

UPSTREAM WATCH

Rebuttal to Nordic Aquafarms



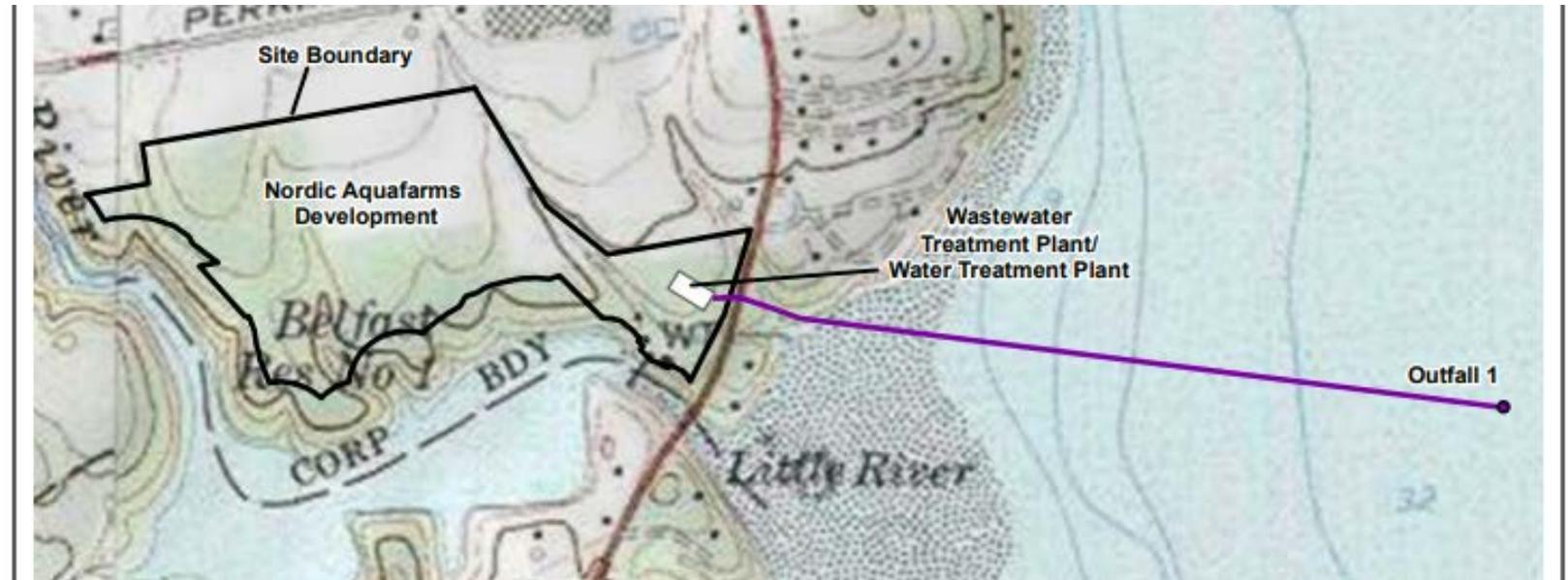
Introduction

- Michael Lannan, P.E.
 - Northport Resident
 - Office in Belfast
 - Homeowner in Bayside Village
 - Active boater
 - Decent Belfast curler
 - Not so good Northport golfer
 - Northport Village Corporation (NVC) Overseer
 - NVC Utility Committee Trustee
 - NVC Infrastructure Committee Chair
 - Maine Professional Environmental Engineer
 - Board Member of various Environmental Associations
- This provides a unique combination of local interests in Belfast, Northport, and our bay, and professional qualifications
- I am here representing Upstream Watch today
- I am here to rebut the statement that “nothing has changed”



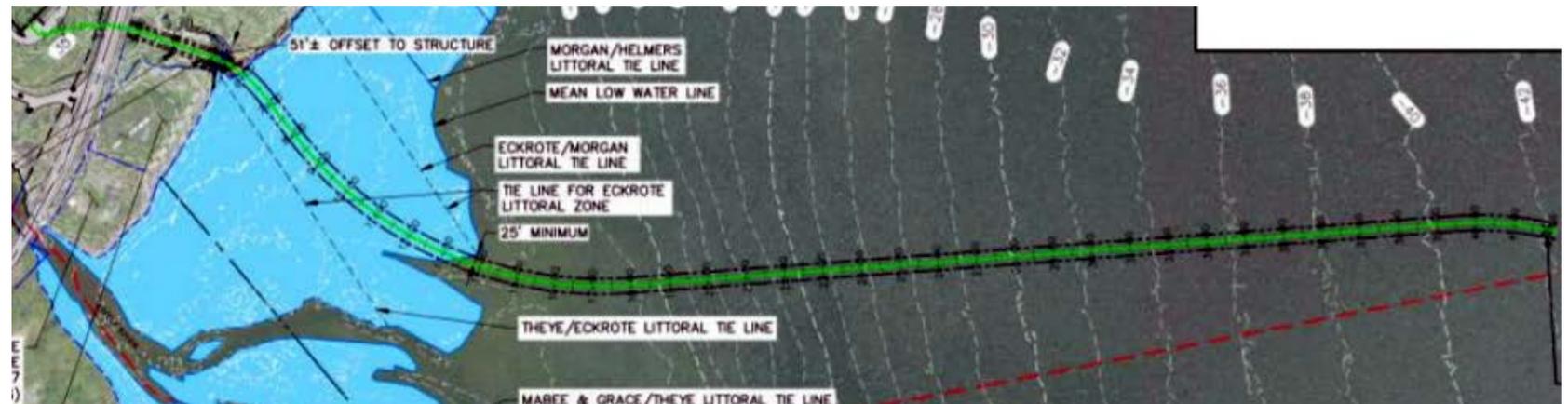
Permitting Process

- The reality is that PLENTY has changed.
 - Nordic mentioned that the slide from June 26, 2019 in their powerpoint presentation has not changed since their application. That is not accurate. Below is their current application pending.



