region **2.** Encourage joint ventures when local capacity does not exist to create benefits for local and Indigenous communities **3.** Ensure equal pay and employment opportunities	Positive	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
				4. Encourage contractor to use qualified local and Indigenous-owned services								
Health and Socio-economic conditions and activities – Non-Indigenous	√ 5(1)c)(i)	Dam construction	Increased use of local businesses by construction workforce	**1.** Encourage non-local workers to stay in local accommodations and use local businesses and services **2.** Discuss workforce needs with local business organizations (Chambers of Commerce, etc.) so that they may provide goods and services that are needed / wanted by the workers	Positive	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health and Socio-economic conditions and activities – Non-Indigenous	√ 5(1)c)(i)	Dam construction	Disruption of community life due to construction activity and temporary workers	**1.** Provide information about peak season availabilities to contractor to ensure best use of local temporary accommodations **2.** Encourage renting local housing rather than using hotels and local campgrounds and other tourism-based accommodations **3.** Request listing of local accommodation establishments and number of rooms that are willing to provide long-term rentals **4.** Liaise with hotel owners in advance of construction to secure the needed Project accommodation, if required **5.** Create short-term accommodations (work camp/trailers) on vacant lands rented from willing local municipal, Indigenous or private property hosts, if required **6.** Provide community orientation to workers and contractors stressing requirement for respectful behaviour and use of community facilities **7.** Ensure adherence to contractor health, safety, and environmental policies **8.** Institute zero-tolerance policy for inappropriate behaviour on the job and in communities, where appropriate **9.** Communicate early and regularly with contractor, local police, social services, and municipalities to establish working relationships and ongoing exchange of information, incident tracking, corrective actions, and other strategies, as required	Negative	Low	Local	Medium	Continuous	Reversible	Non-significant	N/A
Health and Socio-economic conditions and activities – Non-Indigenous	√ 5(1)c)(i)	Dam construction	Change in population and demographics during construction	None proposed	Positive	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Health and Socio-economic conditions and activities – Non-Indigenous	√ 5(1)c)(i)	Dam construction	Increased demand on health care facilities during construction	**1.** Ensure contractors have excellent safety records **2.** Recommend employees access regular medical care in their own communities **3.** Hire locally to avoid pressure on existing medical services by increasing the population **4.** Enforce worksite best practices to reduce spread of contagious disease, as required **5.** Implement testing or vaccination requirements, as required **6.** Deliver a health and safety program for all workers before and during construction employment so that the industry's excellent safety record is maintained	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
				7. Provide first-aid facilities on site and having first aid responders on site at all times								
Health and Socio-economic conditions and activities – Non-Indigenous	√ 5(1)c)(i)	Dam construction	Increased land use during construction	**1.** Give preference to local and Indigenous workers to minimize changes to harvesting **2.** Provide cultural awareness and sensitivity training **3.** Ensure all workers are aware of, and follow, provincial rules and regulations regarding hunting and fishing; work with provincial conservation officers to monitor/enforce rules	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A
