

# COUNCIL ON ENVIRONMENTAL QUALITY



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DATE: May 25, 2018

TO: The Honorable Erin E. Stewart  
Mayor, City of New Britain  
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FROM: Susan D. Merrow  
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RE: CEQ Comments on the *“Environmental Study: Change in Use of New Britain Water Company Land [for the] Proposed Quarry Expansion and Future Water Storage Reservoir”*

## Executive Summary

The Council on Environmental Quality has reviewed the report, *“Environmental Study: Change in use of New Britain Water Company Land”* (the Report). It is the conclusion of the Council that the environmental consequences of the proposal would be adverse and that the need for the additional water storage capacity is not established in the report. Its assumptions about increased demand and reduced supply posit the worst extremes of each. The potential for reductions in demand is not fully considered.

Best management practices regarding quarrying operation and reclamation of former quarry land is absent from the Report entirely. This raises the underlying question of whether the environmental losses are justified since a need has not been proven, mitigation descriptions are vague and post-quarrying restoration is not discussed.

## Introduction

In accord with [Public Act 16-61](#), The Council offers the following guidance. It has been arranged in the order specified by PA 16-61, first describing the proposed project’s potential impact on the environment, next analyzing the Report’s claims regarding the purity and adequacy of the existing and future public water supply, and last discussing the best management practices for such operations.

The Council received about 200 comments from the public, overwhelmingly in opposi-

tion to the proposal. Many were from persons who had hiked the area. Others were from scientists familiar with the ecology of trap rock ridge environments and the animals and plants that inhabit them. Those comments are posted to the Council's website.

This guidance is the consequence of evaluations of the Report by Council members and staff as well as submissions from many individuals who offered insights and analysis of their own, and was supplemented by observations made during a walk of the site on May 8, 2018. The Council acknowledges the cooperation of the City of New Britain and the Tilcon Company in providing access to the site for an orientation walk.

## **The Proposal**

Since 1979, Connecticut has had strict restrictions ([CGS Section 25-32](#)) on the sale, lease or change in use of water supply watershed lands. The proposal that is the focus of the Report would replace a significant portion of a nearly 700 ft. high mountain with a 139 acre, 130 ft. deep reservoir. It would have no natural source other than rain water and ground water and would need to be filled primarily from stormwater runoff from other sources. It would eliminate 13.6 acres of Class I watershed land and 111.9 acres of Class II watershed land that now contribute to New Britain's West Canal and Shuttle Meadow Reservoir to allow for the operation of a commercial rock mining operation for an estimated period of forty years.

During the construction, the Report projects a reduction of safe yield of 70,000 gallons per day, from a project that is being promoted as a strategy to reduce risk of water shortages. When the operation is finished and the quarry allowed to fill, it would nearly double New Britain's water storage capacity.

**1. An analysis of the "potential impacts on the environment" requires a more complete description of planned mitigations, especially for the wetlands and water-courses to be lost, and the risk posed to state listed species of concern (Jefferson Salamander, Spotted Turtle, Eastern Box Turtle and Fir Clubmoss).**

### *A. Habitats lost*

The Report's executive summary (Chapter 1) and its comparison of benefits versus environmental impacts (Chapter 13) understate important environmental consequences of the proposed project. Those consequences, which appear in other chapters of the Report, include loss of habitat for, or risk to, at least four species of special concern, three imperiled landscapes and displacement of a trail of regional significance.

In 1998, the Department of Energy and Environmental Protection (DEEP) and University of Connecticut (UConn) biologists Metzler and Wagner (*Thirteen of Connecticut's Most Imperiled Ecosystems* Draft Report, Connecticut Department of Environmental Protection Natural Diversity Database) identified thirteen imperiled landscapes in Connecticut. The study area and adjacent impacted lands contain at least three of them. Seventy-two acres of forest, a trap rock ecosystem, and a regionally significant hiking trail would be impacted. Much of what is currently on those 72 acres would be gone. Chapter Seven makes clear that the impact for some of the resident flora and fauna is obliteration. Clearing and removing overburden on the proposed expansion area would eliminate entire habitats. The impact for other species, and for transient species, such as raptors and other migratory birds, would be diminished habitat.

The Council has often encountered, in reviewing environmental studies, a presumption that animals displaced from one area simply relocate to another. This cannot be assumed to be true. The reality is that any habitat that can accommodate a species will contain, at a given time, close to the carrying capacity for the location, when all the location's factors like predation, disease, food availability, competition from other species and shelter are taken into consideration. Therefore, displacement creates an additional stressor on surrounding habitat to which the displaced seek to relocate.