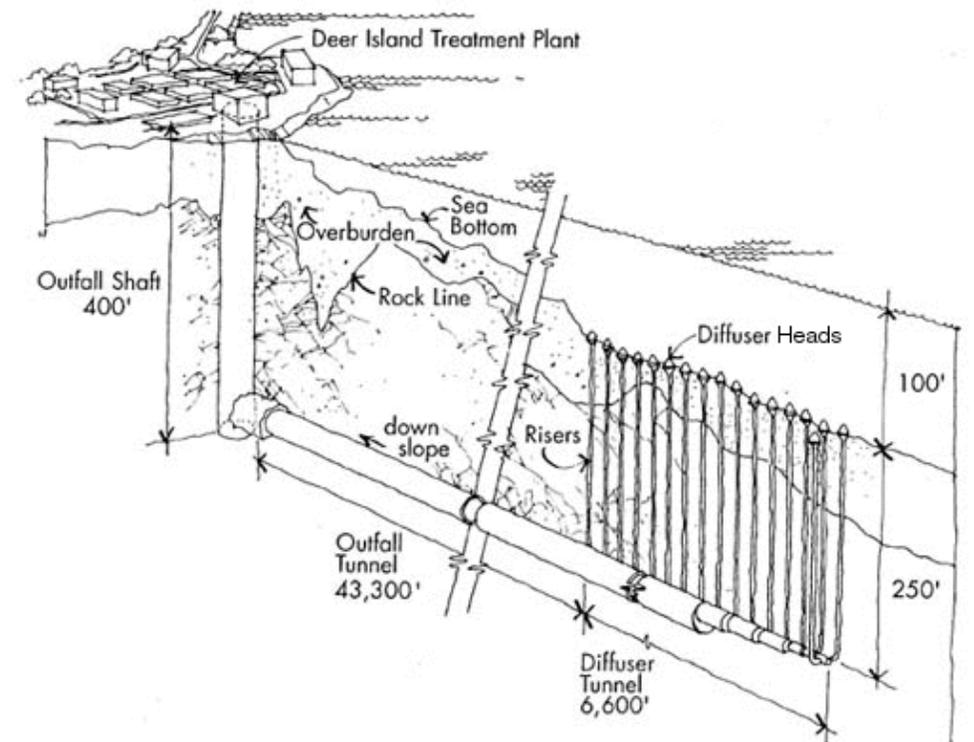
Permitting Process

- The reality is that PLENTY has changed.
 - Even at the last meeting Nordic claims that the discharge is 4,000 feet from low tide to discharge point. That is not accurate.
 - The figure presented by Nordic at the last meeting shows 2,800 feet to low tide and 3,600 feet to high tide “by counting stations”.



Permitting Process

- The reality is that PLENTY has changed.
 - Lastly Nordic makes an erroneous statement in their slide from the last meeting that notes “any additional length increases impact with no environmental gain.” That is not accurate.
 - “No environmental gains???” Discharge in deeper water would allow more vertical mixing and more mixing prior to shore and swimming areas. And many more diffusers over a longer distance would be a major environmental gain or benefit.
 - A different construction method (such as an outfall shaft and coring would limit impact from adding length). This proven technologies as shown in the Deer Island treatment plant I worked on in the 1990s.



Permitting Process



- The reality is that PLENTY has changed. We do not need to spend any more time providing examples here, as the Planning Board is living it. Instead we will focus on WHY Nordic would choose to rebut Upstream Watch with this statement
 - Why is it important that Nordic claim the outfall has not changed?
 - Why is it important that Nordic claim that the outfall need not go any further?
 - Why is it important that Nordic claim that the outfall is at the current location
 - The answer to all is very straightforward. If they admitted to ignoring Northport in their original outfall design, if they admitted to shortening the outfall from the original discussions, if they admitted to changing the design from burying it completely to partially burying, it would mean their permits should be revised. And they have not revised their permits as required.
 - They are stuck defending “no changes”.

Permitting Process

- Nordic acknowledged in their rebuttal that RAS has had multiple failures, but then adds that the letter also mentions that RAS is “one of the most sustainable methods” in the same letter
 - RAS CAN be “sustainable”, but the key to that statement is the “R” in RAS, “R” stands for “Recirculating”
 - When most members of the public think of a “recirculating” system they often equate that with the term “zero-discharge”, after all, recirculating means traveling in a loop continuously
 - “Zero-discharge” is industry speak for a goal to minimize waste and side-streams. What it really means is “minimal-discharge”



Permitting Process

- Nordic acknowledged in their rebuttal that the RAS technology has had multiple failures, but then adds that the letter also says RAS is “one of the most sustainable methods” in the same letter.
 - Nordic’s is simply not a “minimal-discharge” facility at 7.7 million gallons per day. There is no denying that fact.
 - The continual draw from the ocean and discharge to the ocean, with these size tanks, puts THIS particular RAS design approach at greater risk than a closed loop, true minimal-discharge system. There is no denying that fact.
 - One of Upstream Watches greatest concerns is that the increased risk of this type of open-ended facility is exposed during a major upset condition. The risk is economic, environmental, and energy related.



Permitting Process



- Nordic acknowledged in their rebuttal that the RAS technology has had multiple failures, but then adds that the letter also says RAS is “one of the most sustainable methods” in the same letter.
 - Please note that Nordic did not deny that significant fish “kills”, or mortality events have historically occurred with RAS facilities to date, and therefore it is likely that they will have some here as well. Their mortality discussion does not consider anything but “normal” mortalities, however they define those.
 - Sometimes, it is what someone does NOT say, is the important point. Nordic cannot say, and will not guarantee that major mortality events will not occur. The reason is that it is inevitable as RAS develops, yet no plans or contingencies were presented for a major fish kill. Instead they mention a quote about RAS “sustainability”.
 - Sustainability is an interesting choice of words by Nordic to counter Upstream Watch. Sustainability is important, and Upstream Watch would for the City to evaluate their “sustainability” report with respect to energy demands.
 - Please note that their noise analysis was prepared by a subconsultant to “Gridworks Energy Consulting LLC”

Permitting Process



- Their “sustainability” analysis needs to go beyond examining their carbon footprint to also consider energy capacity and impact to electrical supply. Again sometimes what is NOT provided is what is actually vital.
 - “Gridworks Energy Consulting LLC” was hired by the proponent to examine energy needs.
 - In the DEP permit in Section 4.2.8 it states:
 - “GridWorks Energy Consulting LLC (GridWorks) has been retained to help Nordic Aquafarms create a sustainable energy infrastructure and ecosystem at its Belfast facility. GridWorks was formed in 2017 to help the world’s electric grids and microgrids use Transactive Energy Management tools to increase their resilience and sustainability.”
 - The only reference to Gridworks on the City of Belfast website from a letter from Upstream Watch.
 - If they created a “sustainable energy infrastructure”, where is it? Why was their “sustainable...ecosystem” not provided to the City? Why is it referenced in documents to the DEP, but not a few weeks later, when the project was proposed to the City?
 - The next slide is added to remind everyone of the demands for this project....electrical requirements are highlighted....

