



North Shore Wastewater Treatment Plant Project

Public Impact Mitigation Plan

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1 INTRODUCTION

This Public Impact Mitigation Plan (the Plan) describes ACCIONA's approach to mitigating impacts to the community throughout construction of the North Shore Wastewater Treatment Plant (the Project). This approach complies with the requirements of the *Project Agreement* with Metro Vancouver, and its schedules.

This Plan was developed based on consultation best practices and community input gathered during two public consultation periods.

2 ABOUT THE PUBLIC IMPACT MITIGATION PLAN

The Public Impact Mitigation Plan (the Plan) describes ACCIONA's approach to minimizing potential temporary construction impacts to the community during the Project. These include:

- Noise and vibration
- Air quality and dust
- Site cleanliness/visual aesthetics
- Light and odour related to field fabrication
- Traffic congestion/disruption and road closures
- Access to neighbouring businesses and industrial properties
- Impacts to pedestrians and cyclists
- Impacts to existing area utility network

2.1 Public Consultation & Review Process

Since contract award in April 2017, ACCIONA has been working to raise awareness, engage interested parties in dialogue and respond to Project-related enquiries.

Consistent with Metro Vancouver requirements, ACCIONA designed and implemented a two-phase community engagement program. The first phase, held between May 18 and June 8, 2017, sought feedback on the draft Public Impact Mitigation Plan.

A total of 12 feedback forms were received during the first comment period. The Project Team reviewed the public input received and identified additional measures to reduce impacts based on community input. These additional measures were presented at a second Public Information Meeting held on June 21, 2017. No further comments were received specific to the Public Impact Mitigation Plan during the second comment period from June 21 to July 12, 2017.

From the outset, the Project committed that where financially and technically feasible, input received would be incorporated into the final Public Impact Mitigation Plan.

ACCIONA is committed to being a good neighbour throughout the Project. Community input and collaboration are essential components of the mitigation measures and we welcome the community's comments throughout the Project to support the best outcome.

2.1.1 Feedback Summary

Feedback received during the public consultation period showed support for the mitigation measures described in this Plan, citing early engagement, level of detail provided, and overall approach to mitigate impacts, as reasons for support.

The following key themes arising from consultation and engagement on the Plan are summarized in the table below:

Comment	Response
<p>Comment requesting the Project team extend the notification area to all Norgate residents for notices of noise variance.</p>	<p>Comment incorporated into the Plan.</p> <p>ACCIONA is committed to ensuring the notification area includes all Norgate residents.</p> <p>Notification will be done through letter drops to all residents and businesses within a 500 meter radius of the site, website updates, and emails to the Project email distribution list, which includes surrounding community associations.</p>
<p>Comment requesting more detail on how the Project will maintain air quality and reduce dust, and maintain utilities in the local area.</p>	<p>Comment incorporated into the Plan.</p> <p>Mitigation measures are assessed on a situational basis and are designed to respond to varying weather conditions. These measures for dust include watering, screens, wheel washing and street cleaning.</p> <p>The Project will use a temporary BC Hydro feed for construction, as there is capacity for this Project on the existing grid. If utilities are temporarily disrupted to complete the utility connections, the Project Team will provide advance notice to the community.</p>
<p>Comment requesting careful monitoring of cycling lanes along West 1st Street, as dust and debris from construction can make conditions unfavourable and dangerous for cyclists. Suggestion to re-route cyclists to Welch Street if cycling conditions deteriorated.</p>	<p>Comment incorporated into the Plan.</p> <p>The Project Team will regularly monitor cycling lanes and routes to ensure cyclist safety throughout construction. Cycling lanes are considered as part of the Traffic Management Plan.</p> <p>Cycling lanes will be maintained as much as possible. If a cycling lane needs to be re-routed, the Project Team will provide advance notification, and signage will be installed to safely re-route cyclists.</p>

A complete list of comments and questions identified during consultation and ACCIONA’s response to feedback received can be found under separate cover in the *Permit Review Consultation Summary Report (September 2017)*.

