

APPLICATION FOR OHIO EPA SECTION 401 WATER QUALITY CERTIFICATION

Effective October 1, 1996
Revised August, 1998

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This application must be completed whenever a proposed activity requires an individual Clean Water Act Section 401 Water Quality Certification (Section 401 certification) from Ohio EPA. A Section 401 certification from the State is required to obtain a federal Clean Water Act Section 404 permit from the U.S. Army Corps Engineers, or any other federal permits or licenses for projects that will result in a discharge of dredged or fill material to any waters of the State. To determine whether you need to submit this application to Ohio EPA, contact the U.S. Army Corps of Engineers District Office with jurisdiction over your project, or other federal agencies reviewing your application for a federal permit to discharge dredged or fill material to waters of the State, or an Ohio EPA Section 401 Coordinator at (614) 644-2001.

The Ohio EPA Section 401 Water Quality Certification Program is authorized by Section 401 of the Clean Water Act (33 U.S.C. 1251) and the Ohio Revised Code Section 6111.03(P). Ohio Administrative Code (OAC) Chapter 3745-32 outlines the application process and criteria for decision by the Director of Ohio EPA. In order for Ohio EPA to issue a Section 401 certification, the project must comply with Ohio's Water Quality Standards (OAC 3745-1) and not potentially result in an adverse long-term or short-term impact on water quality. Included in the Water Quality Standards is the Antidegradation Rule (OAC Rule 3745-1-05), effective October 1, 1996, revised October, 1997 and May, 1998. The Rule includes additional application requirements and public participation procedures. **Because there is a lowering of water quality associated with every project being reviewed for Section 401 certification, every Section 401 certification applicant must provide the information required in Part 10 (pages 3 and 4) of this application.** In addition, applications for projects that will result in discharges of dredged or fill material to wetlands must include a wetland delineation report approved by the Corps of Engineers, a wetland assessment with a proposed assignment of wetland category (ies), official documentation on evaluation of the wetland for threatened or endangered species, and appropriate avoidance, minimization, and mitigation as prescribed in OAC 3745-1-50 to 3745-1-54. Ohio EPA will evaluate the applicant's proposed wetland category assignment and make the final assignment.

Information provided with the application will be used to evaluate the project for certification and is a matter of public record. If the Director determines that the application lacks information necessary to determine whether the applicant has demonstrated the criteria set forth in OAC Rule 3745-32-05(A) and OAC Chapter 3745-1, Ohio EPA will inform the applicant in writing of the additional information that must be submitted. The application will not be accepted until the application is considered complete by the Section 401 Coordinator. An Ohio EPA Section 401 Coordinator will inform you in writing when your application is determined to be complete.

Please submit the following to "Section 401 Supervisor, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049:

- Four (4) sets of the completed application form, including the location of the project (preferably on a USGS quadrangle) and 8-1/2 x 11" scaled plan drawings and sections.
- One (1) set of original scaled plan drawings and cross-sections (or good reproducible copies).

(See Application Primer for detailed instructions)

1. The federal permitting agency has determined this project: (check appropriate box and fill in blanks)

- a. requires an individual 404 permit/401 certification- Public Notice # (if known) _____
- b. _____ requires a Section 401 certification to be authorized by Nationwide Permit # _____
- c. _____ requires a modified 404 permit/401 certification for original Public Notice # _____
- d. _____ requires a federal permit under _____ jurisdiction identified by # _____
- e. _____ requires a modified federal permit under _____ jurisdiction identified by # _____

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Click to clear all entered information (on all 4 pages of this form)

401 Cert App.

2. Application number (to be assigned by Ohio EPA): 199419

3. Name and address of applicant: **Brian Smith**
Cleveland Clinic
9500 Euclid Avenue #CC-41
Cleveland, Ohio 44195
Telephone number during business hours:
() (Residence)
(216) 445-9521 (Office)

3a. Signature of Applicant: _____ Date: _____

4. Name, address and title of authorized agent: **Rosty Caryk**
Davey Resource Group
295 South Water Street, Suite 300
Kent, Ohio 44240
Telephone number during business hours:
() (Residence)
(330) 673-5685 (Office)

4a. Statement of Authorization: I hereby designate and authorize the above-named agent to act in my behalf in the processing of this permit application, and to furnish, upon request, supplemental information in support of the application.
Signature of Applicant: _____ Date: _____

5. Location on land where activity exists or is proposed. Indicate coordinates of a fixed reference point at the impact site (if known) and the coordinate system and datum used. **PAID**
Address: 668110
Amount \$16810 - Date 6/12/14
33100 Cleveland Clinic Blvd., Avon, Ohio 44011
Street, Road, Route, and Coordinates, or other descriptive location Check # 4367699 Date 6/11/14
Porter Creek Watershed Lorain County Avon Township Avon City Ohio State 44011 Zip Code

6. Is any portion of the activity for which authorization is sought complete? Yes No
If answer is "yes," give reasons, month and year activity was completed. Indicate the existing work on the drawings.

7. List all approvals or certifications and denials received from other federal, interstate, state or local agencies for any structures, construction, discharge or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial
USACE	404	2007-01112	February 2014		

8. DESCRIPTION OF THE ACTIVITY (fill in information in the following four blocks - 8a, 8b, 8c & 9)

8a. Activity: Describe the Overall Activity:
See attached supplemental materials.
PERSON ID: _____
PLACE ID: _____
DOCUMENT ID: 24408
ORGANIZATION ID: 38449
REVENUE ID: 989616

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8b. Purpose: Describe the purpose, need and intended use of the activity:

See attached supplemental materials.

8c. Discharge of dredged or fill material: Describe type, quantity of dredged material (in cubic yards), and quantity of fill material (in cubic yards).

Preferred design: 10,180 cubic yards clean, earthen fill into wetlands, 356 cubic yards clean, earthen fill into stream D-1.
Minimal degradation alternative: 6,438 cubic yards clean, earthen fill into wetlands, 356 cubic yards clean, earthen fill into stream D-1

9. Waterbody and location of waterbody or upland where activity exists or is proposed, or location in relation to a stream, lake, wetland, wellhead or water intake (if known). Indicate the distance to, and the name of any receiving stream, if appropriate.

The proposed project affects Category 2 jurisdictional wetlands and Modified Class 1 headwater streams within the Porter Creek-Frontal Lake Erie 12-digit HUC watershed (04110001-02-04). Porter Creek, a WWH stream, is located partially on-site near the east boundary of the project site.

10. To address the requirements of the Antidegradation Rule, your application must include a report evaluating the:

- o Preferred Design (your project) and Mitigative Techniques
- o Minimal Degradation Alternative(s) (scaled-down version(s) of your project) and Mitigative Techniques
- o Non-Degradation Alternative(s) (project resulting in avoidance of all waters of the state)

At a minimum, item a) below must be completed for the Preferred Design, the Minimal Degradation Alternative(s), and the Non-Degradation Alternative(s), followed by completion of item b) for each alternative, and so on, until all items have been discussed for each alternative (see Primer for specific instructions).

10a) Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water.

10b) Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation.

- 10c) Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.)
- 10d) For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents.
- 10e) To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource.
- 10f) Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project.
- 10g) Describe any impacts on human health and the overall quality and value of the water resource.
- 10h) Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy.
- 10i) Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans.
- 10j) Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species.
- 10k) Describe mitigation techniques proposed (except for the Non-Degradation Alternative):
 - o Describe proposed Wetland Mitigation (see OAC 3745-1-54 and Primer)
 - o Describe proposed Stream, Lake, Pond Mitigation (see Primer)

11. Application is hereby made for a Section 401 Water Quality Certification. I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or I am acting as the duly authorized agent of the applicant.

