



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

OHIO E.P.A.

APR 23 2013

ENTERED DIRECTOR'S JOURNAL

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

Certified Mail

April 23, 2013

Joseph A. Balog
Crowland, Ltd.
6055 Rockside Woods Boulevard, Suite 100
Independence, Ohio 44131

By: [Signature] Date: 4-23-13

Re: Cuyahoga County / City of Brecksville
Grant of Section 401 Water Quality Certification; Minimal Degradation Alternative
Crowland Mixed Development
ACOE Public Notice No. 2001-00087
Ohio EPA ID No. 123924

Dear Stakeholders:

I hereby authorize the above referenced project under one or both of the following authorities and it is subject to the following modifications and/or conditions:

Section 401 Water Quality Certification

Pursuant to Section 401 of the Federal Water Pollution Control Act, Public Law 95-217, I hereby certify that the above-referenced project will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act.

This authorization is specifically limited to a Section 401 Water Quality Certification (here after referred to as "permit") with respect to water pollution and does not relieve the applicant of further Certifications or Permits as may be necessary under the law. I have determined that a lowering of water quality in the Cuyahoga River (HUC 04110002) as authorized by this permit is necessary. I have made this determination based upon the consideration of all public comments, and including the technical, social, and economic considerations concerning this application and its impact on waters of the state.

PART I ON-SITE WATER RESOURCES AND IMPACTS

A. Watershed Setting

The watershed in which this project is located, Headwaters Chippewa Creek (04110002 05 03), has an area of 17.8 square miles of which 54.8 percent is

developed, 39.3 percent is forest, 1.5 percent is grass/pasture, 0 percent is row crop agriculture, and 4.3 percent is other.

Ohio EPA Aquatic "Use Designations" located in this watershed, as found in OAC rule 3745-1-26, include State Resource Water (SRW) and Warmwater Habitat (WWH).

Per the Ohio EPA 2012 Integrated Report, the causes of impairment are as follows:

- Cause unknown
- Direct habitat alterations;
- Flow alteration;
- Natural limits (wetlands);
- Nutrients;
- Oil and grease; and
- Organic enrichment/DO.

The sources of impairment are as follows:

- Land development/suburbanization;
- Major industrial point source;
- Natural;
- Onsite wastewater systems (septic tanks);
- Source unknown; and
- Urban runoff/storm sewers (NPS).

B. Project Description

This project is for the development of for motor services establishments, retail hotel and offices, and a primary interior road that will connect Miller Road in the south to Parkview Road in the north. The site will also include required storm water basins, other infrastructure and on-site non-wetland buffer as mitigation credit.

C. Impacts

Under the minimal degradation alternative, impacts to waters of the state are as follows:

1. Streams impacted as a result of this project are listed in Attachment 1.
2. Wetlands impacted as a result of this project are listed in Attachment 2.

3. Lakes - Impacts to lakes are not authorized under this permit.

PART II TERMS & CONDITIONS

- A. Terms and conditions outlined in this section apply to project and mitigation construction as described in this permit.
- B. The terms of this permit related to wetland and stream impacts for the Crowland Mixed Development project shall expire five (5) years from the date of issuance of the Corps of Engineers 404 Permit for this project.
- C. The terms of this permit related to the Bog mitigation site located at the Bath Nature Preserve shall expire when the applicant is released from mitigation.
- ~~D. The Permittee shall notify Ohio EPA, in writing, and in accordance with Part IV (NOTIFICATIONS TO OHIO EPA) of this permit, upon the start and completion of site development and mitigation construction.~~
- E. A copy of this permit shall remain on-site for the duration of the project and mitigation construction activities.
- F. Unpermitted impacts to surface water resources and/or their buffers occurring as a result of this project must be reported within 24 hours of occurrence to Ohio EPA, Division of Surface Water, Section 401/IWP Manager, (614-644-2001), for further evaluation.
- G. Pesticide application(s) for the control of plants and animals shall be applied in accordance with rule 3745-1-01 of the Ohio Administrative Code, and may require a site specific application permit from Ohio EPA. Such a permit may be obtained by calling 614-644-2001 and speaking with the Toxicology Specialist.
- H. Blasting shall not be done within or near waters of the state (including wetlands) without prior consultation with the Ohio Department of Natural Resources, Division of Wildlife, to determine what protective measures should be taken to minimize damage to wildlife.
- I. Any authorized representative of the director shall be allowed to inspect the authorized activity at reasonable times to ensure that it is being or has been accomplished in accordance with the terms and conditions of this permit.