Steps to protect, relocate or compensate for the loss of endangered and threatened species or species of special concern are not specified in the Report. Among the species in need of more detailed consideration of mitigation are the Northern Long Eared Bat, the Wood Thrush, the Jefferson Salamander, the Eastern Box Turtle and the Spotted Turtle.

Beyond the cases of individual species, entire categories of wildlife would be affected. Seventeen (39.5%) of the breeding bird species detected during surveys in May and June are listed as species of Greatest Conservation Need in the State's 2015 Wildlife [Action Plan](#). Of the forty-three breeding birds reported, twenty-five (58%) are migrants that are protected under the federal Migratory Bird Act. Consultation with [IPaC](#) regarding mitigation measures is advised and the recommendations included in any plan to move forward. Fourteen of the detected bird species of Greatest Conservation Need are dependent on forested habitat. These species would be affected by the destruction of their existing nesting area, a consequence of the destruction of 72 acres of forest. It is reasonable to expect noise pollution from site clearing and ongoing quarrying operations to be disruptive to secretive interior forest birds. Raptors were, presumably, undercounted due to the attenuated time span of the site surveys, which excluded winter and autumn. An expanded survey is warranted.

The Report states negative consequences for all of the amphibians and reptiles detected during field surveys due to the direct loss of vernal breeding pools and lowered reproduction resulting from diminished depth and duration of standing water in the remaining vernal pools. It was made clear in the Report and on the May 8<sup>th</sup> site walk

that the proximity of the vernal pools to each other on the site means that they most likely share biological interconnectivity, even if they are not hydrologically connected. The relocation and reconstruction of suitable habitat is discussed as a possibility in Chapter 6. The specifics of the relocation plan need to be expounded. No evidence of successful box turtle relocation was offered, nor suitable sites located.

The presence, on the site, of the only known extant occurrence in Connecticut of the Fir Clubmoss was revealed by the Report. The possibility of avoiding impact to this plant should be included in the environmental assessment.

The Report's statement that an additional 59 acres of Class I watershed land would be added, though true, is misleading. The "new" Class I lands are created by the 139 acre hole that is being dug in the middle of the currently existing watershed land. No detail is offered on the altered habitat that would surround the proposed reservoir. No claim of reclamation or restoration of the land surrounding the new reservoir is made, so the quality or ecology of the new landscape is unknown.

*B. There is a need for specifics on mitigation*

Though the possibility of mitigation for some of the environmental damage is mentioned in the Report, specifics as to exactly what mitigation would occur and where it would be is absent, as is analysis of its likely success. Transforming an existing location to be more suitable as a location for mitigation for species from elsewhere impacts the existing ecosystem's "ecological goods and services". Choice of mitigation locations must be the result of careful analysis of the suitability of the site for displaced plants and animals. It must also take into consideration the consequences to the existing habitat. The Tilcon company proposed in the Report to donate acreage of undeveloped land it already owns in mitigation for the lost habitat. Open space is not fungible. Additional exposition on the likelihood of successful mitigations is warranted, as is analysis of the effect of transformations of existing habitats consequent to mitigation efforts. The acreage offered needs to be analyzed with regard to whether it is currently suitable to the same species that are being displaced. If not, the Report should acknowledge the permanent loss of such habitats as a consequence of the project.

The Metacomet Trail passes over this ridgeline. It is a valuable part of the New England National Scenic Trail. In 1995, the Connecticut Legislature passed the [Ridgeline Protection Act](#) (PA95-239), which authorizes municipalities to prevent the alteration of ridgelines by construction or quarrying or clear cutting. Included in the Act was Bradley Mountain, the site of the proposed quarry. Chapter Seven of the Report proposes relocation of the Trail. On the May 8<sup>th</sup> walk, segments of the trail that are to remain were identified. This should be mapped to clearly identify the route and its proximity to the proposed quarry. In addition to the trail's recreational value, [trail](#)

[maps](#) of the New Britain area suggest that, though interrupted by occasional major roadways, the trail provides some habitat connectivity. There is a strong possibility that the narrowing of the trail corridor would reduce its migratory value to wildlife.

The Report presumes mitigation in the form of cash payment would be required by the US Army Corps of Engineers (USACE) as a consequence of the wetlands permit that is expected to be applied for. There is no guarantee that such payment, often to a national conservation organization, would be applied in the vicinity of the existing trail and forest system, or that it would be used to construct new wetland habitat.

