REDEVELOPING OHIO LANDFILLS

Photo credit: Cleveland Metroparks | West Creek Reservation was developed on a large portion of a former landfill · Parma, Ohio

February 2023
PREFACE

Landfills of any type can knowingly or unknowingly be a burden to the communities in which they exist. They often present environmental, human health and associated infrastructure hazards. They may also create nuisances by attracting unwanted or otherwise illicit activities in addition to their generally unappealing aesthetic presence. Ensuring that human health and the environment is protected from such facilities should be a top priority and finding a way to accomplish that while providing a benefit to the community is a win for the environment and the region; understanding them is the first hurdle. This document is intended to present information to help communities and other stakeholders understand regulatory obligations tied to these facilities and provide some insight into what these facilities could become with some creative thinking and community support.

Together, the Cuyahoga County Land Reutilization Corporation (Cuyahoga Land Bank) and West Creek Conservancy (West Creek) hope that this document will serve as a model for landfill re-use planning and predevelopment across the State of Ohio.

Simultaneously to preparing this guide, we chose one particular Ohio-based site, the 42-acre Schaaf Road Landfill in Brooklyn Heights, and took it through the steps that would be required to consider a redevelopment project. We looked at what information was already publicly available from the Ohio EPA, conducted an ALTA survey, developed cost estimates for repairing and maintaining the site, and imagined future uses based on our findings. We then developed checklists that would help guide the redevelopment process. All of the relevant documents are linked electronically and can be accessed at www.westcreek.org/projects/eastschaaflandfill or https://cuyahogalandbank.org/about/news-reports/

We wish to thank all those who participated in this process:
The US EPA, the Ohio EPA, Northeast Ohio Regional Sewer District, Partners Environmental, The Mannik & Smith Group, Inc., and the Village of Brooklyn Heights.

Cuyahoga Land Bank and West Creek Conservancy
December, 2022
# CONTENTS

Preface ........................................................................................................................................................................... i
List of Acronyms................................................................................................................................................................... iii

Background and Introduction ........................................................................................................................................ 1

1. Ohio EPA File Review ............................................................................................................................................ 1
2. American Land Title Association/National Society of Professional Surveyors ........................................ 11
3. Monitoring Systems ............................................................................................................................................... 11
4. National Environmental Policy Act ..................................................................................................................... 12
   NEPA Checklist Review ........................................................................................................................................... 12
5. 513 Authorization ................................................................................................................................................ 13
6. Wetland Delineation ............................................................................................................................................... 13
7. Preliminary Geotechnical Investigation .............................................................................................................. 14
8. Land Use Assessment .......................................................................................................................................... 14
   Examples of Land Use Assessments .................................................................................................................... 14
9. Environmental/Regulatory Assistance .................................................................................................................. 16

APPENDIX A .................................................................................................................................................................. 17
LAND DEVELOPMENT CHECKLIST .......................................................................................................................... 18

   Due Diligence .......................................................................................................................................................... 19
   Land Survey ........................................................................................................................................................... 20
   Planning & Zoning ................................................................................................................................................ 21
   Variance Process .................................................................................................................................................. 22
   Approval Process ................................................................................................................................................ 23

LANDFILL REGULATORY CHECKLISTS ....................................................................................................................... 24

   Municipal Solid Waste - OAC 3745-27 .................................................................................................................. 25
   Industrial Solid Waste - OAC 3745-29 .................................................................................................................. 26
   Residual Solid Waste - OAC 3745-30 .................................................................................................................. 27
   Construction and Demolition Debris - OAC 3745-400 ......................................................................................... 28
   Class I Composting Facility ............................................................................................................................... 29
   Class II Composting Facility .............................................................................................................................. 30
   Class III Composting Facility ............................................................................................................................ 31
   Class IV Composting Facility ............................................................................................................................ 32

APPENDIX B .................................................................................................................................................................. 33
Federal Agency NEPA Implementing Procedures ................................................................................................... 34

APPENDIX C .................................................................................................................................................................. 36
FCC Desktop NEPA Checklist ..................................................................................................................................... 37

APPENDIX D .................................................................................................................................................................. 38
Ohio EPA Guidance Documents ................................................................................................................................. 39

REDEVELOPING OHIO LANDFILLS
LIST OF ACRONYMS

513 Authorization procedure for obtaining authorization from Ohio EPA to fill, grade, excavate, build, drill or mine on land where a hazardous waste or solid waste facility was operated (formerly known as Rule 13).

C&DD Construction and Demolition Debris
CE Categorical Exclusion
CFR Code of Federal Regulations
EA Environmental Assessment
EIS Environmental Impact Study
FAA Federal Aviation Administration
FCC Federal Communication Commission
FEMA Federal Emergency Management Agency
FONSI Finding of No Significant Impact
ISW Industrial Solid Waste
MSW Municipal Solid Waste
NEPA National Environmental Policy Act
NHPA National Historic Preservation Act
NO Notice of Intent
NPA Nationwide Programmatic Agreement
OAC Ohio Administrative Code
ODH Ohio Department of Health
RSW Residual Solid Waste
Section 401 Under Section 401 of the Clean Water Act (CWA), a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the United States unless a Section 401 water quality certification is issued, or certification is waived.

Section 404 Anyone who wishes to discharge dredged or fill material into the waters of the U.S., regardless of whether on private or public property, must obtain a Section 404 permit from the U.S. Army Corps of Engineers (Corps) and a Section 401 Water Quality Certification (WQC) from the state.

