



## **NIRB Application for Screening #125346**

### **New Landfill and Waste Transfer Station**

**Application Type:** New

**Project Type:** Infrastructure

**Application Date:** 5/7/2018 4:33:42 PM

**Period of operation:** from 0001-01-01 to 0001-01-01

**Proposed Authorization:** from 0001-01-01 to 0001-01-01

**Project Proponent:** Matthew Hamp  
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## DETAILS

### Non-technical project proposal description

English: This project involves the design and construction of a new landfill and a new waste transfer station as part of the City of Iqaluit's Solid Waste Management Initiative. The existing landfill is rapidly running out of capacity to meet the waste disposal needs of Iqaluit and is currently projected to reach maximum levels in 2022/23. As a result, a new long-term landfill is required to meet the City's current and future needs. The waste transfer station will assist in extending the service life of the new landfill by diverting up to 44% of the waste with the future option to implement future waste reduction and recycling programs. The existing landfill is a traditional design with waste mixed with cover material and spread over an area. This approach can attract the local wildlife and can often results in loose/ lightweight waste such as plastic bags and paper blowing around and out of the site. At the new location this would result in garbage potentially being blown across the tundra. For site cleanliness, animal activity, odour and public perception regarding the existing landfill, this approach was not considered for the new landfill. An alternative to placing the waste in a landfill would be the use of an incinerator however there are many drawbacks to this approach. It is expensive to operate and the lack of availability of spare parts/ skilled labour to maintain it contribute to the expensive operating cost making it a non-feasible option. As a result, the new landfill will be a bale-fill design, meaning waste will be compacted into bales and wrapped in plastic at the waste transfer station and then stacked at the landfill. The new landfill will be located approximately 6km northwest of the City, while the Waste Transfer station will be located on the northern edge of Iqaluit, approximately 1km from the airport in an industrial area. At the Waste Transfer Station, wood and cardboard will be shredded and used in a biomass boiler to heat the facility. Scrap tires will be shredded and stored in shipping containers to be shipped south for recycling or used as cover material. Scrap steel will be compacted and stored in shipping containers to be shipped south for recycling as well and there will be an area for end-of-life vehicle to be decommissioned prior to being sent south for recycling. The waste transfer station will also include a compost area, a community re-use area and an area for residents to drop off household hazardous waste. The landfill will have a service life of 75 years with room to expand in the future.

French: Ce projet comprend la conception et la construction d'un nouveau site d'enfouissement et d'un nouveau centre de transfert des déchets dans le cadre du projet de gestion des déchets solides d'Iqaluit. Le site d'enfouissement existant est de plus en plus à risque de se trouver à court de capacité pour répondre aux besoins de gestion des déchets d'Iqaluit. Les prévisions actuellement laissent entendre que le site atteindra son niveau maximum en 2022-2023. Par conséquent, un nouveau site d'enfouissement à long terme est nécessaire pour répondre aux besoins actuels et futurs de la Ville. Le centre de transfert des déchets aidera à prolonger la durée de vie utile du nouveau site d'enfouissement en redirigeant jusqu'à 44 % des déchets grâce à la future option qui mettra en œuvre d'éventuels programmes de réduction des déchets et de recyclage. Le site d'enfouissement existant est conçu selon un modèle classique où les déchets sont empilés et recouverts d'une couche de matériaux sur le site. Cette façon de faire peut attirer la faune locale et entraîne souvent la perte de déchets légers, comme les sacs de plastique et le papier qui s'envolent au vent dans et à l'extérieur du site. Sur le site, les déchets qui s'envoleraient pourraient atterrir dans la toundra. Pour des questions de salubrité des lieux, d'activités de la faune, d'odeur et de perceptions du public par rapport au site d'enfouissement existant, cette façon de faire a été écartée pour le nouveau site d'enfouissement. Une solution de substitution au site d'enfouissement sera l'incinération des déchets. Par contre, cette méthode présente bon nombre d'inconvénients : coûteuse à exploiter et manque de disponibilité quant aux pièces de rechange/à la main-d'œuvre qualifiée pour maintenir les opérations sont toutes des raisons qui contribuent à son coût d'exploitation élevé justifiant l'irréalisme de cette proposition. Par conséquent, le nouveau site d'enfouissement sera conçu pour faire des ballots de déchets. Concrètement, tous les déchets seront compactés et mis en ballots, puis emballés dans une membrane en plastique avant d'être empilés dans le site d'enfouissement. Le nouveau d'enfouissement sera situé à environ six kilomètres au nord-ouest de la municipalité, alors que le centre de transfert des déchets se trouvera du côté nord d'Iqaluit, à près d'un kilomètre de l'aéroport dans le secteur industriel. Au centre de transfert des déchets, le bois et le carton seront déchiquetés et serviront aux chaudières à biomasse pour chauffer l'installation. Les pneus seront déchiquetés et chargés dans des conteneurs d'expédition qui seront ensuite acheminés vers le sud à des fins de recyclage et d'utilisation comme matériau de couverture. La ferraille sera également compactée et chargée dans des conteneurs d'expédition qui seront ensuite acheminés vers des installations de recyclage au sud. Aussi, il y aura une aire pour les véhicules en fin de vie utile afin de les démanteler avant de les envoyer au recyclage au sud. Le centre de transfert des déchets comprendra par ailleurs une aire pour le compost, une aire pour la réutilisation des objets par les membres de la communauté et une aire pour que les résidents et résidentes puissent se débarrasser de leurs matières dangereuses domestiques. Le site d'enfouissement aura une durée de vie utile de 75 ans avec de l'espace pour agrandir dans le futur.