Physical and cultural heritage; Historical, archaeological, paleontological or architectural elements of importance – the AOO,AN, AOPFN, MNO and Non-Indigenous	√ 5(1)c)(ii); 5(1)c)(iv)	Dam construction	Destruction of archaeological resources on Long Sault Island	**1.** Halt activities if any archaeological resources are discovered, protect the site, notify Indigenous groups and relevant authorities (provincial archaeological authorities) **2.** Comply with the Ontario Heritage Act **3.** Involve interested Indigenous groups in archeological studies **4.** PSPC will work with Indigenous groups prior to construction to prepare a protocol for the protection and management of any recovered artefacts based on the archaeological intervention plan (refer to Phase 4) **5.** If artefacts are found, they will be held in trust by PSPC until the protocol can be implemented	Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Physical and cultural heritage; Historical, archaeological, paleontological or architectural elements of importance - AN, the AOO, AOPFN, MNO and Non-Indigenous	√ 5(1)c)(ii); 5(1)c)(iv)	Dam construction	Destruction of marine archaeological resources	**1.** Conduct an underwater archaeological potential assessment (Phase 1), underwater archaeological surveys (Phase 2, if recommended and deemed feasible), an underwater archaeological impact assessment (Phase 3) and develop an archaeological intervention plan (Phase 4) **2.** Comply with the Ontario and/or Quebec Standards and Guidelines for Consultant Archaeologists **3.** Conduct archaeological investigation based on the archaeological intervention plan in the dewatered area once cofferdam installed, document and recovery any archaeological resources, if discovered, to prevent destruction **4.** Involve interested Indigenous groups in archeological studies **5.** PSPC will work with Indigenous groups prior to construction to prepare a protocol for the protection and management of any recovered artefacts based on the archaeological intervention plan **6.** If artefacts are found, they will be held in trust by PSPC until the protocol can be implemented.	Neutral	N/A	N/A	N/A	N/A	N/A	NA	N/A
Physical and cultural heritage; Historical, archaeological, paleontological or architectural elements of importance – Non-Indigenous	√ 5(1)c)(ii); 5(1)c)(iv)	Dam construction	Conflicts between recreation vehicles and pedestrian traffic on the dam	**1.** Install appropriate fencing and signage to limit pedestrian-recreational vehicle conflicts on the walkway	Negative	Low	Footprint	Permanent	Cyclic	Reversible	Non-significant	N/A

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
Physical and cultural heritage; Historical, archaeological, paleontological or architectural elements of importance – the AOO, AN, AOPFN, MNO	√ 5(1)c)(ii); 5(1)c)(iv)	Dam construction	Physical and cultural heritage value of Long Sault Island	**1.** Discuss opportunities with Indigenous groups for re-establishing natural vegetation on Long Sault Island **2.** Invite Indigenous groups to harvest any trees and plants with cultural value prior to the construction of the new dam **3.** Involve Indigenous groups in the planning, design, siting, installation and maintenance of a plaque or other permanent structure that provides the history of the Ottawa River and Long Sault Island and their importance to Algonquin cultural and physical heritage and recognition of the Project on Algonquin territory **4.** Respect and allow space for Indigenous groups to conduct cultural ceremonies prior to the construction of the new dam to bring recognition and awareness to the historical alteration of the island and Ottawa River which may subsequently help to heal these historical impacts and build reconciliation with the impacted Indigenous groups **5.** Upon completion of the dam, erect signage and information to ensure proper acknowledgement of the significance of the area to the Algonquin Peoples	Negative	Medium	Footprint	Long-term	Continuous	Irreversible	Non-significant	N/A
Physical and cultural heritage; Historical, archaeological, paleontological or architectural elements of importance – AN, the AOO, AOPFN, MNO	√ 5(1)c)(ii); 5(1)c)(iv)	Dam construction	Physical and cultural heritage value of Ottawa River	None proposed	Negative	Medium	Footprint	Long-term	Continuous	Irreversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN	√ 5(1)c)(iii)	Dam construction	Lights on dam affecting fish abundance and harvesting	**1.** Direct lights toward working area during construction	Negative	Low	Footprint	Medium	Cyclic	Reversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN	√ 5(1)c)(iii)	Dam construction	Perceived/real impacts on fish health due to contaminants	**1.** Install turbidity curtain and remove sediments from behind it **2.** Inspect turbidity curtain after it is installed **3.** Monitor for organic mats downstream of the dam construction site within the Project area and remove if observed **4.** Share information on water/fish quality **5.** Share information on construction/demolition material composition and risks to health **6.** Involve Indigenous groups in monitoring fish and fish habitat during construction and post-construction Project phases **7.** Improve fish habitat through offsets approved by DFO **8.** Include Indigenous knowledge in fish monitoring and species restoration or recovery activities, as appropriate	Negative	Medium	Local	Medium	Continuous	Reversible	Non-significant	N/A
