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Draft Environmental Impact Statement

For The

Shelby Crushed Stone, Inc.

Medina Mine

DEC #8-3436-00007/00001, MLF #80346

Town of Shelby, Orleans County, New York

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3.0 INTRODUCTION

This Draft Environmental Impact Statement (DEIS) has been prepared for the Shelby Crushed Stone, Inc. (SCS or the Applicant) Medina Mine expansion, pursuant to the State Environmental Quality Review Act (SEQR) regulations as provided in 6 NYCRR Part 617.9.

The primary goals of this DEIS are to describe the pertinent existing conditions, analyze the potentially significant adverse environmental impacts, identify appropriate mitigation measures and evaluate all reasonable alternatives. This DEIS addresses potential significant adverse environmental impacts that were identified in the Final Scoping Document.

The Final Scoping Document was prepared by the New York State Department of Environmental Conservation (NYSDEC) based on correspondence with NYSDEC staff and input received during the public comment period. A copy of the Final Scoping Document is included in Appendix B.

This DEIS demonstrates that the proposed Medina Quarry expansion avoids or minimizes adverse environmental impacts to the maximum extent practicable. This determination considers environmental, social, economic and other essential considerations from the proposed action and all reasonable alternatives available and incorporates to the maximum extent practicable those mitigation measures identified as practicable.

3.1 DESCRIPTION OF PROPOSED ACTION

SCS proposes to modify its Medina Mine Mined Land Reclamation Permit to add 15+/- acres of land to the currently approved Life of Mine area to the south for purposes of excavation.

The Medina Mine is located south of Blair Road in the Town of Shelby, Orleans County, New York as shown on Figures 2 and 3. The site is in a rural area bounded by woodlands, wetlands and agricultural fields to the south, east and west and by Blair Road to the north. Access to the current quarry property is from Blair Road via an existing access road.

The expansion proposal will impact approximately 8.7 acres of state and federal jurisdictional wetland and 6.1 acres of state regulated 100-foot adjacent area. The location of the proposed expansion area was selected to minimize impacts to the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species. The outer limits of the

proposed expanded mine area have been designed to ensure that the expanded mine will not impact the existing wetland hydrology beyond the expansion area.

The existing and proposed site conditions and topography are shown in Figures 3 and 4.

No other changes are proposed.

3.2 EXECUTIVE SUMMARY

SCS proposes to add 15+/- acres of land to the currently approved Mined Land Reclamation Permit Life of Mine area to the south of the current Medina Mine for purposes of dolostone excavation.

The Medina Mine is located south of Blair Road in the Town of Shelby, Orleans County, New York as shown in Figures 2 and 3 and has been in existence since the early 1980's. The site is in a rural area bounded by woodlands, wetlands and agricultural fields to the south, east and west and by Blair Road to the north. Access to the current quarry property is from Blair Road via an existing access road.

The expansion proposal will impact approximately 8.7 acres of state and federal jurisdictional wetland and 6.1 acres of state regulated 100-foot adjacent area. This represents a loss of approximately 1.7% of the total wetland area (502 acres), as defined by the presence of Palms Muck[1]. The location of the proposed expansion area was selected to minimize impacts to the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species. The outer limits of the proposed expanded mine area have been designed to ensure that the expanded mine will not impact the existing hydrology of the wetland to remain.

SCS proposes to create wetlands within the same watershed to mitigate the unavoidable wetland impacts from the project implementation. The proposed wetland mitigation is comprised of approximately 24.5 acres of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland to mitigate the impact of 6.1± acres of regulated upland adjacent area at the Medina Mine.

[1] The NYSDEC Resource Mapper lists the acreage of wetland MD-9 as 361.3 acres.

As shown in Figure 3, SCS is currently approved to mine dolostone at the Media Mine from a 105.9-acre Life of Mine area situated on lands owned by SCS. Mining within the 15-acre expansion area will be worked in two levels using standard blasting techniques, similar to the existing quarry, with an upper face height of approximately 40 feet and a lower face height of approximately 20 feet.

No change to the method or manner of mining and no change to the processing method or location is proposed as part of this modification. Blasted stone will continue to be excavated by front end loader and truck-hauled to the existing processing plant.

A total of 120.9 acres will be affected by mining and then reclaimed over the life of the mine. The mine site, including the modification area, will be reclaimed as two ponded areas (Figure 4). Both pond's surface elevations are estimated to be approximately 587 to 590 feet above mean sea level. The final floor elevation is estimated to be approximately 538 feet in both areas.

Once mining has ceased and the mined areas fill with water they will be stocked with fish from a private commercial hatchery as recommended by their experts.

3.2.1 Significant Beneficial and Adverse Impacts

3.2.1.1 Beneficial Impacts

This proposal will allow SCS to continue to provide economic benefits to the local community, including but not limited to direct and indirect employment, cost savings to the local communities associated with a local source of stone products, sales tax, property tax and employment tax revenue, and avoided trucking costs and associated wear and tear on infrastructure. The overall annual financial impact (in 2020 dollars, and not including sales or income tax revenues) on Medina, NY and surrounding area if SCS' Joint Application is not granted will total $7,298,820. These economic benefits would be eliminated if the Applicant is forced to terminate operations.

The continuation of mining operations at the Medina Mine will yield compelling environmental benefits as well by reducing vehicle miles traveled and associated decreases in greenhouse gas emissions associated with aggregate shipping from more distant locations. SCS estimates that without the Medina Quarry, the additional truck miles needed to supply to Medina Quarry market would be 209,497 miles annually. At an average fuel use of 5 miles per gallon, which equates to an additional 41,899 gallons of

diesel fuel consumed and an additional 937,707 pounds of CO_2 emitted into the atmosphere on an annual basis.

In addition, unlike most other industrial activities, mining operations are temporary land-uses and NYSDEC approval of the proposed expansion area ultimately will result in ponds stocked with fish and perimeter habitat for nectar-needing biota (monarch butterfly, honeybee, etc.) which will promote species diversity.

Additional information regarding significant public need and benefits is included in Section 3.3.

3.2.1.2 Potential Adverse Impacts

The existing conditions, potential impacts and mitigation measures for the following specific issues identified in the Final Scope were assessed as part of this DEIS:

1. Wetland impacts associated with the mine expansion including the wetlands to be removed as well as potential impacts to the remaining wetlands.

   The proposed quarry expansion will impact approximately 8.7 acres of state and federally regulated wetland and approximately 6.1 acres of state regulated 100-foot adjacent area but will involve no stream impacts. This represents a loss of approximately 1.7% of the total area (502 acres) of NYSDEC regulated Wetland MD-9, as defined by the presence of Palms Muck[2]. The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species.

   SCS is proposing to create wetlands within the same watershed to mitigate the wetland impacts. The proposed wetland mitigation is comprised of approximately 24.5 acres of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland to mitigate the impact of 6.1± acres of regulated upland adjacent area at the Medina Mine.

   No significant hydrogeologic impact to the remaining wetland is anticipated as a result of the mine expansion because:

   a. There will be no change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional

[2] The NYSDEC Resource Mapper lists the acreage of wetland MD-9 as 361.3 acres.

contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream. Water will continue to naturally back up into the feeder ditches and low areas of the wetland.

b. The wetland area is underlain by a seasonal, semi-perched, water table that will not change as a result of the mine expansion. SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland.

c. A marl perimeter berm will be constructed to prevent surface drainage of the wetland.

2. Potential impacts to agricultural resources associated with the mine expansion.

There will be no impacts to agricultural resources from the mine expansion for the following reasons:

a. The expansion area is not part of the Orleans County Consolidated Agricultural District.

b. This area has not been farmed since the late 1960's to early 1970's because it had become economically unproductive as the muck soil was eroding and producing poor results.

c. The seasonal flooding that now occurs in this area makes farming impracticable.

3. Potential short and long-term impacts to surface waters, including a Class C stream.

There is an intermittent ditch located outside (south) of the southern border of the proposed mine expansion area and this ditch is typically dry during the summer and fall and wet during winter and spring. The NYSDEC Environmental Resource Mapper depicts, we believe incorrectly, this intermittent ditch as a Class C stream, which conflicts with Alpha Geosciences data in Appendix E. This ditch is outside of the expansion area and will remain undisturbed. A berm will be constructed between the ditch and the quarry to prevent surface drainage into the expansion area.

There will be no impact to surface waters outside of the expansion area as the primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream. The entire wetland area, including the ditch, is underlain by a seasonal, semi-perched, water table that will not change as a result of the mine expansion.

Water in the ditch will continue to naturally back up into the feeder ditches and low areas of the wetland to the south as it has done for decades. This will not change as a result of the mine expansion.

4. Short and long-term groundwater impacts.

Currently there are two water table conditions in the vicinity of the expansion area:

a. A perched water table which is a seasonal, semi-perched, water table condition that develops on the underlying clayey silt and silty clay layers during the winter and spring and

b. The ground water table, separate from the perched water table, which generally stays within the bedrock.

The lateral extent of the ground water table drawdown in the expansion area will be approximately 280 feet, with the vast majority of the drawdown occurring within 150 feet of the quarry. Mining in the existing quarry and expansion area will cause some temporary local ground water table depression in the bedrock aquifer, up to as much as 10 feet at the quarry face. The ground water table drawdown is temporary while the quarry is actively dewatering and there will be no drawdown when pumping has ceased after the quarry is reclaimed as open water.

As the lateral expansion area is further removed, the resulting limited drawdown in the fractured bedrock aquifer will have no impact on the bedrock wells at nearby residences as compared to conditions associated with existing quarry activities.

The water table beneath the wetland is within the bedrock and drawdown occurs within the bedrock (not within the unconsolidated material). Ground water flow into the quarry emanates from the bedrock fractures. The bedrock aquifer is also the water table aquifer. The water that flows into the quarry and is pumped to keep the quarry floor dry comes from the bedrock aquifer, and not the seasonal, perched water table.

No significant environmental impact to ground water, or related to ground water, will occur as the ephemeral ditch (again, we believe incorrectly referred to as a “Class C stream”) and the wetland area outside of the expansion area will not be impacted by the drawdown associated with the expansion, just as the ditch and the wetland are not currently impacted by the ground water drawdown associated with the present extent of the quarry.

5. Noise and blasting impacts resulting from the changes to the mine footprint.

   Potential offsite impacts from noise resulting from mining activities will not occur as a result of this modification proposal for the following reasons:

   a. No change in the method, manner or intensity of mining is proposed as part of this modification.

   b. No changes to the fixed processing plant and stockpile area are proposed.

   c. The expansion area is screened from all sides due to factors such as natural topography, dense tree growth and the perimeter berms that surround the existing operation.

   d. Because the proposed expansion area will be more distant from all receptors near the existing active mine areas, any noise impacts to those receptors will be further attenuated due to distance. Likewise, because the few neighbors to the south will be located more than one-half mile away from the expansion area, a substantially larger buffer than experienced by existing receptors to the north, no adverse noise impacts to those southerly neighbors will occur.

   e. Almost all mining activity occurs on the mine floor, effectively using the existing mine faces and perimeter berms as noise barriers.

   Blasting is a well-established use of extraction at this location and has been ongoing for almost 40 years. Blasting over this timeframe has been conducted repeatedly at distances less than 200 feet from nearby neighbors without incident, and impacts are expected to decrease based upon the above factors.

   In addition, the current Mined Land Reclamation Permit already limits sound levels from blasting at all neighbors and requires monitoring at every blasting event to document compliance with these sound level limits. These blasting sound level limits are enforced by NYSDEC and are designed to protect the health, safety and welfare of nearby neighbors. SCS will continue to abide by these blasting sound level limits and no changes to these permit conditions are proposed as part of this modification request.

6. Short and long-term community character impacts, including historic and heritage resources.

   The area is mapped as being archeologically sensitive and is located within the West Erie Canalway National Heritage Corridor.

The archaeological work approved by both the NYSDEC and OPRHP pursuant to the terms of the December 9, 2014, Letter of Resolution covered all areas outside of the wetland area. The Archaeological project study area was 21.9 acres, which included the previously approved 7-acre quarry expansion and also the entirety of the currently proposed 14.8-acre expansion area.

Regardless of the sensitivity, all Archaeologically sensitive areas under consideration have already been thoroughly reviewed, assessed and the corresponding mitigation approved by both the NYSDEC and OPRHP and therefore additional assessment and approval is not necessary.

The Erie Canalway National Heritage Corridor spans 524 miles across upstate New York and encompasses 4,834 square miles in 23 counties and is home to 3.2 million people. The corridor parallels the Cayuga-Seneca, Oswego, and Champlain Canals and their historic alignments. The corridor is approximately 15 miles wide in the vicinity of the mine.

The Medina mine is located approximately two miles south of the Erie Canalway and there are no identified cultural or recreational resources nearby.

As documented in this DEIS, there will be no offsite impacts at the nearest residential receptors and, therefore, there will be no impacts to any Erie Canalway National Heritage Corridor resources located two+ miles away.

A copy of the Final Scoping Document is included as Appendix B and the full analysis of each identified potential impact is in Section 4.0.

3.2.2 Alternatives Considered

3.2.2.1 Off-Site Alternatives

As detailed in SCS' June 3, 2019 Joint Application to NYSDEC and USACE for Article 24 And Section 404 Permits (the "Joint Application"), SCS has pursued and exhausted all potential options for acquisition of adjacent or nearby industrially zoned properties not encumbered by wetlands. Likewise, SCS has been unsuccessful in its efforts to acquire the closest existing quarry, operated by LaFarge, in the Town of Royalton. SCS's extensive search for suitable off-site alternatives within the targeted geographical region has been frustrated by factors restricting the siting of a comparable quarry including geology, zoning, environmental restrictions, and proximity to similar quarrying operations. As such,

there are no practicable alternatives to on-site development within the meaning of 6 NYCRR § 663.5(e)(2).

3.2.2.2 On-Site Alternatives

As detailed in SCS' Joint Application, Section 6 ("On-Site Alternatives"), SCS considered much more cost-effective and efficient expansion alternatives that would have impacted 86 acres, 61 acres and 41 acres of regulated wetland, respectively, along with varying levels of ephemeral ditch impact (Table 4) that SCS prefers over the scaled-down 15-acre expansion area proposed in this application. Although SCS believes that any one of those larger preferred alternatives can be accomplished in conjunction with appropriate off-site wetland mitigation measures, the time-sensitivity of SCS' current operational capacity dictated the need for a further reduction in the scale of those proposals.

The proposed 15-acre expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site by focusing on the lower quality emergent marsh which is heavily dominated by invasive species. This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option[3]. This reduced expansion footprint and significant wetland mitigation proposal is proposed in order to strike an appropriate and reasonable balance between the preservation of important wetland functions, values and benefits pursuant to CWA Section 404(b)(1) and ECL Article 24 and the furtherance of compelling economic and social needs within the meaning of E.C.L. § 24-0103, 6 N.Y.C.R.R. §§ 663.1(a) and 663.5(e).

3.2.3 Mitigation Measures Proposed

3.2.3.1 Wetland Mitigation

To mitigate the impacts to the wetland and state regulated 100-foot adjacent areas, SCS is proposing the following mitigation measures:

1. **Reduced Footprint:** SCS' current 15 +/- acre proposal is far smaller than the preferred on-site expansion alternatives discussed in Sections 3.2.2 and 5.4, which would impact 86 acres, 61 acres and 41 acres of regulated wetland, respectively,

[3] From wetland application paperwork included in Appendix E.

along with varying impacts to the ephemeral ditch. Although the Applicant believes that any one of these three alternatives is preferable from an efficiency standpoint and can be accomplished in conjunction with appropriate off-site wetland mitigation measures, the time-sensitivity of the Applicant's current operational capacity dictated the need for SCS' current scaled-down proposal.

The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species. This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option.

2. **Perimeter Berm:** The intermittent ditch identified along the southern limits of the proposed mine expansion is low quality. During the ecological survey visits during late summer and fall, the ditch was completely dry and devoid of any evidence of recent inundation or flow. During the spring visits, the ditch had several inches of stagnant water. While this ditch is classified as Class C by NYSDEC, it does not appear to have the characteristics necessary for this designation. The banks of the ditch are dominated by Phragmites and limited ecological values are present. Installation of a marl berm with tree/shrub plantings along the north edge of the ditch will provide a vegetative buffer to the ditch and wetland south of the ditch. The existing ditch already catches significant hydrology from the emergent marsh community south of the ditch. Preventing impacts to the ditch will help with retaining proper hydrology within the avoided wetlands.

   A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding over the ditch bank. The marl perimeter berm will be constructed north of the ditch, along the inside edge of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring.

   The berm will be constructed of marl placed in continuous 6 to 9-inch layers over the entire length of the fill. Each layer will be compacted after placement by routing earth-moving equipment or a compactor over the marl fill until the compaction rate is equal or greater than 90% of the existing virgin marl. The berm will be constructed to an elevation at least 3 feet above the existing grade and will be continuous and smooth graded. Vegetation will be established immediately after construction by placing a minimum of 6 inches of topsoil on the berm prior to seeding and mulching.

   The location, extent and additional details of the perimeter berm are part of the Mined Land-Use Plan paperwork included as Appendix C.

3. **Replacement:** Replacement mitigation for impacts to the wetland and adjacent area is proposed, at ratios outlined in the 2008 Final Mitigation Rule, at a parcel owned by the applicant which is currently in active agriculture (Table 3). The wetland creation site is located approximately 5.5 miles to the east in the Town of Barre and is within the same watershed (Oak Orchard) as the impact site. The proposed mitigation area will be comprised of approximately 24.5 acres consisting of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland in order to mitigate the impact of 6.11± acres of regulated upland adjacent area at the Medina Mine.

   The Proposed Wetland Mitigation Plan (included in Appendix G) is designed to mitigate the loss of wetland and adjacent area at ratios outlined in the 2008 Final Mitigation Rule. Based on the functions and values assessment included in the wetland mitigation plan, the Applicant is confident that the minimal functions lost as a result of the Medina Mine expansion will be replaced through the creation and restoration at the mitigation site. The impact wetland is heavily encumbered with invasive species whereas the proposed mitigation site has been in agricultural production and is free of invasives, setting it up for success.

4. **Monitoring Plan:** Adaptive management of the mining and mitigation sites will be achieved through monitoring of invasive plant growth, hydrology and ground water.

   Invasive Plant Growth and Hydrology Monitoring

   For the mining site, annual visual monitoring of the wetland south of the ditch to document invasive plant growth/expansion and hydrology levels will be utilized. Annual monitoring is proposed for 5 years after completion of the mine expansion. For the mitigation site, detailed annual monitoring of the mitigation areas and preservation areas is proposed for the first 10 years after construction. Details of the annual monitoring for the mitigation area are provided in the Mitigation Plan included as Appendix G. Deficiencies or issues identified during the annual monitoring (expanded invasive species, lack of hydrology, etc.) will be addressed on a case-by-case basis.

   Ground Water Monitoring

   SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue

at the monthly frequency already required by SCS' Mining Permit Special Condition #12.

Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow, perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

5. **Deed Restrictions:** Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. Appropriate deed restrictions will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G. Appropriate deed restrictions will also be placed on the created wetland resources and 100-foot wetland buffer areas at the proposed wetland mitigation site.
6. **Reclamation**: This mining proposal represents a temporary land-use that is expected to be completed approximately 10 years after implementation. Once all mining is completed the entire SCS quarry area will be reclaimed to ponds. The upper slopes of the expansion area pond will be vegetated with native grass and wildflower seed mixes. This will enhance the habitat for nectar-needing biota (monarch butterfly, honeybee, etc.) and will promote species diversity. Per the reclamation plan, the ponds will be stocked with fish. It is expected that the ponds will naturalize over time and aquatic vegetation will dominate the shallow edges.

The reduced footprint of the expansion proposal, perimeter berm, deed restrictions, monitoring plan, reclamation objective and associated wetland replacement mitigation proposal will minimize adverse impacts on wetland functions and benefits within the meaning of 6 N.Y.C.R.R. § 663.5(e)(2). Additional, specific details regarding wetland resources and the wetland creation mitigation plans are included in Appendix G.

3.2.3.2 Surface Water Mitigation

SCS is proposing the following mitigation measures to mitigate the potential impacts to surface water resources:

1. **Reduced Footprint:** The preferred on-site expansion alternatives discussed in Sections 3.2.2 and 5.4 would impact 86 acres, 61 acres and 41 acres of regulated wetland, respectively, along with varying levels of stream impact. Although the Applicant believes that any one of these three alternatives is preferable from an efficiency standpoint and can be accomplished in conjunction with appropriate off-site wetland mitigation measures, the time-sensitivity of the Applicant's current operational capacity dictated the need for a further reduction in the scale of these proposals.
2. **Perimeter Berm:** A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding. The marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring.

   The berm will be constructed of marl placed in continuous 6 to 9-inch layers over the entire length of the fill. Each layer will be compacted after placement by routing earth-moving equipment or a compactor over the marl fill until the compaction rate is equal or greater than 90% of the existing virgin marl. The berm will be constructed to an elevation at least 3 feet above the existing grade and will be continuous and smooth graded. Vegetation will be established immediately after construction by placing a minimum of 6 inches of topsoil on the berm prior to seeding and mulching.

   The location, extent and additional details of the perimeter berm are part of the Mined Land-Use Plan paperwork included as Appendix C.
3. **Monitoring Plan:** SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue at the monthly frequency already required by Mining Permit Special Condition #12.

   Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow, perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

The reduced footprint of the expansion proposal, perimeter berm and monitoring plan proposal will minimize and mitigate adverse impacts on surface water resources.

3.2.4 Issues of Controversy

3.2.4.1 Additional Future Wetland Impacts

Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. Appropriate deed restrictions will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G. Appropriate deed restrictions will also be placed on the created wetland resources and 100-foot wetland buffer areas at the proposed wetland mitigation site.

3.2.5 Matters to be Decided

Agency approvals required for this proposal include: NYSDEC Mined Land Reclamation, Freshwater Wetlands, SPDES Multi-Sector, and Section 401 Permits as well as an USACOE 404 Wetlands Permit. A summary of all the agencies and permits involved is shown on Table 1 in Section 10.0.

3.3 PROJECT PURPOSE, NEED AND BENEFITS

3.3.1 Background and History

SCS is a locally owned and operated company located in the Town of Shelby, New York (Figures 1 and 2). SCS currently supplies crushed stone aggregate from the Medina Mine to Orleans County and surrounding regions.

SCS is currently approved by NYSDEC to mine dolostone from a 105.9-acre Life of Mine area situated on lands owned by SCS (Figure 3). The high quality dolostone mined at the Medina Mine is approved by the NYS Department of Transportation for use as NYSDOT 703-0201 Crushed Stone Aggregates.

The following list summarizes of the history of this project up until this DEIS:

1. The Joint Application to add 15+/- acres to the currently approved Life of Mine area was submitted to NYSDEC and USACE on June 3, 2019.
2. A Notice of Incomplete Application (NOIA) was issued by the NYSDEC on June 28, 2019.
3. A response to the NOIA was submitted on January 28, 2020.
4. A second NOIA was issued by NYSDEC on February 14, 2020.
5. A response to the second NOIA was submitted March 24, 2020.
6. NYSDEC issued a positive Declaration of Environmental Significance on September 16, 2020.
7. NYSEC issued a Draft Scoping Outline and Notice of Public Scoping on March 23, 2021.
8. NYSDEC issued a final Scoping Outline on May 27, 2021.
9. A Draft Environmental Impact Statement dated September 23, 2021 was submitted to the Department.
10. NYSDEC issued a Determination of Adequacy on November 8, 2021.

Copies of all pertinent correspondence are included in Appendix A and the Final Scope is included in Appendix B.

3.3.2 Public Need for the Project

The New York State legislature has declared a state-wide policy "to foster and encourage the development of an economically sound and stable mining industry, and the orderly development of domestic mineral resources and reserves necessary to assure satisfaction of economic needs compatible with sound environmental management practices." E.C.L. § 23-2703(1). The Center for Governmental Research, Inc. (CGR) document entitled “The Economic Impact of the New York State Mining and Construction Materials Industry”[i] states that the majority of mining in New York is for construction materials used to build and maintain the state's infrastructure. The mined commodities, in addition to the hot mixed asphalt, ready mix concrete and cement industries, were responsible for generating $1.2

to $1.3 billion in wages and 28,000 to 30,000 jobs in New York State. CGR estimates the mining and construction materials industry contributes about $100 million in public sector revenues (sales tax, personal income tax, motor fuel tax, corporate franchise tax and Mined Land Reclamation Law fees)[ii].

The nation's infrastructure earned a C- in the American Society of Civil Engineers' 2021 Report Card for America's Infrastructure, and this deteriorating infrastructure impedes New York's ability to compete in an increasingly global marketplace. The health and stability of local aggregate markets will become especially critical if and when Congress approves the $1 trillion Senate infrastructure bill currently under consideration.

SCS's modest expansion proposal also furthers the New York State smart growth policy "[t]o advance projects for the use, maintenance or improvement of existing infrastructure" within the meaning of ECL 6-0107(2)(A)." SCS has made significant investments at the Site in the form of structures, machinery and processing equipment to enable long-term mining operations to meet local demand. SCS' quarry not only provides a crucial resource for the local highway department and local businesses, but also but also provides local jobs and contributes to the local tax base which, in turn, supports public services.