The Report also speculates that to secure wetlands permits from the City of Plainville, the local wetlands commission will require proof that no feasible or prudent alternative exists to the project and that it would require mitigation beyond that which might be required by the USACE. Plainville would have wetlands jurisdiction over the project (and it also has zoning regulations that could bear on the project). The regulatory outcome is uncertain.

This begs the question of whether other laws or regulations can accomplish mitigation of lost habitat and control of off-site impacts, which will be analyzed in section three of these comments.

## **2. Statements regarding the purity and adequacy of the existing and future public water supply require closer examination**

### *A. Water supply options are underestimated*

Chapter 12 of the Report explores available supply reductions. If there are no environmental, regulatory, or contractual changes, the margin of safety for supply remains above the 1.15 standard required by the Connecticut Department of Health (DPH). The Report states that future water demand projections are expected to increase only slightly between 2018 and 2060, then lists a host of conjectural “what ifs” as reasons the project would be beneficial, including: DEEP water diversion policy changes, reductions with the Metropolitan District Commission water purchase contract, water demands from a “yet to be identified future town or large user,” or a catastrophe that takes out a major source of supply. With those potential environmental, regulatory or contractual changes, it purports a margin of safety slightly below the DPH requirement of 1.15 in 2060, based on an estimated supply reduction of 10% due both to climate change and potential future regulations. An analysis of other ways to meet long-term water needs and reduce risk is missing. The Quinnipiac River Valley has significant high-yielding stratified drift deposits. Though beyond the scope of the Report, an examination of that potential source for the region seems appropriate. Additionally, Crescent Lake, a decommissioned reservoir, lies within sight of the proposed reservoir, though no mention is made of recommissioning it to supplement the City’s reserve. The potential of water conservation is not fully considered. This is discussed in section B, below.

The State's Climate Change Preparedness Plan anticipates both greater precipitation and longer and more frequent droughts. This raises the question of the wisdom of embarking on a plan to construct a reservoir that would not be ready to be filled for forty years and during construction would decrease the available supply. Perhaps the Patton Brook and Crescent Lake sources could be accessed sooner to increase available supply.

*B. New Britain can increase water supply with unexplored initiatives*

While it is very important to plan for climate change and unforeseen reductions in supply, this should not be done without comparing it to expected reductions in demand that can be achieved through water conservation, improving infrastructure, water capture and reuse, improved building standards and development planning.

New Britain's Plan of Conservation and Development predicts future commercial and industrial water demand growth to be limited. It does not project the maximum allowable increase in dwelling units under existing zoning to be likely. The Report offers no estimate of the degree to which any population increase would be concurrent with replacement or renovation of old housing stock that would result in upgrading to modern fixtures and bringing old plumbing up to code. Passive water conservation will happen when older fixtures and appliances are replaced with those that meet federal standards. These reductions will happen without a public education effort or strict building codes. This likely conservation should be factored into the Report's projections, especially since the Report predicts non-revenue unaccounted-for water will increase.

Section 3 of the Final Report of the [State Water Plan](#) contains various scenarios and provides percentage reductions that can be utilized to calculate decreases in demand from conservation in the State's water basins. Using the most conservative estimates for passive conservation, there could be a decrease of 10 gallons per capita per day by 2040. An effort by the City of New Britain to reduce outdoor water use would reduce demand even further. Anticipated reductions in demand need to be included in the Report's estimates of consumption and reserve supply.

The Report does not factor in a reduction in unaccounted-for water. New Britain's loss of potable water during transmission is about 25% higher than the norm. The trend data in Table 5-2 of the Report shows an ever-increasing amount of water that is unaccounted for over the last five years. This five-year average is masking what appears to be an increasingly leak-prone water distribution system. Table 5-2 indicates that 23.7% (2.23 MGD) of the City's water supply went to non-consumptive use in 2015. The Report states, in Chapter 10, that "New Britain will continue to pursue both supply and demand conservation measures outlined in their Water Conservation Plan, with a long-term goal to reduce this unaccounted-for non-revenue water to 15% or less." This reduction is not reflected in demand projections. A reduction in unac-

counted-for non-revenue water to New Britain's goal of fifteen percent amounts to a savings of 0.19 MGD.