Bernard J. Sweet
Signature of Applicant

6 MAR 14
Date

Signature of Agent

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in Block 3 has been filled out and signed.

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Executive Summary

This document was prepared in support of a Section 401 Water Quality Certification from Ohio Environmental Protection Agency (EPA) for the Cleveland Clinic Avon Hospital Bedtower project (the Project) located north of Just Imagine Drive in Avon, Lorain County, Ohio (Appendix A). A Section 404 Individual Permit application has been submitted to U.S. Army Corps of Engineers (USACE), Buffalo District for the project. The primary goal of this project is to expand the existing facility to accommodate a second 170-bed hospital tower and associated medical support infrastructure, including diagnostic centers, laboratory facilities, operating rooms, and administrative spaces. Expansion of the facility will require additional on-site development, including the construction of parking, interior roads, utilities, and storm-water management facilities all set within a natural setting conducive to a healing environment.

The project site is 56.35 acres in size and contains areas upland successional woods, upland old fields, 9.72 acres of Category 2 forested wetlands, 1.76 acres of Category 2 non-forested wetlands, 237 linear feet of Porter Creek, 12 linear feet of ephemeral Modified Class I streams (D-2), and 2,666 linear feet of perennial, highly channelized, Federally regulated, Modified Class I agricultural ditches (D-1, formerly referenced as D-1-1, D-1-2, and D-1-3). The existing Richard E. Jacobs Health Center and associated infrastructure is located in the south of the Project site near I-90 (Appendix A). The existing facility was constructed in 2009, and was authorized by a nationwide permit issued by USACE Buffalo and an Isolated Wetlands Permit issued by Ohio EPA (Appendix B).

As required by the 401 Water Quality Certification application to Ohio EPA, three on-site alternative designs were developed for the proposed expansion project (Appendix A): preferred design alternative, minimal degradation alternative, and non-degradation alternative. Although the preferred design developed for the project maximizes patient use and care at the lowest cost, the Clinic has determined that the increase in project cost associated with the reduction in impacts to water resources under the minimal degradation alternative is warranted to limit impacts to the aquatic environment. As such, the minimal degradation alternative is the plan which the Cleveland Clinic seeks to be permitted.

Under the minimal degradation alternative, the Project will impact a total of 2.23 acres of Category 2 forested wetlands, 1.76 acres of Category 2 non-forested wetlands, and 671 linear feet of Modified Class I streams on the site. Delineation reports and wetland and stream assessment forms are provided in Appendix C, while photos of water resources on the project site are in Appendix D. Impacts to threatened and endangered species or historic and cultural resources are not anticipated from the project (Appendices E and F).

As required by §404(b)(1) of the Clean Water Act, other sites were evaluated to determine if practicable alternative sites exist that would result in less damage to the aquatic environment from the Project (Appendix G). This analysis determined that the project site is the most practicable alternative for the project due to land acquisition costs, costs related to the duplication of services and infrastructure, and operational considerations related to the overall function and integration of the existing health center and proposed hospital as it relates to overall patient care.

Cleveland Clinic proposes to purchase non-forested wetland mitigation credits from the Granger Wetlands Mitigation Bank for impacts to non-forested wetlands at the project site. As no forested wetland mitigation credits from approved wetland mitigation banks or in-lieu fee programs are available within the project watershed, the Applicant proposes to provide mitigation for unavoidable impacts to forested wetlands through the restoration of forested wetlands on a site

east of the Granger Wetlands Mitigation Bank located in Granger Township, Medina County. The proposed mitigation site is located within the same 8-digit HUC as the project site (04110001 Black-Rocky).

Based upon the ratios provided in Ohio Administrative Code §3745-1-54, the Applicant proposes to purchase 3.6 non-forested wetland mitigation credits from the Granger Wetlands Mitigation Bank to compensate for impacts to 1.76 acres of Category 2 non-forested wetlands on the project site. To mitigate for impacts to 2.23 acres of Category 2 forested wetlands, the Applicant proposes to restore 5.58 acre of forested wetlands at the Granger site. Appendix A contains a map showing the location of the wetland mitigation site relative to the Project Site.

To compensate for impacts to 671 linear feet of Modified Class I streams, the Applicant proposes to relocate and restore 1,007 linear feet of stream on the site. Stream mitigation activities will utilize natural channel design. In addition to providing greater stream length on the site, the mitigation stream will be designed with a greatly improved floodprone width, which the existing incised agricultural ditch lacks.

Realization of this project will allow Cleveland Clinic to service the expanding population in the western suburbs of Cleveland. It will reduce patient travel for the more specialized and intensive services a hospital can provide when compared to a family medical center. Furthermore, the hospital will also serve as a critical component of the regional services that have been established through an agreement between Cleveland Clinic and the ProMedica health system in Toledo, Ohio. ProMedica, which operates 11 hospitals and more than 300 other health care facilities in Northwest Ohio and Southeast Michigan, will collaborate with the Cleveland Clinic on improving the quality of patient care, reducing costs and making the services and programs it offers more efficient.

Introduction

The mission of Cleveland Clinic is to provide better care of the sick, investigation into their problems, and further education of those who serve. Since welcoming its first patients in 1921, Cleveland Clinic has excelled at providing specialized medical care supported by comprehensive research and education. It has developed into a world-class health care provider that is consistently ranked as one of the top hospitals in the United States in a variety of disciplines. Research conducted at Cleveland Clinic has led to numerous innovations and breakthroughs in a variety of medical fields, with highlights including:

- Isolation of serotonin, a key factor in hypertension (1940s)
- First coronary angiography (1958)
- Development and refinement of coronary bypass surgery (1967)
- First minimally invasive aortic heart valve surgery (1996)
- First successful larynx transplant (1998)
- Discovery of the first gene linked to juvenile macular degeneration (2000)
- Discovery of the first gene linked to coronary artery disease (2003)
- Pioneering success in deep brain stimulation for psychiatric disorders (2006)
- First kidney surgery performed through a patient's navel (2007)
- Nation's first near-total face transplant (2008)
- First heart/liver transplant in a patient with an artificial heart (2009)
- First robotic partial nephrectomy on a kidney transplant patient (2010)
- Transcatheter valve replacement and repair; and discovery that adult brain neurons can regenerate (2011)
- Discovered that bariatric surgery controls diabetes (2012)

Patient visits to Cleveland Clinic facilities totaled 5.1 million in 2012, with a total of 157,474 admissions and 200,808 surgical cases. Due to the expertise of its staff and overall quality of care provided at its facilities, patients to the Cleveland Clinic come from every state in the nation and from more than 132 countries around the world. Cleveland Clinic is the second largest employer in the State of Ohio, with over 39,300 employees working at the Clinic's main hospital, 75 outpatient locations, and 10 community and affiliate hospitals in northeast Ohio.

The Richard E. Jacobs Health Center, located in Avon, Lorain County, Ohio, is a 190,000 square foot LEED Silver certified facility that opened in 2011. The Health Center currently employs over 420 full-time employees. The facility includes a 24-hour emergency department, primary and specialty care, ambulatory outpatient surgery center, chemotherapy infusion suite, full scale imaging center, and physical therapy area. Hospital admissions are transported by ambulance or helicopter to other facilities within the Cleveland Clinic system. The Center provides health care services to the western Cleveland suburbs, including Westlake, Avon, Lorain, and surrounding communities.