Permitting Process

<u>Infrastructure</u>	<u>Daily Usage</u>	<u>Annual Usage</u>	<u>Population Served</u>
Wastewater	7,700,000 gallons	2,800,000,000 gallons	66,000 people
Water	1,700,000 gallons	630,000,000 gallons	32,000 people
Power Plant	330,000 kilowatts (kW)	123,000,000 kW	<u>48,000 people</u>
Solid Waste	110,000 pounds	180,000,000 pounds	25,000 people
Fish Product	200,000 pounds	73,000,000 pounds	30,000,000 people
Gross income	\$550,000	\$200,000,000	6,500 people(income)

<u>City</u>	<u>City Population</u>	<u>Infrastructure Proposed</u>	<u>Comparable Population</u>
Portland	66,417 people	NAF Wastewater Plant	66,000 people
Lewiston	35,944 people	NAF Power Plant	48,000 people
Bangor	31,997 people	NAF Water Plant	32,000 people
South Portland	25,606 people	NAF Solid Waste	25,000 people



Permitting Process

If Gridworks was hired to use its tools to examine “resilience and sustainability” why was this not provided to the City? The simple answer may be answered by a basic added population equivalent math, which could result in a less than favorable energy capacity results.

- Belfast has a population of approximately 7,000 people.
- Waldo County has a population of approximately 40,000 people.
- The emergency power plant has an emergency power demand (i.e. not normal demand, or peak demand) equivalent to 48,000 people, more than all of Waldo County’s people in one location.



Permitting Process



If Gridworks was hired to use its tools to examine “resilience and sustainability” why was this not provided to the City? The simple answer may be answered by a basic added population equivalent math, which could result in a less than favorable energy capacity results.

- A facilities normal electrical demand (when the peak shaving facility is not online) is typically more than the emergency design demand. It makes sense to provide only what is essential.
- The peak electrical demand (when the peak shaving facility is not online) must be, by definition, more than the normal demand, and therefore, more than the emergency demand.
- Thus, it is not only possible, but very likely that the grid cannot provide all the electrical demand of the facility at normal and peak demands.
- Inadequate electrical supply for the site, and not just helping out the utility with area-wide demand, is also a reason for proposing peak shaving.
- Okay, so what does this potentially mean?

Permitting Process



If the grid cannot provide all the electrical demands of the facility at normal and peak demands, and Nordic proposes to provide peak shaving to fill the gap, what is the big deal with respect to the RAS facility's ability to be "sustainable"?

- Okay, so what does required peak-shaving potentially mean?
- Obviously, the first thing would be that Nordic may have misrepresented the true intended use of the power plant. The implication has been that the peak shaving was for CMP and the area, not because of their needs.
- Next it plays into the proper "Build and "No Build" comparisons that the Planning Board needs to make and informed decision. When one examines energy needs, like other Planning Board topics such as traffic, they typically examine a "Build" scenario and "No Build" scenario. And both "Build and No Build" scenarios also include an allowance for population, commercial, and industrial growth in the area over time.
- If the power plant must be operated to peak shave the facility's demand to prevent brownouts now, the peak shaving requirement is mandatory and not optional, and it would only increase in the future.

Permitting Process



If the grid cannot provide all the electrical demands of the facility at normal and peak demands, and Nordic proposes to provide peak shaving to fill the gap, what is the big deal?

- If this project regularly consumes a substantial amount of current excess electrical capacity, or all the excess capacity at times, there will be no additional electrical capacity for future growth of housing, commercial, or other industries in Belfast, Northport, and other towns along the transmission line for this facility without a major electrical supply upgrade.
- When would it require more than 10% operation just to satisfy the facility's impact on peak shaving demand?
- If a major electrical supply upgrade will likely be needed anytime in the future as a result of this facility's substantial energy demand, it should be funded by Nordic BEFORE they break ground.
- But why can't CMP just upgrade it in the future, as they normally would when capacity is reached. They can, and they would, but that cost, as the result of a single user would be spread across all CMP customers. This action would be a major negative impact to electrical services with respect to potential economic benefits of this project for the public.

Permitting Process



The proponent's proposed consumption of resources, providing adverse impacts, and replacement of these resources and services, or providing mitigation for adverse impacts, can and must be borne by the applicant per the City's Development Standards.

- The proponent has not provided an analysis of its proposed impact on municipal facilities and services for power, or many of the other examples of significant impact potential provided to date, as per City of Belfast Code 102-1206 "Impact on municipal facilities and services, paragraph 1,.....*The planning board is authorized to assess and establish infrastructure or service system improvements the applicant may be required to undertake or pay for to mitigate the amount of negative impact or decline in the level of service.*"
- Since the proposed facility would be a major consumer of municipal facilities and services, and the impact would reach beyond the City of Belfast, then the City cannot possibly agree to make these improvements on behalf of other cities or towns without their input, therefore the only improvement opportunity possible is Section 102-1206(2)(a) which states "*The applicant must agree to make the necessary infrastructure and/or service system improvements, establish a construction or service schedule, and post a performance guarantee to cover all associated costs.*"

Permitting Process

If the grid cannot provide all the electrical demands of the facility at normal and peak demands, and Nordic proposes to provide peak shaving to fill the gap, what is the big deal?

- Since the proposed facility would be a major consumer of municipal facilities and services, and the impact would reach beyond the City of Belfast, then the City cannot possibly agree to make these improvements on behalf of other cities or towns without their input, therefore the only improvement opportunity possible is Section 102-1206(2)(a) which states *“The applicant must agree to make the necessary infrastructure and/or service system improvements, establish a construction or service schedule, and post a performance guarantee to cover all associated costs.”*



Permitting Process

If the grid cannot provide all the electrical demands of the facility at normal and peak demands, and Nordic proposes to provide peak shaving to fill the gap, what is the big deal?