- J. In the event that there is a conflict between the permit application, including the draft mitigation plan, and the conditions within this permit, the conditions within this permit shall prevail unless Ohio EPA agrees, in writing, that the permit application or other provision prevails.
- K. This proposal may require other permits from Ohio EPA. For information concerning application procedures, contact the Ohio EPA District Office as follows:

Ohio Environmental Protection Agency
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio 44087
330-963-1200

Additional information regarding environmental permitting assistance at Ohio EPA can be found at http://www.epa.ohio.gov/dir/permit_assistance.aspx

- L. Best Management Practices (BMPs)
 - 1. All water resources and their buffers, which are to be avoided, shall be clearly indicated on site drawings, demarcated in the field and protected with suitable materials (e.g., silt fencing) prior to site disturbance. These materials shall remain in place and be maintained throughout the construction process.
 - 2. All BMPs for storm water management shall be designed and implemented in accordance with the most current edition of the Ohio Department of Natural Resources Rainwater and Land Development Manual, unless otherwise required by the National Pollutant Discharge Elimination System (NPDES) general permit for storm water discharges associated with construction activities (construction general permit), if required.

A copy of the Rainwater and Land Development Manual is available at:
<http://www.dnr.state.oh.us/tabid/9186/default.aspx#Manual>

A copy of the NPDES construction general permit is available at:
http://www.epa.ohio.gov/dsw/storm/construction_index.aspx#Construction%20General%20Permit
 - 3. Straw bales shall not be used as a form of erosion/sediment control.
 - 4. Grass filter strips shall be established adjacent to all avoided/relocated and un-culverted waters of the state, including wetlands and existing buffer areas.

Filter strips shall be vegetated with non-invasive species native to Ohio and shall be designed and implemented in accordance with the most current edition of the Ohio Department of Natural Resources' Rainwater and Land Development Manual.

5. Temporary fill shall consist of suitable non-erodible material and shall be stabilized to prevent erosion.
6. Materials used for fill or bank protection shall consist of suitable material free from toxic contaminants in other than trace quantities. Broken asphalt is specifically excluded from use as fill or bank protection.
7. Concrete rubble used for fill or bank stabilization shall be a minimum size/weight of concrete in the range of 100-500 lbs. per piece or 12 inches to 18 inches in diameter; free of exposed re-bar; and, free of all debris, soil and fines.
8. Cadmium chromium arsenate (CCA) and creosote treated lumber shall not be used in structures that come into contact with waters of the state.
9. Trees removed from temporary impact areas to facilitate construction shall be replaced with appropriate tree species native to Ohio.
10. Culverts
 - a. Stream culverts shall be installed and designed at the streambed slope to allow for the natural movement of aquatic organisms and bedload to form a stable bed inside the culvert.
 - b. The culvert base or invert with the substrate shall be installed below the sediment to allow natural channel bottom to develop and to be retained.
 - c. The channel bottom substrate shall be similar to and contiguous with the immediate upstream and downstream reaches of the stream. The culvert shall be designed and sized to accommodate bankfull discharge and match the existing depth of flow to facilitate the passage of aquatic organisms.
 - d. Where culverts are installed for temporary crossings, the bottom elevations of the stream shall be restored as nearly as possible to pre-project conditions.

M. Wildlife Protection

1. In order to protect the Indiana bat during this development, bat habitat trees shall not be cut from April 1 through September 30, unless specifically approved by the U.S. Fish and Wildlife Service.
2. In the event that an eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) is encountered during construction of the project, work should immediately be stopped and the Ohio Department of Natural Resources, Division of Wildlife should be contacted. Caution should be employed during construction and during the snakes' active season (March 15 - November 15).
3. If native mussels and/or mussel beds not previously identified are encountered at any time during construction or dredging activities, work must cease immediately and the Ohio Department of Natural Resources' Division of Wildlife must be contacted for further evaluation.

PART III MITIGATION

A. Description of Required Mitigation

Required mitigation ratio was reduced by 0.5:1 because the permittee will preserve in perpetuity through an environmental covenant 19.560 acres in three tracts on-site pursuant to Ohio Administrative Code (OAC) rule 3745-1-54(E)(6). The on-site mitigation area will preserve in perpetuity 2,508 linear feet of streams and 19.560 acres, including 12.148 acres of non-wetland buffer (upland area). This part of the mitigation will also count toward the mitigation for permanent impacts to 350 linear feet to Stream EPH-4, an ephemeral modified class 1 primary headwater stream.