SCS' proposal will serve to advance these legislative priorities and the compelling economic and social needs underlying them by enabling the survival of an existing mining operation and continued service to the local aggregate market in a manner that is compatible with sound wetland mitigation principles. Construction materials, such as the high-quality crushed stone aggregate produced at the Medina Mine, are used on a daily basis in roads, bridges, buildings, drainage courses and slope stabilization, landfills, construction projects, homes and commercial and residential developments. Construction materials make it possible to have safe roads and bridges, homes and comfortable offices, hospitals and stores. Each year well over 10,000 pounds of crushed stone and sand and gravel are produced for each person in New York State[iii].

The Medina Mine currently produces dolomitic limestone aggregate products for an established customer base in Western Orleans and Eastern Niagara Counties. The Medina Mine has supplied a large variety of valuable, high-quality products to the region for decades including:

- NYSDOT approved coarse aggregate (crushed stone) for highways.
- High-quality aglime.

- Material for Lake Ontario shore protection.
- NYSDEC approved remediation fill.
- NYS Canal Corporation embankment fill.
- Medium stone fill for the NYS Power Authority Niagara Falls Reservoir.

Local sources of high-quality aggregate materials reduce the need to haul long distances to supply market demand, thereby reducing fuel consumption and associated air emissions, traffic congestion and unnecessary wear and tear on the roadway infrastructure. Having a local source of construction materials will help keep construction prices low. These savings will be realized every time a contractor buys crushed stone for a driveway or when a municipality purchases material to repair a local road.

This expansion proposal will allow SCS to continue to provide economic and social benefits to the local community, including but not limited to direct and indirect employment, cost savings to the local communities associated with a local source of stone products, and more specifically:

1. **Labor**: Financial impact in 2022 of over $1.96 million to pay 22 full time and seasonal employees including health care, 401k and other benefits.
2. **Stone Sales:** Additional annual cost savings of stone to community = $523,274.
3. **Additional Trucking Costs:** Additional annual cost saving of trucking to community = $978,991.
4. Financial impact of purchases to community and surrounding area = $3,835,017.

Based upon the above projections, the overall annual financial impact (in 2020 dollars, and not including sales or income tax revenues) on Medina, NY and surrounding area if SCS' Joint Application is not granted will total.

$7,298,820

Additional indirect financial impact of having a local source of construction products is the reduced wear and tear on infrastructure. SCS estimates that the additional truck miles necessary to supply the Medina Mine market would be approximately 209,497 miles annually[4] without the Medina Quarry.

[4] Without the Medina Quarry, the construction materials would most likely be supplied to the Shelby market from the next closest quarry locations, specifically Barre Stone Products to the east and Lafarge to the west.

3.3.3 Objectives of the Project Sponsor

SCS proposes to add approximately 15+/- acres to the existing Life of Mine. This will allow SCS to continue to operate the Medina Mine and provide a source of local construction aggregate to the Orleans County, Niagara County and Genesee County markets. Since all alternative options have been exhausted, without the project approval, SCS will be forced to cease production and shut down.

3.3.4 Benefits of the Proposed Action

The lateral expansion proposal will allow SCS to access approximately 1.7 million tons of high-quality NYSDOT construction aggregate which will allow SCS to continue to locally produce construction aggregate products into the near future.

As described in detail in Section 3.3.2, this expansion proposal will allow SCS to continue to provide economic benefits to the local community, including but not limited to direct and indirect employment, cost savings to the local communities associated with a local source of stone products, and avoided trucking costs and associated wear and tear on public infrastructure.

Additionally, ensuring the continued viability of SCS as a local source of construction products mitigates the overall carbon footprint of the aggregate supply chain as it allows for a more efficient use of energy (diesel fuel) compared to trucking in materials from further away. As identified in Section 3.3.2 above, SCS estimates that without the Medina Quarry, the additional truck miles needed to supply to Medina Quarry market would be 209,497 miles annually. At an average fuel use of 5 miles per gallon, which equates to an additional 41,899 gallons of diesel fuel consumed and an additional 937,707 pounds of CO_2 emitted into the atmosphere if Shelby no longer exists.

All of these benefits would be eliminated if the Applicant is forced to terminate its operations.

3.4 ENVIRONMENTAL REVIEW PROCESS

3.4.1 Approvals Required

Agency approvals required for this proposal include: NYSDEC Mined Land Reclamation, Freshwater Wetlands, SPDES Multi-Sector, and Section 401 Permits as well as an USACOE 404 Wetlands Permit. A summary of all the agencies and permits involved is included on Table 1 located in Section 10.0.

3.4.2 State Environmental Quality Review

The New York State Environmental Quality Review Act (SEQR) and its implementing regulations at 6 NYCRR Part 617 require agencies to assess the potential environmental impacts of proposed projects during the permitting process. Under SEQR, potentially significant adverse environmental impacts are evaluated in a DEIS.

A DEIS is intended to function as a disclosure document to provide information about the expected environmental impacts of the proposed action and provide a basis for informed decisions. The DEIS identifies and addresses the potential environmental impacts of a project and reasonable alternative, if any, and identifies ways to avoid or mitigate any potential adverse impacts to the maximum extent practicable. A DEIS also addresses any irreversible and irretrievable commitments of resources, growth inducing aspects, and the use and conservation of energy.

The different steps, pathways and timeframes of the SEQR process are outlined on Table 2 and Figure 3. Copies of pertinent SEQR correspondence are included in Appendix A and the Final Scoping Outline is included in Appendix B.

4.0 ENVIRONMENTAL SETTING, SIGNIFICANT ENVIRONMENTAL IMPACTS, AND MITIGATIONS MEASURES TO MINIMIZE ENVIRONMENTAL IMPACTS

The environmental setting (existing conditions), potentially significant environmental impacts, and mitigation measures are described in this section. Adverse environmental impacts that cannot be avoided or adequately mitigated if the proposed action is implemented are also discussed. Technical reports supporting the analysis provided in each subsection are included as appendices to the DEIS in Section 12.0.

4.1 EARTH AND NATURAL RESOURCES

4.1.1 Lands – Wetland Resources

4.1.1.1 Existing Conditions

The project involves a 14.8-acre expansion of the existing 105.9-acre mine of which 8.69 acres are state and federal jurisdictional wetland and 6.11 acres are state-regulated 100-foot adjacent area. The 8.69 acres of wetland in the expansion area are located along the northern edge of NYSDEC Wetland MD-9 (MD-9), a 502-acre wetland as defined by the presence of Palm Muck soils[5]. The project site plans are included as Figures 3-5 in Section 10.0 and included as part of the Mined Land-use Plan included as Appendix C. In addition, the wetland delineation, Biological & Habitat Assessment Report and impact maps are included as Appendix G.

The site is located in the Lake Ontario Lake Plain ecosystem, approximately 3.2 miles north of the Oak Orchard Swamp and Alabama Swamp, which are part of the Iroquois National Wildlife Refuge. The site sits within the Atlantic Flyway zone for bird migration, which funnels birds north to the boreal forest for breeding in the spring and south to wintering grounds in Central and South America in the fall.

The natural topography of the project area is flat to gently sloping. The uplands within this area consist of successional northern hardwood and successional old field communities. Wetland MD-9 is sustained by direct precipitation to the wetland surface and runoff from the surface water drainage basin that drains into the wetland. Drainage from the wetland is via a series of historic agricultural drainage ditches which regionally

[5] The NYSDEC Resource Mapper lists the acreage of wetland MD-9 as 361.3 acres.

drain to the east and which back up seasonally due to beaver dams further downstream. Detailed wetland topography and drainage ditches are shown on Figure 5 in Section 10.0 and additional details are included in the Wetland paperwork included as Appendix D and the Hydrogeologic Assessment paperwork included as Appendix E.

The portion of MD-9 affected by this proposal is considered Class II under Part 664 regulations. However, as documented in SCS' Joint Application and the Biological & Habitat Assessment, included as Appendix G and discussed below, the majority of the proposed wetland impact area is comprised of an emergent wetland dominated by invasive species and provides little function other than flood flow attenuation.

A significant ecological survey was conducted at the site in 2022 that documented all plant and wildlife species present. Additionally, a detailed description of each ecological community was included. The Habitat Assessment Reports are included in Appendix G.

The wetland areas were found to consist of emergent marsh and hardwood swamp communities. During the ecological survey of the site, it was noted that the northern portion of the wetland proposed to be impacted is lower in quality than the southern portion of the wetland. Significant invasive species populations (*Phragmites*) are present in the proposed impact area and in the northern portion of the wetland community to remain (Figure 12). Several ephemeral ditches are present in the site, and an intermittent stream/ditch which is young and has a densely vegetated understory is present in the northern portion of the project property site. This intermittent feature is located south, and outside of, the proposed expansion area and is identified as a Class C stream by NYSDEC, although the feature was completely dry during the September visits.

The understory contains numerous invasive plant species (garlic mustard, multiflora rose, garden yellowrocket, white snakeroot) that are not present in the wetland community south of the ditch. Invasive species are also present in the northern portion of the wetland community to be avoided. A large patch of *Phragmites* is present along the southern edge of the ditch, extending approximately 300-feet southward into the emergent marsh community. Additional invasive species are present in small quantities south of the ditch.

4.1.1.2 Potential Environmental Impacts

The proposed expansion will impact (remove) approximately 8.7 acres of state and federally regulated wetland and approximately 6.1 acres of state regulated 100-foot adjacent area but will involve no stream impacts. This represents a mere approximately 1.7% reduction of the total area of MD-9 (502 acres), as defined by the presence of the

Palms Muck soil[6]. The proposed expansion area is located along the edge of the wetland and is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species.

A significant ecological survey was conducted at the site in 2022 that documented all plant and wildlife species present. Additionally, a detailed description of each ecological community was included. The Habitat Assessment Reports are included in Appendix G.

As discussed in Section 4.1.1.1 the northern portion of the wetland proposed to be impacted is lower in quality than the southern portion of the wetland. Significant invasive species populations (*Phragmites*) are present in the proposed impact area and in the northern portion of the wetland community to remain (Figure 12). Given the very dense herbaceous plant growth in the emergent marsh and nearly 100% canopy coverage in the hardwood swamp community, expansion of invasive species is not expected. Removal of the existing invasive species north of the ditch, as part of the proposed project, may help prevent the spread of invasive species southward into the remaining wetland by removal of the existing seed source.

During the ecological survey, mining within the quarry was being conducted daily. The noise and activity from the existing mine was evident while surveying the northern portion of the undisturbed area. The steep wall of the quarry limits the distance the noise from the mining operations travels. Diverse wildlife was noted within the forested wetland and buffer community north of the ditch, adjacent to the active quarry. The species noted in the northern communities were common, as was expected based on the average quality of the wetland and buffer. Noise impact to wildlife will continue to not be an issue under the proposal since the configuration and operation of the proposed expansion area are nearly identical to the current quarry.

4.1.1.3 Mitigation Measures

To mitigate the impacts to the wetland and state regulated 100-foot adjacent areas, SCS is proposing the following mitigation measures:

1. **Reduced Footprint:** SCS' current 15 +/- acre proposal is far smaller than the preferred on-site expansion alternatives discussed in Sections 3.2.2 and 5.4, which would impact 86 acres, 61 acres and 41 acres of regulated wetland, respectively,

[6] The NYSDEC Resource Mapper lists the acreage of wetland MD-9 as 361.3 acres.

along with varying impacts to the ephemeral ditch. Although the Applicant believes that any one of these three alternatives is preferable from an efficiency standpoint and can be accomplished in conjunction with appropriate off-site wetland mitigation measures, the time-sensitivity of the Applicant's current operational capacity dictated the need for SCS' current scaled-down proposal.

The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species. This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option.

2. **Perimeter Berm:** The Class C stream identified along the southern limits of the proposed mine expansion is low quality. During the ecological survey visits during late summer and fall, the ditch was completely dry and devoid of any evidence of recent inundation or flow. During the spring visits, the ditch had several inches of stagnant water. The banks of the ditch are dominated by Phragmites and limited ecological values are present. Installation of a marl berm with tree/shrub plantings along the north edge of the ditch will provide a vegetative buffer to the ditch and wetland south of the ditch. The existing ditch already catches significant hydrology from the emergent marsh community south of the ditch. Preventing impacts to the ditch will help with retaining proper hydrology within the avoided wetlands.

   A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding over the ditch. The marl perimeter berm will be constructed north of the ditch, along the inside edge of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring.

   The berm will be constructed of marl placed in continuous 6 to 9-inch layers over the entire length of the fill. Each layer will be compacted after placement by routing earth-moving equipment or a compactor over the marl fill until the compaction rate is equal or greater than 90% of the existing virgin marl. The berm will be constructed to an elevation at least 3 feet above the existing grade and will be continuous and smooth graded. Vegetation will be established immediately after construction by placing a minimum of 6 inches of topsoil on the berm prior to seeding and mulching.

   The location, extent and additional details of the perimeter berm are part of the Mined Land-Use Plan paperwork included as Appendix C.

3. **Replacement:** Replacement mitigation for impacts to the wetland and adjacent area is proposed, at ratios outlined in the 2008 Final Mitigation Rule, at a parcel owned by the applicant which is currently in active agriculture (Table 3). The

wetland creation site is located approximately 5.5 miles to the east in the Town of Barre and is within the same watershed (Oak Orchard) as the impact site. The proposed mitigation area will be comprised of approximately 24.5 acres consisting of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland in order to mitigate the impact of 6.11± acres of regulated upland adjacent area at the Medina Mine.

The wetland mitigation plan is designed to mitigate the loss of wetland and adjacent area at ratios outlined in the 2008 Final Mitigation Rule. Based on the functions and values assessment included in the wetland mitigation plan, the Applicant is confident that the minimal functions lost as a result of the Medina Mine expansion will be replaced through the creation and restoration at the mitigation site. The impact wetland is heavily encumbered with invasive species whereas the proposed mitigation site has been in agricultural production and is free of invasives, setting it up for success.

4. **Monitoring Plan:** Adaptive management of the mining and mitigation sites will be achieved through monitoring of invasive plant growth, hydrology and ground water.

Invasive Plant Growth and Hydrology Monitoring

For the mining site, annual visual monitoring of the wetland south of the ditch to document invasive plant growth/expansion and hydrology levels will be utilized. Annual monitoring is proposed for 5 years after completion of the mine expansion. For the mitigation site, detailed annual monitoring of the mitigation areas and preservation areas is proposed for the first 10 years after construction. Details of the annual monitoring for the mitigation area are provided in the Mitigation Plan included as Appendix G. Deficiencies or issues identified during the annual monitoring (expanded invasive species, lack of hydrology, etc.) will be addressed on a case-by-case basis.

Ground Water Monitoring

SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue at the monthly frequency already required by SCS' Mining Permit Special Condition #12.

Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows

the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow, perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

5. **Deed Restrictions:** Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. Appropriate deed restrictions will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G. Appropriate deed restrictions will also be placed on the created wetland resources and 100-foot wetland buffer areas at the proposed wetland mitigation site.
6. **Reclamation**: This mining proposal represents a temporary land-use that is expected to be completed approximately 10 years after implementation. Once all mining is completed the entire SCS quarry area will be reclaimed to ponds. The upper slopes of the expansion area pond will be vegetated with native grass and wildflower seed mixes. This will enhance the habitat for nectar-needing biota (monarch butterfly, honeybee, etc.) and will promote species diversity. Per the reclamation plan, the ponds will be stocked with fish. It is expected that the ponds will naturalize over time and aquatic vegetation will dominate the shallow edges.

The reduced footprint of the expansion proposal, perimeter berm, deed restrictions, monitoring plan, reclamation objective and associated wetland replacement mitigation proposal will minimize adverse impacts on wetland functions and benefits within the meaning of 6 N.Y.C.R.R. § 663.5(e)(2). Additional, specific details regarding wetland resources and the wetland creation mitigation plans are included in Appendix G.

4.1.2 Lands – Wetland Resources (Adjoining)

4.1.2.1 Existing Conditions

The 8.69 acres of wetland in the expansion area are located along the northern edge of NYSDEC Wetland MD-9 (MD-9), a 502-acre wetland as defined by the Palms Muck[7]. The wetlands in the project area continue southward on property owned by Shelby as shown in Figure 5. The wetland area is approximated by a large, flat area of Palms Muck soils outlined in green in Figure 5. According to the online Soil Survey of Orleans County, New York, this area of Palms Muck soil is 502 acres. Palms Muck is an organic, level soil that is very poorly drained and typically underlain by low-permeability silty clay loam. The silt layers retard downward percolation during the wet season.

MD-9 is sustained by direct precipitation to the wetland surface and runoff from the surface water drainage basin that drains into the wetland and then into a series of historic agricultural drainage ditches which back up seasonally due to beaver dams further downstream. Detailed wetland topography and the location of the drainage ditches are shown on Figure 5 and additional details are included in the Wetland paperwork included as Appendix D and the Hydrogeologic Assessment paperwork included as Appendix E.

4.1.2.2 Potential Environmental Impacts

Potential impacts to the wetland adjoining the expansion area are related to:

1. Ground water impacts: Draining the wetland through quarry dewatering activities; and
2. Surface water impacts: Reduction in the surface water via drainage into the quarry or reduction of surface water supply from the perimeter berm.

<u>Ground Water Impacts</u>

A Hydrogeologic Evaluation was conducted by Alpha Geoscience (Alpha) to assess the potential impacts of the mine expansion on ground water and the wetland to the south. A copy of the full report is included as Appendix E.

As part of the Hydrogeologic Evaluation, Alpha reviewed historic aerial photos, soil mapping and data, existing monitoring well data, core hole data as well as data collected from two new test pits and two well points in the vicinity of the expansion area.

[7] The NYSDEC Resource Mapper lists the acreage of wetland MD-9 as 361.3 acres.

The Hydrogeologic Evaluation determined that there are two distinct water table conditions in and around the vicinity of the quarry expansion area:

a. A perched water table which is a seasonal, semi-perched, water table condition that develops on the underlying clayey silt and silty clay layers during the winter and spring; and

b. The ground water table, separate from the perched water table, which generally stays within the bedrock.

Alpha determined that mining in the existing quarry and expansion area will cause some temporary local ground water table depression in the bedrock aquifer, up to as much as 10 feet at the quarry face. The ground water table drawdown is temporary while the quarry is actively dewatering and there will be no drawdown when pumping has ceased after the quarry is reclaimed as open water. Using the ground water drawdown impacts currently associated with the quarry as a model, Alpha determined that the lateral extent of the ground water table drawdown in the expansion area will be approximately 280 feet, with the vast majority of the drawdown occurring within 150 feet of the quarry. The limited drawdown in the fractured bedrock aquifer associated with the expansion area will have no impact on the bedrock wells at nearby residences as compared to conditions associated with existing quarry activities.

The Hydrogeologic Evaluation determined that no significant hydrogeologic impact to the adjoining wetland is anticipated as a result of the mine expansion because there will be no change to the perched water table condition. The wetland area is underlain by a seasonal, semi-perched, water table that will not change as a result of the mine expansion. This condition develops on the underlying clayey silt and silty clay layers during the winter and spring. The semi-perched water table is drawn down by evapotranspiration and slow percolation during the summer and fall. The clayey silt layer beneath the wetland will remain and continue to retard infiltration to the bedrock during the seasonal wet periods. The rate of infiltration to the subsurface will not change as a result of the expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the expansion.

Additional evidence that mining at the Medina Quarry will have no impact to adjacent wetlands is demonstrated at Federal Wetland PF01E, which is located immediately south-southwest of the current quarry area (Figure 5). This adjacent Federal wetland is underlain by the Lyons Silt Loam, which is a nearly level, fine sandy to mucky silt loam susceptible to prolonged high water table and ponding, similar to the Palms Muck that

underlies MD-9. Mining in the area adjacent to this Federal Wetland has been ongoing since the 1980's and, as evidenced by the existence of the wetland immediately adjacent to the active quarry, this activity has not drained or otherwise negatively impacted the wetland.

Surface Water Impacts

To analyze the potential for surficial hydrogeologic impacts to wetland MD-9, a full water budget analysis was prepared by Alpha Geoscience and is included in Appendix E. The water budget analysis modeled the current hydrologic conditions as well as the future hydrologic conditions after the mine expansion to determine the potential for impact.

The water budget determined that the existing water contribution to wetland MD-9 from the 1448-acre drainage basin outside the wetland is approximately 708 gpm. Mining in the proposed expansion area will result in the removal of 6.3 acres of the 1448-acre drainage basin that contributes surface water to MD-9. The removal of this area will decrease the amount of runoff to the wetland by 1.3 gpm and represents a 0.18% decrease in the amount of runoff contribution to the wetland.

The existing direct precipitation, evapotranspiration, and percolation within the wetland will decrease approximately 1.8% when the 8.7-acre portion of wetland is removed. Based on this data and other relevant circumstances, Alpha concluded that the hydrological impact to the ecology of the remaining wetland, after mine expansion, will be insubstantial.

There will be no significant surficial hydrogeologic impact to the adjoining wetland as a result of the mine expansion for the following reasons:

a. No change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream in the primary ditch. The clayey silt layer beneath the wetland discussed in Sections 4.1.2.2 and 4.2.2 is the primary reason that the wetland exists. Water in the primary ditch will continue to naturally back up into the feeder ditches and low areas of the wetland south of the primary ditch as it has done for decades. This will not change as a result of the mine expansion.
b. The rate of infiltration to the subsurface will not change as a result of the mine expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the mine expansion. The wet season of the wetland occurs during winter and spring as a seasonal perched water table

develops on the underlying clayey silt layer. The perched water table diminishes throughout the summer due to evapotranspiration and slow downward percolation as rainfall diminishes and vegetation growth flourishes. This condition occurs with or without the mine expansion.

c. A berm will be constructed on the north side of the primary ditch to prevent drainage of the wetland. A marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area, between the primary ditch and the quarry, prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring. The location and extent of the perimeter berm is shown on Figure 3 and the Mining Plan Map included in Appendix C; berm construction details are included as Appendix C and are summarized in Sections 4.1.1.3 and 4.1.2.2.

4.1.2.3 Additional Wetland Impacts Related to Potential Future Expansion

In no way does development of the proposed mine expansion area enable further southern expansion of the mine into the wetland or increase the potential for impacts to said wetland in the future. Impacts to aquatic resources from potential future expansion beyond this proposal will be achieved by utilizing deed restrictions. Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. A deed restriction will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G.

Mitigation Measures

To mitigate the impacts to the adjoining wetland area, SCS is proposing the following mitigation measures:

1. **Reduced Footprint:** SCS' current 15 +/- acre proposal is far smaller than the preferred on-site expansion alternatives discussed in Sections 3.2.2 and 5.4, which would impact 86 acres, 61 acres and 41 acres of regulated wetland, respectively, along with varying impacts to the ephemeral ditch. Although the Applicant believes that any one of these three alternatives is preferable from an efficiency standpoint and can be accomplished in conjunction with appropriate off-site wetland mitigation measures, the time-sensitivity of the Applicant's current operational capacity dictated the need for SCS' current scaled-down proposal.

The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species. This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option.

2. **Perimeter Berm:** The Class C stream identified along the southern limits of the proposed mine expansion is low quality. During the ecological survey visits during late summer and fall, the ditch was completely dry and devoid of any evidence of recent inundation or flow. During the spring visits, the ditch had several inches of stagnant water. The banks of the ditch are dominated by Phragmites and limited ecological values are present. Installation of a marl berm with tree/shrub plantings along the north edge of the ditch will provide a vegetative buffer to the ditch and wetland south of the ditch. The existing ditch already catches significant hydrology from the emergent marsh community south of the ditch. Preventing impacts to the ditch will help with retaining proper hydrology within the avoided wetlands.

   A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding over the ditch. The marl perimeter berm will be constructed north of the ditch, along the inside edge of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring.

   The berm will be constructed of marl placed in continuous 6 to 9-inch layers over the entire length of the fill. Each layer will be compacted after placement by routing earth-moving equipment or a compactor over the marl fill until the compaction rate is equal or greater than 90% of the existing virgin marl. The berm will be constructed to an elevation at least 3 feet above the existing grade and will be continuous and smooth graded. Vegetation will be established immediately after construction by placing a minimum of 6 inches of topsoil on the berm prior to seeding and mulching.

   The location, extent and additional details of the perimeter berm are part of the Mined Land-Use Plan paperwork included as Appendix C.

3. **Monitoring Plan:** Adaptive management of the mining and mitigation sites will be achieved through monitoring of invasive plant growth, hydrology and ground water.

   <u>Invasive Plant Growth and Hydrology Monitoring</u>

   Annual visual monitoring of the wetland south of the ditch will be conducted to document invasive plant growth/expansion and hydrology levels will be utilized. Annual monitoring is proposed for 5 years after completion of the mine expansion.

Deficiencies or issues identified during the annual monitoring (expanded invasive species, lack of hydrology, etc.) will be addressed on a case-by-case basis.

Ground Water Monitoring

SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue at the monthly frequency already required by SCS' Mining Permit Special Condition #12.

Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow, perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

4. **Deed Restriction:** Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. Appropriate deed restrictions will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G. Appropriate deed restrictions will also be placed on the created wetland resources and 100-foot wetland buffer areas at the proposed wetland mitigation site.

The reduced footprint of the expansion proposal, perimeter berm, monitoring plan proposal and deed restriction will minimize and mitigate adverse impacts on adjoining wetland functions.

4.1.3 Conformance With NYSDEC Wetland Permit Issuance Standards

6 NYCRR Part 663 defines the procedural requirements to be followed in undertaking different activities in wetlands and wetland adjacent areas and establishes the standards governing the issuance of permits.