- The **ONLY** way a possible performance guarantee can be properly costed is with the required impact potential provided by the applicant with the proper studies and backup materials provided. For example Nordic has simply suggested that water supply is not a problem because it is available in abundant supply from three sources, groundwater, surface water, or city water. **ANY** and **ALL** of these will result in a **CONTINUOUS** impact of **1.7** million gallons per day, and if each is an option **AND** has no limits, then each source should be examined for a performance guarantee at replacing **1.7** million gallons per day from each source.



Permitting Process

The proponent's proposed consumption of resources, providing adverse impacts, and replacement of these resources and services, or providing mitigation for adverse impacts, can and must be borne by the applicant per the City's Development Standards.

- The electrical demand for this facility is proposed at a rate of five orders of magnitude above a new residential demand. These same ratio of rates of demand are applicable, but not limited to groundwater, surface water, city water, traffic, solid waste capacities, increased noise, increased odor, increased nitrogen dioxide emissions and so on.
- For another example, see the figure on the next slide that depicts the nitrogen dioxide levels, when the power plant and plume from the stacks are dispersed in different wind direction. The dispersion results suggest that emissions will result in background conditions at 2, 3, 4, and 5 times the background level.

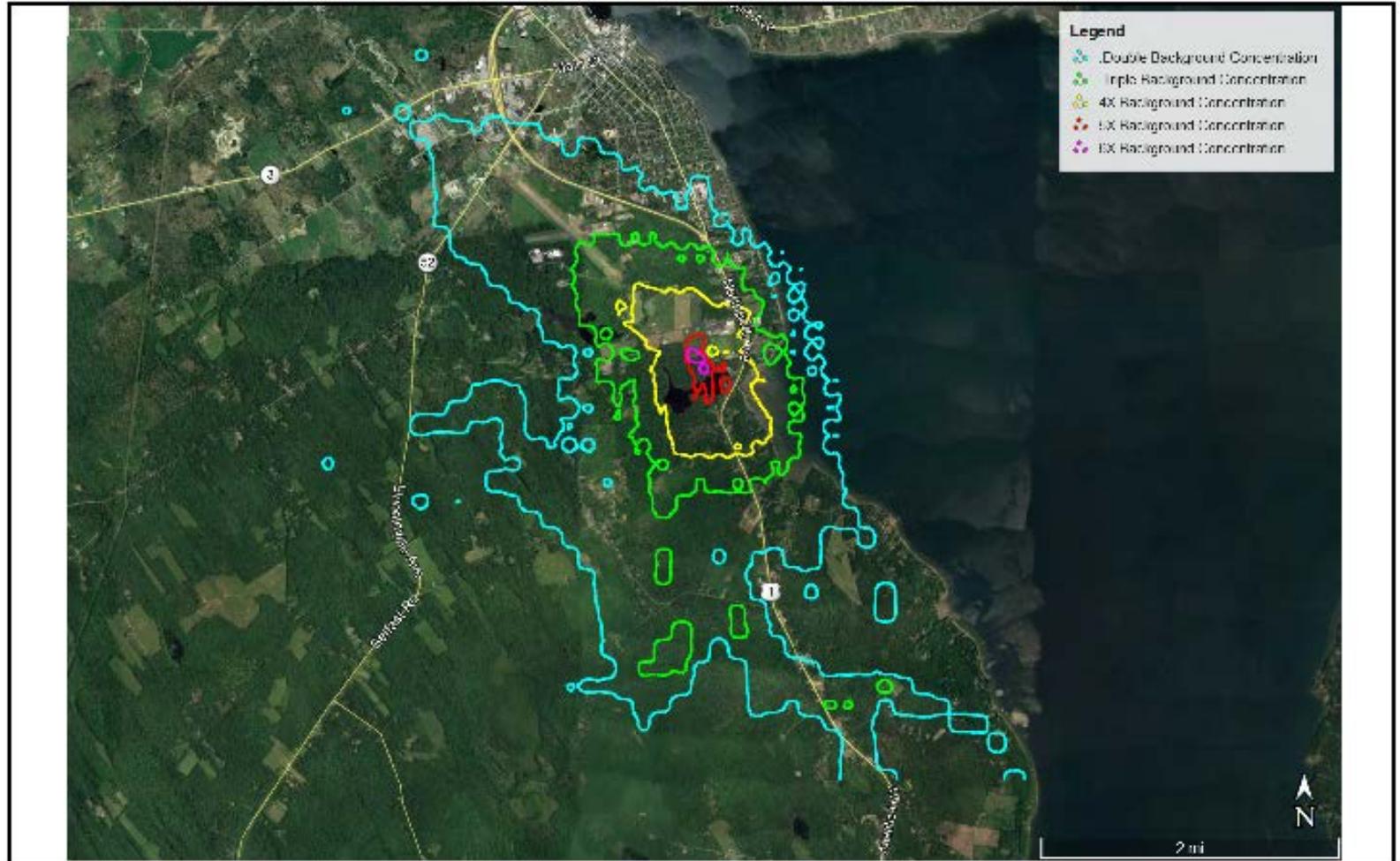


Permitting Process



01/17/2020

NVC/UPSTREAM 13-P



*Exhibit 13-P
Modeled 1-Hour NO2 Concentrations over Background*



Permitting Process



When is a stack an industrial discharge point that is subject to zoning height restrictions, and what is a “chimney”?

- Nordic can call the industrial air pollution dispersion stacks “chimneys” all they want. Are we supposed to believe a “chimney sweep” will be called to clean these industrial stacks. They are not chimneys. They are industrial stacks. They exceed the allowable height limit of 40 feet in this predominately residential and protected area, and this is a violation of the height requirement.
- The height criteria is one criteria that Nordic was so careful to explain was never going to be exceeded during the actual visual assessment in their application and their initial presentation to the Planning Board, but that changed as well.
- The “inconvenient truth” is that even though this a synthetic minor source, the stack heights chosen, since they must masquerade as “chimneys”, are not at protective as they would be if longer-term impacts had to be considered. Typically the stack height is influenced by short-term and long-term averaging periods, so the result could be worse if only short-term emission concentrations are examined.