When planning and development of the Richard E. Jacobs Health Center facility was underway in the 2000s, the potential for expansion of the Health Center into a full hospital was considered. However, at that time, the demand for the services provided at the Health Center was not fully known, and the commitment to construct a full hospital could not be made. However, since opening in 2011, the Health Center has, according to Cleveland Clinic CEO Dr. Toby Cosgrove, "...seen success beyond our expectations and inpatient expansion will help us continue to meet the increasing needs of our patients".

Due to the outstanding demand for immediate inpatient options at the facility and surrounding communities, Cleveland Clinic is currently constructing an initial expansion that will incorporate a 130-bed hospital tower at the location. This effort was designed to completely avoid regulated waters in order to expedite its development and construction. Based upon the existing and anticipated future demand for services at the Center, the decision was made to pursue final expansion of the facility to incorporate a 170-bed inpatient tower, for a total of 300 beds. This additional expansion is also prompted by the recent affiliation with the ProMedica Health System. The agreement will allow an enhancement of patient care, and will improve efficiency, reduce costs and drive quality and value to patients. Due to its location west of Cleveland, the new Avon hospital is anticipated to play a major role in this regional cooperative agreement. This final stage of development will require impacts to wetlands and streams on the project site.

As required by the 401 Water Quality Certification application to Ohio Environmental Protection Agency (EPA), three on-site alternative designs were developed (Appendix A): preferred design alternative, minimal degradation alternative, and non-degradation alternative. Although the preferred design developed for the project maximizes site use as it relates to patient care and operational efficiency, both in utilization and lowest cost, the Clinic has determined that the somewhat reduced efficiency and increase in the overall project cost required to reduce impacts to water resources under the minimal degradation alternative is warranted to limit impacts to the aquatic environment. As such, the minimal degradation alternative is the plan which the Cleveland Clinic seeks to be permitted.

Project History

Construction of the existing Richard E. Jacobs Health Center was authorized by a Nationwide Permit (NWP) issued by USACE Buffalo on May 5, 2009 (Department of the Army No. 2007-01112) and a Level 1 Isolated Permit from Ohio EPA (ID No. 093502). These permits authorized the fill of 0.399 acre of Federal jurisdictional wetlands and 0.06 acre of State isolated wetlands. A jurisdictional determination (JD) accompanied the NWP authorization. USACE Buffalo issued a public notice for the project on May 9, 2014 (Department of Army #2007-01112). Copies of the NWP authorization, JD, and public notice are provided in Appendix B.

Additional land to the northwest of the Center was gifted to Cleveland Clinic. This land was previously delineated for water resources, with a JD (Department of the Army No. 2009-01856) issued for the parcel in 2011. A copy of this second JD is located in Appendix B.

As previously mentioned, the Applicant is currently pursuing construction of an initial expansion that will incorporate a 130-bed hospital tower at the location. This initial construction is occurring without impacts to regulated waters.

Purpose

The purpose of the Project is to provide expanded capacity for patients requiring hospitalization and inpatient care in the western Cleveland suburbs.

Need Elements

Anticipated Future Demand. Surrounding communities, including Avon, Westlake, Avon Lake, and North Ridgeville, have grown substantially in recent years. According to the U.S. Census Bureau, from 2000 to 2010, the population of Avon expanded from 11,446 to 21,193, an 85% increase. During the same time period, the population of Westlake grew from 31,719 to 32,729, a 3% increase. The population of Avon Lake increased from 18,145 to 22,581, a 24% increase, while North Ridgeville grew from 22,338 to 29,465, a 32% increase. The facility also

provides services to patients from Bay Village, Cleveland, North Olmsted, Olmsted Falls, Sheffield Lake, Lorain, Vermillion, Amherst, Oberlin, Wellington, LaGrange, and Grafton. These communities, located west of Cleveland, are anticipated to continue to grow in the future due to ease of access to transportation hubs, strong public schools, and extensive employment opportunities. Additionally, the recent agreement with ProMedica health system in Toledo, Ohio is also anticipated to generate additional specialized health service needs that will be addressed by this site.

Healing in Nature. Primary research has been conducted related to the positive effect of exposure to natural environments on stress levels, cognitive function, and pain. A study performed by Beil and Hanes (2013) found that participants exposed to natural environments experienced a statistically significant reduction in stress levels (measured chemically and through self-reporting) than those exposed to urban built-up surroundings. Berman *et al.* (2008) found that exposure to nature significantly improved test subject's ability to perform intensive cognitive tasks versus those individuals that were exposed to urban surroundings. Lechtzin *et al.* (2010) found that viewing a nature scene while listening to nature sounds is a safe, inexpensive method that may reduce pain during invasive surgery procedures, including bone marrow aspirate and biopsy. In order to reap the health benefits of the natural environment for its patients, Cleveland Clinic attempts to site new facilities in close proximity to natural areas, while maximizing green infrastructure and landscaping within its built environments.

Environmental Resources

Wetlands

A total of 9.72 acres of forested wetlands (Wetlands N-1, N-2, and N-13) and 1.76 acres of non-forested wetlands (0.59 acre of Wetland N-2, Wetland N-3) are located on the project site. The forested wetlands are primarily dominated by *Quercus palustris* (pin oak, FACW), *Acer rubrum* (red maple, FAC), *Lindera benzoin* (northern spicebush, FACW), *Quercus bicolor* (swamp white oak, FACW), *Fraxinus pennsylvanica* (green ash, FACW), and *Toxicodendron radicans* (eastern poison-ivy, FAC). The non-forested wetlands are primarily dominated by *Viburnum recognitum* (smooth arrow-wood, FAC), *Juncus effusus* (lamp rush, OBL), *Scirpus cyperinus* (cottongrass bulrush, OBL), *Fraxinus pennsylvanica* (green ash, FACW), and *Ulmus americana* (American elm, FACW).

These wetlands were qualitatively evaluated using the Ohio Rapid Assessment Method (ORAM) v. 5.0 as developed by Ohio EPA. The wetlands were scored together per section 5.2 of the ORAM manual due to ecological connectivity (wetlands that form a patchwork on the landscape), and received a rating of Category 2 on the ORAM form (Appendix C). This rating was confirmed during site visits conducted in 2010 by members of Ohio EPA's Division of Surface Water for the Lear Nagle Mixed Use Development (Department of the Army #2009-01856, Ohio EPA ID No. 103625) located to the west of the Cleveland Clinic site. Photographs of the wetlands on the site are in Appendix D. Davey Resource Group reviewed the ORAM previously prepared by Ohio EPA for wetlands on and adjacent to the Project site, and determined that the metric scores continue to accurately characterize the existing conditions on the site.

Streams

A total of 2,678 linear feet of Modified Class I, federally regulated ditches (D-1 and D-2) and 237 linear feet of Porter Creek are located on the Project Site. According to Ohio Administrative Code 3745-1-20, Porter Creek is designated as Warmwater Habitat. Porter Creek flows from

south to north along the Project site's east property line, eventually entering Lake Erie at Bay Village (HUC 4110001-02-04). Although labeled separately in the original site delineations and jurisdictional determinations, D-1-1, D-1-2, and D-1-3 are the same primary channel, identified here and by the Corps in the 404 public notice as Stream D-1. D-2 flows into D-1 in the west of the site. These drainage channels are highly modified, channelized agricultural drainage ditches flowing south to north along the site's west property line.