Wetland mitigation for this project is to preserve and enhance the Tamarack bog (the "Bog") located at the Bath Nature Preserve (BNP), Bath Township, Summit County. The Bog was studied in the early 2000's, and was determined to have an historic extent of approximately 13.8 acres (Miletti *et al*, 2005), but preliminary results from a delineation conducted in March, 2013, but not verified by the Corps, showed the Bog has been reduced to an area of 4.36 acres. Miletti *et al* study suggested the main reason for the decrease in size was the construction of two drainage ditches through the east and south portions of the bog sometime around 1970. The likely reason for the ditches was to fill two inline ponds constructed directly downstream. The ditches lowered the water level of the bog, changing the hydrology of the wetland from a sphagnum bog to peat wetland wherein maple trees were able to gain a foothold and shade out the remnant bog species, which are assumed to have been present

throughout the historic Bog in greater abundance. Bath Township is felling the last of the maple trees and has installed an Agri Drain Inline Water Level Control Structure at the outlet of the ditch to allow future re-flooding of the Bog, but has yet to implement its operation.

Topographic information coupled with field observations show that it is likely to expand the flooded area of the wetland by at least 4.54 acres to a total preserved/enhanced wetland area of 8.9 acres, which would be adequate to meet the mitigation ratio for preservation/enhancement as the sole mitigation component pursuant to Ohio Administrative Code (OAC) rule 3745-1-54(E)(5). Given that the mitigation was conducted out of the growing season pursuant to the Regional Supplement and has not been verified by the Corps, the mitigation will only be accepted as preservation with enhancement of an existing wetland. Pursuant to OAC rule 3745-1-54(E)(5)(b), Ohio EPA may accept preservation as the sole mitigation component if the director "...determines that restoration or creation need not be a component of compensatory mitigation based on significant ecological reasons." The Bog contains *Carex disperma*, a State endangered species with this being one of only a small number of known localities in Ohio, as well as two State potentially threatened species (*Carex atlantica* var. *capillacea* and *Larix laricina*) and therefore meets the standard for "significant ecological reasons." The enhancement component of this mitigation project should allow for the expansion of *C. disperma*, *Carex atlantica* var. *capillacea* and *Larix laricina* within the Bog. The bog mitigation project accounts for non-isolated and isolated wetland impacts. Isolated wetland impacts are accounted for under Ohio EPA Permit Number 134129 for the Level 1 Isolated Wetland Permit.

B. Mitigation and Monitoring Plan

As mitigation for impacts described in Part I.C of this permit the applicant shall implement the "The Tamarack Bog Preservation, Enhancement and/or Potential Restoration Draft Mitigation Plan" dated April 16, 2013 and comply with the conditions of this permit.

C. Timing of Mitigation Requirements

No later than October 31, 2013, all required mitigation baseline data shall be collected so that no later than November 1, 2013, the Agri Drain system can be employed to initiate flood control of the Bog.

D. Protection in Perpetuity

1. For the above described wetland and stream mitigation area, including buffers, the Permittee shall submit to Ohio EPA an acceptable, notarized, recorded, and filed Environmental Covenant by January 31, 2014. This allows three months from the deadline of the baseline data collection, which includes a site survey, and one month from the deadline of the first annual report. The Environmental Covenant shall include, as attachments, a metes and bounds (survey) description of the protected area, survey map, and an aerial photograph showing the boundaries of the protected area and all mitigation areas inside the protected area and shall protect, in perpetuity, the Tamarack Bog located at the Bath Nature Preserve, Village of Bath, Summit County.
 - a. Because of past practices that resulted in changes in hydrology that allowed for maple trees and invasive species recruitment, and a desire of BNP to use the Bog as an educational wetland akin to Kent and Cedar Bogs, the Environmental Covenant shall include site-specific terms that detail:
 - i. Agri Drain and/or other flood control device maintenance to assure the Bog stays flooded to its final flood prone perimeter. This may require additional raises in Agri Drain invert elevations; and
 - ii. Specific limitations on the proposed boardwalk for the Bog. This will include restrictions on the use of treated lumber and limitations on the overall length of the board walk.
2. By June 1, 2014, signs shall be placed within visual distance along the mitigation area that indicate the area is a protected wetland mitigation project and that mowing, dumping, or any other activity that would result in a degradation of the wetland without prior authorization from Ohio EPA is prohibited.
3. For the onsite non-wetland buffer areas described above, the Permittee shall submit to Ohio EPA an acceptable, notarized, recorded, and Environmental Covenant, prior to the date of the initial discharge of fill into waters of the state authorized in the permit. The Environmental Covenant shall include, as attachments, a metes and bounds (survey) description of the protected area, survey map, and an aerial photograph showing the boundaries of the

protected area and all mitigation areas inside the protected area and shall protect, in perpetuity:

- a. Preservation Area 1, which has 3.542 acres of category 2 wetland and 1.318 acres of non-wetland buffer for a total preserved area of 4.860 acres;
- b. Preservation Area 2, which has 2.856 acres of category 2 wetland and 7.144 acres of non-wetland buffer for a total preserved area of 10.000 acres; and
- c. Preservation Area 3, which has 1.014 acres of category 2 wetland and 3.686 acres of non-wetland buffer for a total preserved area of 4.700 acres.