The portion of NYSDEC Wetland MD-9 affected by this proposal is considered Class II under 6 NYCRR Part 664 regulations and the proposed activity, mining, is identified in part 663.4(d) as P(X)[8]. 6 NYCRR 663.5(e)(2) requires that all proposed activities within Class II wetlands which are identified as P(X) meet each of the following standards for permit issuance:

1. The proposed activity must be compatible with the public health and welfare,
2. Be the only practicable alternative that could accomplish the applicant's objectives, and
3. Have no practicable alternative on a site that is not a freshwater wetland or adjacent area.

The proposed activity must minimize degradation to, or loss of, any part of the wetland or its adjacent area and must minimize any adverse impacts on the functions and benefits that the wetland provides.

4.1.3.1 Class II Wetland Standards (per 6 NYCRR 663.5(e) and (f):

Class II wetlands provide important wetland benefits, the loss of which is acceptable only in very limited circumstances. a permit shall be issued only if it is determined that the proposed activity satisfies a pressing economic or social need that clearly outweighs the loss of or detriment to the benefit(s) of the Class II wetland.

> (i) ". . . loss of which is acceptable only in limited circumstances." Permits for most activities that could not avoid causing a loss of or detriment to a benefit provided by a Class II wetland would not be approved.
>
> (ii) ". . . satisfies a pressing economic or social need. . ." Pressing should suggest that for the need to outweigh the loss of or detriment to a benefit of a Class II

[8] 'P' signifies that a permit is required, and 'X' signifies that the activity is incompatible with a wetland.

wetland, it must be urgent and intense, though it does not have to be necessary or unavoidable.

(iii) ". . . clearly outweighs. . ." means that the need for the proposed activity must outweigh the loss of or detriment to the benefits in a way that is beyond serious debate, although there does not have to be a large or significant margin between the need and the loss.

4.1.3.1.1 Compatibility with Public Health and Welfare

4.1.3.1.1.1 Standards for Compatibility with Public Health and Welfare

6NYCRR 663.5(f)(1) interprets 'public health and welfare' to include:

(i) consistency of the proposed activity with physical health, if necessary, as judged by health professionals; and

(ii) consistency with related Federal, State and local laws, regulations and policies.

If a proposed activity is inconsistent with physical health, or with any related laws, regulations and government policies, this would weigh against issuing a permit under the act until such conditions were met that would make the proposed activity consistent with these provisions.

4.1.3.1.1.2 Project Compatibility with Public Health and Welfare

The proposal is not inconsistent with physical health, or with any related laws, regulations and government policies. The project is designed to mitigate the potential for impacts to public health and welfare, including potential noise, vibration, visual, traffic, dust and ground water and surface water impacts, to the maximum extent practicable. The project proposal, mining and the removal of wetlands, is a regulated activity under the ECL and can be permitted if and when the standards set forth in the regulations listed in this section are met.

4.1.3.1.2 Practicable Alternatives

4.1.3.1.2.1 Standards for Practicable Alternatives

6NYCRR 663.5(f)(2) interprets 'only practicable alternative' to mean: "A proposed activity is the only practicable alternative if no other is physically or economically feasible. This

does not, however, mean that the most profitable or least costly alternative is the only feasible one nor that the least profitable or more costly alternative is the only feasible one."

4.1.3.1.2.2 Project Practicable Alternatives

An exhaustive investigation of all off-site and on-site practicable alternatives to the proposal was conducted including:

- A no action alternative,
- The feasibility of nine different alternative sites,
- Alternative depths within the current quarry,
- Alternative project size and
- Alternative project schedule.

The alternatives investigation determined that there are no viable alternatives to the proposal. The practicable alternatives investigation is presented in Section 5.0.

4.1.3.1.3 Economic and Social Need and Burden

4.1.3.1.3.1 Standards for Economic and Social Need and Burden

6NYCRR 663.5(f)(3) defines 'economic and social need' as: "When the economic and social need for the proposed activity is considered, the economic and social burden that would be imposed on the public shall be considered. The public economic and social burden may include: associated services, such as sewer systems, schools, and fire and police protection, necessitated by the proposed activity; prevention of contamination, flood or other damage to the proposed development on the wetland by methods such as channelization, alteration of land, alteration of water flow, draining or construction of dams, dikes or levees; and/or services and repairs, such as medical care, pumping, cleaning, dredging and emergency assistance as a result of contamination, flooding or other damage to the proposed development on the wetland. Nothing in this section precludes the consideration of any issue which must be addressed under the State Environmental Quality Review Act (article 8 of the Environmental Conservation Law)."

4.1.3.1.3.2 Project Related Economic and Social Need and Burden

Social Need

This proposal will allow SCS to continue to provide economic benefits to the local community, including but not limited to direct and indirect employment, cost savings to

the local communities associated with a local source of stone products, sales tax, property tax and employment tax revenue, and avoided trucking costs and associated wear and tear on infrastructure. The overall annual financial impact (in 2020 dollars, and not including sales or income tax revenues) on Medina, NY and surrounding area if SCS' Joint Application is not granted will total $7,298,820. These economic benefits would be eliminated if the Applicant is forced to terminate operations.

The continuation of mining operations at the Medina Mine will yield compelling environmental benefits as well by reducing vehicle miles traveled and associated decreases in greenhouse gas emissions associated with aggregate shipping from more distant locations. SCS estimates that without the Medina Quarry, the additional truck miles needed to supply to Medina Quarry market would be 209,497 miles annually. At an average fuel use of 5 miles per gallon, which equates to an additional 41,899 gallons of diesel fuel consumed and an additional 937,707 pounds of CO_2 emitted into the atmosphere if Shelby no longer exists.

In addition, unlike most other industrial activities, mining operations are temporary land-uses and NYSDEC approval of the proposed expansion area ultimately will result in ponds stocked with fish and perimeter habitat for nectar-needing biota (monarch butterfly, honeybee, etc.) which will promote species diversity.

Additional information regarding significant public need and benefits is included in Section 3.3.

Social Burden

Associated Services: The project is an expansion of an existing use and will not increase the social burden on associated services such as sewer systems, schools, and fire and police protection.

Contamination: Mining, by itself, does not impact water quality. However, as with any activity, care should be taken that potential contaminants are not spilled or disposed of in a manner that would reduce the quality of the groundwater. The main potential sources of contamination are:

- Accidental leakage from storage tanks.
- Accidental leakage during fuel delivery.
- Accidental leakage from operating or parked equipment.
- Vandalism.

No storage of petroleum, chemicals or hazardous substances will occur in the modification area. In the unlikely event of a reportable spill, the NYSDEC Spill Hotline (800-457-7362) will be contacted immediately and clean up done in accordance with their recommendations.

Flooding: The proposal will not increase the chance of flooding in the wetland or at other downgradient resources. The existing intermittent drainage channel/Class C stream located immediately to the south of the expansion area will remain undisturbed and continue to function as it currently does. The proposed marl perimeter berm will prevent stormwater from the expansion area from entering the drainage ditch while also preventing the wetland from draining into the quarry during any flood conditions.

As discussed in Section 4.2.1.2, a full water budget analysis was prepared by Alpha Geoscience to analyze the potential for surficial hydrogeologic impacts, including flooding. The water budget analysis is included in Appendix E. The water budget analysis modeled the current hydrologic conditions as well as the future hydrologic conditions after the mine expansion to determine the potential for impact.

The water budget determined that the existing water contribution to wetland MD-9 from the 1448-acre drainage basin outside the wetland is approximately 708 gpm. Mining in the proposed expansion area will result in the removal of 6.3 acres of the 1448-acre drainage basin that contributes surface water to MD-9. The removal of this area will decrease the amount of runoff to the wetland by 1.3 gpm and represents a 0.18% decrease in the amount of runoff contribution to the wetland.

The existing direct precipitation, evapotranspiration, and percolation within the wetland will decrease approximately 1.8% when the 8.7-acre portion of wetland is removed.

Based upon this data and current site conditions, Alpha concluded that the hydrological impact to the ecology of the remaining wetland, after mine expansion, will be insubstantial.

There will be no significant surficial hydrogeologic impact to the adjoining wetland as a result of the mine expansion for the following reasons:

a. No change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream in the primary ditch. The clayey silt layer beneath the wetland

discussed in Sections 4.1.2.2 and 4.2.2 is the primary reason that the wetland exists. Water in the primary ditch will continue to naturally back up into the feeder ditches and low areas of the wetland south of the primary ditch as it has done for decades. This will not change as a result of the mine expansion.

b. The rate of infiltration to the subsurface will not change as a result of the mine expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the mine expansion. The wet season of the wetland occurs during winter and spring as a seasonal perched water table develops on the underlying clayey silt layer. The perched water table diminishes throughout the summer due to evapotranspiration and slow downward percolation as rainfall diminishes and vegetation growth flourishes. This condition occurs with or without the mine expansion.

c. A berm will be constructed on the north side of the primary ditch to prevent drainage of the wetland. A marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area, between the primary ditch and the quarry, prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring. The location and extent of the perimeter berm is shown on Figure 3 and the Mining Plan Map included in Appendix C; berm construction details are included as Appendix C and are summarized in Sections 4.1.1.3 and 4.1.2.2.

Channelization: No additional runoff sources will be created as a result of this proposal and there will be no significant hydrogeologic impact to the adjoining wetland that would increase the potential for channelization for the following reasons:

a. No change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream in the primary ditch. The clayey silt layer beneath the wetland discussed in Sections 4.1.2.2 and 4.2.2 is the primary reason that the wetland exists. Water in the primary ditch will continue to naturally back up into the feeder ditches and low areas of the wetland south of the primary ditch as it has done for decades. This will not change as a result of the mine expansion.

b. The rate of infiltration to the subsurface will not change as a result of the mine expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the mine expansion. The wet season of the wetland occurs during winter and spring as a seasonal perched water table develops on the underlying clayey silt layer. The perched water table diminishes throughout the summer due to evapotranspiration and slow downward percolation

as rainfall diminishes and vegetation growth flourishes. This condition occurs with or without the mine expansion.

c. The location of the proposed marl berm just north of the primary ditch will direct all project area stormwater internally, thereby eliminating the potential for channelization from runoff. The perimeter will berm also prevent drainage from the wetland into the expansion area and potential channelization of the wetland. The location and extent of the perimeter berm is shown on Figure 3 and the Mining Plan Map included in Appendix C; berm construction details are included as Appendix C and are summarized in Sections 4.1.1.3 and 4.1.2.2.

Alteration of Land: The proposal will not alter the land outside of the expansion area. Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. Appropriate deed restrictions will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G. Appropriate deed restrictions will also be placed on the created wetland resources and 100-foot wetland buffer areas at the proposed wetland mitigation site.

Alternation of Water Flow: The proposal will not alter the flow of water outside of the expansion area. The existing intermittent drainage channel/Class C stream located immediately to the south of the expansion area will remain undisturbed and continue to function as it currently does. The proposed marl perimeter berm will prevent stormwater from the expansion area from entering the drainage ditch while also preventing the wetland from draining into the quarry during any flood conditions.

As discussed in Section 4.2.1.2, a full water budget analysis was prepared by Alpha Geoscience to analyze the potential for surficial hydrogeologic impacts, including water flow. The water budget analysis is included in Appendix E. The water budget analysis modeled the current hydrologic conditions as well as the future hydrologic conditions after the mine expansion to determine the potential for impact.

The water budget determined that the existing water contribution to wetland MD-9 from the 1448-acre drainage basin outside the wetland is approximately 708 gpm. Mining in the proposed expansion area will result in the removal of 6.3 acres of the 1448-acre drainage basin that contributes surface water to MD-9. The removal of this area will decrease the amount of runoff to the wetland by 1.3 gpm and represents a 0.18% decrease in the amount of runoff contribution to the wetland.

The existing direct precipitation, evapotranspiration, and percolation within the wetland will decrease approximately 1.8% when the 8.7-acre portion of wetland is removed. Based upon this data and current site conditions, Alpha concluded that the hydrological impact to the ecology of the remaining wetland, after mine expansion, will be insubstantial.

There will be no significant surficial hydrogeologic impact to the adjoining wetland as a result of the mine expansion for the following reasons:

a. No change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream in the primary ditch. The clayey silt layer beneath the wetland discussed in Sections 4.1.2.2 and 4.2.2 is the primary reason that the wetland exists. Water in the primary ditch will continue to naturally back up into the feeder ditches and low areas of the wetland south of the primary ditch as it has done for decades. This will not change as a result of the mine expansion.

b. The rate of infiltration to the subsurface will not change as a result of the mine expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the mine expansion. The wet season of the wetland occurs during winter and spring as a seasonal perched water table develops on the underlying clayey silt layer. The perched water table diminishes throughout the summer due to evapotranspiration and slow downward percolation as rainfall diminishes and vegetation growth flourishes. This condition occurs with or without the mine expansion.

c. A berm will be constructed on the north side of the primary ditch to prevent drainage of the wetland. A marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area, between the primary ditch and the quarry, prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring. The location and extent of the perimeter berm is shown on Figure 3 and the Mining Plan Map included in Appendix C; berm construction details are included as Appendix C and are summarized in Sections 4.1.1.3 and 4.1.2.2.

Draining or Construction of Dams, Dikes of Levees: No dams, dikes or levees will be removed as part of this proposal. The project as proposed will create a perimeter berm around the expansion area as a mitigation measure to address the potential for draining of the wetland south of the expansion area and to prevent stormwater from within the expansion area from entering the wetland.

The construction of the perimeter berm will not impact the adjoining wetland because there will be no change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream in the primary ditch. The clayey silt layer beneath the wetland discussed in Sections 4.1.2.2 and 4.2.2 is the primary reason that the wetland exists. Water in the primary ditch will continue to naturally back up into the feeder ditches and low areas of the wetland south of the primary ditch as it has done for decades. This will not change as a result of the mine expansion.

As discussed in Section 4.2.1.2, a full water budget analysis was prepared by Alpha Geoscience to analyze the potential for surficial hydrogeologic impacts, including water flow. The water budget analysis is included in Appendix E. The existing direct precipitation, evapotranspiration, and percolation within the wetland will decrease approximately 1.8% when the 8.7-acre portion of wetland is removed. Based upon this data and current site conditions, Alpha concluded that the hydrological impact to the ecology of the remaining wetland, after mine expansion, will be insubstantial.

Services and Repairs: No increase in the demand for services or repairs are associated with this proposal. As demonstrated above, the project does not present a risk of contamination, flooding or other damage to the proposed development on the wetland.

4.1.3.2 Mitigation of Impacts

4.1.3.2.1 Standards for Mitigation

NYSDEC wetland mitigation standards are listed in 6 NYCRR Part 663 and covered in detail in the NYSDEC Regulatory Guidance: *Freshwater Wetlands Regulation Guidelines on Compensatory Mitigation* "Wetlands Guidance".

6 NYCRR 663.5(g) states that:
(1) The applicant may suggest a proposal to enhance the existing benefits provided by a wetland or to create and maintain new wetland benefits in order to increase the likelihood that a proposed activity will meet the applicable standards for permit issuance. Such a proposal must meet the following provisions:

> (i) the mitigation must occur on or in the immediate vicinity of the site of the proposed project;

(ii) the area affected by the proposed mitigation must be regulated by the act and this Part after mitigative measures are completed; and

(iii) the mitigation must provide substantially the same or more benefits that will be lost through the proposed activity.

(2) Any mitigation considered as part of a permit granted pursuant to this Part will be included as a condition on such permit and must be complied with as mandatory if other work is started or completed.

(3) If mitigation proposed does not totally compensate for lost values or benefits that would be lost by the proposed activity, then the net loss of benefits must be assessed. Any unmitigated net loss of wetland values must then be weighed according to standards contained in section 663.5 of this Part.

The NYSDEC Wetlands Guidance lists six (6) guidelines for wetland mitigation:

1. Priority requirements are to first avoid and then minimize project impacts.
2. Compensatory mitigation should preferably be "in-kind".
3. Compensatory mitigation preferably should be "on-site".
4. The preferred order of compensatory mitigation is wetland restoration, then creation, and finally enhancement.
5. Mitigation proposals should be based on plans containing clear specific detail, short- and long-term goals and measurable performance criteria.
6. Mitigation preferably should be completed prior to starting the permitted project or concurrently with it.

4.1.3.2.2 Project Mitigation Summary

The proposed project minimizes wetland loss, minimizes adverse impacts on the overall wetland functions and benefits and restores wildlife habitat and hydrology in an area degraded by farming activities. Six wetland mitigation measures are proposed:

1. **Reduced Footprint:** The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species (see Section 4.1.1.1). This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option.

2. **Perimeter Berm:** A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding. The marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring (see Section 4.1.1.3).

3. **Replacement:** Replacement mitigation for impacts to the wetland and adjacent area is proposed off-site at ratios outlined in USEPA/USACE's June 9, 2018 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (the "2008 Final Mitigation Rule"). The proposed mitigation area will be comprised of approximately 24.5 acres consisting of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland in order to mitigate the impact of 6.11± acres of regulated upland adjacent area at the project site. Additional details are provided below in Section 4.1.3.2.3 and the Wetland Mitigation Plan is included in Appendix G.

4. **Monitoring Plan:** Adaptive management of the mining and mitigation sites will be achieved through monitoring of invasive plant growth, hydrology and ground water.

   Invasive Plant Growth and Hydrology Monitoring

   For the mining site, annual visual monitoring of the wetland south of the ditch to document invasive plant growth/expansion and hydrology levels will be utilized. Annual monitoring is proposed for 5 years after completion of the mine expansion. For the mitigation site, detailed annual monitoring of the mitigation areas and preservation areas is proposed for the first 10 years after construction. Details of the annual monitoring for the mitigation area are provided in the Mitigation Plan included as Appendix G. Deficiencies or issues identified during the annual monitoring (expanded invasive species, lack of hydrology, etc.) will be addressed on a case-by-case basis.

   Ground Water Monitoring

   SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue at the monthly frequency already required by SCS' Mining Permit Special Condition #12.

   Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows

the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow, perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

5. **Deed Restrictions:** Minimizing impacts to remaining aquatic resources within the mine property will be achieved by utilizing deed restrictions. Appropriate deed restrictions will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G. Appropriate deed restrictions will also be placed on the created wetland resources and 100-foot wetland buffer areas at the proposed wetland mitigation site.
6. **Enhanced Reclamation**: This mining proposal represents a temporary land-use that is expected to be completed approximately 10 years after implementation. Once all mining is completed the entire SCS quarry area will be reclaimed to ponds. The upper slopes of the expansion area pond will be vegetated with native grass and wildflower seed mixes. This will enhance the habitat for nectar-needing biota (monarch butterfly, honeybee, etc.) and will promote species diversity. Per the reclamation plan, the ponds will be stocked with fish. It is expected that the ponds will naturalize over time and aquatic vegetation will dominate the shallow edges.

4.1.3.2.3 Enhancement or Creation of New Wetland Benefits

To compensate for the total loss of 8.69± acres of jurisdictional wetland, Shelby Crushed Stone is proposing the off-site creation of 17.81± acres of shallow emergent marsh and hardwood swamp communities, off-site restoration of 6.66 acres of shallow emergent marsh wetland, off-site preservation of 2.04 acres of existing wetland, and on-site preservation of 73.3 acres of existing wetland to be avoided. To compensate for the impact to 6.11 acres of state regulated 100-foot adjacent area, the applicant is proposing

the off-site creation of 11.09 acres of upland adjacent area and the preservation of 1.22 acres of upland woods. The off-site mitigation is proposed at a site on Pask Road in the Town of Barre (Figure 13).

4.1.3.2.3.1 Mitigation Site Description

The mitigation site consists mostly of active agricultural fields with areas of successional northern hardwoods and successional old field communities interspersed. The published Soil Survey of Orleans County identifies soils within the proposed wetland creation areas as Niagara silt loam, Lakemont silty clay loam, and Odessa silt loam (Figure 14).

The Pask Road mitigation site is located 5.5 miles east of the SCS quarry expansion area and was chosen based on the proximity to the SCS Quarry and availability.

The Pask Road mitigation site and the SCS Quarry expansion area are located within the Oak Orchard Creek watershed, which is a sub watershed of the Lake Ontario watershed. Per mitigation requirements, the mitigation location must be within the same watershed that is proposed for impact. The mitigation site has suitable soil characteristics for successful hydrology. The on-site mitigation site is owned by Shelby Crushed Stone (the Applicant) and is therefore available for carrying out the proposed mitigation.

Northern Harrier

The mitigation site is immediately adjacent to a recently documented northern harrier (NYS threatened) wintering area and within the 0.5-mile home range for this species. To investigate the potential for impact to northern harrier a Winter Grassland Raptor Survey was conducted by EDI and is included in Appendix G.

Winter Raptor Survey visits were conducted at the Site from December 13, 2021 through March 21, 2022. A total of eight (8) surveys were conducted, twice per month from December through March on suitable weather days. During the surveys at the Site, no Northern Harriers were observed within or adjacent to the property. Driving surveys of the surrounding area did identify two (2) occurrences of Northern Harrier in the vicinity of the known wintering location. A combination of driving surveys and stationary surveys were utilized to document all bird activity within the Site and adjacent habitats.

Baseline habitat data was obtained during the field surveys, which identified the Site as dominated by agricultural fields that had been planted with soybeans the previous season. Hedgerows are present which may provide perches during hunting, but limited potential

for high small mammal populations are expected based on the current land use and adjacent habitats.

During the field surveys no direct observations of foraging, roosting, perched or flying Northern Harriers (or other listed wintering raptor species) were noted at the Site. Site conditions and ecological communities are not ideal for use by wintering Northern Harriers. The lack of dense herbaceous vegetation for small mammals resulted in lack of use within the Mitigation Site. Northern Harriers were not observed in high numbers in the community surrounding the Site.

Based on the results of the survey it is EDI's professional opinion that the Site does not host potentially suitable habitat for wintering Northern Harriers, nor is it used frequently by wintering Northern Harriers, therefore the proposed site plan of creating wetland mitigation will have no impact on wintering Northern Harriers. Additionally, the creation of emergent marsh wetland mitigation will enhance the Site and may lead to foraging opportunities by Northern Harriers in the future.

4.1.3.2.3.2 Mitigation Site Construction Plan

The objective of the wetland creation is to replace the functions and values lost as a result of the proposed expansion project. The determination of credits was determined based on the creation to impact ratio of 3:1 for shallow emergent marsh and 4:1 for hardwood swamp and was determined to be appropriate given the average quality of the wetland impact area (invasive species, location proximate to Pask Road). These ratios are based on the recommended ratios contained in the final mitigation rule (2008). In addition to the wetland creation, there will be 6.66± acres of shallow emergent wetland restoration, 2.04 acres± of off-site forested wetland preservation, and 73.3 acres of on-site wetland preservation. Along with the wetland creation, restoration, and preservation, there will be an additional 11.04± acres of buffer creation and 1.22± acre of upland buffer preservation (Figure 15).

The following construction steps are recommended by EDI in their Pask Road Wetland Mitigation Plan:

1. Strip the topsoil from the creation area and stockpile in a separate staging area or reuse as a seed bed in the appropriate zone and as fill for future construction. (No stockpiling of topsoil or subsoil will occur within any regulated wetlands or buffers).

2. Excavate as per specifications shown on the Mitigation Plans (Figure 15). It is recommended that low impact and/or tracked equipment is utilized in the construction of the mitigation area. Rough finish grading should create rough surfaces on all side slopes and a ragged shoreline. It is important that survey control be established in order to assure that the final planned elevations are obtained. The wetland mitigation area should be over-excavated by six (6) inches to allow for the reapplication of topsoil.
3. Place a minimum of six inches of topsoil within the wetland creation area and bring the creation area to the proposed elevations. This soil should come from the topsoil excavated from this area unless the soil contains invasive species propagules, in which case the topsoil should be sourced from an area that does not contain invasive plant parts or seeds.
4. It is critical if heavy equipment and or untracked equipment is utilized within the mitigation areas that the soils are decompacted prior to planting. The soils should be fluffed-ripped using a disc, chisel plow or other means prior to planting. Disc the surface to an approximate depth of six (6) inches after topsoil has been replaced within ALL creation areas. While performing decompacting efforts, avoid mixing subsoil and topsoil to the maximum extent possible. After disking, a hand operated cone penetrometer or other method should be used to confirm acceptable compaction levels and planting can commence.

4.1.3.2.3.3 Mitigation Site Plantings

Immediately following mitigation construction, all areas including wetland creation areas, berms and disturbed upland areas will be seeded with the respective seed mixtures and rates specified in the Wetland Mitigation Plan. The wetland creation area is proposed to have tree plantings and a forested wetland/shallow emergent seed mix.

Hardwood Swamp Tree Plantings

One-thousand three hundred and sixty #2 size tree plantings are proposed for the hardwood swamp wetland creation area. The trees proposed for planting within the mitigation include equal numbers of Swamp White Oak, Pin Oak, American Sycamore and Red Maple. These trees were selected by considering soil conditions, climate, hydrology, inundation tolerance, shade tolerance, wildlife benefit and other factors in determining suitable species for planting.

The wetland creation is designed to be a hardwood swamp community with several trees for increased diversity and habitat. The plan utilizes the expectation that volunteer species will establish in addition to the planted trees. The planting scheme is random to mimic what occurs naturally.

Wetland/Shallow Emergent Seed Mix

Wetland seeding with a cover crop is proposed immediately followed by straw mulch to retain moisture. It is expected that ground water and precipitation will allow for proper hydrology within the basin. Vegetation is expected to be supplemented by existing native species as well as the seed mixes. The seed mix can take up to a year to germinate as some species of wetland seeds need to cold stratify before emerging.