These streams scored in the Modified Class 1 range on the Ohio EPA Headwater Habitat Evaluation Index (HHEI) form (Appendix C). These scores were verified by Ohio EPA Division of Surface Water staff on November 22, 2010 for the Lear Nagle Mixed Use Development. Photographs of the streams on the site are in Appendix D.

Uplands

Areas of upland successional forest and old field are interspersed among the wetlands on the site. Common plant species in these areas include *A. rubrum*, *F. pennsylvanica*, *T. radicans*, *Parthenocissus quinquefolia* (Virginia creeper, FACU), *Rosa multiflora* (rambler rose, FACU), and *Rubus allegheniensis* (Allegheny blackberry, FACU).

Off-Site Alternative Analysis

An evaluation of off-site alternatives was completed to determine if other sites in close proximity to the existing facility are available that could practicably be obtained and developed with potentially less damaging consequences to the aquatic environment. The term practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. Information regarding the alternative sites is provided below and in Appendix G.

Requirements

To be considered suitable for the Project, the Alternative Sites needed to be 1) visible from I-90 2) easily accessible from either the I-90/Crocker Road interchange in Westlake or the I-90/Lear Nagle Interchange in Avon, 3) available for sale, and 4) large enough to physically accommodate the facility required by the project purpose.

Alternatives

The proposed Project Site (Site 1) and Alternative Sites (Sites 2, 3 and 4) are outlined in Appendix G. As opposed to the Project Site, all of the Alternative Sites would require a significant added cost related to land acquisition. The Alternative Sites include Ross/Syed (Site 2), with an estimated acquisition cost of \$16.0 million, Jarem (Site 3), with a cost of \$8.1 million, and NWQ Jaycox (Site 4) at \$9.0 million.

All of the sites are located in the Lake Erie lake plain in a similar landscape position to the existing Richard E. Jacobs Health Center. Analyses of secondary source material, including recent aerial imagery, USFWS National Wetland Inventory, USGS StreamStats, USEPA MyWATERS, and the Cuyahoga and Lorain County Soil Surveys all indicate the potential presence of regulated waters on the project sites. All of the alternative sites are underlain by somewhat poorly drained to poorly drained hydric soils or non-hydric soils with hydric inclusions, which indicates a high potential for the alternatives sites to support wetlands.

Site 2 is located east of Crocker Road in Westlake approximately ¼ mile south of I-90. This site is surrounded by commercial and residential areas in a rapidly developing corridor along Crocker

Road. The estimated acquisition cost for Site 2 is \$16 million. The site is underlain by non-hydric soils with hydric inclusions (Haskins loam, 0 to 2 percent slopes and Mahoning silt loam, 0 to 2 percent slopes). Recent aerial imagery shows evidence of drainage ditches, relict farm furrows, and hydrophytic vegetation. This site is not visible or directly accessible from I-90.

Site 3 is located on the southwest quadrant of the I-90/Lear Nagle interchange. The estimated acquisition cost is \$8.1 million. The site cannot currently support the Project, because it lacks sewer service. To obtain sewer service, new sewer lines would have to be constructed beneath I-90 at an estimated cost of \$1 million to \$2 million. All of the site is underlain by hydric soils (Miner silty clay loam, Luray silty clay loam) or non-hydric soils with hydric inclusions (Mahoning silty clay loam, 0 to 2 percent slopes). A stream identified by MyWATERS and StreamStats is visible on the site.

Site 4 is located northwest of I-90 and Jaycox Road. The estimated acquisition cost is \$8.1 million. The site is underlain by hydric soils (Luray silty clay loam, Allis silt loam, 0 to 2 percent slopes, and Miner silty clay loam, shale substratum). Soil saturation and drainage ditches are visible on the site in recent aerial imagery.

Details regarding the alternative sites are provided in Appendix G.

Additional Project Costs and Operational Considerations

Any alternative site would require a major investment in land as described above. Land acquisition costs range from \$8.1 million to \$16 million. In addition, Cleveland Clinic would incur significant costs in preparing some of the alternative sites for development that would not be required at the existing site.

Aside from the additional costs to acquire an alternative site, there are construction, equipment and operational costs to consider. The existing facility includes considerable operational and administrative space and infrastructure, including medical offices, an ambulatory surgery center, and an emergency department. If an alternative site was pursued for the project, significant additional expenses would be incurred by the Applicant to duplicate required services at the new facility. The alternative site would require a new emergency department and operating rooms. New laboratory and diagnostic facilities which incorporate expensive equipment, including magnetic resonance imaging (MRI), computed tomography (CT) scanners, and others, would also be required. Some of these specialized medical devices can cost above \$1 million per unit. The total cost to duplicate these facilities in a separate location is estimated at \$25 million.

Cleveland Clinic can operate much more efficiently by having the hospital, emergency department, ambulatory surgery center, and medical offices all on the same site. Doctors can visit patients in the hospital, perform surgery in the surgery center and see patients at their offices without having to leave the complex. This arrangement is also much more convenient and efficient for support staff, patients and visitors. Food services and back-of-house services can be combined and delivered more efficiently with one complex rather than two. Today, the public and elected officials have major concern regarding rising health care costs. As such, health care providers like Cleveland Clinic must be extremely cognizant of costs. Duplication of services and equipment is simply not acceptable where such savings can be realized.

The City of Avon has strictly limited commercial and industrial development south of I-90. The City has enforced a policy of planning areas south of I-90 to be primarily residential and areas north of I-90 to be primarily commercial and industrial. The City passed an ordinance in November 2006 amending its charter to prohibit commercial or industrial rezoning south of I-90 without a vote of the people. Except for a small "halo" around the new interchange, only

residential development is allowed south of I-90 per this Charter Amendment (Ordinance 95-06), which passed overwhelmingly in a public referendum. The small “interchange halo” is only suitable for small-scale, commercial development.

In summary, any alternative site is going to include considerable expenses to purchase the property (\$8.1 million - \$16 million) and prepare it for development. The duplication of services and the associated construction and equipment costs will require an additional \$25 million for developing separate facilities instead of utilizing the facilities currently available at the existing site. Operational costs will be greater with an alternate site, and patient care will suffer, as there will be an increased need for unnecessary patient transfers between the two facilities.

The Applicant can deliver better health care services to the community and region by offering consolidated services at one complex. These considerations make the existing project site the only practicable alternative for the Project, and the only alternative acceptable to the Applicant.

On-Site Alternatives Design Requirements

Design of the Project must follow requirements outlined by the Facility Guidelines Institute (<http://www.fgiguilines.org/>) for the construction of hospitals and outpatient facilities. Key guidelines considered for the Project included:

- Minimize travel distances of patient and staff to create an efficient layout
- Allow for the continuous expansion of existing facilities, including the ED, Operating Rooms (OR), and imaging suite, to avoid duplication of services already in place
- Separate public and support areas to maintain separate patient and material flow thru the facility
- Related modalities of care, such as the ED, OR, and Bed Tower, need to be in close proximity to one another to create an efficient workflow and to minimize the distance of patient transfers and to enhance healthcare provider productivity
- Direct and/or visual contact with nature supports a healing environment (as described previously)
- Create clear circulation paths to eliminate confusion and to enhance way finding

Adherence to these considerations guided the design of the expansion of the existing facility. Siting of the bed towers to the north of the existing facility allows for efficient connections to the emergency department and surgery center. These existing facilities will provide inpatient care and will serve as points of admission into the bed towers. The south of the existing structure is occupied by the medical office building, which has a different function and occupancy type and does not require connections to the bed towers. Expansion to the west would negatively impact patient flow associated with existing drop-off points, while expansion to the east would affect support functions associated with loading docks and existing site infrastructure.