### *C. Safe yield projections have been called into question*

Additionally, there are issues with respect to actual and potential safe yield analysis. The current Safe Yield Analysis refers to, and relies on, the 2002 Water Supply Plan done by Lenard Engineering. The city-owned Patton Brook Well was not included as part of the evaluation because, at the time, it was leased to Southington. That lease expired on July 1, 2014 and was not renewed. The October 4, 2017 minutes of the New Britain Board of Water Commissioner's meeting indicate the Patton Brook Well was tested for several weeks and produced approximately one-million gallons per day.

Additionally, the New Britain Water Company (NBWC) owns land in Burlington acquired for the development of the Lamson Corner-Burlington Brook Reservoir which, according to Lenard's 2009 New Britain Water Supply Plan says "would increase system safe yield by 2.6 MGD". This source is included on the "High Quality Source" (HQS) list of the Connecticut Department of Public Health (DPH). A DPH memo from June 4, 2015 states that nearly all of land contributory to this potential drinking water supply has been protected for nearly one hundred years and is Class II water company land. Though there would be economic and ecological cost to developing this source, its potential was not included in the reserve estimates of the Report.

The inclusion of the Lamson Corner and Patton Brook sources and projections of reduced demand through conservation and reducing non-revenue water loss would have increased the reserve estimates of the Report.

### *D. Flood-skimming and treatment costs*

Though development of Patton Brook and Lamson Corner have expenses attached, so might the new proposed reservoir. If built, it would be the deepest lake entirely within Connecticut's borders (130 feet). Concerns have been raised about water quality in the reservoir which would be filled primarily with surface storm water runoff (flood skimmed water), which is among the dirtiest of water sources and carries the risk of high treatment costs. Additionally, the plan to draw from the reservoir at different depths, described in Chapter Eight, could also increase treatment costs when drawing from a potentially hypoxic layer at depth.

Further, to prevent deterioration in the quality of the stormwater runoff that would provide the "surplus" to be flood-skimmed, controls over growth, paving and land use would need to be put in place. This is a challenge, especially if more than one political jurisdiction is involved.

**3. “Best management practices” should incorporate the mitigation for lost plant and animal species described previously, should conform to already established planning documents, should also provide a reclamation plan and should avoid off-site environmental impacts.**

*A. Consistency with other state planning documents*

Best Management Practices cannot be considered independently of existing planning documents, more thorough details on mitigation, and projections of off-site consequences. The insertion of a 72-acre working quarry into a 1,000-acre forested, trap rock habitat is a major ecological disruption with regional consequences. The Report offers no reference to, or consistency with, Connecticut’s Comprehensive Wildlife Conservation Strategy, or of the Connecticut Forest Action Plan, or the State Plan of Conservation and Development. Although information was provided on the plant community, a comprehensive vegetation map would have been helpful in assessing the project’s full impact. No larger scale maps of critical habitats or EcoRegion maps from US Forest Service or USEPA were provided to show broader landscape impact context.

Needless to say, the project itself is contrary to long-established State policy of not allowing the intrusion of commercial activities onto Class I and Class II reservoir watershed lands as protection of water quality for drinking water sources.

*B. Need for a broader scope*

Though beyond the initial scope of the project, it is now apparent from review of the Report and of the comments received about it, that the environmental analysis of a project must look beyond the confines of the project boundaries to appropriately assess its impact. It was evident on the May 8<sup>th</sup> site walk that the hydrology of some off-site wetlands and vernal pools are likely to be affected by the loss of existing watershed. These off-parcel wetlands and watercourses should be included in the “loss totals” for the project.

The Report acknowledges downstream impacts to wetlands and watercourses that would be lost or impacted due to losses of watershed and hydrologic change. When the scope of work was being drafted, it was not clear to the Council that integrating the proposed reservoir into the existing reservoir system would require widening of an existing stream channel, with potential adverse consequences downstream and for local wildlife. Filling the new reservoir would require flood skimming from Coppermine Brook. Streams and riparian health rely on seasonal flooding and scouring to clear debris and sediment, create habitat, and distribute nutrients and biota. The impact of flood skimming on the long-term ecology downstream needs to be assessed as to whether changes in stream flow at Coppermine brook would have a positive or negative effect on aquatic and riparian species.



There is no certainty that the low flow conditions in Coppermine Brook will find resolution with or without a storage reservoir. The Report indicates, in its margin of safety projections, that there would be a 2 MGD reduction in supply due to compliance with streamflow regulations. The White Bridge surface water diversion is currently exempt from these regulations but a release requirement would most likely be mandated as part of a new diversion permit for a storage reservoir. However, surface water contributions to Coppermine Brook could be ineffectual if there is a downstream groundwater withdrawal of 1.56 MGD from the Bristol Mechanic Street well.