~~4. Signs shall be placed within visual distance along the non-wetland buffer mitigation areas that indicate the areas are protected wetland mitigation projects and that mowing, dumping, or any other activity that would result in a degradation of the areas without prior authorization from Ohio EPA is prohibited.~~

E. Agency Site Visits

The applicant shall arrange on-site mitigation meetings with Ohio EPA during the growing season that follows the submittal of the second, fifth, seventh and tenth annual mitigation monitoring reports. The purpose of this inspection is to determine if the mitigation project has been constructed in accordance with the mitigation and monitoring plan approved by Ohio EPA and the terms and conditions of this permit, as well as to determine progress toward compliance with the performance goals for the site. The applicant is responsible for undertaking any modifications identified by Ohio EPA.

F. Reporting

1. Annual Mitigation Construction, Baseline Data and Project Update Reports

A mitigation construction baseline data and project update report shall be submitted to Ohio EPA by December 31 of each year following the date of this permit and until mitigation construction is complete and a mitigation monitoring report is ready for submittal. Given the scope of work for construction and baseline data collection, it is anticipated that there will only be one annual Mitigation Construction, Baseline Data and Project Update

Report, due by December 31, 2013. This first year's report will include the baseline data. Each update report shall contain, at a minimum, the following information:

- a. The status of all of the mitigation required for the project as specified in the application and permit including the filing of the required Environmental Covenant;
 - b. The status of the filling activities at the development site including dates filling was started and completed, or are expected to be started and completed. If filling activities have not been completed, a drawing shall be provided, which shows the locations and acreage/feet of wetlands/streams that have not yet been filled. If filling activities have been completed, then as-built drawings shall be submitted, which show where fill was placed.
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- c. Mitigation construction start date, completion date, or expected start and completion date;
 - d. A discussion of the extent to which the mitigation has been completed according to the timelines specified in this permit;
 - e. All baseline data, graphs, charts, tables, etc. as outlined in the draft mitigation plan and Sampling and Analysis Plans that are to be developed before the baseline sampling occurs; and
 - f. Current contact information for all responsible parties including phone number, e-mail, and mailing addresses. For the purposes of this condition, responsible parties include, but may not be limited to the Permittee, consultant, Environmental Covenant holder, and Environmental Covenant owner.
 - g. As-built drawings sized 11" by 17" (to scale) of each of the mitigation areas, once construction is complete. For the Bog, this will be the survey map, 0.5 inch contour map, and final approved (JD) delineation map, as well as any other maps as outlined in the draft mitigation plan.

2. Annual Mitigation Monitoring Reports

- a. The mitigation monitoring period shall commence immediately following completion of mitigation construction and baseline data

collection, and shall continue through a ten year monitoring period, except as provided for in the contingency plan.

- b. Annual Mitigation Monitoring Reports shall be submitted to Ohio EPA by December 31 of the first full year following the end of the first full growing season and completion of mitigation construction. Given the scope of work for construction and baseline data collection, it is anticipated that Monitoring will be completed by October 31, 2013, and that the first Annual Mitigation Monitoring Report will be submitted by December 31, 2014. All subsequent reports shall be submitted by December 31st of each of the monitoring years.
- c. Annual Mitigation Monitoring Reports shall be prepared in the format prescribed in "INTEGRATED WETLAND ASSESSMENT PROGRAM. Part 6: Standardized Monitoring Protocols and Performance Standards for Wetland Creation, Enhancement and Restoration, Version 1.0 Ohio EPA Technical Report WET/2004-6" (the "Part 6 Manual") available on our website in the reports section.
- d. The first year's annual mitigation monitoring report shall:
 - i. Be submitted to Ohio EPA by December 31, 2014. All subsequent reports shall be submitted by December 31st of each of the monitoring years;
 - ii. Contain a full copy of the final U.S. Army Corps of Engineers 404 permit for the project; and
 - iii. Include plan views and cross sections of the as-built mitigation area including the location and types of planting(s).
- e. All Annual Mitigation Monitoring Reports shall:
 - i. Include a cover letter. The cover letter shall identify the status of the mitigation project and identify any items needing immediate attention or questions for the regulatory agencies;
 - ii. Clearly identify the specific monitoring period the report is intended to represent, as well as the calendar year the monitoring occurred. The report shall also provide a summary of current mitigation status, which compares the previous years'

monitoring information with the current report including graphs and tables showing trends, etc.;