The Project will include the construction of a second, 170-bed tower on the site that will consist of two floors of inpatient facilities on the lower levels, including expansion of the existing ED, OR, and imaging services. The second bed tower will increase the total inpatient capacity to 300 beds.

Three-story bed towers are proposed to limit the footprint of the Project in order to reduce impacts to water resources. Additional vertical expansion of the bed-towers was considered as a way to further reduce impacts, but a taller facility would require ‘high-rise’ designation that would require additional safety features (pressurized shafts), larger booster pumps to provide adequate water pressure to fire lines on higher floors, and wind analysis of the exterior envelope

and building structure. Additionally, supplemental vertical expansion of the 130-bed tower would occur when patients are occupying the facility, and would result in unacceptable impacts to patient care during construction.

Parking values are based upon data collected by Cleveland Clinic at other facilities within its system of hospitals. Cleveland Clinic's standard parking ratio goals include 5 parking spaces per 1,000 square feet of hospital floor space, and 1.5 spaces per bed in the bedtowers.

Please See Appendix H for information and figures related to the design of the facility.

Responses to Questions 10a through 10k

10a. Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water.

Preferred Design: The preferred design includes the construction of a 170-bed hospital bedtower totaling 289,000 square feet of floor space with associated expansion of support services including emergency department, operating rooms, and imaging. The facility will incorporate required utilities, asphalt surface parking, and storm water management areas. A total of approximately 10,180 cubic yards of clean, earthen fill will be discharged into wetlands (N-2 and N-3) on the site, while approximately 356 cubic yards will be discharged below the ordinary high water mark of stream D-1 in order to accommodate the construction of the hospital expansion.

Minimal Degradation Alternative: The minimal degradation alternative includes the construction of 170-bed hospital bedtower totaling 289,000 square feet of floor space with associated expansion of support services including emergency department, operating rooms, and imaging. The facility will incorporate required utilities, permeable surface parking, and storm water management areas. A total of approximately 6,438 cubic yards of clean, earthen fill will be discharged into wetlands (N-2 and N-3) on the site, while approximately 356 cubic yards will be discharged below the ordinary high water mark of stream D-1 in order to accommodate the construction of the expansion.

Non-Degradation Alternative: The non-degradation alternative includes the construction of a stand-alone 170-bed hospital bedtower totaling 289,000 square feet of floor space within upland areas of the site. Expansion of associated support services including emergency department, operating rooms, and imaging will occur, but these facilities will be operationally deficient due to the separation of the 170-bed bedtower from the existing facility. The facility will incorporate required utilities, permeable surface parking, and storm water management areas. Additional structures not required in the preferred design and minimal degradation alternative that are required in the non-degradation alternative to avoid impacts to water resources include a pedestrian and roadway bridge used to access parking areas, a 200 linear foot skywalk connecting Tower 1 to Tower 2, a structured parking garage, and two 3-sided box culverts. The non-degradation alternative would not result in the placement of fill into streams and wetlands on the project site. Although the non-degradation alternative would meet the purpose and need of the project, operational deficiencies, reduction in the quality of care to patients, and increased project cost make the non-degradation alternative an unacceptable alternative for the project.

10b. Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation.

Preferred Design: The quality of water on the site and within the Porter Creek watershed is expected to slightly decrease upon completion of the Project as a result of the loss of 6.31 acres of Category 2 wetlands (1.76 acres non-forested forested, 4.55 acres forested) and 671 linear feet of Modified Class I streams. See Table 1 for an impact and avoidance analysis of on-site water resources.

The project site supports common Ohio wildlife species, including *Bufo americanus* (American toad), *Melospiza melodia* (song sparrow), *Microtus pennsylvanicus* (meadow vole), *Odocoileus virginianus* (white-tailed deer), *Procyon lotor* (raccoon), *Sciurus carolinensis* (eastern gray squirrel), *Sylvilagus floridanus* (eastern cottontail), *Thamnophis sirtalis* (common garter snake), and *Turdus migratorius* (American robin). The streams on the site provide limited habitat for aquatic organisms due to past alterations to the channels to facilitate drainage from adjacent agricultural fields.

The following threatened or endangered species are known to occur within Lorain County, Ohio.

Indiana and Northern Long-Eared bats. Suitable habitat for the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*) exists on the project site. To assess the site for the presence of these bat species, Davey Resource Group conducted a mist net and acoustic survey on the site on July 10 and 11, 2013. This survey caught a total of seven big brown bats (*Eptesicus fuscus*) and one eastern red bat (*Lasiurus borealis*). No Indiana or northern long-eared bats were captured during this survey. A previous survey, conducted in 2010 on an adjacent parcel, did capture northern long-eared bats. In order to minimize potential impacts to the Indiana and northern long-eared bats, the Applicant proposes to clear trees within the project footprint during the winter clearing time frame from October 1 to March 31. This project is not likely to impact these species.

Kirtland's warbler. The federally endangered Kirtland's warbler (*Dendroica kirtlandii*) is known to migrate along the Lake Erie shoreline through Ohio in late April through May and late August through early October. This project is within three miles of the Lake Erie shoreline. The applicant proposes to avoid the clearing of shrubs and trees from April 22 to June 1 and August 15 to October 15. The project is not likely to impact this species.

Piping plover. The federally endangered piping plover (*Charadrius melodus*) is found on beaches along the shorelines of the Great Lakes. This species does not nest in the state but only utilizes stopover habitat as it migrates through the region. Therefore, the project is not likely to impact this species.

Eastern massasauga. The federal candidate eastern massasauga (*Sistrurus catenatus*) inhabits wetlands and adjacent uplands. Due to the disturbed nature of the site and surrounding areas within the City of Avon, the eastern massasauga likely does not utilize the site. No eastern massasauga were observed during site visits. This project is not likely to impact this species.

Bald eagle. The bald eagle (*Haliaeetus leucocephalus*), a species of concern, is protected under the Bald and Golden Eagle Protection Act. Bald eagle nests are found in Lorain County within the townships of Amherst, Black River, Brownhelm, Henrietta, Lagrange, Pittsfield and Ridgeville. The site is found in Avon Township within Lorain County. Bald eagle habitat

includes areas adjacent to water bodies that provide suitable feeding (lakes, rivers, oceans) and must include large trees appropriate for roosting and nesting. Lake Erie, located approximately 2.25 miles offsite to the northeast, could provide suitable feeding habitat for the bald eagle. No bald eagles or nest sites were observed during fieldwork. This project will not impact this species. Please see Appendix E for threatened and endangered species coordination for the project.