*C. Adverse impacts should be anticipated and accounted for contractually or through regulation*

There is a great potential for erosion, sedimentation, disruption and loss of wildlife from this project. The Report needs to provide information on how, or whether, construction would be timed to minimize impacts on wildlife and water quality. The Report lists a number of permits intended to control some of those aspects of construction. Sand and gravel mining is regulated through the State's air pollution regulations with regard to dust and smoke.

Control of storm water pollution leaving the site is included as an obligation of DEEP's "Industrial Stormwater General Permit". The Federal Clean Water Act, which is administered by the State, requires the monitoring of pollutants from point source discharges at such sites. These have no applicability to mines that retain their stormwater.

Connecticut has no specific regulation of sand and gravel mining. In 2015, the Connecticut Supreme Court ([SC 19203](#)) determined that attempts by DEEP to control environmental effects of sand and gravel mines, like wetland infringement and habitat disruption, are beyond the scope of the water diversion permit. This raises the question of the adequacy of future controls on major mining operations like this one. State law ([CGS 22a-5](#)) directs the Commissioner of Energy and Environmental Protection to provide for minimum state-wide standards for the mining, extraction, excavation or removal of earth materials of all types. Such standards have not been promulgated, leaving issues like reclamation, mitigation, and performance bonds subject to the good will of the mine operator or contractual arrangements between the land owner and the mine operator. In the greater New England Region, the majority of states have some form of mining regulation. These states serve as examples of best management practices with regard to mining operations. New Hampshire requires a permit with a detailed description of the reclamation plan for the site. New York requires a permit and submission of a plan that "must include mitigation measures to ameliorate any environmental impacts to the greatest extent practicable. The reclamation plan needs to identify the final reclamation objective of the land after mining is completed at the site." Maine requires an uncut buffer around the site and site reclama-

tion. In the absence of regulation, guarantees of restoration and conformance with the best management practices for quarrying must be contractual, enforceable and transparent and these should be specified in advance.

In the absence of regulation, contractual obligations to guarantee acceptable performance and to protect the surrounding community from damage, including flooding and blasting, are essential management tools. These guarantees should include specifics regarding which conservation lands are to be offered to make up for the land lost, how such lands would be preserved and protected from encroachments of the type that launched this Report, and commitment to reclamation and landscaping of damaged land. These commitments would best be guaranteed by a performance bond.

#### *D. Flood Control*

The Council has received complaints from residents about flooding that is believed to be a consequence of existing quarrying at the site. Concerns have been received about additional off-site flooding as a consequence of expansion of the quarry that would eliminate wetlands and porous soils that may presently reduce downstream flooding. The impacts of the lost watershed acreage on ground water have also been questioned. These should be the subject of additional engineering analysis.

Bristol's flooding problems, described in the Report, might possibly be ameliorated by the flood skimming proposed to fill the reservoir. Other strategies can be put into play as well. The Milone and MacBroom drainage evaluation, that is included in Chapter 4, makes the point that historic development choices cannot be easily mitigated. Though true, future flooding can be mitigated with proper controls on runoff. Land use controls, like reductions in impervious surfaces, are needed throughout the state to improve water quality. While flood skimming could mitigate regional flooding, this solution only delays implementation of needed reductions in impervious surfaces that has both flood reduction and ecological benefits as well.

#### **Conclusion**

The Council notes that, in general, the purpose of an environmental study is to identify issues for possible avoidance, mitigation and, often, to offer alternatives. In its review of the Report, the Council has identified topics in need of further inquiry and elucidation that go to the heart of the legislative charge and the fundamental purpose of the report. Primary among these is the question of whether there is a need for the proposed reservoir, given the alternative potential water sources and wide ranging conservation measures that were not included in the Report.

Many questions about the consequences of moving ahead with the project were unanswered. What mitigation is planned for species that would lose habitat, and where would that mitigation be? What are the properties of the lands that were offered by Tilcon as mitigation in exchange for the lost lands? How the lands offered, as mitigation, are to be protected from future encroachment? What guarantees would there be that quarried sites would be reclaimed? What guarantees or performance bonds would be required to ensure compliance by Tilcon? Should this project be delayed until DEEP has promulgated the statutorily-directed (CGS Section 22a-5) minimum state-wide standards for the mining, extraction, excavation or removal of earth materials?

Therefore, having reviewed the large amount of information presented thus far, the Council cannot stipulate that this project could proceed safely or wisely without satisfactory answers to the questions above.