2.2 Community Liaison Officer

ACCIONA has appointed a Community Liaison Officer (CLO), who will be the main point of contact for the community throughout Project construction. The CLO will provide regular updates to the community as the Project progresses and will monitor a 24-hour/7-day per week Project information phone line, voicemail and email, so that the Project Team can appropriately respond to any questions or concerns in a timely manner and document public input.

The Community Liaison Officer can be reached at 604-928-7810 or by email at community@accionabjv.ca.

2.3 Monitoring of the Plan

As the Project progresses, the Project Team will monitor the construction activity and potential impacts to ensure the mitigation measures described in this Plan are undertaken wherever possible. The Project will monitor and respond to weather and construction conditions to mitigate noise, dust, odour and traffic impacts to the community.

3 PUBLIC IMPACT MITIGATION MEASURES

Based on early engagement findings from Metro Vancouver, the Project Team’s knowledge of the Project area, and public input, the following activities, potential impacts and proposed mitigation measures have been identified to minimize community impacts during construction.

Activity	Potential Impact(s)	Proposed Mitigation	Timing & Duration
Material handling and concrete work	<ul style="list-style-type: none"> • Air quality • Dust • Street cleanliness 	<ul style="list-style-type: none"> • Use water trucks to minimize dust potential during drier weather conditions by dampening areas. • Provide hard-surfaced vehicle exit areas instead of earth-exposed surfaces. • Use truck wheel washing stations to clean vehicles as they exit the site. • Regularly clean local area roads with a street sweeper. 	<p>During site preparation, stone column installation and concrete placing works.</p> <p>May 2017 through to Project completion.</p>
Construction equipment	<ul style="list-style-type: none"> • Air Quality • Dust 	<ul style="list-style-type: none"> • Ensure that machinery complies with federal and provincial emissions standards. • Use temporary, direct hydro feed, reducing the need for on-site generators and related emissions. • Implement an anti-idling policy on site in compliance with municipal bylaws. • Schedule truck deliveries to take place during off-peak times to minimize impacts wherever possible. • Review all transportation options, including the use of barge. To date, all materials for the stone columns have been transported by barge. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>
Site preparation and ground improvement activities	<ul style="list-style-type: none"> • Noise • Vibration 	<ul style="list-style-type: none"> • Use quieter methods such as stone columns instead of pile driving for ground densification, which minimizes potential for noise and vibration. 	<p>During site preparation, stone column installation.</p> <p>May 2017 through January 2020.</p>

Activity	Potential Impact(s)	Proposed Mitigation	Timing & Duration
Construction equipment	<ul style="list-style-type: none"> Noise 	<ul style="list-style-type: none"> Install temporary fencing and screens in key areas to minimize noise. Install additional noise screens around noisier equipment when in use. Use modern, quieter equipment as often as possible. Use a temporary, direct hydro feed, reducing the use of noisy power generators. Conduct background noise monitoring to identify any constructed-related effects. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p> <p>Noise monitoring will be undertaken prior to construction starting, and periodically during site preparation activities and construction.</p>
Work hours	<ul style="list-style-type: none"> Noise 	<ul style="list-style-type: none"> Work in accordance with the District of North Vancouver’s Noise Regulation Bylaw. If a variance is needed, obtain approval from the District and provide advance notice to surrounding residents and businesses. Ensure the entire Norgate community is notified. Schedule noisier work during the day wherever possible. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>

Activity	Potential Impact(s)	Proposed Mitigation	Timing & Duration
Utility connections	<ul style="list-style-type: none"> • Disruption to existing area utility network • Traffic congestion • Traffic disruption • Access to neighbouring industrial properties • Road closures 	<ul style="list-style-type: none"> • Construct new utility lines for the Project, minimizing potentially disruptive tie-ins to the existing network. • Provide advance notice of any planned work that will cause temporary disruptions to the community. • Schedule potentially disruptive work outside of regular business hours or during periods that will cause the least disruption. • Schedule any brief road closures for utility work to take place during off-peak times to minimize impacts. • Keep the District of North Vancouver, City of North Vancouver and emergency responders informed of any traffic pattern changes or construction-related traffic delays. • Provide advance notice, including additional road signs where required to inform the local community and the travelling public of upcoming construction activities that may require temporary road closure. 	<p>As needed.</p> <p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>