- iii. Contain the **current contact information** for the Permittee, agent, environmental covenant holder, and environmental covenant owner including phone number, e-mail, and mailing addresses;
- iv. Contain a list of species planted in all mitigation areas;
- v. Include photographs to be collected as follows:
 1. An adequate number of fixed observation points shall be selected, with no fewer than three fixed observation points per distinct mitigation area, to provide representative overviews of each distinct mitigation area. The use of stakes with unique numbers to designate photo locations is recommended.
 2. Photographs shall be taken from these points at the same position and angle during the growing season of each monitoring year. The fixed observation points shall be marked on the base map.
 3. Additional photographs of areas of interest within each distinct mitigation area shall be marked on the base map and provided in each monitoring report.
- f. At a minimum, the first, third, and fifth year annual reports shall contain updated drawings sized 11" by 17" or larger (to scale) of each of the mitigation wetlands and streams reflecting the current conditions, corrective or other actions that occurred, changes in dominant vegetation, and other pertinent information.

G. Monitoring Requirements – Wetlands

1. Site Drawings - At a minimum, in the first, third, fifth, seventh and ninth year annual reports a plan view that provides information on the morphometry of all mitigation wetlands and the location of any water control devices shall be provided.

2. Wetland Delineation

- a. A delineation of the wetland mitigation area(s) shall be performed during the growing season of the tenth year of monitoring. The wetland delineation shall be performed in accordance with the United States Army Corps of Engineers 1987 Wetland Delineation Manual and the applicable Regional Supplement to the Corps of Engineers Wetland Delineation Manual and shall include an assessment of soils, hydrology, and plants according to the manual.
- b. A 0.5-foot topographic contour survey shall be conducted over the entire Bog area, to include the Agri Drain location. The purpose of this survey is to determine the proper initial invert for the Agri Drain in relation to the flood-prone extant bog area of the Bog as well as the perimeter topography to be able to determine the reasonable ~~practicable—predictable—flood-prone—area—with—changes—in—invert~~ elevation at the Agri Drain.
- c. For wetlands mitigated adjacent to existing wetlands the boundary of the existing wetlands shall be semi-permanently marked prior to the adjacent wetland mitigation construction activities.
 - i. Enough semi-permanent markers of adequate height and color shall be placed such that the wetland mitigation area can be easily identified and accurately measured.
 - ii. Markers shall be maintained to assure they are in such a condition to be readily functional detectable markers for the entirety of the monitoring period.

3. Hydrology Monitoring

- a. It is anticipated that with changes in flood-prone area as adjustments are made at the Agri Drain, the Bog will be able to maintain a constant flooded condition. Two hydrology metrics shall be monitored:
 - i. Two automatic Data-Loggers (Levellogger Gold water level/temperature loggers, or equivalent) will be installed, the locations of which will be determined during the baseline survey year. Generally, one will be placed within the center of the Bog to monitor the water level at the surface of the bog in relation to the sphagnum. The second will be installed near the Agri Drain

in the natural stream channel to measure stream base flow elevation. The purposes of these monitors are two-fold:

1. To measure and track that water levels are maintained to the surface of the bog, which is critical for sphagnum moss production; and
 2. To determine if there is a potential loss of hydrology from the system that must be accounted for from other historic disturbances that must be corrected.
- ii. One of the goals of this enhancement project is to expand the flood-prone area of the Bog, and to do this while maintaining the balance between expanding the Bog's permanently inundated perimeter while not creating a water depth too deep to support the extant vegetation community within the existing bog. Because of the time involved in developing permanently inundated indicator conditions, as a surrogate the flood-prone perimeter of the Bog shall be delineated with each change to the Agri Drain. Prior to the first flood level being set (baseline), and at any consequent change in the Agri Drain invert, the flood-prone perimeter will be mapped to determine if the actual flooded perimeter is increasing. Prior to the baseline flood prone perimeter being mapped, a Sampling and Analysis Plan (SAP) complete with methodology and reporting protocols shall be developed.
- b. The Bog appears to have a considerable amount of ground water influence, which is contradictory to what we would expect to see for a bog (bogs are supposed to be precipitation-driven). In order to adequately evaluate the water inputs so that proper expectations of the vegetation community can be developed, the draft mitigation plan calls for water chemistry samples to be collected from a total of 8 wells and three grab samples to be collected for chemical analysis. A Sampling and Analysis Plan (SAP) shall be developed prior to well installation. The specific location will be determined during the baseline survey period. Data collected will include Calcium, Magnesium, Potassium, Sodium, Alkalinity, Chloride and Sulfate. Additional data will include water depth, dissolved oxygen, pH, Specific Conductivity, and temperature. Data will be collected twice a year in years one and two, and once a year after that. Data will be reported annually.