Permitting Process



Dispersion modeling still shows a potential exceedance

- The new stack height and exhaust parameters were provided by Nordic in a short memorandum to DEP. DEP modelled these parameters. Unfortunately, the parameters were incorrect. Nordic chose to take this memorandum or presentation approach, as they have with all their updates, as opposed to updating their application(s) to both DEP and to the Planning Board as required.
- Unfortunately, when one focuses on just fixing a mistake, instead of reevaluating and resubmitting the application materials, as a whole, other mistakes can be made.
- The emission parameters as provided accidentally “diluted” the emissions. This would have been much harder to do, if the entire application was updated, and the proper backup material was provided in the appendices for QA/QC.

Permitting Process

Air quality dispersion modeling still shows a potential exceedance

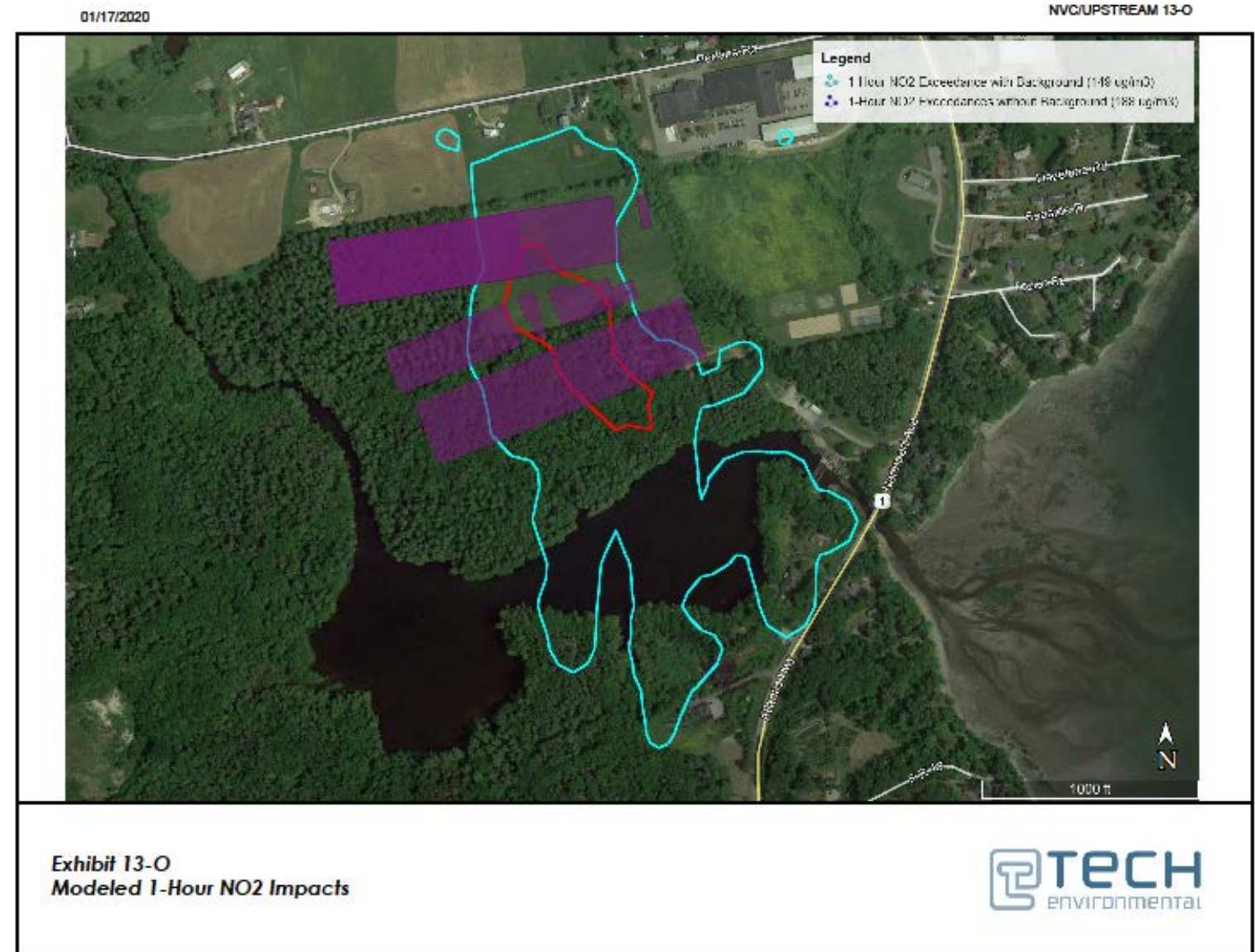
- The next slide includes the current modeling results showing exceedances outside of the property.
- This modeling has a number of other problems here, as well. Those problems will be discussed at the DEP hearings.
- The important point here is that if the emissions are slightly above or slightly below the required thresholds, there is no denying that there is very, very little room for emission concentration drift for the extremely complex air pollution control system proposed.



Permitting Process



The air quality dispersion modeling still shows a potential exceedance....



Permitting Process



As we can see the energy impact to the area and the air quality impact to the area are directly related. Unfortunately, if peak shaving is necessary, and not something proposed “to help the utility” as discussed then...

- Nordic has not demonstrated that they have sufficient redundancy based upon their fuel restriction. It is therefore not clear whether the proposed synthetic minor air application is reasonable for the electrical demands or protective of the area in periods of higher electrical demands.
- All of these concerns should be addressed as required in Section 102-1206 for the utilities, and in Section, 102-1193, Section 102-1194, and section 102-1195.
- It is hard to believe a legitimate energy consultant would not examine all of these concerns as part of Gridworks Energy Consulting LLC resilience and energy analysis, if it occurred. But why didn't the City see this analysis?

Permitting Process

- Why was Nordic's expert, Gridworks Energy Consulting LLC, not required to provide its sustainability analysis or its energy assumptions?
 - Although Nordic seems to like to group their consultant reports, positive endorsements, and true independent, third-party reviews together and describe them as similar items, as they did at the last hearing, they are not the same. The reality is that there is a significant partiality with respect to proponent consultant reports, endorsements, and true independent, third-party review.
 - A proponent's consultant actually cannot provide a study to the City, without approval from their client. It would be unethical and a possible legal problem. As Nordic mentions, the consultant does have an ethical obligation to perform a proper study, but they also have an ethical obligation to satisfy their contract.