The cover crop will consist of Annual Rye Grass applied at a rate of 10 lbs./acre. The wetland seeding mixture is included as Table 5.

Upland Tree Planting

One-thousand one hundred #2 size tree plantings are proposed for the upland creation area. The trees proposed for planting within the mitigation include equal numbers of White Oak, Red Oak, Eastern Cottonwood, Red Maple and Eastern Redbud. These trees were selected by considering soil conditions, climate, hydrology, inundation tolerance, shade tolerance, wildlife benefit and other factors in determining suitable species for planting.

Upland Seeding

The upland seeding mixture and rate is included as Table 6. Upland areas disturbed by the construction of the wetland creation areas will be seeded and mulched immediately after the earthwork has been completed in order to stabilize these areas and minimize the risk of soil erosion.

4.1.3.2.3.4 Performance Standards and Monitoring

The project will include at a minimum, the creation of 17.81 acres of shallow emergent marsh and hardwood swamp and restoration of 6.66 acres of emergent marsh to compensate for the loss of 8.696 acres of federal and state regulated wetlands.

A minimum of 85% coverage of beneficial species will be obtained and total coverage will meet or exceed 80%, with no more than 50% coverage of one species. Less than 5% of the wetland vegetative composition will include invasive species (i.e., Lythrum salicaria and Phragmites australis).

Seasonal inundation/saturation of between 0 and 6 inches of water will be established and maintained for at least 12.5% of the growing season for 80% of the monitoring years.

The wetland creation area will provide adequate protection and habitat for an array of nesting birds, amphibians and reptiles.

SCS will submit annual monitoring reports to the USACE for the first ten (10) years following completion of construction and initial planting efforts. Please see the Wetland Mitigation Plan located in Appendix G for the proposed Maintenance and Inspection Schedule.

SCS will be responsible for first successfully meeting the short-term requirements of the permit, including any necessary adaptive management measures. If invasive species control measures are required, SCS will develop a plan to control the species that establish and present a plan to USACE for approval. Minor occurrences of invasive species will be manually removed during scheduled monitoring visits. Should hydrology not properly establish, the Applicant will develop a plan to attain planned hydrology.

4.1.3.2.4 Applicability of Mitigation with 6 NYCRR 663.5(g)

1. **The mitigation must occur on or in the immediate vicinity of the site of the proposed project.**

To compensate for the total loss of 8.69± acres of jurisdictional wetland, Shelby Crushed Stone is proposing the off-site creation of 17.81± acres of shallow emergent marsh and hardwood swamp communities, off-site restoration of 6.66 acres of shallow emergent marsh wetland, off-site preservation of 2.04 acres of existing wetland, and on-site preservation of 73.3 acres of existing wetland to be avoided. To compensate for the impact to 6.11 acres of state regulated 100-foot adjacent area, the applicant is proposing the off-site creation of 11.09 acres of upland adjacent area and the preservation of 1.22 acres of upland woods.

The off-site mitigation is proposed at a site on Pask Road in the Town of Barre (Figure 13), 5.5 miles east of the SCS quarry expansion area. This location was chosen based on the proximity to the SCS Quarry and availability.

The Pask Road mitigation site and the SCS Quarry expansion area are both located within the Oak Orchard Creek watershed, which is a sub watershed of the Lake Ontario watershed. The mitigation site has suitable soil characteristics for successful hydrology.

The on-site mitigation site is owned by Shelby Crushed Stone (the Applicant) and is therefore available for carrying out the proposed mitigation.

2. **The area affected by the proposed mitigation must be regulated by the act and this Part after mitigative measures are completed.**

Deed restrictions are proposed to be utilized at the mitigation site to protect the created wetlands and buffer areas.

3. **The mitigation must provide substantially the same or more benefits that will be lost through the proposed activity.**

Replacement mitigation for impacts to the wetland and adjacent area is proposed, at ratios outlined in the 2008 Final Mitigation Rule, at a parcel owned by the applicant which is currently in active agriculture (Table 3). The proposed mitigation area will be comprised of approximately 24.5 acres consisting of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland in order to mitigate the impact of 6.11± acres of regulated upland adjacent area at the Medina Mine.

Based on the functions and values assessment included in the mitigation plan, the Applicant is confident that the minimal functions lost as a result of the Medina Mine expansion will be replaced through the creation and restoration at the mitigation site. The impact wetland is heavily encumbered with invasive species whereas the proposed mitigation site has been in agricultural production and is free of invasives, setting it up for success.

4.1.3.2.5 Applicability of Mitigation with NYSDEC Regulatory Guidance: Freshwater Wetlands Regulation Guidelines on Compensatory Mitigation

Each sub-section of the Wetland Guidance is provided in italics followed by the relevant portion of the application that applies.

1. **Priority requirements are to first avoid and then minimize project impacts.**

Compensatory mitigation is only used when it can offset project impacts that cannot be avoided entirely or reduced any further

The proposal avoids and minimizes project impacts to the maximum extent practicable. The proposed expansion area is designed to minimize impacts on wetland hydrology and

the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species (see Section 4.1.1.1).

An exhaustive investigation of all off-site and on-site practicable alternatives to the proposal was conducted including:

- A no action alternative,
- The feasibility of nine different alternative sites,
- Alternative depths within the current quarry,
- Alternative project size and
- Alternative project schedule.

The preferred on-site expansion alternatives discussed in Sections 3.2.2 and 5.4 would impact 86 acres, 61 acres and 41 acres of regulated wetland, respectively, along with varying levels of stream impact.

The alternatives investigation determined that there are no viable alternatives to the proposal. The practicable alternatives investigation is presented in Section 5.0.

This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option. This reduced expansion footprint and significant wetland mitigation proposal is proposed in order to strike an appropriate and reasonable balance between the preservation of important wetland functions, values and benefits pursuant to CWA Section 404(b)(1) and ECL Article 24 and the furtherance of compelling economic and social needs within the meaning of E.C.L. § 24-0103, 6 N.Y.C.R.R. §§ 663.1(a) and 663.5(e).

2. Compensatory mitigation should preferably be "in-kind".

In-kind mitigation means replacing a wetland that is being altered with a wetland of the same type -- for example replacing emergent marsh with emergent marsh. Functions and benefits of the replacement wetland are assumed to be generally the same as those of the wetland being replaced.

Replacement with the same wetland type maintains the amount of that type in some geographical context. It is the most conservative approach when project impacts have not been or cannot be fully assessed.

The proposed mitigation will be comprised of approximately 24.5 acres consisting of mixed shallow emergent marsh and hardwood swamp wetland and 2 acres of wetland preservation in order to replace the wetland impacted in kind. In addition, the Applicant is proposing the creation of 12.4 acres of upland adjacent area tree plantings adjacent to the newly created wetland in order to mitigate the impact of 6.11± acres of regulated upland adjacent area at the Medina Mine. Additional details are provided below in Section 4.1.3.2.3 and the Wetland Mitigation Plan is included in Appendix G.

Replacement with a different type -- for example replacing forested wetlands with emergent marsh is considered "out-of-kind"; it is acceptable in limited circumstances. It is not always possible to replace some types of wetland, such as bogs or mature red maple swamps. It is not always desirable to replace a wetland type. For example, the wetland type being lost may be predominant regionally. Successful replacement with a different, less common type can increase regional biological diversity. It may also better contribute to other regional conservation goals.

The reasons for choosing out-of-kind replacement should be documented as part of the permitting process.

This is not applicable as in-kind mitigation is proposed.

Whether in-kind or out-of-kind, the proposed mitigation must provide substantially the same or more benefits than will be lost through the proposed activity [6 NYCRR 663.5 (g)].

Trade-off of one significant function for another must be avoided. For example, flood control could be provided without replacing lost wildlife habitat, but should not be allowed. The full array of lost functions and benefits should be replaced as closely as possible, consistent with the requirements of Part 663.

The primary function and values provided by the wetland area proposed for impact include floodflow alteration, nutrient removal and wildlife habitat. Based on the functions and values assessment included in the Proposed Wetland Mitigation Plan, included in Appendix G, the Applicant is confident that the minimal functions (see Table 7) lost as a result of the Medina Mine expansion will be replaced through the creation and restoration at the mitigation site.

The impact wetland is heavily encumbered with invasive species whereas the proposed mitigation site has been in agricultural production and is free of invasives, setting it up for success. The wetland creation areas are proposed as a both shallow emergent marsh and hardwood swamp communities. Trees will be scattered throughout the hardwood swamp mitigation area at a rate of 200 trees per acre (1360 trees total), along with a forested wetland seed mix. An emergent seed mix will be utilized within the shallow emergent marsh creation area. The purpose is to create a diverse habitat, maximizing the variety of species to inhabit this area.

3. Compensatory mitigation preferably should be "on-site".

Off-site mitigation is mitigation that is not within or contiguous to the impacted wetland. It may be within the project site boundaries, on adjacent property, elsewhere in the watershed or within some larger political, ecological or geographic area.

The off-site mitigation is proposed at a site on Pask Road in the Town of Barre (Figure 13), 5.5 miles east of the SCS quarry expansion area. This location was chosen based on the proximity to the SCS Quarry and availability.

The Pask Road mitigation site and the SCS Quarry expansion area are both located within the Oak Orchard Creek watershed, which is a sub watershed of the Lake Ontario watershed. The mitigation site has suitable soil characteristics for successful hydrology. The on-site mitigation site is owned by Shelby Crushed Stone (the Applicant) and is therefore available for carrying out the proposed mitigation.

Off-site mitigation is acceptable in some circumstances. On-site mitigation may not always be possible or desirable. For example, the configuration or physical limitations of a site may preclude on-site compensation, or the site may be contaminated.

As shown on Figures 5 and 12, the remainder of the property south of the intermittent ditch is comprised of NYSDEC Class 2 wetlands and buffer areas, which limits on-site wetland creation. On-site mitigation measures that can be implemented and are proposed include:

- A substantially reduced footprint that focuses on lower quality wetlands.
- A perimeter berm to prevent draining of the remaining wetland.

- Water level and hydrologic monitoring.
- Deed restrictions.
- Enhanced reclamation.

See Section 4.1.3.2.2 for details regarding on-site mitigation measures.

However, the benefits being provided by some wetland functions are site-dependent; others are not. Mitigation off-site does not compensate for loss of a function that is site-dependent but is not replaced on-site. If compensation for such a loss is necessary to meet permit standards in 6 NYCRR 663, a permit should be denied.

If a function is not site-dependent, mitigation done off-site may compensate for its loss. In this case, off-site mitigation could be used to help meet the permit standards in Part 663.

The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species (see Section 4.1.1.1) and separated from the high-quality wetland to the south by an intermittent ditch (see Section 4.1.1).

The primary function and values provided by the wetland area proposed for impact include floodflow alteration, nutrient removal and wildlife habitat. Based on the functions and values assessment included in the Proposed Wetland Mitigation Plan, included in Appendix G, the Applicant is confident that the minimal functions (see Table 7) lost as a result of the Medina Mine expansion will be mitigated and replaced through the creation and restoration at the mitigation site.

Mitigation measures that are proposed to address impact to wetland functions are discussed in detail in Section 4.1.2.2 and include:

1. **Reduced Footprint:** The proposed expansion area is designed to minimize impacts on wetland hydrology and the higher quality mature forested wetland on the site and instead focus on the lower quality emergent marsh which is heavily dominated by invasive species. This application represents a 90% reduction in wetland impacts associated with the preferred 86-acre expansion option.
2. **Perimeter Berm:** A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding over the ditch. The marl perimeter berm will be constructed north of the ditch, along the inside edge

of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring.

3. **Monitoring:** Monitoring of invasive plant growth, hydrology and ground water will be conducted.
4. **Deed Restriction:** A deed restriction will be placed on the avoided wetland resources and 100-foot wetland buffer areas, which will protect the resources from future impacts and/or development. Details regarding the proposed deed restrictions are included in the Wetland Mitigation Plan, included in Appendix G.

A function like flood control or storm water management usually must be replaced on-site if continued protection of the immediate down stream area is needed.

A full water budget analysis (included in Appendix E) was prepared to analyze the potential for surficial hydrogeologic impacts. The analysis determined that the hydrological impact to the ecology of the remaining wetland and downstream resources, after mine expansion, will be insubstantial. Details regarding the existing and proposed hydrologic conditions are included in Section 4.2.1.

The Hydrogeologic Evaluation (included in Appendix E) determined that no significant hydrogeologic impact to the adjoining wetland is anticipated as a result of the mine expansion. Details regarding the existing and proposed ground water conditions are included in Section 4.2.2.

Replacement of functions like water quality maintenance or nutrient export may be acceptable off-site if the mitigation occurs in the same watershed.

The Pask Road mitigation site and the SCS Quarry expansion area are both located within the Oak Orchard Creek watershed, which is a sub watershed of the Lake Ontario watershed.

Functions and values to be gained by the watershed include floodflow alteration, nutrient removal and wildlife habitat. The wetland creation area will provide additional area for retention of flood waters and nutrients from adjacent development. These functions will be performed by the ability of the mitigation area and adjacent preserved wetland to hold excess storm water, and in turn, remove nutrients and sediment by settling as well as provide quality wildlife habitat.

Values like recreation, open space and aesthetics might be replaced within the same city, town or county.

The Pask Road mitigation site is located just 5.5 miles away and in the same county as the SCS Quarry expansion area and will provide additional recreation, open space and aesthetic value. The Pask Road mitigation site will increase and preserve the overall recreation, open space and aesthetic value in Orleans County through the creation of 17.81± acres of shallow emergent marsh and hardwood swamp, restoration of 6.66 acres of emergent marsh, creation of 11.09 acres of upland adjacent area and the preservation of 1.22 acres of upland woods, see Table 3. These areas will be preserved though deed restrictions.

Wetland fish habitat must be replaced on the same body of water.

Not applicable.

Mitigation for lost wildlife habitat may be acceptable off-site within the same ecological zone as defined by the Department for wildlife management purposes.

The Pask Road mitigation site is located just 5.5 miles away and both the SCS Quarry expansion area and the Pask Road mitigation site are located within the Lake Ontario Lake Plain ecosystem. Both sites also sit within the Atlantic Flyway zone for bird migration, which funnels birds north to the boreal forest for breeding in the spring and south to wintering grounds in Central and South America in the fall.

The Pask Road mitigation site will increase and preserve the overall habitat area in Lake Ontario Lake Plain ecosystem through the creation of 17.81± acres of shallow emergent marsh and hardwood swamp, restoration of 6.66 acres of emergent marsh, creation of 11.09 acres of upland adjacent area and the preservation of 1.22 acres of upland woods. This additional habitat will be preserved though deed restrictions.

Baseline biological and habitat assessments were conducted at both the SCS Quarry expansion area and the Pask Road mitigation site (see Appendix G). The SCS Quarry expansion area assessment concluded that the proposal would have minimal effect on resources, including Birds of Conservation Concern. The Pask Road mitigation site assessment concluded that the proposed mitigation project may increase the quality of habitat for Northern Harriers to utilize the site in the future.

The point is that while the array of impacted functions and benefits should be replaced, it may be possible to separate them and compensate for different losses in different places.

All of the wetland functions that will be impacted under this proposal will be mitigated and replaced, see Section 4.1.3.2 for mitigation details.

Juxtaposition is important. A wetland restored or created abutting and contiguous with an existing wetland or waterbody is more likely to persist and be effective than an one created in isolation. An isolated wetland can be valuable if it is strategically placed, such as an open marsh located near upland nesting cover.

The Pask Road mitigation site will increase and preserve the overall protected wetland area in the Oak Orchard Creek watershed through wetland creation and preservation abutting an existing wetland. 17.81± acres of shallow emergent marsh and hardwood swamp will be created, 6.66 acres of emergent marsh will be restored, 11.09 acres of upland adjacent area will be created, and 1.22 acres of upland woods will be preserved, see Table 3. These additional wetland areas will be preserved though deed restrictions.

4. The preferred order of compensatory mitigation is wetland restoration, then creation, and finally enhancement.

Different situations may dictate different approaches, including a combination of these methods of mitigation.

All three mitigation methods are proposed. 17.81± acres of shallow emergent marsh and hardwood swamp will be created, 6.66 acres of emergent marsh will be restored, 11.09 acres of upland adjacent area will be created, and 1.22 acres of upland woods will be preserved, see Table 3. These mitigation areas will be preserved though deed restrictions.

Restoration means reclaiming a degraded wetland to bring back one or more functions that have been partially or completely lost by such actions as filling or draining. It is the preferred form of mitigation because it typically has the greatest chance of successfully establishing natural wetland functions. Opportunities for on-site wetland restoration are usually limited. Restoration is probably most applicable when off-site mitigation is used to replace some or all of the wetland functions impacted by the proposed project.

The Pask Road mitigation site offers an opportunity to restore a degraded wetland that has lost functions from draining for agriculture.

Creation means making a new wetland, usually by flooding or excavating lands that were not previously occupied by a wetland. It offers the benefit of maintaining no-net-loss of wetland acreage, perhaps, however, at the expense of important upland.

The Pask Road mitigation plan includes creation of new wetland as well as preservation of upland resources (wetland 100-foot buffer areas) through deed restrictions. Additional details are provided in Section 4.1.3.2.3 and the Wetland Mitigation Plan is included in Appendix G.

To date, there is less assurance of success in creating new wetland than in restoring a degraded one. Many created wetlands have not persisted over time or have not provided the functions for which they were designed. Success rates are improving as wetland construction technology is advancing. Careful design, monitoring, and long term maintenance are critical.

Adaptive management of the Pask Road mitigation site will be achieved through monitoring of invasive plant growth, hydrology and ground water, see Section 4.1.3.2.2 for details.

Creation is especially successful when it is done by enlarging an existing wetland or waterbody. Often, too, several acres of wetland can be constructed adjacent to an existing wetland or aquatic system for the cost of creating one acre of isolated wetland.

The Pask Road mitigation site will increase and preserve the overall protected wetland area in the Oak Orchard Creek watershed through creation and preservation of wetlands adjacent to an existing wetland, see Figure 15.

5. Mitigation proposals should be based on plans containing clear specific detail, short and long term goals and measurable performance criteria.

Project sponsors are responsible for designing and implementing mitigation measures as a legitimate project expense. Innovative proposals should be

encouraged, but they require more detailed planning, monitoring, and critical evaluation.

General guidelines on planning and implementing compensatory mitigation follow, with more detailed planning considerations listed in the Appendix. These guidelines should be applied sensibly. The detail needed, the intensity of follow-up monitoring and the requirements for performance guarantees must be considered in the context of the value of the wetland being impacted and the magnitude of the impacts. All mitigation proposals, even if relatively small, should be documented, however.

General Planning and Implementation Guidelines

a. Mitigation Goals

Establishment of wetland vegetation in and of itself is not acceptable as a goal or as a measure of success of a mitigation project. Goals and performance criteria must relate to successful replacement of the unavoidable wetland losses that are being mitigated. Meeting clear and specific performance standards is the measure of successful mitigation.

The goal of the Pask Road mitigation is to create a sustainable shallow emergent marsh and hardwood swamp community (Figure 15) that will replace the wetlands to be impacted at the proposed SCS Quarry site. Replacing the functions lost by the impact to the existing wetlands is critical to the success of the wetland creation area. Specific details regarding performance criteria and performance standards are included in Section 4.1.3.2.3.4 and the Proposed Mitigation Plan is included in Appendix G.

The project will include at a minimum, the creation of 17.81 acres of shallow emergent marsh and hardwood swamp and restoration of 6.66 acres of emergent marsh to compensate for the loss of 8.696 acres of federal and state regulated wetlands.

The project will establish and maintain 85% coverage of identified beneficial species; total coverage shall meet or exceed 80%, with no more than 50% coverage of one species. Less than 5% of the wetland vegetative composition will include invasive species (i.e., Lythrum salicaria and Phragmites australis).

The project will establish and maintain seasonal inundation/saturation of between 0 and 6 inches of water, for at least 12.5% of the growing season for 80% of the monitoring years.

The wetland creation area will provide adequate protection and habitat for an array of nesting birds, amphibians and reptiles.

b. Replacement Ratios

There are no mandated ratios for replacing lost wetland acreage, but replacement on at least a 1:1 basis is desirable. Replacement ratios should be evaluated and set on a project-by-project basis, considering the functions and benefits lost or gained, the acreage involved, and the mitigation being proposed.

It is very often necessary to replace more acreage than has been impacted to fully compensate for losses. Larger acreage may be needed as insurance against the uncertainties associated with trying to create a new wetland. Higher replacement ratios may also be needed to compensate for the long time it will take for a mitigation wetland to function at the same level and provide the benefits of the wetland being replaced.

The objective of the wetland creation is to replace the functions and values lost at the impact site. The determination of credits was determined based on the creation to impact ratio of 3:1 for shallow emergent marsh and 4:1 for hardwood swamp and was determined to be appropriate given the average quality of the wetland impact area (invasive species, location proximate to Pask Road). In addition to the wetland creation, there will be 6.66± acres of shallow emergent wetland restoration, 2.04 acres± of off-site forested wetland preservation, and 73.3 acres of on-site wetland preservation. Along with the wetland creation, restoration, and preservation, there will be an additional 11.04± acres of buffer creation and 1.22± acre of upland buffer preservation, see Table 3.

c. Persistence

Mitigation wetlands must persist over time, but not necessarily remain static. Ecological changes will occur in response to internal and external processes. Wetlands should be designed with the capacity to adapt to changing conditions and still persist in some form. They should not require intensive long term maintenance in order to remain as a viable wetland, unless the maintenance is provided for as a project cost and is guaranteed in some manner.

The project has been designed to be sustainable and self-maintaining. Once the wetland hydrology and hydrophytic vegetation has been established, it is anticipated that the wetland will continue to function without human intervention.

d. Monitoring

Mitigation projects should be monitored for an appropriate period as determined on a case-by-case basis. Long term monitoring is generally needed to assure the continued viability of mitigation wetlands. The five year minimum established in the Department's Freshwater Wetlands Enforcement Guidance Memorandum provides a useful reference point. Monitoring requirements should be coordinated with other regulatory agencies having jurisdiction over the project. There must be provisions to ensure that corrective action will be taken as needed until the wetland mitigation goals are met.

The permittee will submit annual monitoring reports to the USACE for the first ten (10) years following completion of construction and initial planting efforts. Please see the Proposed Mitigation Plan included in Appendix G for the proposed Maintenance and Inspection Schedule.

The report will include a summary of the data collected between May and October for that monitoring year.

These reports will include the following:

1. Comparison of site conditions to an as-built survey.
2. Wetland Delineation including a map of the wetland boundary.
3. Photographs (minimum of 12) from fixed locations including a photo-location map.
4. A plants species list including wetland indicator status, strata, dominant plants and aerial coverage.
5. A list of plants introduced through seeding and/or planting.
6. Water depth and date of measurement from representative locations within the mitigation area during the growing season. The sample points will be fixed locations and shall be plotted on a map.
7. Fish and wildlife observations at the mitigation site.
8. A summary statement regarding the perceived success of the wetland creation project. The report will evaluate the goals/performance standards as set forth in

the permit or mitigation plan as well as current wetland functions. These reports must also address any potential problem areas and include suggestions and a timetable for correction if it is anticipated that projected goals may not be met.

9. Date(s) of field inspection(s).

e. Guarantees

An applicant must be bound to complete mitigation in accordance with plans and to do monitoring and remedial work as needed. An environmental monitor may be needed, at project expense, for larger or more complex mitigation projects. These requirements can be included as permit requirements as long as the permit is written to expire at the end of the monitoring period. All permit conditions expire with the expiration of the permit. Separate mitigation agreements can be considered if the Office of General Counsel is consulted to make sure they are legally enforceable.

Performance bonds or some other form of financial assurance that mitigation projects will be completed and monitored should be considered for larger projects or projects with a high risk of failure. Financial guarantees should also be considered when ownership of the mitigation wetland may change, such as when a developer completes the sale of the property involved. Again, the Office of General Counsel must be consulted for legal content.

A performance bond in the amount of $51,500 is proposed with the USACE, see the Proposed Mitigation Plan included in Appendix G for additional details.

Regardless of size, mitigation wetlands are regulated by the Freshwater Wetlands Act after completion [6 NYCRR 663.5 (g)(ii)]. Additional forms of long term protection may be desirable, as well. Restrictive deed covenants or conservation easements are useful devices. These should be developed in consultation with the Department's Office of General Counsel.

Ensured long term sustainability will be achieved through a deed restrictive covenant. The draft deed restriction is included in the Proposed Mitigation Plan included in Appendix G.

6. **Mitigation preferably should be completed prior to starting the permitted project or concurrently with it.**

Pre-project mitigation greatly enhances our ability to enforce or modify mitigation requirements since the permit can still be revised or revoked if necessary. Completing the mitigation prior to the project allows time to assess the likelihood of the mitigation's success.

However, up-front mitigation may not always be practical or desirable. For example, when mitigation work is done concurrently with the permitted project, soils and vegetation from the impacted wetland can be used in the mitigation work.

Mitigation must be incorporated into a construction schedule that must be approved by the Department and that becomes part of the project authorization.

Pre-project mitigation is not practicable in this case and concurrent mitigation is proposed as the proposal addresses an urgent economic need of the applicant.