4. Vegetation Monitoring

- a. The number, size (using a modified VIBI tree/shrub methodology based on the one found on page 9 of the Part 9 Manual), and location of all living Tamarack trees (*Larix laricina*) within the Bog shall be recorded as part of the baseline survey, and then in the first, third, fifth, seventh and ninth year surveys.
 - b. There shall be a survey of the expanse of the Bog, to include species, of all sphagnum moss areas as part of the baseline survey, and then in the first, third, fifth, seventh and ninth year surveys.
 - c. The mitigation wetlands shall be assessed to obtain a VIBI score according to methods and protocols approved by Ohio EPA (http://www.epa.ohio.gov/portals/35/wetlands/PART4_VIBI_OH_WTLD_s.pdf) during the growing season of the first, third, fifth, seventh and ninth years after completion of construction of the mitigation wetlands. The method shall be modified such that only the four intensely surveyed plots shall permanently laid out and surveyed for each VIBI.
 - d. The location and name of each plant community type within the wetland mitigation area shall be marked on a scaled drawing or scaled aerial photograph (base map) and named. The dominant plant species shall be visually determined in each vegetation layer of each community type, and the scientific names of these species shall be included in the report.
 - e. Invasive and native species that are negatively affecting the sphagnum moss development (multiflora rose, buckthorn, etc.) and maple trees that are shading the sphagnum shall be removed. Monitoring shall ensure that swamp loosestrife and other potential native and invasive species do not shade out the sphagnum.
5. For wetlands to be enhanced as compensatory mitigation, the pre-enhancement condition of the wetland to be enhanced shall be established prior to the enhancement activities. This baseline data shall be reviewed and approved by Ohio EPA prior to the initiation of enhancement activities.

H. Performance Goals – Enhanced Wetlands

1. There shall be an improvement in the Bog VIBI score by 10 points above the baseline VIBI by the end of the 10-year monitoring period.

2. There shall be at least 8.9 acres of wetland at the end of the monitoring period.
 3. There shall be a demonstrated trajectory of the Bog increasing the area of permanently inundated wetland perimeter. Because of the time required to develop proper hydrologic indicators of permanently inundated condition, as a surrogate, there shall be a demonstration based on data that over time there is a trajectory that with continued manipulations of the Agri Drain invert that the flooded wetland perimeter could reach the historic extent of the Bog and likely permanently inundated conditions. Section 5.2.2 of the "Part 6 Manual" describes in detail Ohio EPA's interpretation and intended use of "trajectory."
 4. There shall be a demonstrated trajectory of successful growth and reproduction of Tamarack trees in the Bog.
 - ~~5. There shall be a demonstrated trajectory of successful growth (aerial cover) and reproduction of sphagnum moss in the Bog.~~
 6. The mitigation wetland shall contain at least 75 percent relative cover of native perennial hydrophytes.
 7. The enhanced mitigation wetland shall have less than five percent relative cover of all non-Typha invasive plant species listed in Appendix 7 of the Guidelines for Mitigation Banking in Ohio available at http://www.lrb.usace.army.mil/regulatory/guidelines_wetland_mitigation-Ohio.pdf. Due to the difficulty of distinguishing the three species of cattails (*Typha latifolia*, *Typha angustifolia*, and *Typha x glauca*), as well as the likelihood that at least one of these will be present in many types of Ohio wetlands, the total relative cover of all invasive species, including *Typha* spp., will be less than ten percent. Included in the invasive species calculation shall be maple trees, saplings, sprouts, etc. and other potential native species that may impede the development of a sphagnum-dominated wetland, such as swamp loosestrife, and other species identified during the ten-year monitoring period, which has the potential to shade out and impede sphagnum development.
- I. Performance Goals – Preserved Wetlands

Preserved wetlands and their buffers shall be subject to an environmental covenant that specifies the activities that are allowed and/or prohibited within the boundaries of the wetland and associated buffers to be preserved. All provisions must protect the long-term health and existing functions of the wetlands and associated buffers.

J. Contingency Plans

If the mitigation areas are not performing as proposed by the end of the tenth year of post construction monitoring, the monitoring period may be extended and/or the Permittee may be required to revise the existing mitigation or seek out new or additional mitigation areas.

Ohio EPA may reduce or increase the number of years for which monitoring is required to be conducted based on the effectiveness of the mitigation.