Activity	Potential Impact(s)	Proposed Mitigation	Timing & Duration
Truck activity	<ul style="list-style-type: none"> • Traffic congestion • Traffic disruption • Access to neighbouring industrial properties • Road closures 	<ul style="list-style-type: none"> • Schedule any brief road closures for truck deliveries to take place during off-peak times to minimize impacts. • Keep the District of North Vancouver, City of North Vancouver and emergency responders informed of any traffic pattern changes or construction-related traffic delays. • Provide advance notice, including additional road signs where required to inform the local community and the travelling public of upcoming construction activities that may require temporary road closure. • Pre-fabricate materials and use construction staging at off-site locations to reduce the number of construction vehicles on local roadways travelling to and from the site where possible. • Coordinate with businesses in the area to avoid possible traffic conflicts wherever possible. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>
General construction	<ul style="list-style-type: none"> • Cyclist and pedestrian routes 	<ul style="list-style-type: none"> • Provide safe, clearly marked routes for pedestrian access. • Maintain cycling lanes or provide safe detour routes for cyclists throughout construction wherever possible. • Regularly monitor cycling lanes and routes to ensure cyclist safety throughout construction. • All Highway Use Permits will be obtained through the District of North Vancouver. The Project will work closely with Traffic Management Consultants to implement the Project’s Traffic Management Plan. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>

Activity	Potential Impact(s)	Proposed Mitigation	Timing & Duration
Parking during construction	<ul style="list-style-type: none"> Traffic congestion 	<ul style="list-style-type: none"> ACCIONA has appointed a Logistics Manager who will explore options for centralized employee parking and shuttle services to reduce on-site parking requirements. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>
On-site works	<ul style="list-style-type: none"> Visual aesthetics Site cleanliness 	<ul style="list-style-type: none"> The Project has conducted several clean up initiatives throughout the site, including disposal of litter, contaminated soil and overgrown vegetation. Temporary fencing will be installed around the site in November 2017 to improve the site aesthetic and reduce potential distractions to the travelling public. Regularly maintain on-site disposal bins and offices as per the Project’s Waste Management Plan and LEED and Envision guidelines. Restore site surroundings post construction. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>
Field fabrication	<ul style="list-style-type: none"> Light Dust Odour Visual aesthetics 	<ul style="list-style-type: none"> Minimize the need for field fabrication where practical, by requiring suppliers to apply coating and linings before delivery. Install environmental enclosures and screens as appropriate. Install the majority of pipes and other equipment after the building is constructed, to provide a visual shield. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p>

Activity	Potential Impact(s)	Proposed Mitigation	Timing & Duration
Transportation of materials	<ul style="list-style-type: none"> Traffic congestion 	<ul style="list-style-type: none"> Maximize the amount of pre-building and pre-assembling of materials and construction staging at off-site locations to reduce the number of construction vehicles on local roadways. Re-use as much of the existing on-site material as possible to minimize the need for off-site materials. ACCIONA has appointed a Logistics Manager who will review all transportation options, including use of trucks, barge and rail to help reduce impacts to the travelling public. LEED and Envision Gold requirements have established a standard of 30% locally sourced materials for Project construction. 	<p>Starting at site preparation works, and for the duration of construction activities.</p> <p>May 2017 through to Project completion.</p> <p>ACCIONA will continue to explore transportation options as the Project design is finalized.</p>
Storage of materials	<ul style="list-style-type: none"> Visual aesthetics 	<ul style="list-style-type: none"> ACCIONA has appointed a Logistics Manager who will work to identify local storage space that could be used for construction staging. Fencing around the site will be installed in November 2017. 	<p>May 2017 through to Project completion.</p> <p>ACCIONA will continue to explore storage options as the Project design is finalized.</p>

4 TRAFFIC MANAGEMENT PLAN

ACCIONA has developed a Traffic Management Plan to assess current levels of traffic, evaluate potential Project-generated traffic and determine initiatives to minimize disruptions to the community and travelling public. Traffic will be monitored throughout Project construction and adjustments will be made on an as-needed basis. Traffic monitoring includes the use of traffic cameras at key intersections around the Project site, and the use of a third party traffic consultant to coordinate activity related to the use of local roads.