4.1.4 Agricultural Resources

The proposal will result in the conversion of land that has previously been used for agriculture. However, the SEQR Part 1 form, portions of which are auto-filled based on the project location, incorrectly identifies the expansion area as being located within an agricultural district certified pursuant to Article 25-AA of the NYS Ag. & Markets Law.

Orleans County has one (1) consolidated agricultural district, which covers approximately 115,000 acres or about 1/2 of the County[iv]. This district consists of viable agricultural lands, or, in other words, land that is currently used for agriculture or may be used for agriculture in the future. Agricultural districts may include not just farm fields, but also residential, forested and commercial properties.

As per the Orleans County Consolidated Agricultural District No. 1 Map, included as Figure 7 in Section 10.0, the Media Mine and the expansion area are not part of the Orleans County Consolidated Agricultural District. In addition, these areas are not actively farmed, nor have they been farmed since the late 1960's to early 1970's because it had become economically unproductive as the muck soil was eroding and producing poor results.

There will be no impacts to agricultural resources from the mine expansion for the following reasons:

- The expansion area is not part of the Orleans County Consolidated Agricultural District.
- This area has not been farmed since the late 1960's to early 1970's because it had become economically unproductive as the muck soil was eroding and producing poor results.
- The seasonal flooding that occurs in this area makes farming impracticable.

4.2 WATER RESOURCES

4.2.1 Surface Water

4.2.1.1 Existing Conditions

Surface water in and around the expansion area is sustained by direct precipitation and runoff from the surface water drainage basin that drains into the wetland and then into a series of historic agricultural drainage ditches which back up seasonally due to beaver dams further downstream. Detailed topography and the location of the historic drainage ditches are shown in Figure 5.

The Soil Survey of Orleans County, NY (1977 Printed Version)[v] has 1:15,840 scale soil map sheets with black and white aerial images that were taken in the early 1970s, prior to mining at the site. The aerial image for the site shows that the present-day wetland area was nearly treeless, and that the vast majority of the wetland had ditches that drained into a primary ditch. The land was being drained and used for muck farming on both sides of the primary ditch. This is consistent with the fact that the USGS Medina Quadrangle map, which was published in 1973, does not indicate a wetland present in the area south of the Medina Mine. The ditches south of the primary ditch drained northward to the primary ditch, whereas those on the north side (east of the SCS property) drained southward to the primary ditch.

A water budget was prepared for the project area and adjoining wetlands and is included with the Hydrogeologic Assessment paperwork attached as Appendix E. The water budget demonstrates that the primary source of the water in project area and adjoining wetland is from direct precipitation. The water then drains through a series of ditches to the primary ditch and drains to the east. The primary ditch periodically backs up as a result of beaver dams located downstream, approximately 0.9 miles east of the site, causing seasonal flooding upstream.

Surface water is and has been present seasonally in the wetland and its ditches from this flooding. Current and historical aerial images of the site available from Google Earth and the NYS Office of Information Technology, as well as on-site monitoring of the ditch, indicate that the wetland is typically dry during the summer and fall and wet during the winter and spring On-site monitoring of a staff gage (SG-1) in the primary ditch confirms that the ditch was again dry in the fall of 2019, but water had started to back up in the ditch as of early November. Figure 9 shows the location of SG-1. The present edge of the quarry is between 300 ft to 350 ft north of the primary ditch (Figures 3 and 5). Ponded water was present in the primary ditch from January to May of this year and again in August, the most recent measurement date.

The NYSDEC Environmental Resource Mapper classifies this intermittent primary ditch as a Class C stream. As explained above, however, the classification of this stream as C, and not merely D, is not supported by Alpha Geosciences data that show that it likely does not support fisheries.

As shown on Figures 1-3 and 9, this primary ditch is located outside (south) of the expansion area and will remain undisturbed throughout the project. In addition, an earthen berm will be constructed between the primary ditch and the quarry.

4.2.1.2 Potential Short and Long-Term Impacts

A full water budget analysis was prepared by Alpha Geoscience to analyze the potential for surficial hydrogeologic impacts, included in Appendix E. The water budget analysis modeled the current hydrologic conditions as well as the future hydrologic conditions after the mine expansion to determine the potential for impact.

The water budget determined that the existing water contribution to wetland MD-9 from the 1448-acre drainage basin outside the wetland is approximately 708 gpm. Mining in the proposed expansion area will result in the removal of 6.3 acres of the 1448-acre drainage basin that contributes surface water to MD-9. The removal of this area will decrease the amount of runoff to the wetland by 1.3 gpm and represents a 0.18% decrease in the amount of runoff contribution to the wetland.

The existing direct precipitation, evapotranspiration, and percolation within the wetland will decrease approximately 1.8% when the 8.7-acre portion of wetland is removed.

Based upon this data and current site conditions, Alpha concluded that the hydrological impact to the ecology of the remaining wetland, after mine expansion, will be insubstantial.

There will be no significant surficial hydrogeologic impact to the adjoining wetland as a result of the mine expansion for the following reasons:

d. No change in the source of water to the wetlands. The primary source of water in the wetland is from direct precipitation and additional contribution comes from surface water ponding in the ditches and wetland due to beaver dam(s) downstream in the primary ditch. The clayey silt layer beneath the wetland discussed in Sections 4.1.2.2 and 4.2.2 is the primary reason that the wetland exists. Water in the primary ditch will continue to naturally back up into the feeder ditches and low areas of the wetland south of the primary ditch as it has done for decades. This will not change as a result of the mine expansion.

e. The rate of infiltration to the subsurface will not change as a result of the mine expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the mine expansion. The wet season of the wetland occurs during winter and spring as a seasonal perched water table develops on the underlying clayey silt layer. The perched water table diminishes throughout the summer due to evapotranspiration and slow downward percolation as rainfall diminishes and vegetation growth flourishes. This condition occurs with or without the mine expansion.

f. A berm will be constructed on the north side of the primary ditch to prevent drainage of the wetland. A marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area, between the primary ditch and the quarry, prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring. The location and extent of the perimeter berm is shown on Figure 3 and the Mining Plan Map included in Appendix C; berm construction details are included as Appendix C and are summarized in Sections 4.1.1.3 and 4.1.2.2.

4.2.1.3 Mitigation Measures

SCS is proposing the following mitigation measures to mitigate the potential impacts to surface water resources:

1. **Reduced Footprint:** The preferred on-site expansion alternatives discussed in Sections 3.2.2 and 5.4 would impact 86 acres, 61 acres and 41 acres of regulated wetland, respectively, along with varying levels of stream impact. Although the

Applicant believes that any one of these three alternatives is preferable from an efficiency standpoint and can be accomplished in conjunction with appropriate off-site wetland mitigation measures, the time-sensitivity of the Applicant's current operational capacity dictated the need for a further reduction in the scale of these proposals.

2. **Perimeter Berm:** A berm will be constructed to prevent drainage of the wetland into the quarry in the event of flooding. The marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring.

   The berm will be constructed of marl placed in continuous 6 to 9-inch layers over the entire length of the fill. Each layer will be compacted after placement by routing earth-moving equipment or a compactor over the marl fill until the compaction rate is equal or greater than 90% of the existing virgin marl. The berm will be constructed to an elevation at least 3 feet above the existing grade and will be continuous and smooth graded. Vegetation will be established immediately after construction by placing a minimum of 6 inches of topsoil on the berm prior to seeding and mulching.

   The location, extent and additional details of the perimeter berm are part of the Mined Land-Use Plan paperwork included as Appendix C.

3. **Monitoring Plan:** SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue at the monthly frequency already required by Mining Permit Special Condition #12.

   Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

   A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow,

perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

The reduced footprint of the expansion proposal, perimeter berm and monitoring plan proposal will minimize and mitigate adverse impacts on surface water resources.

4.2.2 Groundwater

4.2.2.1 Existing Conditions

A Hydrogeologic Evaluation was conducted by Alpha Geoscience (Alpha) to assess the existing ground water conditions of the mine expansion area and the wetland to the south. As part of the Hydrogeologic Evaluation, Alpha reviewed historic aerial photos, soil mapping and data, existing monitoring well data, core hole data as well as data collected from two new test pits and two well points in the vicinity of the expansion area (Figure 9).

The Hydrogeologic Evaluation determined that there are two distinct water table conditions in and around the vicinity of the quarry expansion area:

a. A perched water table which is a seasonal, semi-perched, water table condition that develops on the underlying clayey silt and silty clay layers during the winter and spring; and

b. The ground water table, separate from the perched water table, which generally stays within the bedrock.

A Hydrogeologic Cross-Section depicting current water table conditions is included as Figure 10 and the Hydrogeologic Assessment and supporting documents are included as Appendix E.

4.2.2.2 Potential Short and Long-Term Impacts

Alpha determined that mining in the existing quarry and expansion area will cause some temporary local ground water table depression in the bedrock aquifer, up to as much as 10 feet at the quarry face. The ground water table drawdown is temporary while the quarry is actively dewatering and there will be no drawdown when pumping has ceased after the quarry is reclaimed as open water. Using the ground water drawdown impacts currently associated with the quarry as a model, Alpha determined that the lateral extent of the (bedrock) ground water table drawdown in the expansion area will be approximately 280 feet, with the vast majority of the drawdown occurring within 150 feet

of the quarry. A Hydrogeologic Cross-Section depicting water table conditions at full buildout is included as Figure 11 and the Hydrogeologic Assessment and supporting documents are included as Appendix E.

The limited drawdown in the fractured bedrock aquifer associated with the expansion area will have no impact on the bedrock wells at nearby residences as compared to conditions associated with existing quarry activities.

The Hydrogeologic Evaluation determined that no significant hydrogeologic impact to the adjoining wetland is anticipated as a result of the mine expansion for the following reasons:

a. The rate of infiltration to the subsurface will not change as a result of the mine expansion; consequently, the length of time that the wetland remains wet at the surface will not change as a result of the mine expansion. The wet season of the wetland occurs during winter and spring as a seasonal perched water table develops on the underlying clayey silt layer. The perched water table described in Section 4.2.2.1 diminishes throughout the summer due to evapotranspiration and slow downward percolation as rainfall diminishes and vegetation growth flourishes. This condition occurs with or without the mine expansion.

b. A berm will be constructed on the north side of the primary ditch to prevent drainage of the wetland. A marl perimeter berm will be constructed along the inside edge of the southern half of the expansion area, between the primary ditch and the quarry, prior to stripping activities in the expansion area. The berm will be constructed to prevent the wetland to the south from draining into the quarry during wet periods, typically in the spring. The location and extent of the perimeter berm is shown on Figure 3 and the Mining Plan Map included in Appendix C; berm construction details are included as Appendix C and are summarized in Sections 4.1.1.3 and 4.1.2.2.

c. The water that is pumped to keep the quarry floor dry comes from the bedrock aquifer, and not the seasonal, perched water table discussed in the previous section. The ground water table is within the bedrock and separated from the wetland (and primary ditch). The drawdown within the water table extends (and will extend) outward from the quarry face, but the drawdown occurs (and will occur) completely within the bedrock (water table) aquifer. The ephemeral primary ditch and the wetland will not be impacted by the drawdown associated with the expansion, just as the ditch and the wetland are not currently impacted by the ground water drawdown associated with the present extent of the quarry.

4.2.2.3 Mitigation Measures

SCS will implement a long-term monitoring plan that will allow for observation of water-level impacts that may occur in the future as the mine advances into the 8.7 acres of wetland. Water level measurements at these locations will continue at the monthly frequency already required by Mining Permit Special Condition #12.

Well points PZ-1 and PZ-2, and staff gauge SG-1, will be added to the existing monitoring required by Special Condition #12 of the Mining Permit. Figure 9 shows the locations of these monitoring points. PZ-1 is located north of the primary ditch and PZ-2 is located south of the primary ditch. Both well points allow for monitoring of the shallow, semi-perched, seasonal water table. SG-1 is located within the primary ditch and monitors the surface water level in the ditch.

A monitoring well pair will be installed south of the primary ditch in a track-rig accessible area of the wetland at a location preferably near PZ-2. One of the wells will be screened in the unconsolidated material above bedrock (MW-7S), but beneath the lacustrine silt and clay layer. The other well (MW-7) should be completed in bedrock through the Gasport Member and into the Decew Member, with the overburden cased and sealed off with cement. The addition of this monitoring well pair will allow monitoring of the surface water (SG-1); the shallow, perched system above the silty clay (PZ-1 and PZ-2); the unconsolidated material above bedrock (MW-7S) and the bedrock aquifer (MW-7).

4.3 COMMUNITY RESOURCES

4.3.1 Noise and Blasting

4.3.1.1 Existing Conditions

Operations at the mine, including blasting, that create noise are well established and have occurred at regular intervals during the last 40 years. Over this timeframe mining activities, including blasting, have been conducted repeatedly at distances less than 200 feet from nearby neighbors without incident. Noise impacts directly related to blasting are generally limited in nature as blasting itself lasts for less than a second, is heard as a muffled noise and this noise is largely in the frequency range inaudible to the human ear.

4.3.1.2 Potential Short and Long-Term Impacts

Because the proposed expansion area will be more distant from all receptors near the existing active mine areas, any noise impacts to those receptors will be further attenuated

due to distance. Likewise, because the few neighbors to the south will be located more than 1/2 mile away from the expansion area, a substantially larger buffer than experienced by existing receptors to the north, no adverse noise impacts to those southerly neighbors will occur. Following the 6-dB for doubling of distance rule from the NYSDEC Program Policy: Assessing and Mitigating Noise Impacts[vi], these southerly neighbors would experience a less than 1-dB increase in noise level which is considered unnoticed and will have no appreciable effect.

In addition, potential offsite impacts from noise resulting from mining activities will not occur as a result of this proposal for the following reasons:

- No change in the method or manner of mining is proposed as part of this modification.
- Blasting frequency and scheduling will stay the same, generally once per week (Monday through Friday) between the hours of 9AM to 3PM. No blasting will take place on legal holidays, weekends or during periods of adverse weather conditions and ordinarily not during the winter months of December through February.
- The expansion area is screened from all sides and noise will be attenuated due to factors such as distance to potential receptors, natural topography, dense tree growth and the perimeter berms that surround the existing operation.
- The expansion area is further removed from the closest receptors than the existing active mine areas.
- Almost all mining activity occurs on the mine floor, effectively using the existing mine faces and perimeter berms as noise barriers.

4.3.1.3 Mitigation Measures

The current Mined Land Reclamation Permit limits sound levels from blasting at all neighbors[9] and requires monitoring at every blasting event to document compliance with these sound level limits[10]. These blasting sound level limits are enforced by NYSDEC and are designed to protect the health, safety and welfare of nearby neighbors. SCS will continue to abide by these blasting sound level limits and no changes to these permit conditions are proposed as part of this modification request.

[9] Mined Land Reclamation Permit Condition #17.

[10] Mined Land Reclamation Permit Condition #18.

4.3.2 Community Character

The area is mapped as being archeologically sensitive and the Shelby Fort site is located on the property.

The archaeological work approved by both the NYSDEC and OPRHP pursuant to the terms of the December 9, 2014 Letter of Resolution covered all areas outside of the wetland area[11]. The Archaeological project study area[12] was 21.9-acres, which included the previously approved 7-acre quarry expansion and also the entirety of the currently proposed 14.8-acre expansion area.

Regardless of the sensitivity, all areas under consideration have already been thoroughly investigataed, assessed and the corresponding mitigation approved by both the NYSDEC and OPRHP and therefore additional assessment and approval is not necessary. Pertainant Archaeological correspondence, approvals and mitigation are included as Appendix F.

The Erie Canalway National Heritage Corridor spans 524 miles across upstate New York and encompasses 4,834 square miles in 23 counties and is home to 3.2 million people. The corridor parallels the Cayuga-Seneca, Oswego, and Champlain Canals and their historic alignments. The corridor is approximately 15 miles wide in the vicinity of the mine. The Medina mine is located approximately two miles south of the Erie Canalway and, as per the NYS Canals Map (https://nycanalmap.com/), screenshot included as Figure 7, there are no identified cultural or recreational resources within two miles of the quarry.

As documented in this DEIS, there will be no offsite impacts at the nearest residential receptors and, therefore, there can be no impacts to any National Heritage Corridor resource located two+ miles away.

OPRHP reviewed this expansion proposal and determined that "No Adverse Impacts on properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places, with the condition that should potential human remains be identified during construction that the attached OPRHP/SHPO

[11] Wetlands and areas of standing water are normally not included in archaeological study areas as per the New York Archaeological Council's "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State" adopted by the New York State Office, Parks, Recreation and Historic Preservation.

[12] Archaeological Reconnaissance Survey of the Shelby Crushed Stone Parcel 1 prepared by the State University of New York at Buffalo Archaeological Survey, dated August 2007, copy included in Appendix F.

and Haudenosaunee Human Remains Discovery Protocols are immediately followed." A copy of the no adverse impact letter is included in Appendix F.

4.3.2.1 Mitigation of Potential Impacts on Public Infrastructure

The proposal itself will mitigate potential impacts on public infrastructure by continuing to provide a local source of high-quality construction aggregates. Hauling aggregate causes wear and tear on the public infrastructure as construction aggregate is a high weight product that is transported in large quantities. If the materials within this project are not utilized, the local demand will not change and construction aggregates and other stone products will be obtained from other, more distant sites, potentially increasing the wear and tear on local infrastructure.

5.0 ALTERNATIVES

5.1 NO ACTION

The no action alternative would not fulfill the project purpose, market demand and state-wide objectives outlined in Section 3.3. Those objectives include, among other things, ensuring a reliable source of local aggregates to meet increasingly critical infrastructure demands in a manner that is consistent with smart growth objectives and sound wetland mitigation practices. The no action alternative thus is not considered viable as it does not meet the project purposes.

5.2 ALTERNATIVE SITES

NOTE: THE APPLICANT HAS REQUESTED THAT THE FINANCIAL INFORMATION SUBMITTED TO THE LEAD AGENCY IN SECTION 5 OF ITS JOINT APPLICATION BE TREATED AS THE APPLICANT'S CONFIDENTIAL AND PROPRIETARY BUSINESS INFORMATION / TRADE SECRETS WITHIN THE MEANING OF NYS PUB. OFFICER'S LAW § 87(2) & 5 U.S.C. § 552(b)(4) AND BE PROTECTED FROM DISCLOSURE UNDER THE FOIL AND FOIA.

As detailed in SCS' Joint Application, included as Appendix D of the DEIS, in its search for viable sites which met the criteria outlined in Section 3, the Applicant identified nine (9) sites which deserved consideration based primarily on availability and parcel size. Location maps for each of these sites are included in Appendix 5 of the Joint Application.

Updated offers were recently mailed to adjacent property owners (Alternative Sites #1-5 identified below) and no responses were received. Documentation of the updated offers including the letters and delivery receipts are included as Appendix D of the DEIS. None of the recent offers to adjacent property owners were accepted. Moreover, the adjacent properties are not zoned industrial or vested for mining use and the feasibility of securing timely zoning approvals is questionable in light of Frontier Stone's 15-year effort to secure zoning approval for its Fletcher Chapel Road mine.

The following is a summary of these sites and the reason each was eliminated from consideration:

Alternative Site 1: Satkowski property, East of Existing Quarry
This site is 90.7 acres in size with approximately 65.08 acres of minable area. The site is assessed at $403,200. The Applicant made an offer to the current owner on September 7, 2023 for $XXX and offered lifetime use of the current residence at no cost. The owner

was not interested in selling nor did he counteroffer. The Applicant again contacted the landowner in 2018 and the landowner still had no interest in negotiating.

Alternative Site 2 – Fuller property, West of Jeddo Creek

The site is 61.7 acres in size with approximately 36.58 acres of minable area. The site is assessed at $161,950. The Applicant made an offer to the current owner on September 7, 2023 for $XXX with an xx-year option agreement at $XXX/year. The owner stated that he was not interested in selling the property because it was given to him by his mother.

Alternative Site 3 – Root Property, North of Blair Road

This site is 353.7 acres in size with approximately 127.16 acres of minable area. The site is assessed at $941,200. The Applicant made an offer to the current owner on September 7, 2023 for $XXX with a XX-year option agreement at $XXX/year. The owner was not interested in selling. The Applicant tried several times to contact the landowner again in 2018 but never received a response.

Alternative Site 4 – Roberts Property, southwest of existing quarry

This site is 160 acres in size with approximately 24 acres of minable area. The site is assessed at $245,349. The Applicant made an offer to the current owner on September 7, 2023 for $XXX with a XX-year option agreement at $XXX/year. The owner appreciated the offer but said he was not interested in selling the property. The Applicant negotiated with the landowner in 2018 and tried to form a royalty agreement. Negotiations eventually broke off and the landowner will not respond.

Alternative Site 5 – Schubel Property, southeast of existing quarry

This site is 222.3 acres in size with approximately 47.8 acres of minable area. The site is assessed at $759,100. The Applicant made an offer to the current owner on September 7, 2023 for $XXX with a XX-year option agreement at $XXX/year. The owner said he was not interested because of his farming roots and existing heifer business.

Alternative Site 6 – Lafarge quarry Rochester Road, Gasport, Niagara County

The Applicant made an offer to Lafarge North America in 2012 for a lease term of XX years with an option for XXXX extensions and offered to acquire the mining permit from LaFarge. The offer was not considered and no counteroffer was received.

Alternative Site 7 – Pask Road Property (Mitigation Site)

At the request of NYSDEC and USACE, the Applicant evaluated the potential to re-locate the mining operation to this property which is currently owned by the applicant. This is not a viable alternative for the following reasons:

1. Although marketable material may exist at this site, it is outside the applicant's market area and there is a competing quarry (Barre Stone Products) approximately 5 miles away.

2. The site lacks the required infrastructure (roads, utilities - especially power, etc.) to meet the requirements to operate a quarry at this location.

3. Although it is highly unlikely that the Town of Barre would approve a quarry at this location, the time required to design and permit a project at this location and then move all of the operations from the current facility far exceeds the remaining life of the current mine which would force the Applicant out of business. As noted, Frontier Stone spent 15 years attempting to rezone and permit a quarry nearby before getting denied by the Town of Shelby.

4. The odd shape of the property would impact operating efficiency. While the property is large, it is flag shaped with a narrow western 'pole' will not be mineable once you factor in property line and stripping setbacks. In addition, a NYSDEC Class C stream bisects the central portion of the site, which further reduces the effective mining areas.

5. Wetlands are present throughout property. As shown on Figure 16, copy enclosed, there are 11 wetlands totaling over 25-acres and 7 streams totaling over 8,000 liner feet present on this property, significantly limiting the open contiguous areas that could be mined without impacting wetland resources.

6. And finally, as indicated by the soils map (see Figure 14) and two well logs immediately west of the property on Townline Road (see Figures 16 and 17, copies enclosed), the bedrock at this location is covered by approximately 30'+ of overburden, with the upper 20'+ portion comprised of sticky clay. The removal and disposal of this volume of clay presents a very expensive logistical obstacle that makes bedrock extraction too expensive and not a viable option for this property.

Alternative Site 8 – Cambria Asphalt Products

At the request of NYSDEC and USACE, the Applicant evaluated the potential to re-locate the mining operation to this property which is currently owned by the applicant. The site is approximately 20 miles west of the current site and contains an operating asphalt plant. The existing facility occupies about one-half of the 26-acre site. Although the remainder of the site likely contains marketable product, it is not a viable alternative for the following reasons:

1. Cambria is located outside of the Medina Quarry market area.
2. There are two competing quarries (Lafarge), one less than two miles away and another about 10 miles from the Cambria location. This makes the scenario highly unlikely to be competitive and/or economically feasible.
3. The approximately 13-acres of potentially accessible reserves at this site are used as a stockpile and staging area for the Asphalt plant. Removing this area would limit Cambria's ability to operate and would have a significant negative impact on business success. Also, limited reserves make moving the Medina Quarry aggregate plant cost prohibitive.
4. A quarry would require a Special Use Permit from the Town, which is not guaranteed, especially in light of the proximity of the Tennessee Gas Pipeline natural gas compressor station and pipeline to Cambria Asphalt Products.

Alternative Site 9 - Frontier Stone

In 2011, the Applicant submitted to Frontier Stone a Letter of Intent to purchase the yet-to-be permitted proposed quarry on Sour Spring Road in the Town of Shelby. The offer included a pre-permit purchase price of $XXX and a post-permit price of $XXX with conditions. The offer was rejected and no counteroffer was received. As noted above, the project was ultimately rejected by the Town of Shelby.

5.3 ALTERNATIVE DESIGN AND TECHNOLOGY

The availability of geologic materials suitable for use as construction materials determines the portions of the site that may be mined. Mining can only occur where the resource exists.

5.3.1 Alternative Mining Depth

Alternative mining depths are not viable options because reducing the depth of mining will reduce minable aggregate reserves without any reduction in impacts and increasing

the depth of mining isn't feasible as the rock below the Lockport Dolomite is of inferior quality and is not suitable for NYSDOT aggregate.

5.4 ALTERNATIVE SIZE

As noted above, the applicant previously considered three on-site alternative plans which would have impacted 86 acres, 61 acres and 41 acres of state and federal wetland. These alternative layouts are included with the Wetland paperwork included in Appendix D. Due to the fact that the Applicant has exhausted the mining potential in all of the unregulated area, no on-site alternatives are available which would avoid impacts to state-regulated 100-foot adjacent area or state and federally regulated wetland. Table 4 summarizes the wetland impacts under the three on-site alternatives considered. All far exceed the currently proposed impacts of 8.69 acres of regulated wetland. Note that the current proposal does not involve any stream impacts.