[illegible]

### Post-Closure Phase: from to

## Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Waste Transfer Station Location	Other	Municipal	The site was owned by the Government of Nunavut and used to store crushed and shredded metal drum refuse produced by the military prior to 1993. The City gained control on the land in 1993 and a site cleanup was performed. The site is currently used as storage by local contractors for various material including tar waste drums and storage of some chemical and oil-based products. It is also used as a training area for the City's Fire Department.	The site consists of 1.13ha of land that has been graded and graveled and is currently being used for storage. A field visit confirmed that the lands are flat and unremarkable and suggest that they had limited potential for archaeological site prior to recent disturbances. The project site is interpreted to have limited potential to impact significant archaeological sites and no further archaeological work is recommended.	The waste transfer station is located in the community of Iqaluit and is approximately 1.5km from the Sylvia Grinnell Territorial Park.
New Landfill Location	Landfill	Commissioners	This site was previously Commissioner's Land but the City has transferred the area designated for the landfill to the City. An ATV trail crosses the west side of the Site and this trail will be the location of a new access road (approved as part of a previous NIRB application). This trail is used by locals to access hunting and fishing areas to the north of the site. The site is reportedly used by locals for berry picking, dog walking, picnicking and camping.	Both an archaeological overview (AOA) and impact (AIA) assessment were performed on the site. The AOA indicated that the landfill area is not interpreted as an area of high potential for yet undiscovered sites, but there is still a potential for unrecorded significant sites and a field investigation (AIA) is recommended. During the AIA, a pedestrian survey was conducted of areas having a high archaeological potential however no archaeological sites were observed in the landfill study area.	Iqaluit is the nearest community to the project site, approximately 8km away. The closest protected area is the Sylvia Grinnell Territorial Park, approximately 4.5km away.

## Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
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Iqaluit	Joel Fortier – Environmental Assessment Coordinator	Qikiqtani Inuit Association	2018-11-23
Iqaluit	General Public	Public Consultation Event	2018-11-15

## Authorizations

Indicate the areas in which the project is located:

South Baffin

### Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Transport Canada	Aeronautical Assessment Form for Obstacle Evaluation	Active	2018-09-04	2020-03-04
Other	Government of Nunavut Department of Health - Conditional approval of the project based on timely sharing of technical documents for Health review, conformity to the Public Health Act and General Sanitation Regulations	Active	2018-08-16	
Other	NAV Canada - Waste Transfer Station Assessment	Active	2018-10-02	2019-10-02
Nunavut Water Board	The City has an existing water license (3AM - IQA1626). This water license currently covers the operation of the existing landfill. An amendment will be issued to incorporate the new landfill.	Not Yet Applied	2016-06-17	2026-06-16

### Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Some material will likely be brought to the Iqaluit International Airport using commercial air freight.	
Water	Material will likely be brought to Iqaluit via the commercial sea-lifts	
Land	Material will be brought to site using existing roads (Waste Transfer Station) and a new road (landfill) that was applied under a separate NIRB application (14QN039)	

### Project accomodation types

Community

## Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Excavator	1	12ft x 16ft	Excavate foundation for Waste Transfer Station and construct the landfill
Dump Truck	2	10ft x 20ft	Import fill material for new landfill
Bulldozer	1	10ft x 16ft	Grade the new landfill
Truck and Trailer	1	10ft x 60ft	Transport material and equipment to both sites
Pick up Trucks	4	10ft x 15ft	Trasnpourt staff between the project sites

## Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	1	2000	2000	Gallons	A fuel truck will likely be used to re-fuel the equipment at the sites
Gasoline	fuel	1	2000	2000	Gallons	Used to fuel the pickups trucks and vehicles relying on gasoline, likely by gass station in town or a contractor's private fuel supply at their yard.

## Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0		

# Waste

## Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Site Cleanup/Remediation	Overburden (organic soil, waste material, tailings)	20 cubic meters	If soil at the Waste Transfer Station is contaminated, it will need to be disposed at a soil treatment facility.	N/A

### Environmental Impacts:

A predicted environmental impact at the landfill will be the effect on the drainage in the area and the small shallow ponds around the site. The landfill will need to implement a leachate collection system and a liner to collect any leachate and properly treat it. The bale fill design will inherently have a cleaner leachate than traditional landfills because all of the waste is wrapped in plastic. As well, an electric fence will surround the site to help protect the site from wildlife. The bale fill design should minimize the amount of wildlife attracted to the site. The landfill is located in an area used for camping, skiing and berry picking, due to the bale fill design, there should be minimal odour in the summer months and virtually no blowing litter, leaving the area in good condition for residents to continue their previous activities. At the Waste Transfer Station(Other in the drop down menu), household hazardous waste will be collected and stored in designated containers to be properly disposed/ recycled, as well as automotive fluids. Both the landfill and the waste transfer station will provide employment opportunities to the communities during the construction and operations phases. By implementing this projects, the City of Iqaluit will obtain two new critical pieces of infrastructure that will help the City manage its waste properly and positively contribute to overall human health in the area. During the construction of the waste transfer station, there will be construction noise however since it is located in an industrial area, the effect on residents should be minimal.



# **Additional Information**

## **SECTION A1: Project Info**

Under NIRB file number 14QN039 the access road to a new granular deposit will be constructed. This access road will also be used to service the new landfill.

## **SECTION A2: Allweather Road**

Under NIRB file number 14QN039 the access road to a new granular deposit will be constructed. This access road will also be used to service the new landfill.

## **SECTION A3: Winter Road**

## **SECTION B1: Project Info**

## **SECTION B2: Exploration Activity**

## **SECTION B3: Geosciences**

## **SECTION B4: Drilling**

## **SECTION B5: Stripping**

## **SECTION B6: Underground Activity**

## **SECTION B7: Waste Rock**

## **SECTION B8: Stockpiles**

## **SECTION B9: Mine Development**

## **SECTION B10: Geology**

## **SECTION B11: Mine**

## **SECTION B12: Mill**

## **SECTION C1: Pits**

## **SECTION D1: Facility**

## **SECTION D2: Facility Construction**

## **SECTION D3: Facility Operation**

## **SECTION D4: Vessel Use**

## **SECTION E1: Offshore Survey**

## **SECTION E2: Nearshore Survey**

## **SECTION E3: Vessel Use**

## **SECTION F1: Site Cleanup**

## **SECTION G1: Well Authorization**

## **SECTION G2: Onland Exploration**

## **SECTION G3: Offshore Exploration**

## **SECTION G4: Rig**

## **SECTION H1: Vessel Use**

## **SECTION H2: Disposal At Sea**

## **SECTION I1: Municipal Development**

### **Description of Existing Environment: Physical Environment**

**LANDFILL** - The site predominately is comprised of rolling hills intersected by minor stream valleys and shallow ponds. Some bedrock outcrops and small glacio-fluvial terraces are present in the south central and northeast part of the site respectively. Boulder fields mainly occur in the northwest and central portion of the site. Bedrock outcrops on site range in height from a couple to several meters high. The terraces comprise approximately 1m in height and predominantly consist of fine to coarse gravel and sand materials. The rocks in the boulder fields are rounded to sub-angular and range from 0.3-4m in diameter. There are no other prominent landforms (e.g. Eskers) or unique landscape features on the Site. The features on the Site are typical of what is general found throughout the tundra landscape. **WASTE TRANSFER STATION** - The site is located in the glacial marine delta comprising of sand, silt, boulders and gravel. The site is mainly flat lying with a gentle slope to the south. The soil and fill consists of gravelly sand to sandy gravel and groundwater was encountered at a depth of approximately 1.5m.

### **Description of Existing Environment: Biological Environment**

**LANDFILL** - A total of twenty-three (23) plant species were inventoried on the Site, none of them were protected under the federal Species at Risk Act (SARA). Dominant and sub-dominant plant species that were inventoried included Arctic Willow, Net-vein Willow, Bog Bilberry, Arctic Bell Heather and Reindeer Lichen. A total of eleven (11) wildlife species were inventoried on and adjacent to the Site during the field visit, which included 3 mammals, 5 birds and 3 insects. None of the wildlife species are protected under SARA. The time of year and duration of the field investigations combined with the vastness and availability of habitat in the region, very likely limited the number of recorded wildlife observations onsite. **WASTE TRANSFER STATION** - There were no observed vegetation or wildlife present at this site.