Permitting Process

- Why was Nordic's expert, Gridworks Energy Consulting LLC, not required to provide its sustainability analysis or its energy assumptions?
 - Most subcontractors, especially for a project of this size with patent consequences, require a confidentiality agreement between the proponent and the subcontractor. Only the proponent can reveal the results.
 - Therefore, if the results are favorable, the proponent often uses some or all of it, in their applications, in their own context.
 - If it is not favorable, the proponent is under no legal obligation to provide a study to the City that is not to their benefit.



Permitting Process

- The difference between a proponent's consultant reports, endorsements, and true independent, third-party reviews
 - An positive or negative endorsement of a project is even more "loosy-goosy" with respect to content and impartiality. Someone endorsing, or opposing, a project may be doing so for reasons other than an examination of the "three-legged stool" of economics, environmental, and energy as required by Section 102 and the Belfast Comprehensive Plan. A biased opinion is okay, and it adds to the discussion, but it is not a neutral evaluation.
 - An "endorser" has no legal or ethical obligation to be independent and provide a true holistic evaluation, so neither studies provided by the proponent's consultants or endorsements are independent.
 - Again, there have been little to no true, third party independent reviews of the facility to date, and that is a problem.
 - A true independent , third-party evaluation, would involve the City hiring a consultant that reports directly to the City with a defined scope of work to, for example, examine the benefits and impacts of this facility being connected to the electrical grid for power consumption and peak shaving needs. The proponent typically pays for the report, but the City controls the scope and independent evaluation.



Permitting Process

- Nordic spent quite a bit of time in their rebuttal referring to their June 26th presentation to the Planning Board. There is a 3D rendering offered as “proof” that nothing has changed...
 - Permits were submitted as early as October of 2018 for wastewater and mid-2019 for the other items, but they claim that nothing has changed.
 - Nordic has a project design team in Belfast and more staff in Portland, but nothing has changed.
 - They have an open door policy to listen to local concerns, and have promised to consider and address them, but nothing has changed.
 - They have provided thousand of pages of response to DEP Requests for Information, but nothing has changed.
 - They have provide some, if not all of the information provided to the DEP to the Planning Board, but nothing has changed.
 - The Planning Board has asked excellent probing questions and concerns at over 15 or so nights on the project as a whole and on individual permitting topics , but nothing has changed.



Permitting Process

- If after all of this feedback, concerns raised, and time to adjust.....if nothing truly has changed, then....

- **Nordic must be doing it wrong**

- The truth is things have changed...it is a normal and healthy part of the permitting process
- Nordic has learned details that have required changes in approach and design about water supply possibilities, outfall routing, heating options, tidal rights, wastewater filter needs, soil instabilities, blasting needs, dam lifecycle concerns, citizens concerns about construction, operations and maintenance for air quality, noise, dust, traffic and odor concerns, for DEP stormwater requirements, fish mortality concerns, disinfection concerns, and most recently, at the last meeting, for daily cement production capacities of the area.
-essentially nearly every item discussed by Nordic at the last meeting has been improved, replaced, augmented, discussed in a different light, or brand new information was added....



Permitting Process



- If in reality is PLENTY has changed, WHY Nordic would choose to rebut Upstream Watch on this obvious point?
 - For starters their applications were, and still are, horribly inadequate for a project of this magnitude.
 - When Upstream Watch points out that the permits and supporting information provided by their consultants is extremely inaccurate to provide a through review, Nordic immediately responds with the statement....
 - “but DEP and the Planning Board has accepted the applications as complete”
 - There are two thresholds at DEP and for the Planning Board for permitting. The first is “did you complete the application?”
 - The second is “is the application material sufficient for approval of the permit with proper conditions to protect the public?”
 - They clearly had not satisfied both the first and second criteria or there would not have been many rounds of request for information from DEP, and thousand upon thousands of pages of response, some of which are posted on the City’s website

Permitting Process



- Suggesting an accepted or completed application is akin to acceptance of the project is not reasonable....
 - If accepting the applications as complete was the threshold for approval at DEP or from the Planning Board, then there would be no review process, no public meetings, no deliberation, and the complete application would be simply approved as is.
 - Obviously, all permits are reviewed, there is a public input process, there are deliberations, third-party independent reviews, as well as the initial application completeness check, so acceptance of an application as complete has no bearing on whether it meets the Planning Board's goals and requirements.
 - And ANY proponent is obligated (if they desire approval) to provide additional information to help the local or state regulators understand the implications to the "three-legged stool" of economic, environmental or energy benefits and risks.
 - As I briefly mentioned at the last meeting before being cut off for time, one can tell a lot by a proponent's approach to permitting

Permitting Process



- As mentioned before, one can tell a lot about a proponent from their permitting approach. If they can answer yes unequivocally to the questions below, they are likely very forthcoming with their design, and the flow of information has been adequate such that one could see how the proper conditions can be developed for approval....
 - Does a proponent attempt to be inclusive and address questions or do they talk about procedure and excluding comments and ideas?
 - Do they provide all the necessary input, output and data assumptions for analyses provided by the proponent's consultants, or do they refuse to provide this information as "not required"?
 - Do their analyses include normal and upset scenarios, so that assurances can be had that the facility can remain in compliance at all times?
 - Do they attempt to persuade regulators with added studies, or backup data that may not be directly required that they have considered everything?
 - Have they offered to permit the facility in stages, with an "we'll prove it to you as we go strategy"?
 - Have they provided sufficient cost, or design information for a true "three-legged stool" analysis?
 - Are they willing to replace consumed utilities?
 - Are they willing to bond the project?
 - Have they provided a detailed construction plan?
 - Do they have sufficient staging planned?
 - Have they updated the plan as the design has been refined?
 - Have they continually updated their applications so all can know what is proposed (i.e. not just those closely involved in the regulatory review process, but someone that simply goes to the website to gather an understanding from the application)?
- SO IS NORDIC'S APPROACH TO DATE FORTHCOMING OR DATA LIMITING?