ACCIONA is required to obtain a Highway Use Permit from the District of North Vancouver to use local roads for Project construction related activities, which includes the transportation of materials. Highway Use Permits define road use and identify safety and mitigation measures. If temporary impacts to local roads are unavoidable, necessary permits will be obtained. Mitigation and safety measures will be assessed in each situation to identify the required signage and safety measures for each permit.

The Project Team's current construction methodology recognizes West 1st Street as a key route for trucking and emergency responders, and extended closures of this are not currently anticipated during construction. Some brief closures may be required for utility installation work, which will be completed through single-lane-alternating traffic and will be scheduled during off-peak traffic times.

ACCIONA will schedule trucking requirements to avoid peak traffic times and reduce overall road congestion. This will reduce traffic impacts to the community, and avoid the emissions and economic costs of having construction vehicles idling in congested traffic. ACCIONA is committed to exploring other methods to transport materials to site via barge or rail, which will significantly reduce the total time and distance travelled by trucks to the Project site. This initiative has already been successfully implemented for transporting stone column materials by barge, removing approximately 1,500 truck trips from local roads, further minimizing the potential construction impacts to the community.

The Project Team will also work with the Vancouver Fraser Port Authority and other local businesses to coordinate high-volumes work requirements as much as possible to avoid traffic conflicts and reduce impacts to the local community. Traffic will be monitored in the surrounding area and the Project Team will work with the District of North Vancouver to resolve any congestion or traffic complications that may result from Project activities. Additional signage will also be posted as needed to inform local residents, businesses and the travelling public of upcoming construction activities that may require road closures.

Cyclists and Pedestrians

Safety is ACCIONA's priority. Safe routes will be provided for all members of the travelling public and local community.

Safe, clearly marked diversion routes will be provided in advance of any sidewalk closures for pedestrians.

Bicycle lanes will be maintained where it is safe to do so, and where applicable detours will be provided using the shortest, safest routes when established cycle lanes cannot be maintained. The Project Team will provide advance notice of any closures or diversions before they are implemented.

Although still in development, ACCIONA's construction strategy is based on maximizing off-site pre-fabrication to reduce construction traffic in the immediate vicinity of the Project site. The Project Team is also exploring options to reduce on-site parking requirements by providing centralized parking and shuttle bus services for construction workers. ACCIONA has used these methods very effectively on other projects and are confident they will work well for this Project.

The following subsections describe key points of ACCIONA's Traffic Management and Temporary Site Access Strategy.

4.1 Traffic Management

ACCIONA's traffic management provisions will ensure the highest level of safety and the fewest impacts on traffic flow by:

- Keeping good separation between the public and NSWWTP traffic;
- Providing the maximum possible working space for NSWWTP staff and other vehicle access; and,
- Minimizing changes to traffic flows and access points.

Traffic management measures will include implementing detours and closures in multiple areas, sometimes simultaneously. We will design these detours and closures so that they:

- Anticipate the extent to which traffic will be affected on existing municipal roads or streets;
- Minimize impacts on the environment and neighbourhoods; and,
- Take into account traffic requirements of public facilities, such as hospitals and schools.

ACCIONA will uphold the safety of the workforce and the travelling public, including pedestrians and cyclists, by implementing safety measures such as traffic barriers, pavement markings, advisory signs, and traffic controls.

We will inform the District of North Vancouver of any affected routes, liaise with the City of North Vancouver, and work with the Public Safety Communications Centre and emergency responders to establish alternate emergency response routes in advance of any required traffic changes.

4.2 Temporary Site Access

Temporary site access provisions are included as part of the Traffic Management and Temporary Access Plan.

Site access locations will be signed and clearly marked. Delivery drivers will be briefed about delivery routes and site access locations in advance of any deliveries.

Businesses adjacent to the Project site on Pemberton Avenue require access to the rear of their premises closest to the CN Rail line. ACCIONA is working with the tenants and property owners to ensure that the impacts of construction activities are minimized, and that access to the buildings and loading bays is maintained where it is safe to do so.