Minimal Degradation Alternative: Wetland impacts and impacts to wildlife utilizing these water resources will be reduced in the minimal degradation alternative. A reduction in impacts to water resources was realized through the extensive use of permeable pavers (or equivalent technology) within the parking for the hospital. In addition to improving water quality through filtration, the storage capacity of the paver sub-base allows for a reduction in the amount of storm water quality basins required to accommodate surface water runoff from impermeable asphalt utilized in the preferred design. This reduction in basin acreage allowed the reorganization of parking in order to reduce impacts to water resources. The minimal degradation alternative will impact a total of 3.99 acres of Category 2 wetlands (1.76 acres non-forested, 2.23 acres forested) and 671 linear feet of Modified Class I streams. The minimal degradation alternative was designed to avoid impacts to wetland N-2 to the maximum extent practicable, as N-2 is the largest forested wetland on the project site. Impacts to wildlife using the water resources on the site and threatened and endangered species previously described in the preferred design are not anticipated under the minimal degradation alternative.

Non-Degradation Alternative: Impacts to wetlands and streams under the non-degradation alternative are completely avoided. However, the non-degradation alternative will impact upland habitat adjacent to the water resources that may be utilized by wildlife or threatened and endangered species utilizing the water resources on the project site. However, impacts to these species are not expected under the non-degradation alternative.

Table 1. Impact and Avoidance Analysis

Resource	Type	Connectivity	Area/Length	Assessment Score	Category/Class	Preferred Impacts		Min-Deg Impacts		
						Area/Length Impacted	% Avoided	Area/Length Impacted	% Avoided	
Wetlands	N-1	forested	non-isolated	0.50 ac.	50	2	0.00 ac.	100%	0.00 ac.	100%
	N-2	forested, non-forested	non-isolated	9.33 ac.	50	2	5.14 ac.	45%	2.82 ac.	70%
	N-3	non-forested	non-isolated	1.17 ac.	50	2	1.17 ac.	0%	1.17 ac.	0%
	N-13	forested	non-isolated	0.84 ac.	50	2	0.00 ac.	100%	0.00 ac.	100%
Streams	Porter Creek	perennial	RPW	237 LF	45 (QHEI)	WWH	0 LF	100%	0 LF	100%
	D-1	perennial	RPW	2,666 LF	26 (HHEI)	Mod. I	671 LF	75%	671 LF	75%
	D-2	ephemeral	NRPW	12 LF	24 (HHEI)	Mod. I	0 LF	100%	0 LF	100%
Total Wetlands			11.48 ac.			6.31 ac.	45%	3.99 ac.	65%	
Total Streams			2,915 LF			671 LF	77%	671 LF	77%	

10c. Include a discussion of the technical feasibility, cost-effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.)

Preferred Design: The preferred design is technically feasible, cost-effective, and available. Once the proposed project is complete, future maintenance activities will be minimal and are not expected to lead to future surface water degradation. The preferred design has a total estimated cost of over \$163 million.

Minimal Degradation Alternative: The minimal degradation alternative is technically feasible and available, but costs associated with the construction of the facility are anticipated to be approximately 1% higher than the preferred design, at approximately \$164.5 million. Cost increases are related to the extensive use of permeable paving (or similar technology) across much of the parking areas on the site. Despite these increased costs and associated decreased patient and employee parking efficiency, the minimal degradation alternative is the project plan which the Applicant seeks to be permitted due to the reduction in impacts to wetlands and water quality.

Non-Degradation Alternative: Although technically feasible and available, the non-degradation alternative is not cost-effective, with an overall project cost of \$182.8 million. Construction of the non-degradation alternative would include considerable additional project costs related to the construction of infrastructure required to eliminate impacts to regulated waters, as previously documented in the response to question 10a. Additionally, the non-degradation alternative would result in a decrease in operational efficiency of the facility that would lead to an unacceptable reduction in the quality of patient care for those seeking treatment at the hospital. Due to cost and operational considerations, the non-degradation alternative is not an acceptable alternative for the project.

10d. For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents.

Preferred Design: n/a

Minimal Degradation Alternative: n/a

Non-Degradation Alternative: n/a

10e. To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource.

Preferred Design: The Applicant is aware of two government and/or privately sponsored conservation projects that specifically target improvement of water quality or enhancement of recreational opportunities in the Rocky River watershed (10-digit HUCs 04110001-01 and 04110001-02) where the Project is located.

- 1) The Rocky River Watershed Council, formed in 2002, states that its mission is to, "...protect, restore, and perpetuate a healthy watershed through public education, watershed planning, communication, and cooperation among stakeholders". The Rocky River Watershed Council works to improve the health of the Rocky River watershed through a number of means,

including conducting watershed cleanups, riparian corridor plantings, and securing conservation easements on critical areas of the watershed.

- 2) The Rocky River Watershed Action Plan, prepared by the Northeast Ohio Areawide Coordinating Agency on behalf of the Rocky River Watershed Council, was endorsed by Ohio EPA and ODNR in 2006. This plan includes action steps designed to improve water quality, educate the public about the importance of water resources, and protect the Rocky River and its tributaries.

Minimal Degradation Alternative: Same as preferred design.

Non-Degradation Alternative: Same as preferred design.

10f. Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project.

Preferred Design: Costs for the installation of erosion control materials, BMPs, and preparation of a Storm Water Pollution Prevention Plan for the preferred design are estimated to be approximately \$326,000.00 Please see Table 2 for a breakdown of estimated costs.

Minimal Degradation Alternative: Costs for the installation of erosion control materials, BMPs, and preparation of a Storm Water Pollution Prevention Plan for the minimal degradation alternative are estimated to be approximately \$1,710,000.00.

Non-Degradation Alternative: Costs for the installation of erosion control materials, BMPs, and preparation of a Storm Water Pollution Prevention Plan for the non-degradation alternative are estimated to be approximately \$298,000.00.

Table 2. Storm Water Control and BMP Costs

Item Description	Preferred Alternative (\$)	Minimal Degradation Alternative (\$)	Non-Degradation Alternative (\$)
silt fence	\$24,000.00	\$20,000.00	\$32,000.00
sediment traps	\$15,000.00	\$15,000.00	\$15,000.00
construction entrances	\$10,000.00	\$10,000.00	\$10,000.00
concrete washout and fueling area	\$5,000.00	\$5,000.00	\$5,000.00
temporary mulching and seeding	\$130,000.00	\$120,000.00	\$90,000.00
storm water pollution prevention plan	\$10,000.00	\$10,000.00	\$10,000.00
maintenance of construction BMPs	\$12,000.00	\$10,000.00	\$16,000.00
storm water management basins	\$120,000.00	\$20,000.00	\$120,000.00
pervious pavement water volume/quality storage	\$0.00	\$1,500,000.00	\$0.00
Total Costs (\$)	\$326,000.00	\$1,710,000.00	\$298,000.00

10g. Describe any impacts on human health and the overall quality and value of the water resource.

Preferred Design: Construction of the Project under the preferred design will result in a lowering of water quality of the water resources within the construction area due to the loss of wetland acreage. Construction of storm water controls and BMPs will ensure that that quantity and quality of water ultimately entering Porter Creek does not result in adverse impacts to this water resource. The overall quality and value of the remaining wetlands and streams on the project site will not be negatively affected, as work in the water bodies is not proposed. The remaining wetlands and streams will be protected through a deed restriction.

The preferred design will positively affect human health, as the Project will provide improved health care opportunities for people within Avon and surrounding communities. Cleveland Clinic is recognized as a world leader in medical innovation and invention. Although more challenging to directly quantify, medical research conducted by physicians and scientists at the facility will result in positive benefits to human health, in northeast Ohio, the United States, and around the world.