5.5 ALTERNATIVE SCHEDULE

A change in the development schedule may not be realistic because the rate at which mining operations occur is generally determined by market demand. If the product cannot be sold, it is not economical to increase the rate of production. The anticipated production rate represents the best possible assumption as to future conditions and aggregate demand. A reduction in development rate will not necessarily reduce or mitigate the potential environmental impacts. It may instead prolong the period during which any potential impacts may be experienced prior to reclamation of the site.

6.0 SHORT-TERM AND LONG-TERM IMPACTS, CUMULATIVE IMPACTS AND OTHER ASSOCIATED ENVIRONMENTAL IMPACTS

Impacts that will result from the proposed action are:

1. Permanent removal of approximately 8.7 acres of state and federal jurisdictional wetland and 6.1 acres of state regulated 100-foot adjacent area (however, these impacts will be satisfactorily mitigated) and ultimately the entire mine will be reclaimed to open water.
2. Permanent removal of 6.3 acres of the 1448-acre drainage basin that contributes surface water to MD-9. The removal of this area will decrease the amount of runoff to the wetland by 1.3 gpm and represents a 0.18% decrease in the amount of runoff contribution to the wetland.
3. Potential for localized, temporary development of a groundwater cone of depression (until final reclamation).

7.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

When the expansion proposal is implemented, a nonrenewable resource, dolostone for use as crushed stone aggregate, will be irreversibly and irretrievably committed. However, the demand for construction aggregates and other stone products has historically remained at a uniformly high level. It is assumed the demand will remain at a similar, if not higher level in the future. If the materials within the project area are not utilized, construction aggregates and other stone products will be obtained from other, more distant sites to meet local demand.

Construction aggregates are a high weight, low-cost product. Transportation costs are a substantial part of the overall cost of aggregate. Hauling aggregate about 20 miles roughly doubles the cost to the public. In addition, increased hauling distances result in increased traffic, increased potential environmental impacts associated with the increased traffic and increased wear and tear on the infrastructure.

8.0 GROWTH INDUCING ASPECTS

The growth inducing aspects of this project, if any, will be small as it is a continuation of an existing operation will remain essentially the same. The project will serve as a source to meet the existing demand and future needs for construction aggregate in this market area. This source is more environmentally friendly and cost-effective than more distant sources, thereby reducing overall transportation related impacts and costs to the consumer.

The existing facilities (such as roads, waste disposal, electricity, etc.) are adequate to meet the needs of the project.

The project will not directly result in the growth of the community. However, the materials supplied by the project will contribute to the maintenance and construction of highways and structures that will help maintain the general growth and infrastructure of the community.

The continued use and development of construction aggregate sources in close proximity to the market areas will create a competitive market and reduce costs to the consumer. This decrease in cost may be reflected in an increase in affordable construction activity.

9.0 EFFECT ON THE USE AND CONSERVATION OF ENERGY

The effect on the use and conservation of energy will be negligible as the proposal is a continuation of an existing operation and no increase in production is proposed. The mobile equipment, such as front-end loaders and haul trucks, utilize diesel fuel and will continue to do so. This type of equipment does not use large amounts of diesel fuel since their primary operating time during a production season (April through November) is limited. The applicant will conduct business in a practical, responsible manner to conserve energy.

10.0 TABLES AND FIGURES

State Agencies		
Agency	**Permit/Interest**	**Applicable Law/Regulation**
NYS DEC	Mined Land Reclamation	ECL 23-2701
NYS DEC	Freshwater Wetlands	6 NYCRR Part 663, Part 664, and Part 665
NYS DEC	SPDES Multi-Sector General Permit for Stormwater	6 NYCRR Part 750
NYS DEC	Section 401 of Clean Water Act	6 NYCRR Part 608, Section 401 of Clean Water Act
Federal Agencies		
Agency	**Permit/Interest**	**Applicable Law/Regulation**
USACE	Wetlands	Section 404 of CWA
Local Government		
Agency	**Permit/Interest**	**Applicable Law/Regulation**
Town of Shelby	Interested Agency	

Table 1. Involved Agencies and Associated Permits

SEQR Timing			
Steps	**Completion Date**	**Calendar Days**	**Citation**
Establish Lead Agency	5/20/20	30	617.6(b)(3)(i)
Resolve a Lead Agency Dispute	NA	20	617.6(b)(5)(iv)
Determine Significance	9/16/20	20	617.6(b)(3)(ii)
Scoping	5/27/21	60	617.8(f)
Determine Adequacy of a Submitted draft EIS	TBD	45	617.9(a)(2)
Determine Adequacy of a Re-submitted draft EIS	TBD	30	617.9(a)(2)(ii)
Draft EIS Public Comment Period	TBD	Minimum 30	617.9(a)(3)
SEQR Hearing (optional)	TBD	Minimum 15, maximum 60, after filing of draft EIS	617.9(a)(4)(ii)
Prepare final EIS (no SEQR hearing)	TBD	60 after filing of draft EIS	617.9(a)(5)
Prepare final EIS (SEQR hearing)	TBD	45 days after close of hearing	617.9(a)(5)
Prepare findings by Lead Agency (if the action involves an applicant)	TBD	Minimum 10 days, maximum 30 days, after the filing of final EIS	617.11(a) 617.11(b)
Prepare Findings by Involved Agency	TBD	Minimum 10 days after the filing of final EIS	617.11(c)
Conditioned Negative Declaration public comment period	TBD	30 days after date of publication in the ENB	617.7(d)(1)(iv)
Prepare final EIS (SEQR hearing)	TBD	45 days after close of hearing	617.9(a)(5)

Table 2. NYSDEC SEQR Timeframes and Project History

Impact Type	Restoration	Creation	Preservation	Total Mitigation Credit
Emergent Wetland 7.0 acres	6.66 acres (2:1) = 3.33 acres credit	11.01 acres (3:1) = 3.67 acres credit	NA	7 acres
Forested Wetland 1.69 acres	NA	6.8 acres (4:1) = 1.7 acres credit	2.04 acres (20:1) = 0.1 acres credit	1.8 acres
100' Upland Buffer 6.11	NA	NA	11.04 buffer creation (tree planting) and 1.22-acre upland buffer preservation= 12.26 acres	12.22 acres
TOTALS 8.69± acres wetland, 6.11± acres upland	3.33 credits	5.37 credits	12.26 acres buffer creation and 0.1 credit for wetland preservation	8.8 acres and 12.26 acres buffer creation

Table 3. Wetland Mitigation

Option	Wetland Impact	Ephemeral Ditch Impact
Concept 1	86 acres	2,200 LF
Concept 2	61 acres	2,200 LF
Concept 3	41 acres	1,120 LF

Table 4. Alternative Design Impact Summary

NORTHEAST WETLAND DIVERSITY MIX *Recommended rate is 2lbs. per acre; project requires 22lbs.*			
Common Name	**Latin Name**	**Indicator Status**	**Percent by Number of seeds (not weight)**
Green Bulrush	*Scirpus atrovirens*	OBL	28.82%
Soft Rush	*Juncus effusus*	OBL	13.05%
Monkey Flower	*Mimulus ringens*	OBL	12.01%
Fox Sedge	*Carex vulpinoidea*	OBL	8.35%
Ditch Stone Crop	*Penthorum sedoides*	OBL	7.83%
Reed Meadowgrass	*Glyceria grandis*	OBL	6.68%
Wool Grass	*Scirpus cyperinus*	OBL	5.22%
Blue Vervain	*Verbena hastata*	FACW	4.18%
Boneset	*Eupatorium perfoliatum*	FACW	2.09%
Rice Cut Grass	*Leersia oryzoides*	OBL	1.57%
Common Sneezeweed	*Helenium autumnale*	FACW	1.48%
Canada Mannagrass	*Glyceria canadensis*	OBL	1.36%
Joe Pye Weed	*Eupatorium maculatum*	OBL	0.89%
New England Aster	*Aster novae-angliae*	FACW	0.73%
Water Plantain	*Alisma plantago-aquatica*	OBL	0.52%
Grassleaf Goldenrod	*Euthamia graminifolia*	FAC	0.47%
Wrinkled Goldenrod	*Solidago rugosa*	FAC	0.47%
Straw Colored Flatsedge	*Cyperus strigosus*	FACW	0.47%
Purple Stemmed Aster	*Aster puniceus*	FACW	0.42%
Buttonbush	*Cephalanthus occidentalis*	OBL	0.38%
Soft Stem Bulrush	*Scirpus tabernaemontanii*	OBL	0.36%
Flat Top White Aster	*Aster umbellatus*	FACW	0.35%
Bearded Sedge	*Carex comosa*	OBL	0.31%
Fringed Sedge	*Carex crinita*	OBL	0.26%
Giant Goldenrod	*Solidago gigantea*	FACW	0.24%
Deertongue	*Pancium clandestinum*	FACW	0.24%
Nodding Beggar-Ticks	*Bidens cerunua*	OBL	0.22%
Water Parsnip	*Sium suave*	OBL	0.21%
Small Fruited Bulrush	*Scirpus microcarpus*	OBL	0.18%
Water Hemlock	*Cicuta maculata*	OBL	0.16%
Wild Rye	*Elymus canadensis*	FACU	0.10%
Devils-Beggar-Ticks	*Bidens frondosa*	FACW	0.08%
Purple-Stem Angelica	*Angelica atropurpurea*	OBL	0.06%
Water Dock	*Rumex verticillatus*	OBL	0.05%
Shallow Sedge	*Carex lurida*	OBL	0.05%
Pennsylvania Smartweed	*Polygonum pensylvanicum*	FACW	0.04%
Swamp Milkweed	*Asclepias incarnata*	OBL	0.04%
Riverbank Wild Rye	*Elymus riparius*	FACW	0.03%
Hop Sedge	*Carex lupulina*	OBL	0.02%
Blue Flag	*Iris versicolor*	OBL	0.01%

Table 5. Mitigation Site Wetland Seed Mix

COVER CROP* **Annual Rye as a cover crop is recommended at 10 lbs. per acre*			
Common Name	**Latin Name**	**Indicator Status**	**Percent by Number of seeds (not weight)**
Annual Rye Grass	*Lolium multiflorum*	NI	100%
Eastern Native Habitat & CREP Mix - ERNMX-173 Recommended per acre rate is 11lbs with 30lbs of cover crop; project requires 135lbs.			
Common Name	**Latin Name**	**Indicator Status**	**Percent by Number of seeds (not weight)**
Big Bluestem	*Andropogon gerardii*	FACU	40.0%
Virginia Wildrye	*Elmyus virginicus*	FACW	26.8%
Switchgrass	*Pancium virgatum*	FAC	15.0%
Partridge Pea	*Chamaecrista fasciculata*	FACU	6.0%
Indiangrass	*Sorghastrum nutans*	FACU	5.0%
Purple Coneflower	*Echinacea purpurea*	NI	3.0%
Blackeyed Susan	*Rudbeckia hirta*	FACU	3.0%
Oxeye Sunflower	*Heliopsis helianthoides*	FACU	1.0%
Common Milkweed	*Asclepias syriaca*	UPL	0.1%
Wild Bergamot	*Monarda fistulosa*	FACU	0.1%

Table 6. Mitigation Site Upland Seed Mix

Wetland Function-Value Evaluation Form

Total area of wetland 81.93 ac Human made? no Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Limestone Quarry & Agricultural Fields Distance to nearest roadway or other development 2220 ft

Dominant wetland systems present Shallow Emergent Marsh Contiguous undeveloped buffer zone present no

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W2

Latitude 43.18129 Longitude -78.41818

Prepared by: AMM Date 12/21/2022

Wetland Impact:
Type PEM Area 7.0 ac

Evaluation based on: Field

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		X	5, 7, 9, 15		Large wetland associated with an intermittent stream that lacks a defined outlet
Floodflow Alteration	X		1, 2, 5, 6, 7, 8, 9, 10, 13, 14, 18	X	Very high floodflow storage for the areas within the wetland boundary.
Fish and Shellfish Habitat		X	1		No fish or potential fish habitat are present
Sediment/Toxicant Retention	X		1, 3, 5, 7, 10, 12, 13, 14, 15, 16	X	Sources of sediment may exist from flood events within the wetland.
Nutrient Removal	X		1, 2, 3, 4, 5, 8, 9, 12, 13, 14	X	Intermittent stream on site flows past multiple agricultural fields which can cause an excess of nutrients being present.
Production Export	X		1, 2, 4, 5, 7, 8, 9, 12, 14	X	Production export high throughout the community. High density of plants and animals within the wetland.
Sediment/Shoreline Stabilization	X		1, 3, 6, 7, 12, 13, 15		Wetland not directly associated with a water course.
Wildlife Habitat	X		1, 3, 5, 6, 7, 8, 9, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21	X	Suitable habitat for abundant wildlife is present throughout the wetland.
Recreation		X	3, 4, 5		Wetland is on private property and can be used for private recreation.
Educational/Scientific Value		X	2, 5		Site is not an educational area
Uniqueness/Heritage		X	4, 5, 6		Large wetland dominated by PFO and PEM communities but contains some areas of PSS.
Visual Quality/Aesthetics		X	4, 8		Valuable wildlife throughout the wetland area, flowering plants during different seasons.
ES Endangered Species Habitat		X			No T&E habitat present
Other					