Permitting Process



- To illustrate Nordics approach, we will use our review of their traffic testimony.....
 - Does a proponent attempt to inclusive and address questions and not exclude comments and ideas?
 - Upstream Watch provided a two-page letter, more than a week in advance of Nordic's presentation on traffic. The letter directly questioned the construction traffic potential. Nordic did not provide any response to the assumptions, or address the concerns.
 - Does a proponent provide all the necessary input, output and data assumptions for analyses provided by the proponent's consultants, and not simply refuse to provide this information as "not required"?
 - Nordic's traffic consultant provided a very good, and defensible operational traffic study. It checked all the boxes with respect to proper practice, approach and analyses. Even though, Upstream Watch clearly provided a reasonable construction traffic concern, not in general, but specifically for this project, when prompted about traffic, she mentioned that she does not provide construction traffic studies. When prompted further, some general discussion of truck trips and trip-ends was provided from notes, but there was no formal analysis. This is clearly taking the "not required" approach even though construction could be between 5 and 10 years.
 - Do their analyses included normal and upset scenarios, so that assurances can be had that the facility can remain in compliance at all times?
 - While the traffic consultant said that her firm does not typically provide construction analyses, she did not suggest that for this project operational traffic was expected to be more than construction traffic. In fact, for this project the peak, or "upset" condition is definitely construction traffic. Instead of formally addressing this, the proponent chose to marginalize the concern by providing some notes and thoughts, and only discussing some of the potential truck trips.

Permitting Process

- To illustrate Nordics approach, we will use our review of their traffic testimony.....
 - Do they attempt to persuade regulators with added studies, or backup data that may not be directly required that they have considered everything?
 - Again, the traffic study was performed “properly”, but that does not mean it was conservative or representative of potential impacts. For starts they assumes that their traffic was either that of a manufacturing facility, or an office building, and then the AVERAGED the possibilities.
 - This facility is a manufacturing facility and an office complex, but it is also so much more. It is a city sized wastewater treatment, water treatment, power plant, solid waste facility, slaughterhouse, education center, pump station, and more. These traffic demands are additive, not either/or, or to be averaged. A examination of the traffic from all of these facilities collectively is necessary.
 - The traffic analysis assumed certain traffic patterns, but did not suggest conditions.
 - No traffic study can be considered complete without including the left turn from Route 1 northbound on to Route 3 West. This was described as the typical traffic pattern by the proponent at the meeting.
 - Have they offered to permit the facility in stages, with an “we’ll prove it to you as we go strategy”?
 - No, in fact they did not even consider the scenario where Phase 1 is operating and Phase 2 is under construction. Only the final product at least 7 years, and more likely 10 years later as construction goes, was evaluated.



Permitting Process

- To illustrate Nordics approach, we will use our review of their traffic testimony.....
 - Have the provided sufficient cost, or design information for a true “three-legged stool” analysis?
 - The proponent has done nothing to examine the potential collateral impact from building a bypass road, significant truck traffic, and the noise and dust associated with it.
 - Are they willing to replace consumed utilities?
 - The traffic patterns could require a light at the intersection described earlier, but Nordic has not evaluated upgrading this intersection.
 - Turn lanes may be required, simply because when a truck turns either way at the dam it must take time to get up to speed to go uphill.
 - Are they willing to bond the project?
 - It is impossible to consider what a bond may be like for this project, without the proper analyses provided by the proponent.
 - Have they provided a detailed construction plan?
 - Nordic has provided no construction traffic plan, nor has it updated schedule after determining that massive amounts of soil must be removed



Permitting Process



- To illustrate Nordics approach, we will use our review of their traffic testimony.....
 - Do they have sufficient staging planned?
 - Nordic has not provided sufficient staging so trucks will need to be at the ready continuously. This is simply not a good plan.
 - Have they updated the construction plan as the design has been refined?
 - Nordic has not updated its construction plan at all. The same basic spreadsheet timeline is proposed. The same narrative is in the application.
 - At this point it simply makes no sense. To meet the soil removal schedule as originally proposed, Nordic will have to have many, many loaders and trucks operating in the same 8,000 square foot active construction area.
 - Have they continually updated their applications so all can know what is propose (i.e. not just those closely involved n the regulatory review process, but someone that simply goes to the website to gather an understanding from the application)?
 - No, we have no idea what is proposed for traffic at this point, the original analyses does not included any of the solid waste, fuel truck deliveries, equipment deliveries, feed type of how it will be delivered, and now we learn that a cement plant is likely because the infrastructure in this area cannot provide cement fast enough, when needed. If the cement infrastructure is not sufficient, how do we know the application has been updated to properly assess traffic. We don't, and we can't. The Planning Board cannot either. Traffic had to be evaluated better. Route 1 and Route 3 are simply too important to the area.
 - **SO TRAFFIC ASIDE IS NORDIC'S APPROACH TO DATE FORTHCOMING OR DATA LIMITING?**

Permitting Process

- The permit application and supporting materials
 - These are all interrelated.
 - They must be complete.
 - And they must remain up to date.
- Permitting process is not simply a “hurdle to overcome”
 - It is a reflection of the proponent’s commitment
 - The way a proponent completes the application
 - Whether a proponent will go beyond formal requirements, and
 - Does the proponent prefer to fight or reassure
- Eventually, every proposed project comes down to the **“three-legged stool” of economics, energy, and the environment**



What about the size of Nordic Aquafarms?

- This is not a small family farm proposal. This is a proposal for many very large industrial facilities that are all interrelated to be installed on one site, in two separate construction phases:
 - A 800,000+ square foot industrial development
 - A 7.7 million gallon per day wastewater treatment plant
 - A 1.8 million gallon per day water treatment plant
 - A 20,000 fish per day slaughter house
 - A 200,000 pound per day fish fillet food shipping operation
 - A 100,000 pound per day food waste transfer station, and
 - A 16 Mega-Watt power plant
- This facility will provide approximately 7% of the salmon demand for the United States



What about
the size of
Nordic
Aquafarms?



- The tankage in multiple buildings will take up most of the land



What about
the size of
Nordic
Aquafarms?



- The process areas are larger than Gillette Stadium and Fenway Park



What about
the size of
Nordic
Aquafarms?



- For comparison sake... the Nordic Aquafarms project tankage is bigger than the Quarry at the Rock Row Development in Portland



What about the size of Nordic Aquafarms?