### **Description of Existing Environment: Socio-economic Environment**

The archaeology investigation yielded no culturally significant site on the landfill or the waste transfer station site. Based on a review of the geology of the Project area, impacts to unrecorded significant paleontological sites is not anticipated based on the age of the bedrock. The current landfill site land use is camping, berry picking and access to hunting and fishing ground to the north of the site that is accessed by an existing ATV trail on the west of the site. The ATV trail will be constructed into a two lane road to provide access to the landfill and to a gravel deposit to the west of the site (not part of this application). There were two Valued Socioeconomic Components that the landfill site falls with, the first is a Proposed Transportation Corridor that extends approximately 100km north of Iqaluit to another VSEC designated as an area of High Mineral Potential. The second is the Char Area of Abundance that is a large area encompassing Frobisher Bay and connecting inland freshwaters.

## Miscellaneous Project Information

### Identification of Impacts and Proposed Mitigation Measures

**LANDFILL: PHYSICAL** - The site is located close to the Sylvia Grinnel Protected area, any negative impacts will be mitigated by staying away from the protected area and doing as much as possible to minimize the impact on the land within the project boundaries. The landfill will likely be designed to sit on top of the existing land, minimal excavation will likely be done to preserve the permafrost. The hydrology of the site will be affected by the construction of the landfill, but the designer will account for this in the design of ditches to still allow for proper drainage, and the leachate collected on site will be treated prior to being released. The air quality noise levels may be affected by construction equipment and landfill operations, as well the odour of the landfill, however the smell will be minimized through the bale fill design. As well, only the appropriate amount of equipment will be brought to site. The site is also located far outside of Iqaluit, so noise and air quality should not be an issue. **BIOLOGICAL**: On the site, 20 species of plants and 11 species of animals were overserved however none of the are listed as protected under the SARA. Care will be taken to minimize the destruction of vegetation and potential animal habitats during the construction and operational phases of this project. **SOCIO-ECONOMIC**: The landfill construction and operation will create new employment opportunities as well as provide Iqaluit with a modern landfill that residents can be proud of. By upgrading this vital piece of community infrastructure, waste will be handled and disposed of in a clean and efficient manner, which is better for overall human health compared to a traditional landfill. **WASTE TRANSFER STATION: PHYSICAL** - The structure is located on a piece of land that is primarily sand and gravel. In order to construct a stable foundation, earth will need to be excavated and an engineered fill will need to be placed. As well, to help preserve the permafrost, the use of insulation as well as other systems like thermosyphons may be used to help prevent the permafrost from melting. Composting will take place at this site but it will take place in vessel containers that will prevent any negative odours from polluting the air, and the majority of the operations at this facility will occur indoors, reducing the noise generated by the facility. **SOCIO-ECONOMIC**: The waste transfer station construction and operation will create new employment opportunities as well as provide Iqaluit with a modern facility that residents can be proud of. By constructing this vital piece of community infrastructure, waste will be handled and disposed of in a clean and efficient manner, which is better for overall human health.

### Cumulative Effects

**LANDFILL**: Bales of waste from the waste transfer station will likely be transported daily to the landfill. The area where the landfill is was irregularly visited by vehicles, which will now occur on a daily basis, and equipment at the landfill will be operated to handle the bales. There will be an increase in noise at this location, as well, in the areas close to the road, there may be dust accumulation that was disturbed on the road and settled adjacent to the road. The road providing access to the landfill will also provide access to the public to this area of the land. It was previously only accessible by ATV or snowmobile. By providing easier access, more people may travel to this area for recreational purposes. **WASTE TRANSFER STATION**: This site was previously used as general contractor storage and as the fire training site for the City's fire department. There may be contaminants in the soil from the previous land uses that would need to be remediated before the site was constructed. This will be an industrial site in an area that already considered an industrial area. The amount of noise generated by this facility should not significantly increase the overall noise level generated in the area. The facility will increase the traffic to this area but it is primarily business around the site, the added traffic should not be an issue.