Current use of land and resource for traditional	√ 5(1)c)(iii)	Dam construction	Perceived/real impacts on fish health due to contaminants	**1.** Install turbidity curtain and remove sediments from behind it **2.** Inspect turbidity curtain after it is installed	Negative	Low	Local	Medium	Continuous	Reversible	Non-significant	N/A

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
purpose – the AOO, MNO				**3.** Share information on water/fish quality **4.** Share information on construction/demolition material composition and risks to health **5.** Improve fish habitat through offsets approved by DFO **6.** Involve Indigenous groups in monitoring activities **7.** Include Indigenous knowledge in fish monitoring and species restoration or recovery activities, as appropriate								
Current use of land and resource for traditional purpose – AN, the AOO, MNO	√ 5(1)c)(iii)	Dam construction	Changes to access to fishing areas near the dam from fencing and signage	**1.** Provide cultural awareness and sensitivity training (including Indigenous rights) to Project workers involved in constructing the fencing and signage, as well as those communicating the safety features to Algonquins and other Indigenous communities **2.** Communicate early and regularly with communities about access to fishing areas close to the dam	Negative	Low	Footprint	Long-term	Continuous	Irreversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN	√ 5(1)c)(iii)	Dam construction and operation	Loss of fishing equipment from snagging on blocks on dam apron	**1.** Investigate alternatives to habitat creation options for the Quebec apron, such as boulders rather than blocks **2.** Use blocks of a different design that are less likely to snag	Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Current use of land and resource for traditional purpose – the AOO, AN, AOPFN	√ 5(1)c)(iii)	Dam construction and operation	Loss of fishing habitat and spawning grounds leading to loss of abundance and fishing opportunities	**1.** Improve fish habitat through offsets approved by DFO **2.** Collaborate with Indigenous groups to develop a fish habitat compensation and monitoring plan that includes Indigenous knowledge, including temperature monitoring during spawning seasons	Negative	Low	Local	Long-term	Continuous	Reversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN, the AOO, AOPFN, MNO	√ 5(1)c)(iii)	Dam construction and operation	No Fish passage or fish passage for American eel (only)	None proposed	Neutral	NA	NA	NA	NA	NA	N/A	NA
Current use of land and resource for traditional purpose – AN, the AOO, AOPFN, MNO	√ 5(1)c)(iii)	Dam construction and operation	Fish passage (for multiple fish species) changing abundance of certain species	**1.** Delay fish passage until mitigation measures can be assessed (option 4)	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown/not evaluated
Current use of land and resource for traditional purpose – AN, the AOO, AOPFN, MNO	√ 5(1)c)(iii)	Dam construction and operation	Fish passage delayed until watershed wide plan in place and assessed	None proposed	Positive	NA	NA	NA	NA	NA	N/A	NA
Current use of land and resource for traditional purpose – AN, the AOO, AOPFN, MNO	√ 5(1)c)(iii)	Dam construction	Wildlife mortality from Project activity traffic	**1.** Implement traffic control measures at the Project site, for example, speed limits **2.** Monitor wildlife mortality during the Project activities and address issues if mortality rate is high	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN, the AOO	√ 5(1)c)(iii)	Dam construction and operation	Changes in health and abundance of wildlife that rely on fish	None proposed	Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Current use of land and resource for traditional purpose – the AOO MNO	√ 5(1)c)(iii)	Dam construction	Impacts of construction noise on wildlife and migratory birds and wildlife habitat	**1.** Mitigations to avoid impacts to wildlife and migratory birds as noted in Chapter 12. **2.** Keep noise pollution to a minimum and establish quiet hours, especially during the night to help provide a more suitable environment for wildlife,	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
				where possible (see Section 11.2.3 for more measures related to noise).								