Minimal Degradation Alternative: Construction of the Project under the minimal degradation alternative will result in a lowering of water quality of the water resources within the construction area due to the loss of wetland acreage. This loss of quality will be less than in the preferred design due to the reduction in total impacts to wetlands on the site. As in the preferred design, construction of storm water controls and BMPs will ensure that that quantity and quality of water ultimately entering Porter Creek does not result in adverse impacts to this water resource. The overall quality and value of the remaining wetlands and streams on the project site will not be negatively affected, as work in the water bodies is not proposed. The remaining wetlands and streams will be protected through a deed restriction.

Like the preferred design, the minimal degradation alternative will also positively affect human health, as the Project will provide improved health care opportunities for people within Avon and surrounding communities. Medical research conducted by physicians and scientists at the facility will still be conducted, and will result in positive benefits to human health in northeast Ohio, the United States, and around the world.

Non-Degradation Alternative: Construction of the Project under the non-degradation alternative will not directly impact water resources within the construction area. However, the non-degradation alternative will result in an increase in impermeable surfaces on the project site. Construction of storm water controls and BMPs will ensure that that quantity and quality of water ultimately entering Porter Creek does not result in adverse impacts to this water resource. The overall quality and value of the remaining wetlands and streams on the project site will not be negatively affected, as work in the water bodies is not proposed. The remaining wetlands and streams will be protected through a deed restriction.

The non-degradation alternative will positively affect human health, as the Project will provide improved health care opportunities for people within Avon and surrounding communities, and medical research opportunities at the facility. However, the positive effect on human health resulting from the non-degradation alternative will be lower than the preferred or minimal degradation alternative due to the decreased operational efficiency and reduced overall quality of care that will be provided to patients under the non-degradation alternative. As previously mentioned, the non-degradation alternative is not an acceptable alternative to the Applicant due to cost and operational considerations.

10h. Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy.

Preferred Design: While economic development is not a primary objective of the Project, construction of the Project under the preferred design will have a positive economic impact on Lorain County and the City of Avon by providing much needed construction and other jobs in the community. Cleveland Clinic estimates that the construction of the preferred design will generate approximately 140 full-time construction jobs for two construction seasons (18 months) at an average hourly wage of \$35-\$52/hour (including fringe benefits). Using a standard 40-hour work week, this translates to an average annual salary of \$72,800-\$108,160 per worker and a total payroll of approximately \$30 million over the duration of the project. Once constructed, the hospital is anticipated to employ a total of 750 full time workers, with a total estimated annual payroll of \$50 million. Annual taxes are estimated to provide revenue of \$6.35 million.

The U.S. Census Bureau (<http://quickfacts.census.gov/qfd/states/39/39093.html>) reports that 301,478 people lived in Lorain County in 2012. This is a very small increase from the population in 2010, when 301,356 people were reported to live in the county. From 2008 to 2012, the median household income in the county was \$51,756, which was more than the statewide median household income of \$48,246 during the same time period. The U.S. Census Bureau also reported that between 2008 and 2012, 14.2% of the people in Lorain County lived below poverty level. According to statistics published by the U.S. Bureau of Labor Statistics, Lorain County had an unemployment rate of 7.4% as of August 2013, slightly below the Ohio average unemployment rate of 7.5%.

In addition to the direct economic impact that will be realized by construction workers and permanent health care workers who are employed on this project, indirect economic benefits will occur as these workers spend portions of their salaries to purchase goods and services in and around the Project site and in their own communities. Additionally, construction of the Project will help to draw additional secondary businesses to the area to capitalize on the increase in people visiting the facility. These businesses may include hotels and restaurants, among others.

Adjacent property values may increase as a result of the construction of the preferred design.

Minimal Degradation Alternative: As previously described for the preferred alternative, economic development is not a primary objective of the Project. However, construction of the Project under the minimal degradation alternative will have a positive economic impact on Lorain County and the City of Avon by providing much needed construction and other jobs in the community. Cleveland Clinic estimates that the construction of the minimal degradation alternative will generate 143 full-time construction jobs for two construction seasons (18 months) at an average hourly wage of \$35-\$52/hour (including fringe benefits). Using a standard 40-hour work week, this translates to an average annual salary of \$72,800-\$108,160 per worker and a total payroll of approximately \$30.5 million over the duration of the project. The total number of permanent employees working at the facility is expected to be the same as in the preferred design. Annual tax revenues will also be the same as in the preferred design.

In addition to the direct economic impact that will be realized by construction and health care workers who are employed by this project, indirect economic benefit will occur as these workers spend portions of their wages to purchase goods and services in and around the Project site and in

their own communities like the preferred design. The expansion of the facility under the minimal degradation alternative is expected to draw additional businesses to the area as in the preferred design.

Adjacent property values may increase as a result of the construction of the minimal degradation alternative.

Non-Degradation Alternative: Cleveland Clinic estimates that the construction of the non-degradation alternative will generate approximately 177 full-time construction jobs for two construction seasons (18 months) at an average hourly wage of \$35-\$52/hour (including fringe benefits). Using a standard 40-hour work week, this translates to an average annual salary of \$72,800-\$108,160 per worker and a total payroll of approximately \$38 million over the duration of the project. Total permanent employment and tax revenue at the facility is estimated to be the same as in the preferred design and minimal degradation alternative.

However, as previously noted, the non-degradation alternative is not feasible from a cost or operational efficiency perspective, and is not an acceptable alternative to Cleveland Clinic. As such, direct, indirect, and induced jobs would not be created by the non-degradation alternative as it will not be constructed by Cleveland Clinic.

10i) Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans.

Preferred Design: No important social and economic benefits will be lost as a result of the construction of the preferred design for this project. Tourism and aesthetics will not be adversely affected by the construction of the preferred design. The wetlands and stream on the site proposed to be impacted by the Project are not utilized by the public for recreational purposes.

Minimal Degradation Alternative: Similar to the preferred design, no important social and economic benefits will be lost as a result of the construction of the minimal degradation alternative for this project. Tourism and aesthetics will not be adversely affected by the construction of the minimal degradation alternative. The wetlands and stream on the site proposed to be impacted by the Project are not utilized by the public for recreational purposes.

Non-Degradation Alternative: Similar to the preferred design and minimal degradation alternative, no important social and economic benefits will be lost as a result of the construction of the non-degradation alternative for this project. Tourism and aesthetics will not be adversely affected by the construction of the non-degradation alternative.

10j. Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species.

Preferred Design: As previously described in response to question 10b, the preferred design will result in a loss of 6.31 acres of Category 2 wetland (4.55 acres forested, 1.76 acres non-forested) and the relocation of 671 linear feet of Modified Class 1 stream to the north of the project site. The loss of these resources will reduce the available habitat for species potentially utilizing the site. However, species likely utilizing the site that may be potentially impacted by the project are common Ohio species. The project should not result in population stress that would threaten the continued existence of these species.

Stream mitigation activities associated with the preferred design will provide environmental benefits and improvements to water quality, in addition to improving habitat for aquatic organisms potentially utilizing Stream D-1 on the site. Stream D-1 is an incised, linear agricultural ditch that has been heavily modified in order to maintain drainage for adjacent farm fields. Stream channelization has resulted in the loss of high quality substrate (i.e. gravel, cobble) and contributes to sediment load in the stream. Stream mitigation activities will adhere to natural channel design and will involve the restoration of a minimum of 1,007 linear feet of stream channel on the site. The new stream channel will feature a greatly expanded floodplain that will be planted with native trees, shrubs, and seeded with a native seed mix. These activities will result in improved flood water retention, improved sediment and nutrient filtering capacity, and improved on-site habitat for aquatic organisms potentially utilizing this stream. Please see responses to question 10k for additional information related to potential stream mitigation activities.