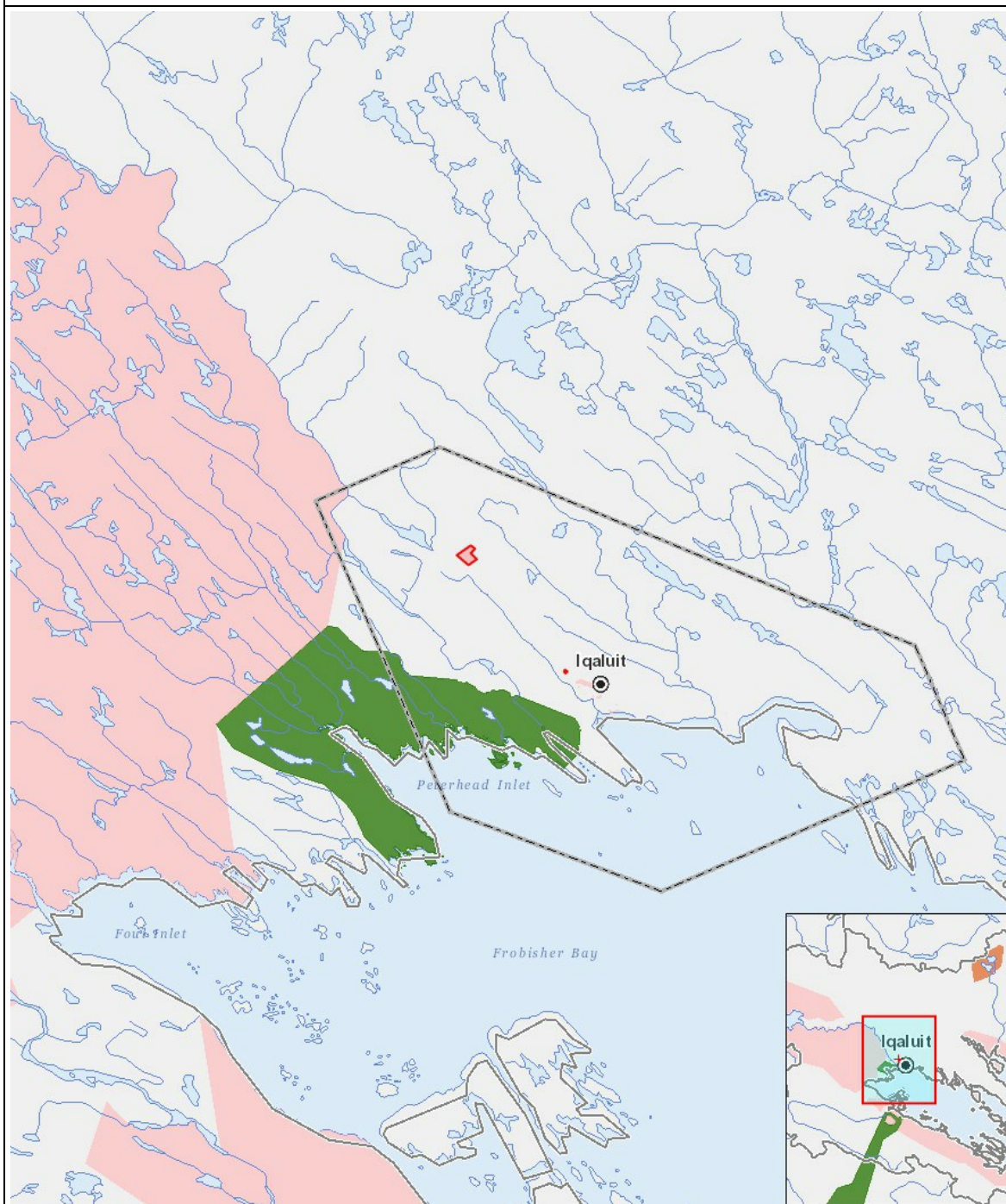
# Impacts

## Identification of Environmental Impacts

		PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eschers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
<b>Construction</b>																										
Other		-	N	N	-	-	-	-	-	-	-	-	N	N		-	-	-	-	-		P	-	-	-	-
Landfill		N	-	N	-	N	-	-	-	-	-	N	N	N	N	N	N	N	-	-		P	-	-	-	-
<b>Operation</b>																										
Other		-	-	-	-	-	-	-	-	-	-	N	N	N		-	-	-	-	-		P	-	-	-	-
Landfill		-	-	-	-	-	-	-	-	-	-	N	N	N		-	-	-	-	-		P	-	-	-	-
<b>Decommissioning</b>																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

## Project Location



## List of Project Geometries

- |   |         |                                 |
|---|---------|---------------------------------|
| 1 | polygon | New Landfill Location           |
| 2 | polygon | Waste Transfer Station Location |