Table 7. Wetland Function-Value Evaluation

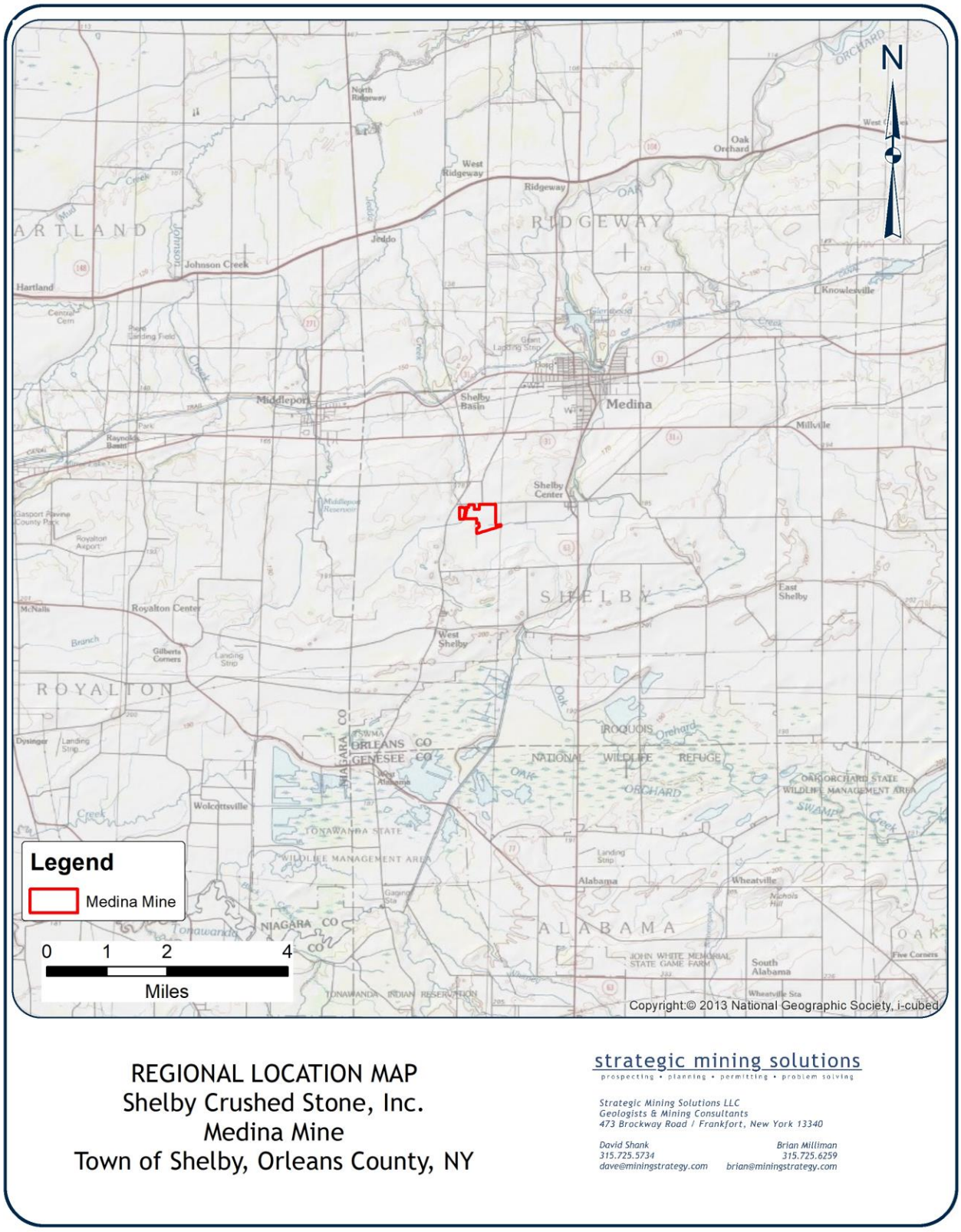

Figure 1. Regional Location Map

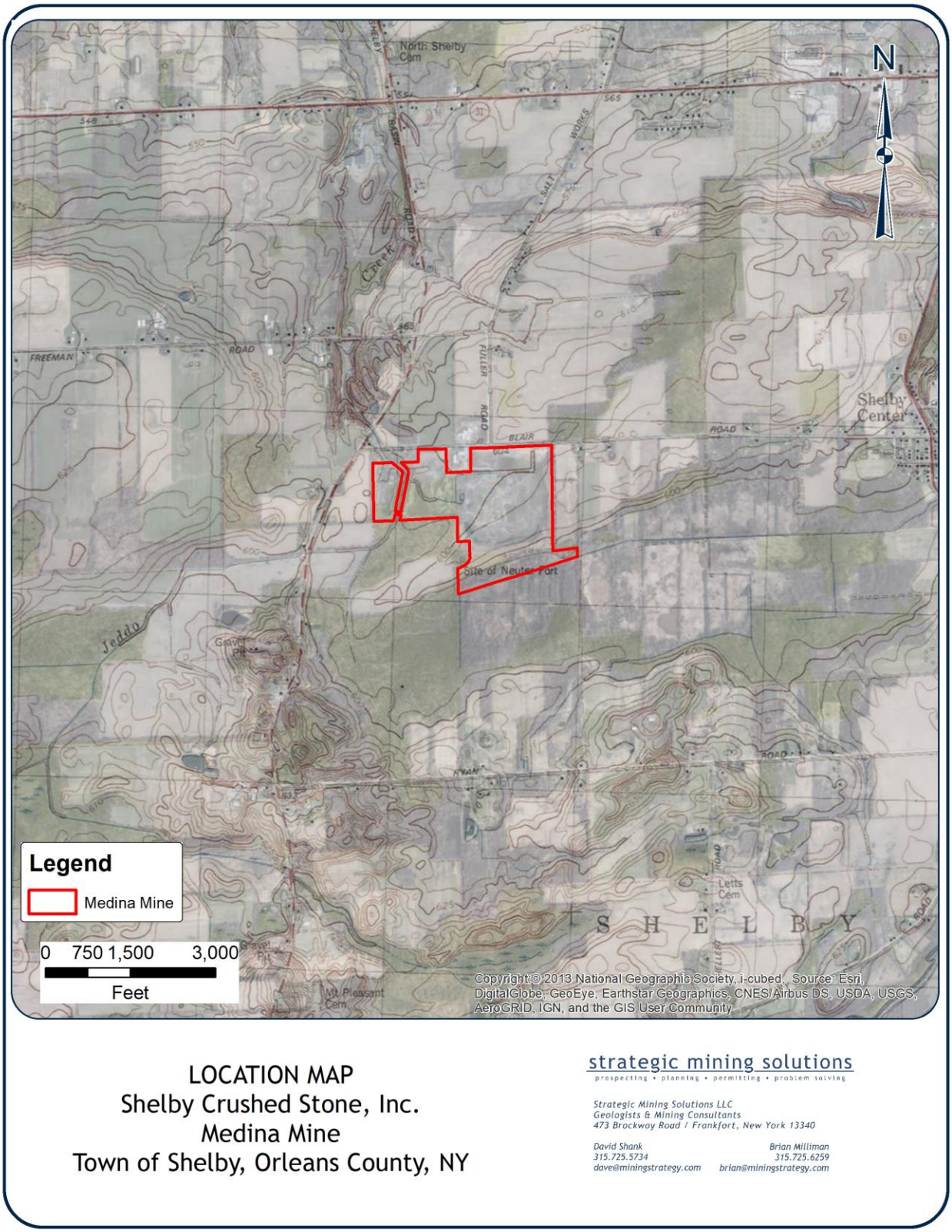

Figure 2. Location Map

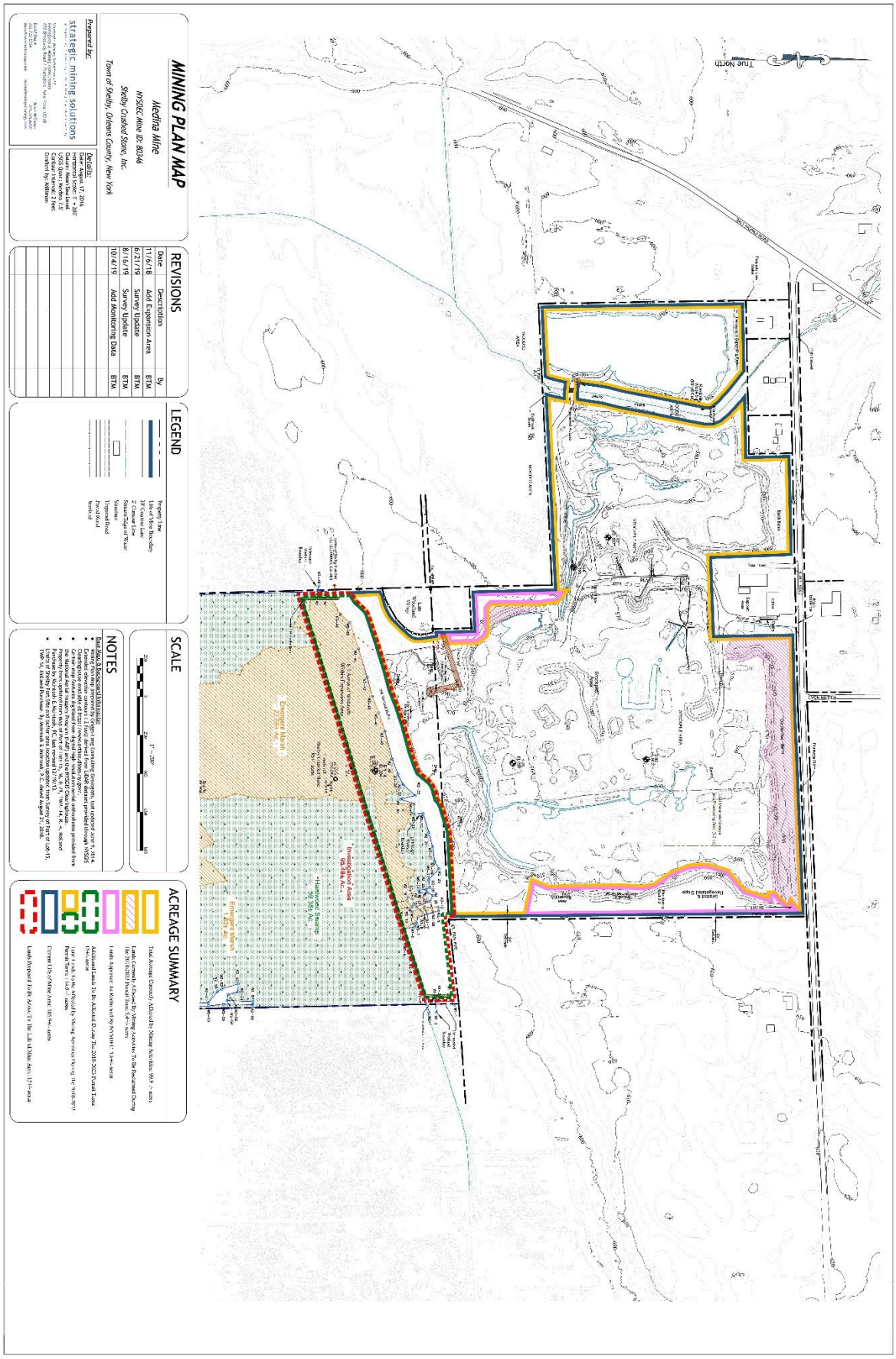

Figure 3. Mining Plan Map

Figure 4. Reclamation Plan Map

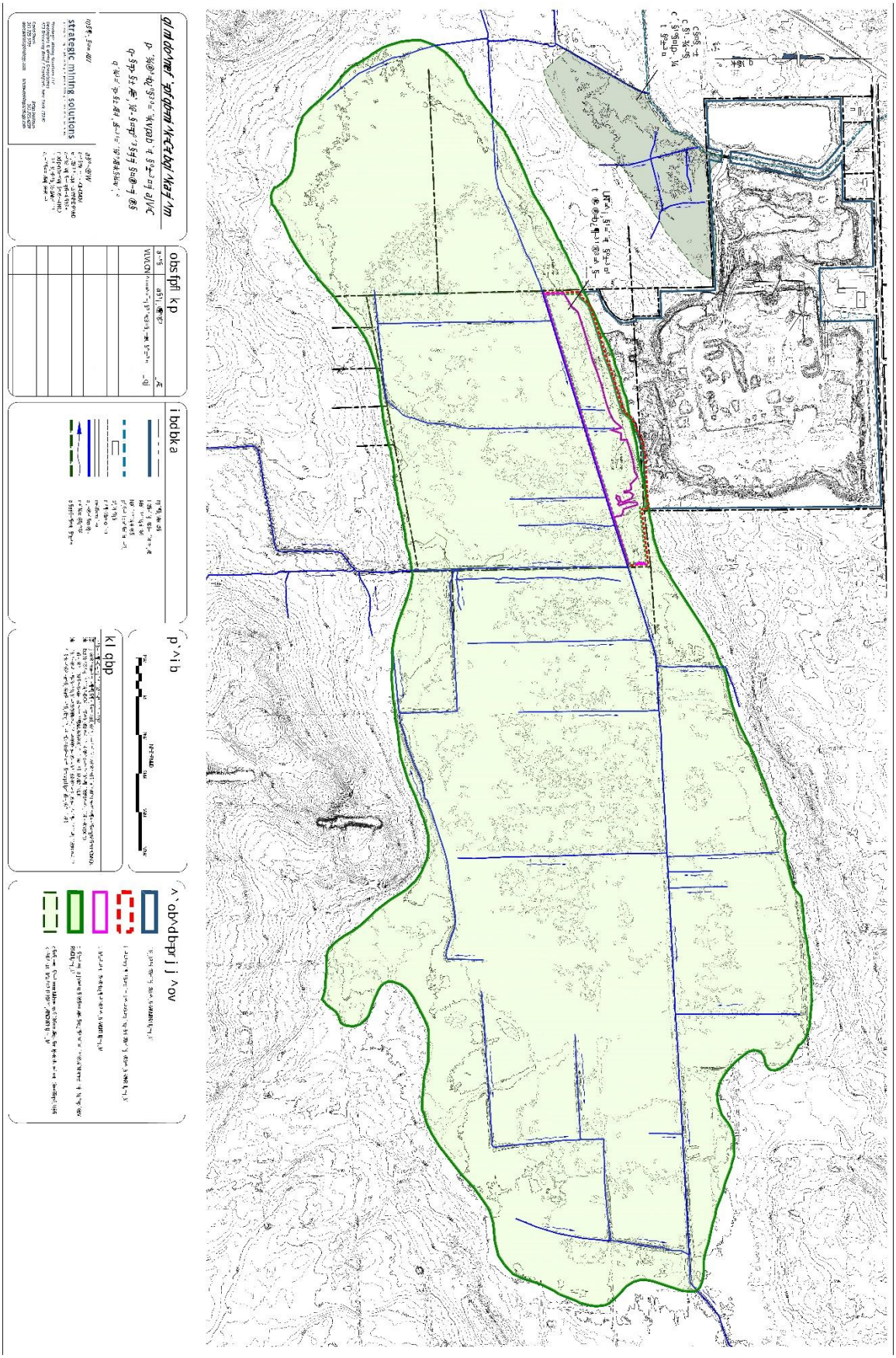

Figure 5. Topographic Site Plan and Wetland Map

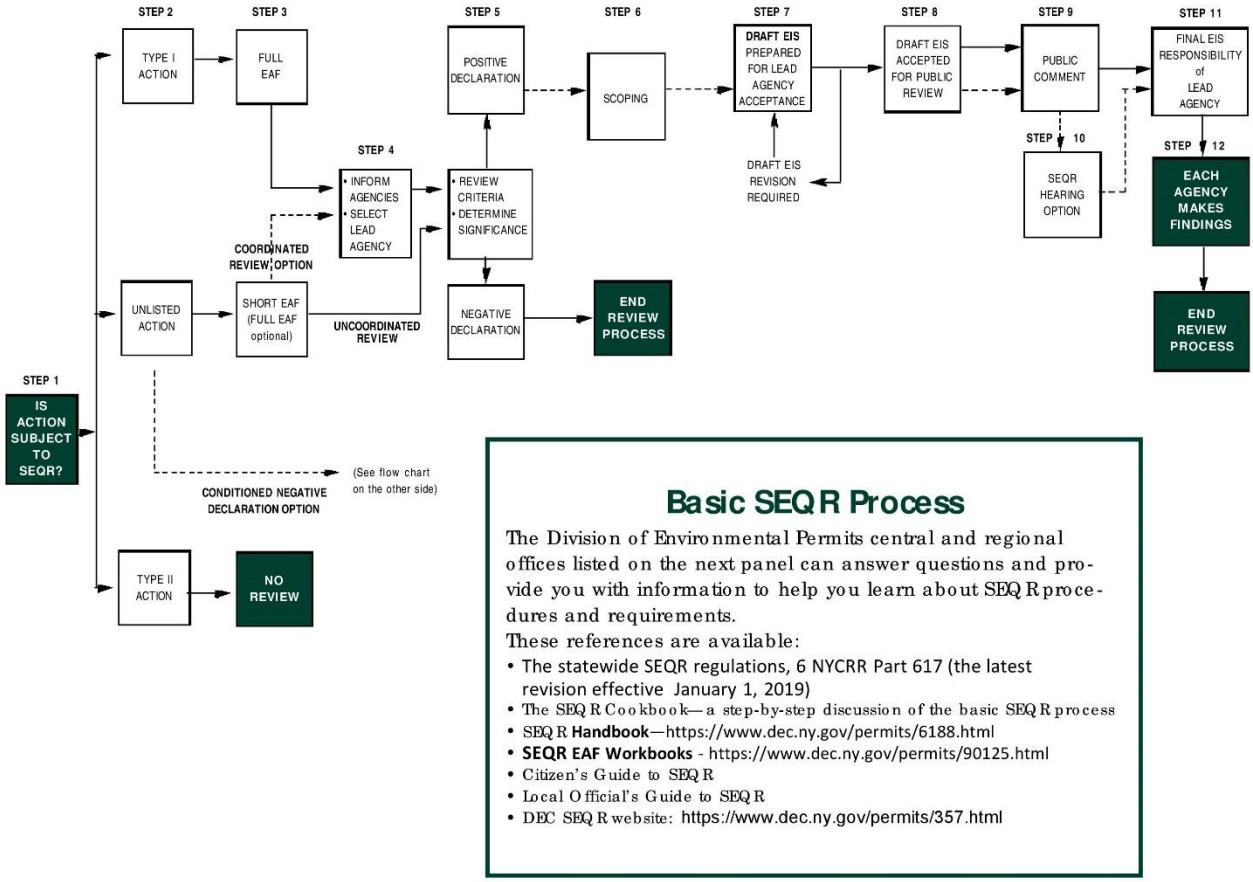

Figure 6. NYSDEC SEQR Flow Chart

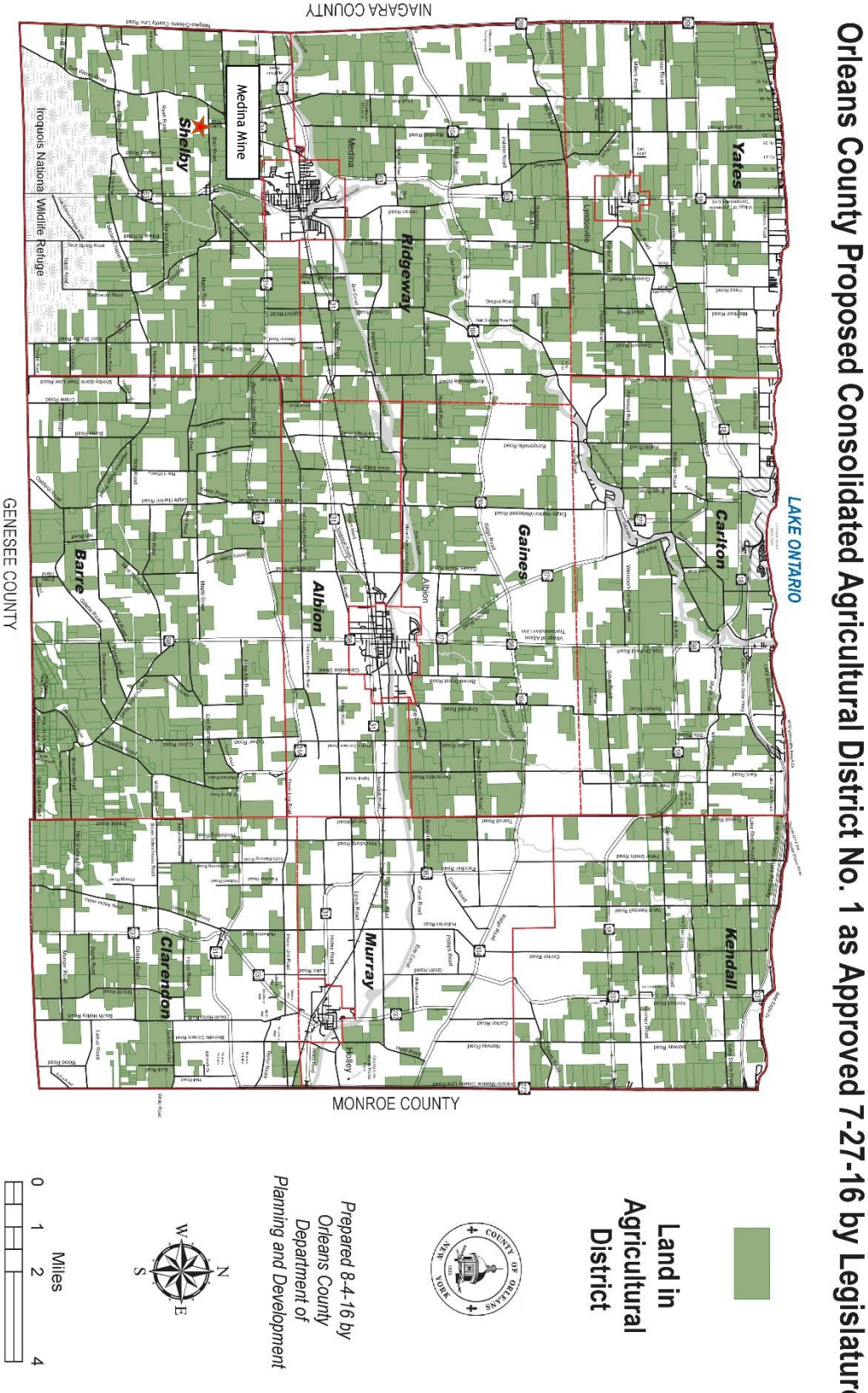

Figure 7. Orleans Consolidated Agricultural District No. 1

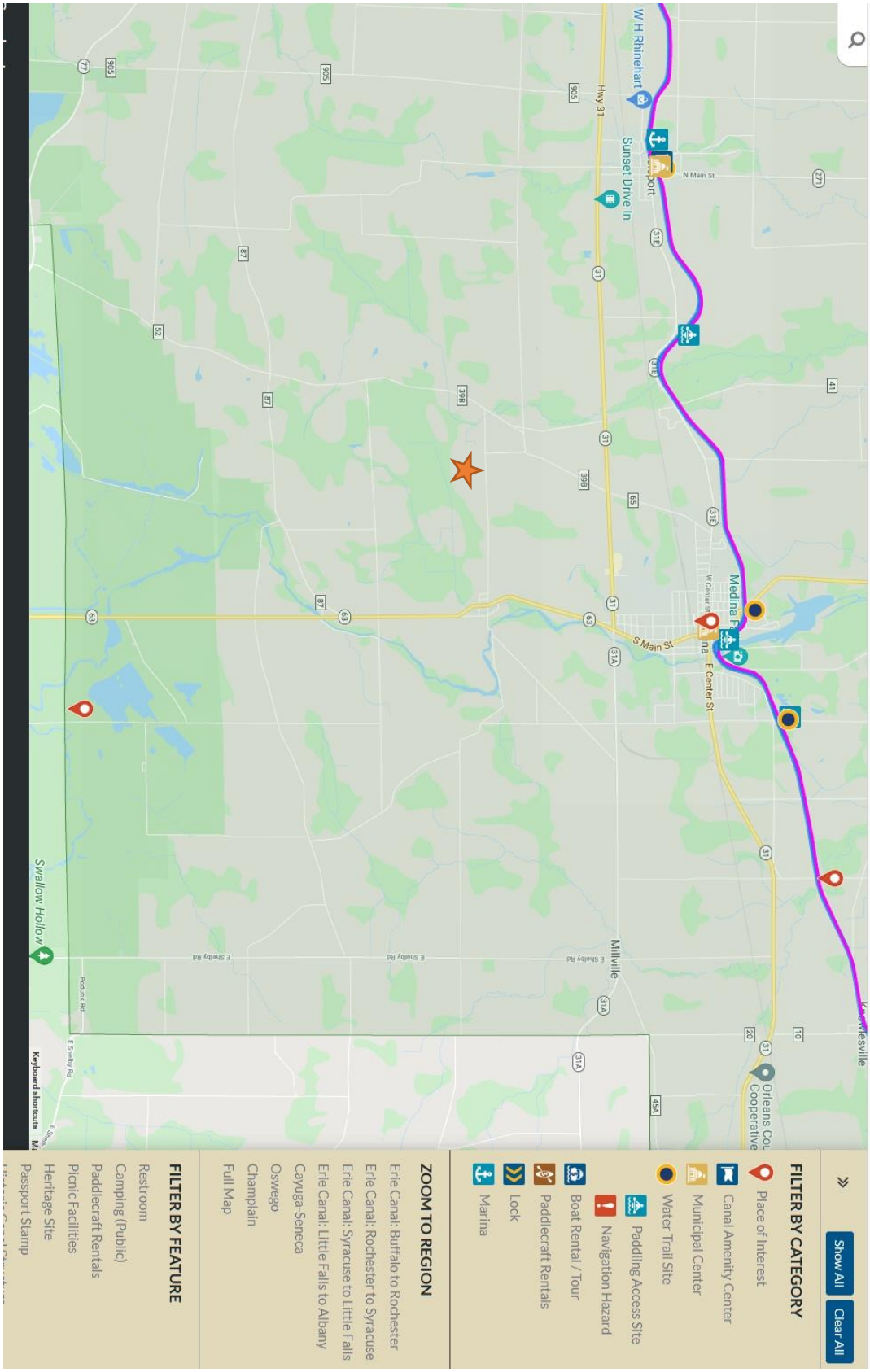

Figure 8. NYS Erie Canalway National Heritage Corridor GIS Map

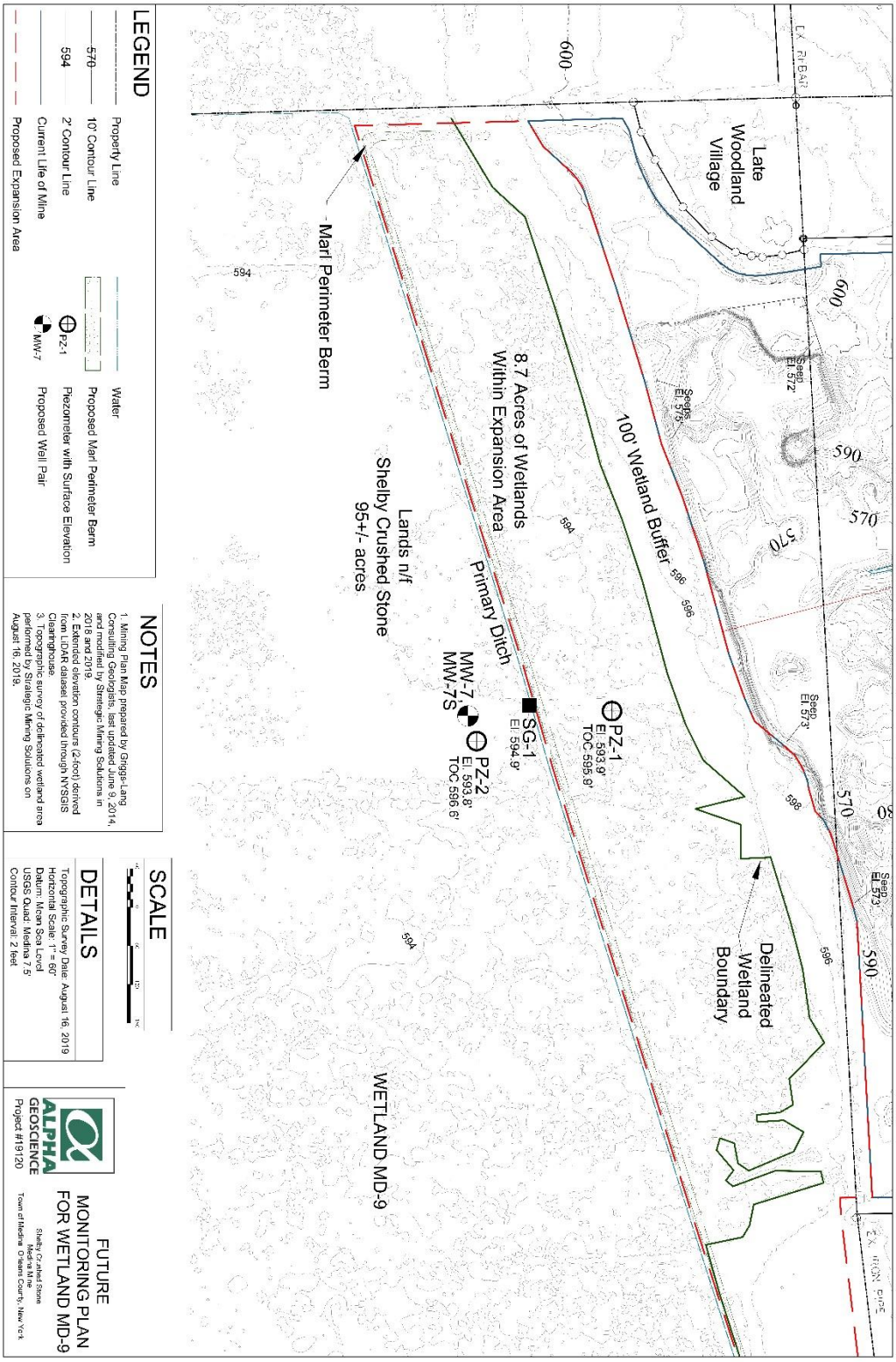

Figure 9. Monitoring Plan Map

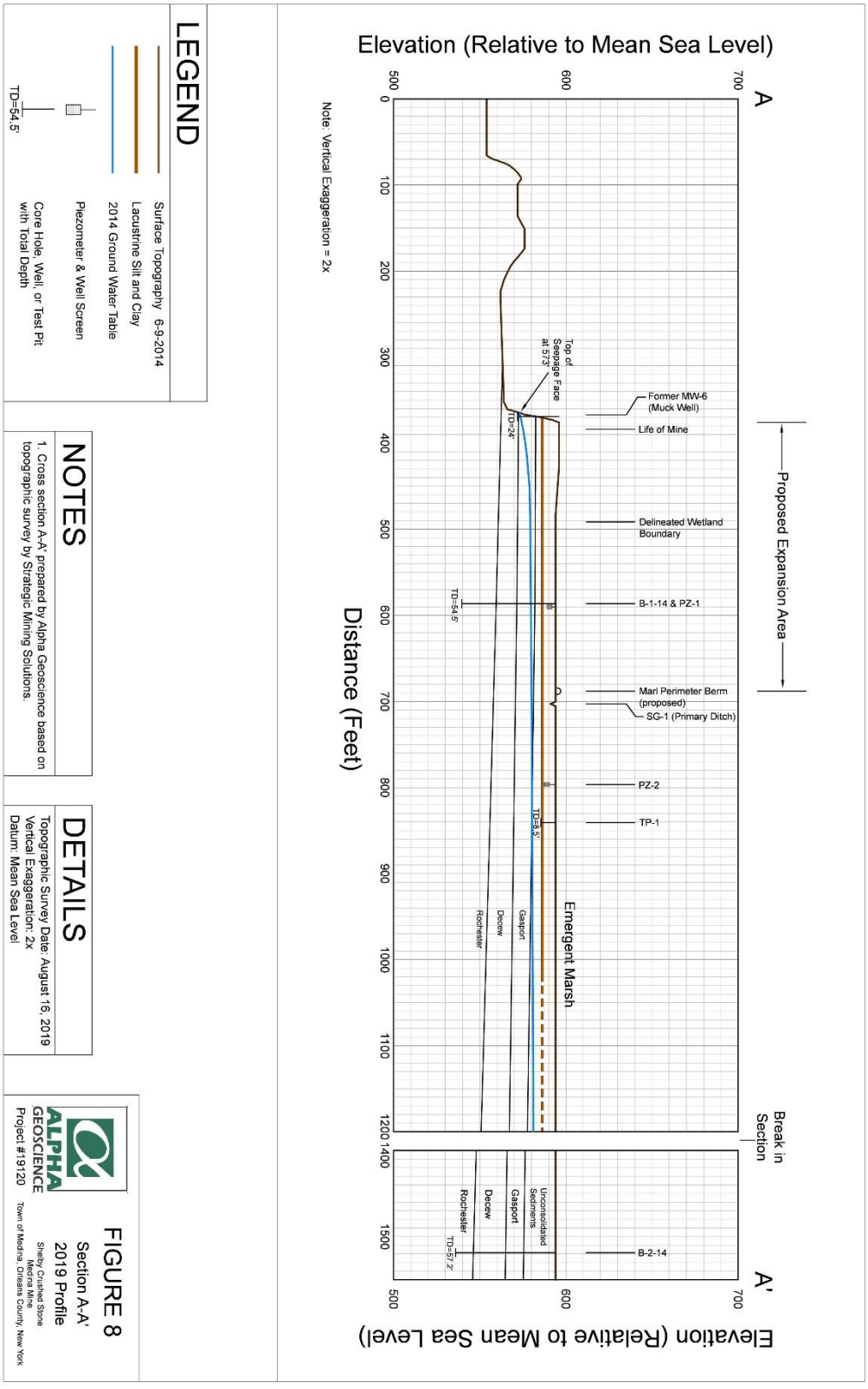

Figure 10. Hydrogeologic Cross-Section Showing Current Conditions

Figure 11. Hydrogeologic Cross-Section Showing Full Buildout Conditions

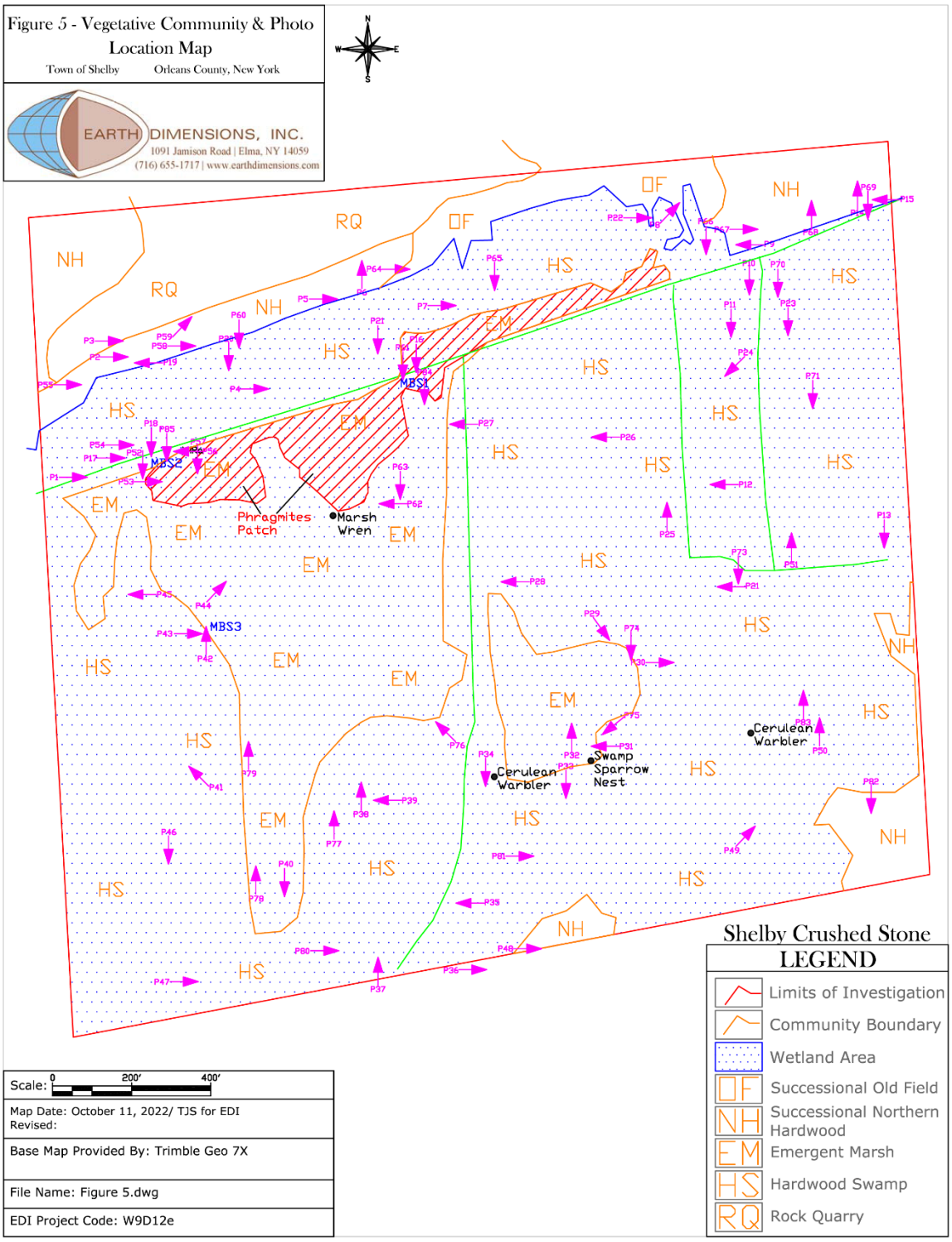

Figure 12. Vegetative Community

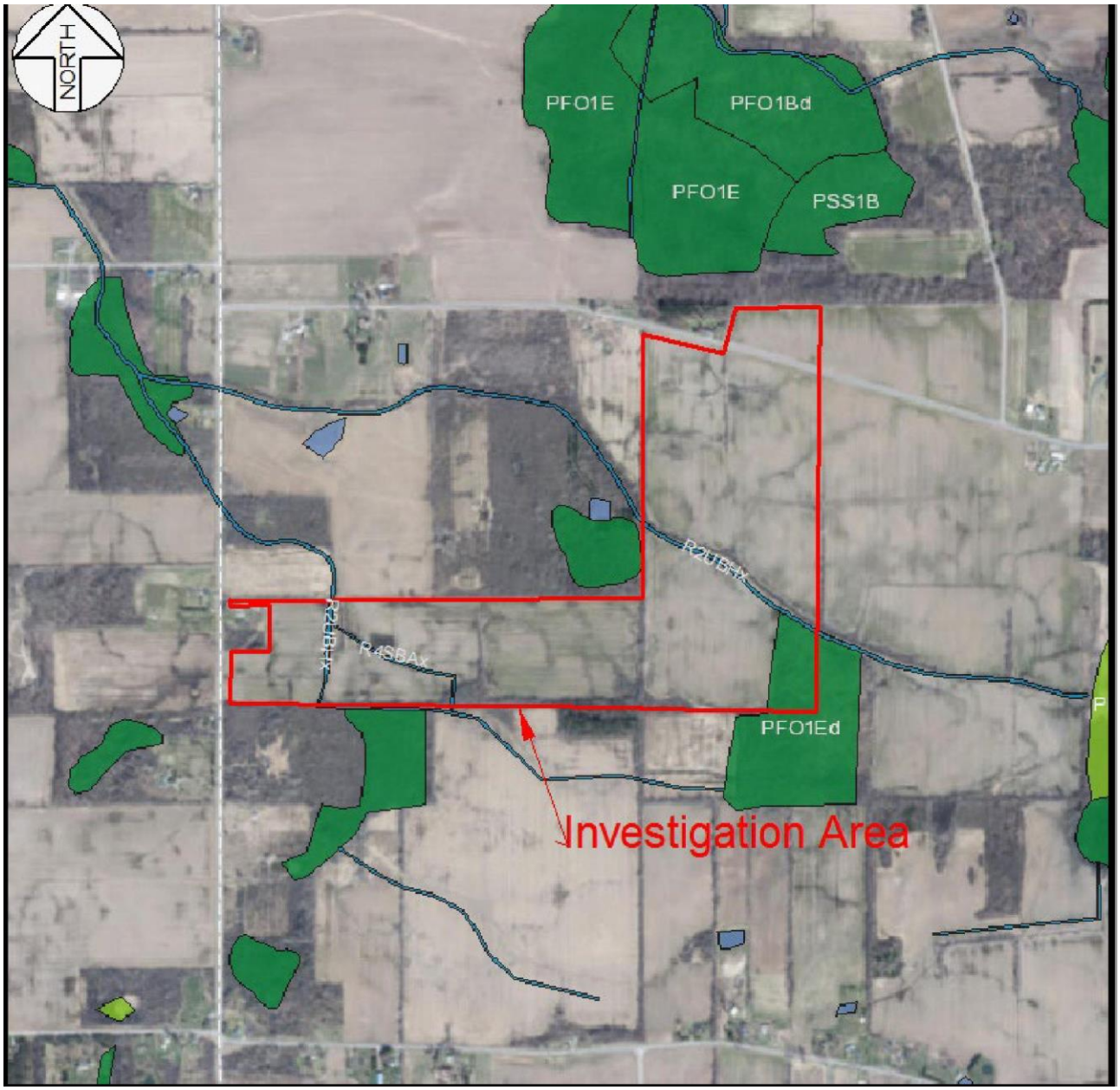

Figure 13. Pask Road Mitigation Site

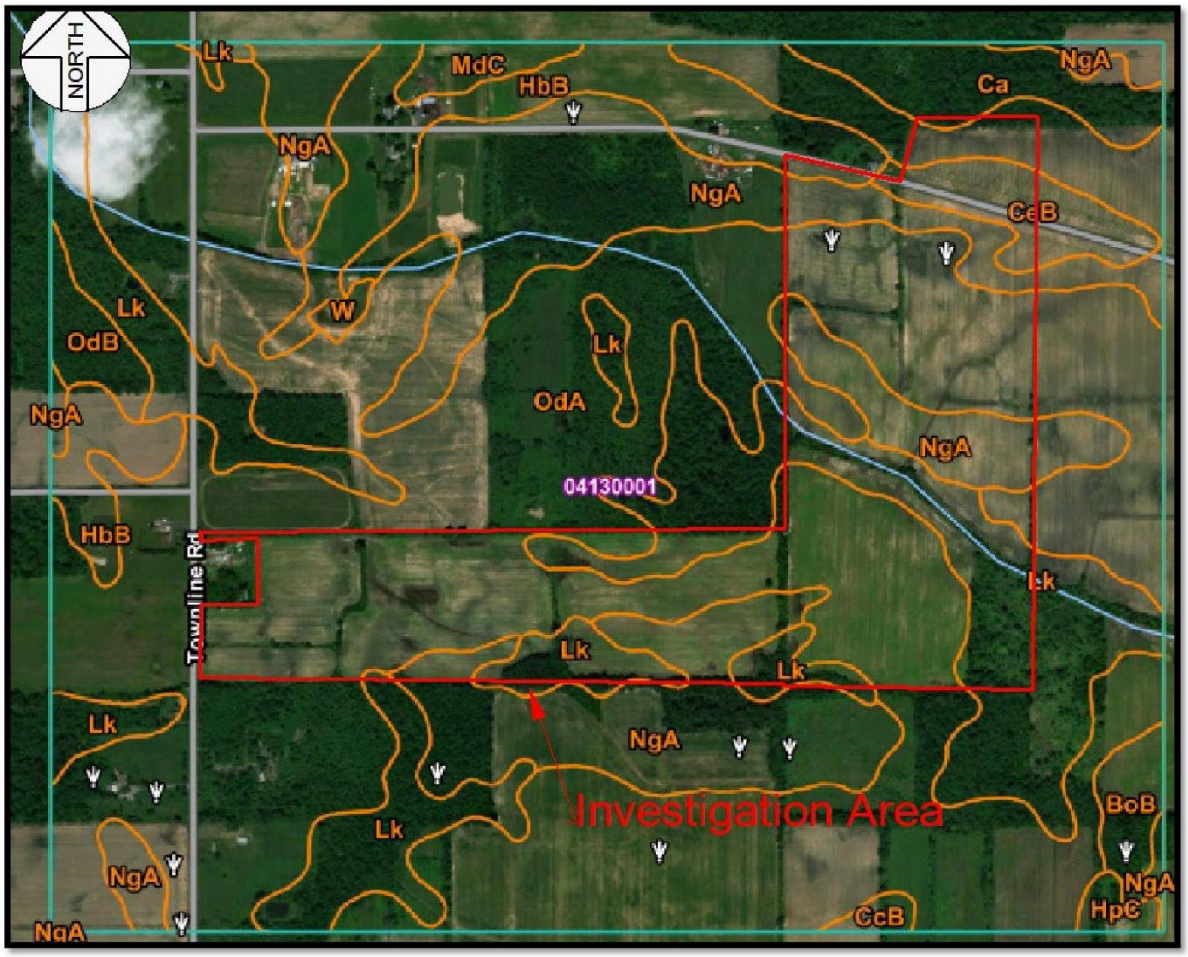

Figure 4: NRCS Erie County Soil Survey Map

http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Shelby Crushed Stone

Town of Barre, Orleans County, New York

EARTH DIMENSIONS, INC.

Figure 14. Pask Road Soils Map

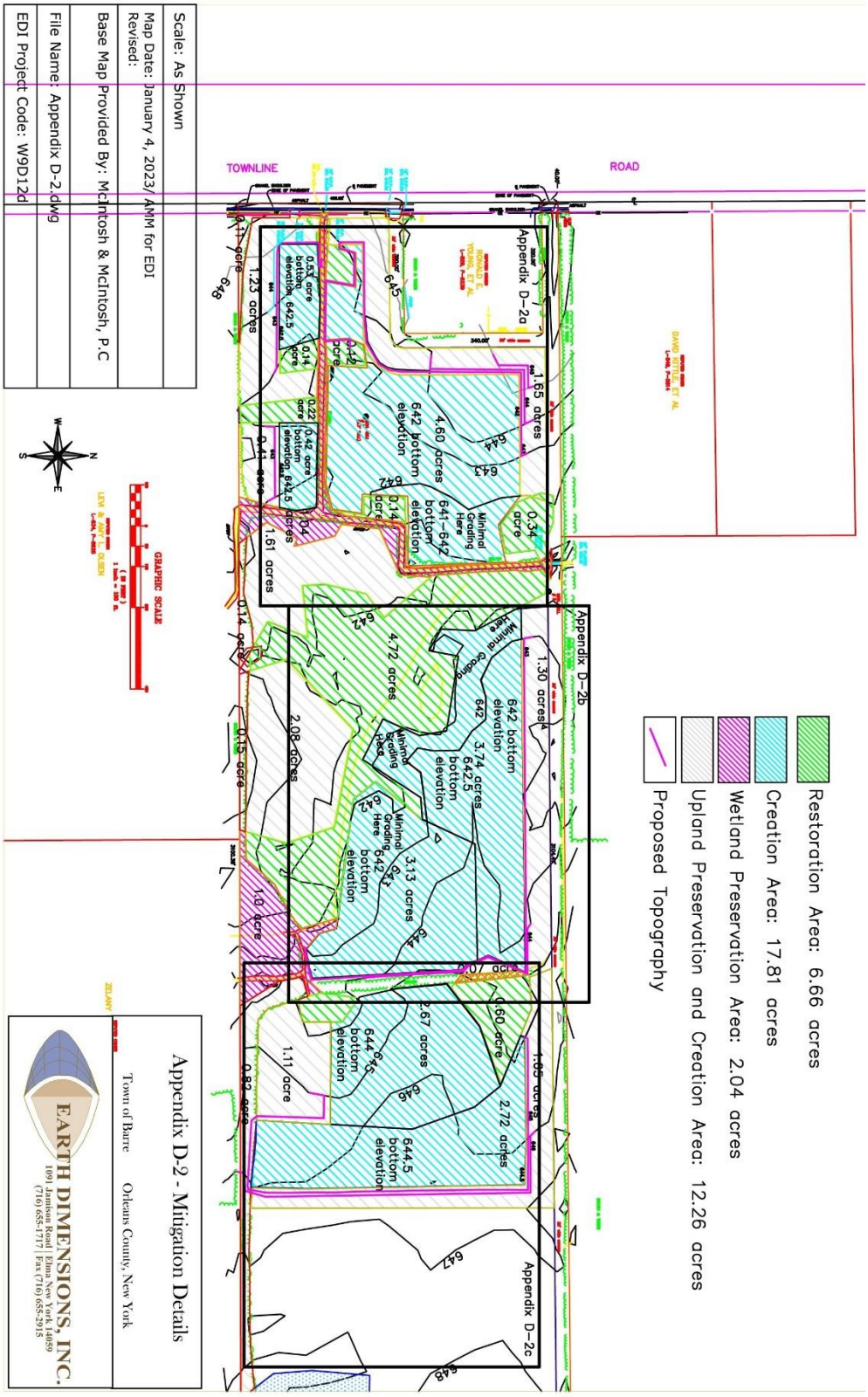

Figure 15. Pask Road Mitigation Details

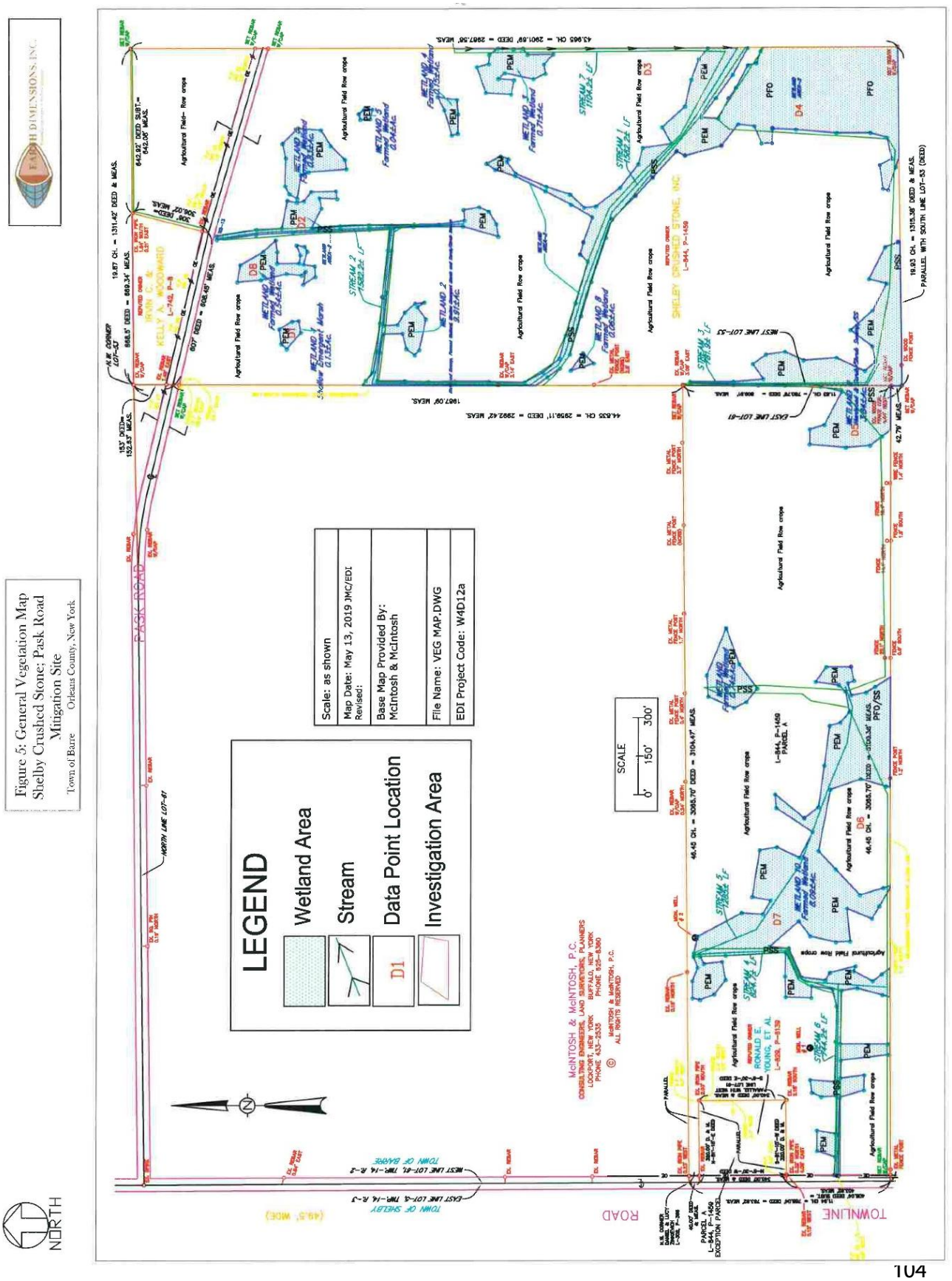

Figure 5: General Vegetation Map
Shelby Crushed Stone; Pask Road Mitigation Site
Town of Barre Orleans County, New York

Figure 16. Pask Road Wetland Delineation Map

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

(1) COUNTY Orleans
(2) TOWN Shelby

WATER WELL COMPLETION REPORT

(3) DEC Well Number: OL 408

(4) OWNER: Leroy Banks
(5) ADDRESS: 4886 Townline Rd. Medina, NY 14103
(6) LOCATION OF WELL (See Instructions On Reverse) (Check here ☒ if address is same as above)
(7) LATITUDE/LONGITUDE AND METHOD USED ☒ GPS ☐ Map: N43° 10.612' W078° 18.666'
(8) TAX MAP NO.

(9) DEPTH OF WELL BELOW LAND SURFACE (feet): 33
(10) DEPTH TO GROUNDWATER BELOW LAND SURFACE (feet): 13 DATE MEASURED: 10/4/16

CASINGS

(11) DIAMETER	6 in.	in.	in.	in.
(12) LENGTH	36.5 ft.	ft.	ft.	ft.

(13) GROUT TYPE / SEALING: Bentonite
(14) GROUT / SEALING INTERVAL (feet) FROM 0' TO 20'

SCREENS

(15) MAKE & MATERIAL		(16) OPENINGS		
(17) DIAMETER	in.	in.	in.	in.
(18) LENGTH	ft.	ft.	ft.	ft.

(19) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)

YIELD TEST

(20) DATE: 10/4/16
(21) DURATION OF TEST: 2hrs. 17min.
(22) LIFT METHOD ☒ Pump ☐ Air Lift ☐ Bailer
(23) STABILIZED DISCHARGE (GPM): 14
(24) STATIC LEVEL PRIOR TO TEST (feet/inches below top of casing): 16'
(25) MAXIMUM DRAWDOWN (Stabilized) (feet/inches below top of casing): 19.85'
(26) RECOVERY (Time in hours/minutes): 30 min.
(27) Was the water produced during the test discharged away from immediate area? Yes X No ____

PUMP INSTALLATION

(28) PUMP INSTALLED? YES X NO ____
(29) DATE: 10/5/16
(30) CERTIFIED PUMP INSTALLER: Zachary Atwell
(31) TYPE: Submersible
(32) MAKE: S-class
(33) MODEL: 10SV05P4-2W230
(34) MAXIMUM CAPACITY (GPM): 10
(35) PUMP INSTALLATION LEVEL FROM TOP OF CASING (Feet): 32

DRILLER INFORMATION

(36) METHOD OF DRILLING ☐ Rotary ☒ Cable Tool ☐ Other
(37) USE OF WATER (See instructions for choices): Domestic
(38) DATE DRILLING WORK STARTED: 10/3/16
(39) DATE DRILLING WORK COMPLETED: 10/4/16
(40) DATE REPORT FILED: 10/11/16
(41) REGISTERED COMPANY: Atwell Water Well Service
(42) DEC REGISTRATION NO.: NYRD 10139
(43) CERTIFIED DRILLER (Print name): Zachary Atwell
(44) CERTIFIED DRILLER SIGNATURE *: Zachary Atwell