Current use of land and resource for traditional purposes - AN, AOPFN	√ 5(1)c)(iii)	Dam construction	Impacts on wildlife that rely on fish	None proposed	Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Current use of land and resource for traditional purpose – AN, AOPFN, MNO	√ 5(1)c)(iii)	Dam construction and operation	Plant and natural material harvesting	**1.** Invite Indigenous groups to harvest any trees and plants of cultural value prior to the construction of the new dam **2.** Discuss opportunities with Indigenous groups to re-establish natural vegetation on Long Sault Island which could include the following: a) Plant new pioneer species in disturbed areas, including thistle, asters, goldenrod, mugwort, dandelion, nettles, sumac, etc., to restore disturbed sites b) Discuss a species restoration plan with interested Indigenous communities, which could include a plant re-introduction strategy for all stages of restoration c) Make efforts to re-establish the Wolf Willow away from the construction activities on Long Sault Island, so that Algonquins represented by the AOO can continue to harvest it for medicinal and ceremonial use d) Invite Indigenous communities to apply Indigenous knowledge to decision-making to determine which plants to seed, manage, and monitor in the Project footprint e) Communicate restoration activities through signage other appropriate communication methods f) Restrict access to planting sites while vulnerable to human disturbance g) Monitor growth rates of vegetation planted to support restoration and the development of habitat h) Include Indigenous groups in monitoring restored plants	Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Current use of land and resource for traditional purpose – the AOO	√ 5(1)c)(iii)	Dam construction and operation	Physical removal and/or disturbance of shoreline plants during construction	**1.** Invite Indigenous groups to harvest any trees and plants of cultural value prior to the construction of the new dam **2.** Discuss opportunities with Indigenous groups to re-establish natural vegetation on Long Sault Island which could include the following: a) Plant new pioneer species in disturbed areas, including thistle, asters, goldenrod, mugwort, dandelion, nettles, sumac, etc., to restore disturbed sites b) Discuss a species restoration plan with interested Indigenous communities, which could include a plant re-introduction strategy for all stages of restoration c) Make efforts to re-establish the Wolf Willow away from the construction activities on Long Sault Island, so that Algonquins represented	Negative	Low	Footprint	Medium	Punctual	Reversible	Non-significant	N/A

Valued Component affected	Area of federal jurisdiction (√)	Project Activity	Potential effects	Proposed mitigations or enhancements	Direction of Effect	Main criteria to determine the significance of effects					Significance of residual adverse effect	Likelihood of significance of residual adverse effect
						Magnitude	Geographical extent	Duration	Frequency	Reversibility		
				by the AOO can continue to harvest it for medicinal and ceremonial use d) Invite Indigenous communities to apply Indigenous knowledge to decision-making to determine which plants to seed, manage, and monitor in the Project footprint e) Communicate restoration activities through signage other appropriate communication methods f) Restrict access to planting sites while vulnerable to human disturbance g) Monitor growth rates of vegetation planted to support restoration and the development of habitat h) Include Indigenous groups in monitoring restored plants								
Current use of land and resource for traditional purpose – the AOO	√ 5(1)c)(iii)	Dam construction and operation	Reduced harvesting of plants for food and medicine due to actual or perceived contamination of plants and medicines from dust, or plant absorption of chemicals from road runoff, or construction spills.	**1.** Manage dust during construction with water **2.** Restore any areas that do become contaminated by spills **3.** Discuss a vegetation restoration plan with Indigenous groups for the Project footprint/construction areas and/or other parts of Long Sault Island **4.** Install silt fence during construction to capture contaminants from running into the Ottawa River **5.** Design roadway to include ditching and sedimentation ponds to capture run-off of contaminants exists currently **6.** Explore the creation of other areas that are accessible for harvesting medicinal plants so the need to harvest on this shoreline is reduced	Negative	Low	Local	Medium	Cyclic (seasonal)	Reversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN, the AOO, AOPFN, MNO	√ 5(1)c)(iii)	Dam construction and operations	Changes in water or land access or travel from Project activities	None proposed	Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Current use of land and resource for traditional purpose – AOPFN	√ 5(1)c)(iii)	Dam construction	Avoidance of the Ottawa River due to construction activities that may release contaminants in sediment and from dam construction materials	**1.** Monitor water quality changes during the Project activities **2.** Provide water quality data to communities **3.** Provide material safety information about dam components to AOPFN	Negative	Low	Local	Medium	Cyclic	Reversible	Non-significant	N/A
Current use of land and resource for traditional purpose – AN	√ 5(1)c)(iii)	Dam construction	Avoidance of the Ottawa River for drinking, swimming, and bathing because of real or perceived contaminants in sediment and dam construction materials	**1.** Involve Indigenous groups in monitoring water quality during construction Project phases **2.** Provide water quality data to communities	Negative	Medium	Local	Medium	Cyclic	Reversible	Non-significant	N/A