IV. NOTIFICATIONS TO OHIO EPA

All notifications, correspondence, and reports regarding this permit shall reference the following information:

Permittee Name: Joseph A. Balog
Project Name: Crowland Mixed Development
Ohio EPA ID No.: 123924

and shall be sent to:

Ohio Environmental Protection Agency
Division of Surface Water, 401/IWP Unit
Lazarus Government Center
50 West Town Street
P.O. Box 1049
Columbus, Ohio 43216-1049

You are hereby notified that this action of the director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within 30 days after notice of the director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the director within three days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, Ohio 43215

Sincerely,



Scott J. Nally
Director

cc: Peter Krakowiak, Department of the Army, Buffalo District, Corps of Engineers
Peter Swenson, U.S. EPA, Region 5
Mary Knapp, U.S. Fish & Wildlife Service
John Kessler, ODNR, Division of Real Estate & Land Management
Dave Snyder, Ohio Historical Preservation Office
Jeff DeShon, Ohio EPA, DSW, EAS
Joe Loucek, Ohio EPA, NEDO
Rosty Caryk, Davey Resource Group, 1500 North Mantua Street, P.O. Box 5193,
Kent, Ohio 44240

Attachments: Stream Impacts table
Wetland Impacts table
Site Location Map (project)
Site Location Map (mitigation)

Ohio EPA would appreciate your feedback on the permitting process that you have just completed. Please visit the web address listed below and take a short survey to offer input into the Agency's efforts to provide efficient and effective service.