* By signing this document I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; (3) under the penalty of perjury the information provided in this Well Completion Report is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45.

10/2013

(45) WELL LOG
Depth to Bedrock N/A (ft. below land surface)
Ground Elevation 681 (ft. above sea level)
Top of Casing 3+ (ft. above (+) or below (-) land surface)

TOP OF WELL
0'
Brown Sticky Clay
26'
Coarse Gravel w/some Sand
33'
BOTTOM OF HOLE

NYSDEC

LOCATION SKETCH - Indicate north

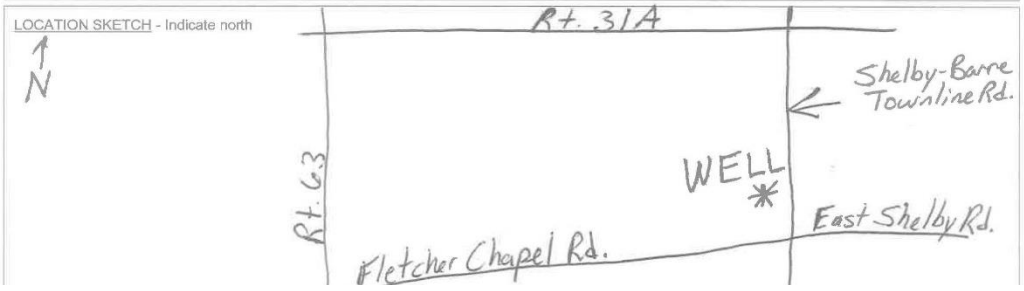

Figure 17. Water Well Completion Report for 4886 Townline Road

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

WATER WELL COMPLETION REPORT

(1) COUNTY Orleans
(2) TOWN Barre
(3) DEC Well Number OL 441

(4) OWNER NAME: Levi Olsen
(5) OWNER ADDRESS: 4480 Shelby-Barre Townline Rd. Albion NY 14411
(6) WELL ADDRESS (Provide sketch or map) ☐ Same as owner address: 4895 Shelby-Barre Townline Rd. Albion
(7) LATITUDE/LONGITUDE AND METHOD USED: X GPS ☐ Map 43.17547 78.30957
(8) TAX MAP NO.
(9) DEPTH OF WELL (Feet): 31
(10) DEPTH TO GROUNDWATER (Feet) AND DATE MEASURED: 8.5 7/13/20
(11) FLOWING? Yes ____ No X

WELL LOG
DEPTH TO BEDROCK (Feet below land surface) 31'
GROUND ELEVATION (Feet above sea level) 647'
TOP OF CASING (Feet above (+) or below (-) land surface) 1'6" +

CASINGS

(12) DIAMETER	6 in.	in.	in.	in.
(13) LENGTH	32.5 ft.	ft.	ft.	ft.

(14) GROUT TYPE / SEALING: Bentonite
(15) GROUT / SEALING INTERVAL (Feet) From 0 To 19

SCREENS

(16) MAKE & MATERIAL		(17) SLOT SIZE		
(18) DIAMETER	in.	in.	in.	in.
(19) LENGTH	ft.	ft.	ft.	ft.

(20) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)

YIELD TEST

(21) DATE: 7/13/20
(22) DURATION OF TEST (Hours/minutes): 2hrs. 11min.
(23) LIFT METHOD: X Pump ☐ Air Lift ☐ Bailer
(24) STABILIZED DISCHARGE (GPM): 6
(25) STATIC LEVEL PRIOR TO TEST (Feet/inches below top of casing): 10'
(26) MAXIMUM DRAWDOWN (Stabilized) (Feet/inches below top of casing): 20.8'
(27) RECOVERY TIME (Hours/minutes): Approx. 15 min.
(28) Was the water produced during the test discharged away from immediate area? Yes X No ____

PUMP INSTALLATION

(29) PUMP INSTALLED? Yes ____ No X
(30) DATE
(31) CERTIFIED PUMP INSTALLER
(32) TYPE
(33) MAKE
(34) MODEL
(35) MAXIMUM CAPACITY (GPM)
(36) PUMP INSTALLATION LEVEL (Feet below top of casing)

DRILLER INFORMATION

(37) METHOD OF DRILLING: X Rotary ☐ Cable Tool ☐ Other ____
(38) USE OF WATER (See instructions for choices): Domestic
(39) DATE DRILLING WORK STARTED: 7/10/20
(40) DATE DRILLING WORK COMPLETED: 7/13/20
(41) DATE REPORT FILED: 7/17/20
(42) REGISTERED COMPANY NAME: Atwell Water Well Service
(43) DEC REGISTRATION NO.: NYRD 10139
(44) CERTIFIED DRILLER (Print name): Zachary Atwell
(45) CERTIFIED DRILLER SIGNATURE *: Zachary Atwell

* By signing this document I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; (3) under the penalty of perjury the information provided in this Well Completion Report is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45.

04/2018

TOP OF WELL
0'
1' Topsoil
Brown, Dry, Sandy Clay
10'
Brown, Wet Sticky Clay
20'
Wet Gray Sand w/some rocks
26'
chefly coarse colorful gravel
31'
Bedrock
BOTTOM OF HOLE

NYSDEC COPY

LOCATION SKETCH - Indicate north

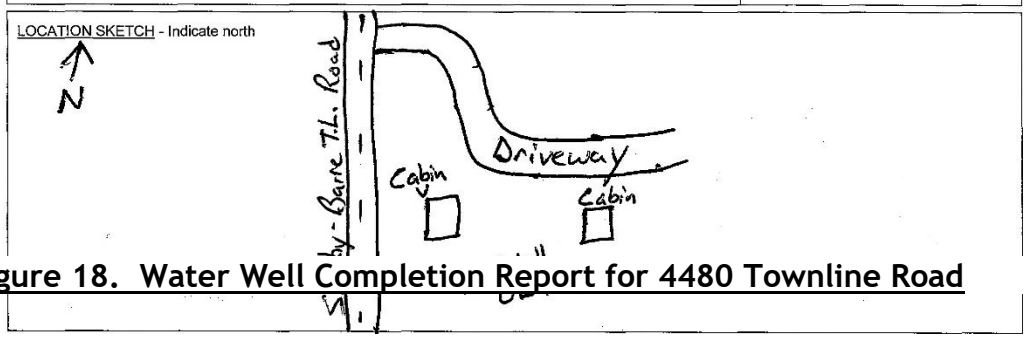

Figure 18. Water Well Completion Report for 4480 Townline Road

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Orleans County Consolidated Agricultural District No. 1, Overview document from the Orleans County Planning and Development Department. On the internet: https://cms9files.revize.com/orleanscountyny/Document_center/Department/Planning/Ag%20district.pdf

USGS National Minerals Information Center. On the internet at: https://www.usgs.gov/centers/nmic/natural-aggregates-statistics-and-information