Minimal Degradation Alternative: As previously described in response to question 10b, the minimal degradation alternative will result in a loss of 3.99 acres of Category 2 wetland (2.23 acres forested, 1.76 acres non-forested) and the relocation of 671 linear feet of Modified Class 1 stream to the north of the project site. The loss of these resources will reduce the available habitat for species potentially utilizing the site. However, species likely utilizing the site that may be potentially impacted by the project are common Ohio species. The project should not result in population stress that would threaten the continued existence of these species.

Like the preferred design, stream mitigation activities associated with the construction of the project will provide environmental benefits and improvements to water quality, in addition to improving habitat for aquatic organisms potentially utilizing Stream D-1 on the site. Stream mitigation activities will result in improved flood water retention, improved sediment and nutrient filtering capacity, and improved on-site habitat for aquatic organisms potentially utilizing this stream. Please see responses to question 10k for additional information related to potential stream mitigation activities.

Non-Degradation Alternative: As the non-degradation alternative will not result in impacts to water resources, no loss of water quality or impacts to aquatic species will occur. Environmental benefits related to on-site stream mitigation will not take place under the non-degradation alternative; Stream D-1 will continue to provide little water quality and aquatic habitat functions or values in its current state.

10k. Describe mitigation techniques proposed (except for the Non-Degradation Alternative):

-Describe proposed Wetland Mitigation (see OAC 3745-1-54 and Primer)

-Describe proposed Stream, Lake, Pond Mitigation (see Primer)

Preferred Design: Wetlands. Per the 2008 Federal mitigation rule (33 CFR Part 332), Cleveland Clinic first examined the potential to purchase wetland mitigation credits from an Interagency Team-approved wetland mitigation bank in the same 8-digit HUC watershed as where the project is located. The Granger Wetlands Mitigation bank, located within the same watershed as the project site (Black-Rocky, HUC-04110001), does have non-forested credits available for sale. The applicant proposes to purchase non-forested wetland mitigation credits at Granger to compensate for impacts to non-forested wetlands at the Project site.

However, Granger does not currently have the appropriate number of forested credits available for the Project. As no forested wetland mitigation credits are available from approved wetland mitigation banks or in-lieu fee programs within the Project watershed, the Applicant proposes to

provide mitigation for unavoidable impacts to forested wetlands under the preferred design through the restoration of forested wetlands on a parcel located adjacent to the Granger Wetlands Mitigation Bank located in Granger Township, Medina County. The proposed mitigation site is located within the same 8-digit HUC watershed as the project site (04110001 Black-Rocky).

The mitigation site is underlain by Carlisle muck (Ch). Carlisle muck is a very poorly drained histosol that occurs within depressions. The site is adjacent to Granger Ditch, and is in a similar landscape position to the Granger Wetlands Mitigation Bank. Plugging of drainage ditches and breaking of subsurface tile should restore adequate hydrology to the site necessary for the development of high-quality wetlands. Micro- and macrotopography restoration will provide a diversity of habitat within the mitigation wetlands. Extensive plantings of native woody tree and shrub species will ensure the development of a diverse forest community. Appendix A contains a map showing the location of the mitigation site relative to the Project Site.

Based upon the ratios provided in Ohio Administrative Code §3745-1-54, the applicant proposes to purchase 3.6 non-forested wetland mitigation credits from the Granger Wetlands Mitigation bank to compensate for impacts to 1.76 acres of Category 2 non-forested wetlands on the project site. To mitigate for impacts to 4.55 acres of Category 2 forested wetlands, the Applicant proposes to restore 11.38 acres of forested wetlands at the Granger site at a 2.5:1 ratio. The wetland mitigation project will be protected in perpetuity by a third-party conservation easement held by ODNR Division of Wildlife, the long term management partner for the Granger Wetlands Mitigation Bank.

Streams: Per the 2008 Federal mitigation rule (33 CFR Part 332), Cleveland Clinic first examined the potential to purchase stream mitigation credits from an Interagency Team-approved wetland mitigation bank in the same 8-digit HUC watershed as where the project is located. No stream mitigation banks or in-lieu fee programs operate in the Black-Rocky 8-digit HUC watershed (04110001). On-site permittee responsible mitigation to compensate for impacts to 671 linear feet of Modified Class I stream was deemed appropriate and practicable. Please see Appendix I for an inset map of the project site showing the stream mitigation area and for additional information.

Mitigation activities will involve the relocation of Ditch D-1 into a new channel to the north of the project site. For impacts to 671 linear feet, a minimum of 1,007 linear feet will be provided at a 1.5:1 ratio. The existing stream is an incised, linear agricultural ditch which lacks habitat features and good quality substrate (e.g. gravel, cobble). Historic dredging to maintain adequate drainage in the adjacent farm fields resulted in the loss of these features. Additionally, the stream presently contributes to downstream sediment load due to erosion. According to the Ohio EPA 2012 Integrated Report, direct habitat alterations and siltation are both identified as causes of impairment in the Cahoon Creek-Frontal Lake Erie 12-digit HUC watershed (04110001-02-04)

Stream mitigation will utilize natural channel design to mimic natural functions and values. The relocated stream reach will be constructed with a greatly expanded floodplain which the existing incised agricultural ditch currently lacks. This improved flood prone width will help to attenuate flows during large storm events, and will improve sediment and nutrient filtration for the stream. The upland buffers along the stream will be planted with native trees and shrubs, and will be seeded with a native wetland seed mix. The stream mitigation activities will improve both the on-site habitat for aquatic organisms, and the water quality of the water flowing from the site into Porter Creek.

A bio-swale will discharge to D-1 to maintain hydrology in the remaining southern section of the stream. The relocated mitigation stream and its buffers will be protected in perpetuity by a deed restriction. Please see Appendix I for stream mitigation design information and measurements.

Minimal Degradation Alternative: Wetlands: For the minimal degradation alternative, Cleveland Clinic proposes to combine the purchase of credits from the Granger Wetlands Mitigation Bank with permittee-responsible mitigation to compensate for impacts to wetlands on the project site, like in the preferred design. Based upon the ratios provided in Ohio Administrative Code §3745-1-54, the applicant proposes to purchase 3.6 non-forested wetland mitigation credits from the Granger Wetlands Mitigation bank to compensate for impacts to 1.76 acres of Category 2 non-forested wetlands on the project site. To mitigate for impacts to 2.23 acres of Category 2 forested wetlands, the Applicant proposes to restore 5.58 acres of forested wetlands at the Granger site at a 2.5:1 ratio. The wetland mitigation project will be protected in perpetuity by a third-party conservation easement held by ODNR Division of Wildlife, the long term management partner for the Granger Wetlands Mitigation Bank.

Streams: Stream mitigation activities under the minimal degradation alternative will match those in the preferred design due to identical impact lengths. Mitigation activities will involve the relocation of Ditch D-1 into a new channel to the north of the project site. For impacts to 671 linear feet, a minimum of 1,007 linear feet will be provided at a 1.5:1 ratio.

A bio-swale will discharge to D-1 to maintain hydrology in the remaining southern section of the stream. The relocated mitigation stream and its buffers will be protected in perpetuity by a deed restriction. Please see Appendix I for stream mitigation design information and measurements.