<http://www.surveymonkey.com/s/wqc-iwpfeedbackform>

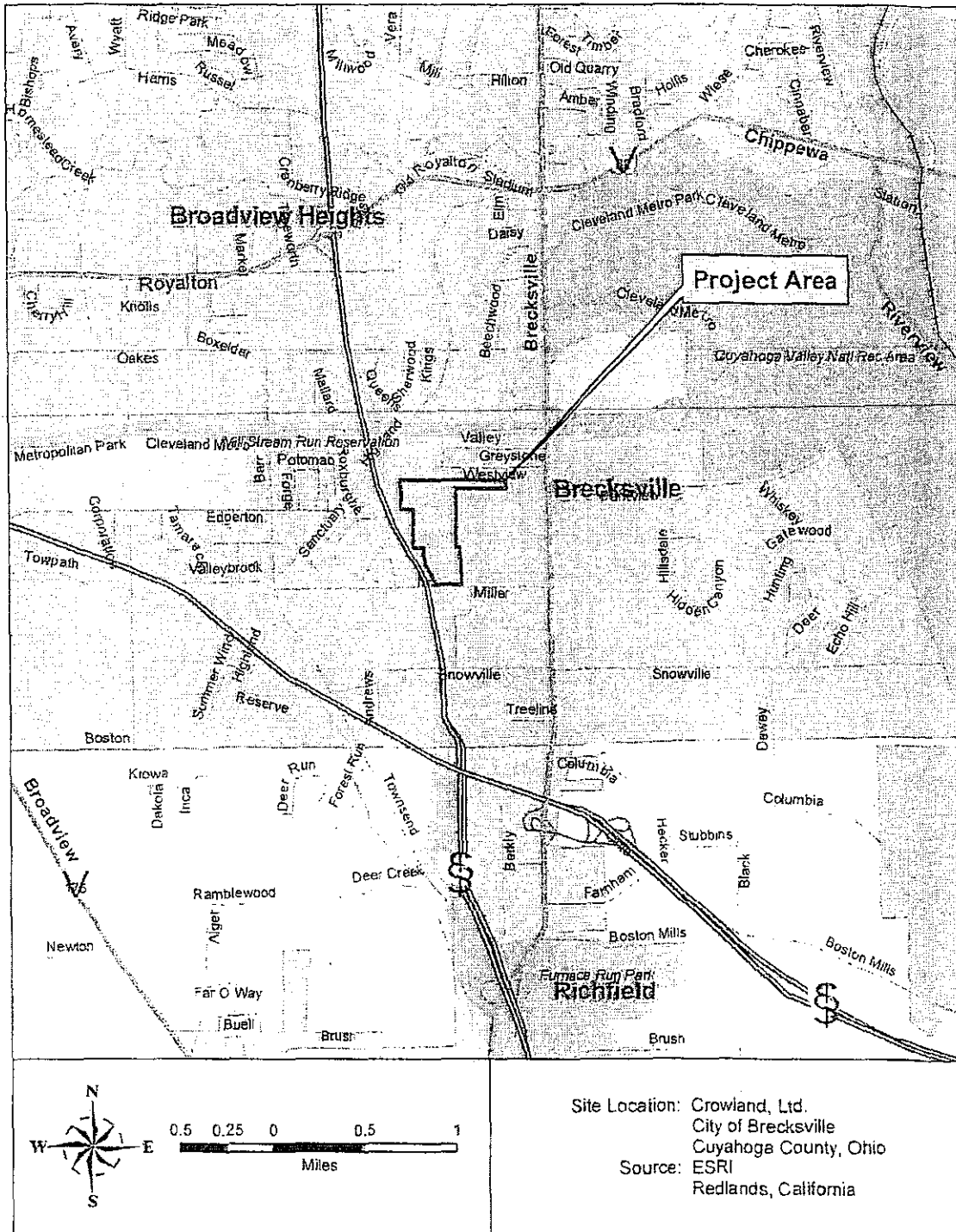
Attachment 1: Stream Impacts

Stream ID	Length (feet)	Type	PHWH Class	MDA Impacted	MDA Avoided	MDA % Avoided	MDA Preserved
A	1,803	Perennial	Mod II PHWH	0	1,803	100	397
B	781	Perennial	Mod II PHWH	0	781	100	231
C	163	Perennial	Mod II PHWH	0	163	100	163
D	419	Perennial	Mod II PHWH	0	419	100	419
EPH-1	681	Ephemeral	Mod I PHWH	0	681	100	681
EPH-2	181	Ephemeral	Mod I PHWH	0	181	100	0
EPH-3	220	Ephemeral	Mod I PHWH	0	220	100	220
EPH-4	426	Ephemeral	Mod I PHWH	350	76	17.8	76
EPH-5	144	Ephemeral	Mod I PHWH	0	144	100	40
EPH-6	36	Ephemeral	Mod I PHWH	0	36	100	0
EPH-7	281	Ephemeral	Mod I PHWH	0	281	100	281
TOTALS	5,135			350	4,785	93.2	2,508

Attachment 2: Wetland Impacts Table

Wetland ID	Isolated or Non-isolated?	Forested or Non-Forested	Category	Total Acreage on Site	Total Acreage Impacted	Percent Avoided
AA/BB/CC	Non-Isolated	Forested	2	0.620	0.053	91.5
AAA	Non-Isolated	Non-Forested	2	0.020	0.020	0.0
BBB	Non-Isolated	Non-Forested	2	0.063	0.000	100.0
C	Non-Isolated	Non-Forested	2	0.010	0.000	100.0
CCC	Non-Isolated	Non-Forested	2	0.009	0.000	100.0
D	Non-Isolated	Forested	2	0.270	0.000	100.0
DD	Non-Isolated	Forested	2	0.020	0.020	0.0
DDD	Non-Isolated	Non-Forested	2	0.028	0.028	0.0
E	Non-Isolated	Forested	2	0.360	0.000	100.0
EE	Non-Isolated	Forested	2	0.050	0.050	0.0
EEE	Non-Isolated	Non-Forested	2	0.008	0.008	0.0
F	Non-Isolated	Forested	2	0.010	0.000	100.0
FF	Non-Isolated	Forested	2	0.040	0.040	0.0
FFF	Non-Isolated	Non-Forested	2	0.014	0.000	100.0
G/H	Non-Isolated	Forested	2	0.710	0.000	100.0
GG	Non-Isolated	Non-Forested	2	0.080	0.080	0.0
HH	Non-Isolated	Forested	2	0.200	0.200	0.0
II	Non-Isolated	Forested	2	0.490	0.490	0.0
J	Non-Isolated	Forested	2	0.590	0.011	98.1
JJ	Non-Isolated	Forested	2	0.600	0.600	0.0
K	Non-Isolated	Non-Forested	2	0.100	0.000	100.0
L	Non-Isolated	Forested	2	0.050	0.050	0.0
M	Non-Isolated	Forested	2	0.030	0.030	0.0
MM	Non-Isolated	Forested	2	3.600	0.058	98.4
N	Non-Isolated	Forested	2	0.980	0.000	100.0
NN	Non-Isolated	Forested	2	0.290	0.290	0.0
O	Non-Isolated	Forested	2	0.190	0.088	53.7
P	Non-Isolated	Forested	2	0.290	0.280	3.4
Q	Non-Isolated	Forested	2	0.410	0.006	98.5
QQ*	Non-Isolated	Forested	2	0.110	0.000	100.0
R	Non-Isolated	Forested	2	0.080	0.080	0.0
RR	Non-Isolated	Forested	2	0.120	0.120	0.0
S	Non-Isolated	Forested	2	0.220	0.220	0.0
T	Non-Isolated	Forested	2	0.070	0.000	100.0
U/V	Non-Isolated	Forested	2	1.010	0.000	100.0
W	Non-Isolated	Forested	2	0.090	0.000	100.0
X*	Non-Isolated	Forested	2	0.002	0.000	100.0
Y/Z	Non-Isolated	Forested	2	0.230	0.000	100.0
			Σ	12.064	2.822	76.6

Location of Project Area on Highway Map





GRAPHIC SCALE
0' 150' 300'