- For comparison sake...This multiyear dam reconstruction project required significant permitting for staging, sequencing, and construction prior to approval. There were significant mitigation practices considered to limit the impact to the water quality and the quality of life of the abutters. This fish farm project needs to provide the same level of forethought and public planning



What about
the size of
Nordic
Aquafarms?



- For comparison sake... the 4.0 MGD Augusta Wastewater Treatment Plant...(it can partially treat 40 MGD during rain events)



What about
the size of
Nordic
Aquafarms?



- For comparison sake... the 1.5 MGD Belfast Wastewater Plant



What about
the size of
Nordic
Aquafarms?

- For comparison sake... 2.0 MGD water treatment plant operations in Cottage Grove, Oregon...note backwash and filtrate waste streams



What about
the size of
Nordic
Aquafarms?



- For comparison sake...typical filleting operation for 200,000 pounds of fillet per day...note the open door in the upper right



What about the size of Nordic Aquafarms?

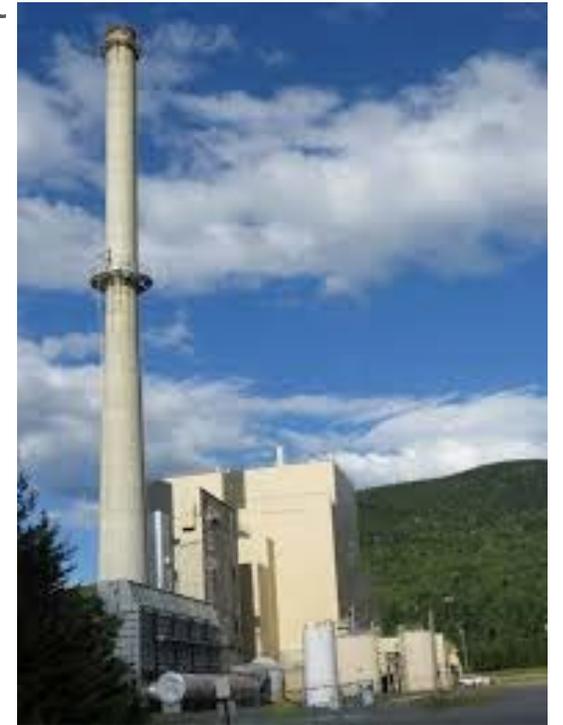


- For comparison sake...100,000+ pounds of fish waste per day. More if filleted, and less is only gutted and beheaded.



What about the size of Nordic Aquafarms?

- For comparison sake...This 50 MW power plant will emit 161 lbs/hr of NO_x while the 16 MW NAF Power Plant application says it will emit 108 lbs/hr...NAF has suggested it is now lower, but has provided no update to its application



What about the size of Nordic Aquafarms?



- This is going to disrupt the area for close to a decade. This is going to be built in two-phases. The proposed project is not a normal single season construction project. It will have:
 - Excavation of millions of cubic feet of clay soil
 - Replacement of a fraction of the soil with gravel for a base
 - Blasting for ledge and driving sheets to hold back the clay
 - An onsite cement processing facility or even more trips
 - Tens of thousands of truck trips annually during construction
 - Construction and staging right up to the roadway
 - Construction and staging right up to the residential abutters
 - Construction and staging directly uphill from the Little River
 - A Bypass road will be built for an entire summer on Route 1
 - There will be construction disturbance on the bay floor for months
- None, I repeat NONE, of the construction sequencing, staging, or operational start-up approach has been provided to the Planning Board or the public to date beyond the very basic discussion of what is in Phase 1 and what is in Phase 2. Enough must be provided to demonstrate that the project is doable.

Permitting Process



- To illustrate Nordics approach to date, we considered a simple answer of “YES” or “NO” to the each question below?
 - Does a proponent attempt to inclusive and address questions or do they talk about procedure and excluding comments and ideas?
 - Nordic’s traffic study explored operational traffic only. When prompted for
 - Do they provide all the necessary input, output and data assumptions for analyses provided by the proponent’s consultants, or do they refuse to provide this information as “not required”
 - Do their analyses included normal and upset scenarios, so that assurances can be had that the facility can remain in compliance at all times?
 - Do they attempt to persuade regulators with added studies, or backup data that may not be directly required that they have considered everything?
 - Have they offered to permit the facility in stages, with an “we’ll prove it to you as we go strategy”?
 - Have the provided sufficient cost, or design information for a true “three-legged stool” analysis?
 - Are they willing to replace consumed utilities?
 - Are they willing to bond the project?
 - Have they provided a detailed construction plan?
 - Do they have sufficient staging planned?
 - Have they updated the plan as the design has been refined?
 - Have they continually updated their applications so all can know what is propose (i.e. not just those closely involved n the regulatory review process, but someone that simply goes to the website to gather an understanding from the application)?
- SO OVERAL IS NORDIC’S APPROACH TO DATE FORTHCOMING?

Permitting Process



- Unfortunately the answer to every question below is “NO”. It is simply impossible to see how proper conditions could be developed for this project with the minimal data provided. The facility is just too large for broad-range conditional approval. Conditional approval would put all of the compliance responsibility squarely on the City, and that is simply not reasonable.
 - Does Nordic attempt to inclusive and address questions or do they talk about procedure and excluding comments and ideas? NO
 - Does Nordic provide all the necessary input, output and data assumptions for analyses provided by the proponent’s consultants? NO
 - Does the Nordic analyses included normal and upset scenarios, so that assurances can be had that the facility can remain in compliance at all times? NO
 - Does Nordic attempt to persuade regulators with added studies, or backup data that may not be directly required that they have considered everything? NO
 - Have procedure offered to permit the facility in stages, with an “we’ll prove it to you as we go strategy” ? NO
 - Have they provided sufficient cost, or design information for a true “three-legged stool” analysis? NO
 - Are they willing to replace consumed utilities? NO
 - Are they willing to bond the project? NO
 - Have they provided a detailed construction plan? NO
 - Do they have sufficient staging planned? NO
 - Have they updated the plan as the design has been refined? NO
 - Have they continually updated their applications so all can know what is propose (i.e. not just those closely involved n the regulatory review process, but someone that simply goes to the website to gather an understanding from the application)? NO