VAP Voluntary Action Program
BACKGROUND AND INTRODUCTION

Brief History of Solid Waste Regulation in Ohio

Old, pre-regulation dumps were often located on the edge of town near creeks or streams or a wooded area where the garbage was out of sight and out of mind. As solid waste regulation began to take form in the 1960s, these dumps became illegal and were phased out. Some of them were closed with a soil cover intended to separate the waste from the public but many were simply abandoned with minimal cover or even with exposed waste.

Some of the old dumps became licensed solid waste landfills. In 1968, the Ohio Department of Health (ODH) began regulating solid waste landfills and issued licenses to facilities that met the newly adopted standards. The ODH rules prohibited landfills from being located in areas where waste disposal would constitute a hazard to groundwater or surface water resources, or create a health hazard. These included areas near rivers, streams, lakes, flood plains, and in abandoned quarries directly connected to groundwater resources. With the closure of many dumps, these newly licensed facilities began to grow.

In October 1972 the Ohio Environmental Protection Agency (Ohio EPA) was created and took over the management of solid waste facilities from ODH. In 1976 OEPAl issued new rules that replaced the ODH Rules. Ohio EPA’s 1976 rules established more stringent siting criteria, including providing protection of groundwater resources by prohibiting new solid waste landfills from being located within sand and gravel pits, limestone or sandstone quarries, 1,000 feet of water supply wells, and five feet of seasonal high groundwater tables.

In 1988, the Ohio Legislature passed House Bill (HB) 592, which directed Ohio EPA to revise and improve the 1976 solid waste landfill rules. As part of this effort, Ohio EPA developed siting criteria to better protect groundwater resources, and incorporated these criteria into the solid waste rules effective March 1, 1990.

Throughout the 1990s Ohio EPA introduced rules that added new construction and operational requirements for landfills. Geosynthetic liners were added to the requirements to create a composite liner system; additional landfill gas monitoring
requirements were introduced; as were design analyses to assess the stability of the landfills. These and other rule requirements increased the construction and operation costs of the facilities. For some landfill owners and operators the increase was enough to force them to close.

Because of the various regulations that existed from the mid-1960s through the 1990s and even into the 2020s the landfills that have closed have varied requirements based on the applicable regulations at the time the facility was closed.

- The pre-regulation dumps had no closure requirements and in some cases have the potential to pose the greatest risk to human health and the environment. Because there were no regulations governing the operation of dumps, anything and everything could have been and was disposed of in them. These dumps were often precariously located near creeks and streams and have the potential to pollute surface waters as well as groundwater.

- The early landfills, licensed by ODH and Ohio EPA prior to 1994, had minimal closure requirements. A soil cover or ‘cap’ was likely required and some financial assurance to cover a three-year post closure period. Once that three-year period had passed many of the landfills that were privately owned became abandoned properties. Continued upkeep at the facilities was not required and the minimal cover that was placed likely started to erode away. Many of these abandoned facilities attracted trespassers that might congregate there because of the remote area, or possibly even use the terrain for recreational purposes. These activities, such as use of motorized vehicles and bicycles, also tended to cause additional damage to the minimal cap.

- The modern landfills, licensed and permitted by Ohio EPA after 1994, provide the most protection to human health and the environment. Facilities that had been operating prior to 1994 were required to upgrade to the new standard which included installation of a clay liner, a geosynthetic liner, leachate collection, landfill gas control, and implementation of 30 years of post-closure care. These facilities continue to be regulated through the post-closure care period and are most likely to still have a responsible party for their care and maintenance.
In addition to the facilities described above, which would all be considered Municipal Solid Waste (MSW) Landfills, there are Residual Solid Waste (RSW) Landfills and Industrial Solid Waste (ISW) Landfills that are usually affiliated with a manufacturing facility or industrial plant and Construction & Demolition Debris (C&DD) Landfills that are limited to accepting debris from the construction or demolition of structures. The items generally accepted at C&DD Landfills consists of any waste material from construction as well as the resulting material from the demolition of a structure, but not the contents of the structure. RSW, ISW and C&DD landfills are all regulated by Ohio EPA.

Hazardous Waste facilities may also be considered for redevelopment. Hazardous waste facilities are regulated by the USEPA, but in Ohio the USEPA has delegated the program administration to the state.

Table 1 below provides a list of potential permits and authorizations that may be necessary for the redevelopment of a closed facility. It also provides the name of the regulatory agency that administers the specific permitting program.

| Types of Landfill Facilities | 513 Authorization - Ohio EPA (see Guidance Document #631, Appendix D) | Voluntary Action Program - Ohio EPA | 401/404 Permitting - Ohio EPA | US Army Corps of Engineers | Air Pollution Permitting - Ohio EPA | NEPA - Lead agency determined by project | OAC Rule 3745-54 through 57 | OAC Rule 3745-27 | OAC Rule 3745-29 | OAC Rule 3745-30 | OAC Rule 3745-400-
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Solid Waste Facilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Solid Waste Facilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Solid Waste Facilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction &amp; Demolition Debris Facilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous Waste Treatment, Storage or Disposal Facilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
While closed landfills can pose problems for a community, they can also provide opportunity for redevelopment. Ensuring human health and protecting the environment at these facilities should be first priority. Second is finding a reuse that can both serve the community and provide sufficient revenue to maintain the site. Examples include:

- Leveraging the height of the landfill for digital billboards or cell towers (if footer depth and zoning permit)
- Capturing energy by installing solar panels or wind turbines if feasible
- Using buildable border areas for new office space, parking canopies, or storage units
- Combining the above with low-impact green space or play areas (picnic areas, ballfields, trails)

The following discussion looks at one example site, the Schaaf Road Landfill in Brooklyn Heights, Ohio, to give community leaders some insight into what considerations precede any attempt at redevelopment. Afterward, we offer a step by step guide to the pre-planning process, useful checklists, and Appendices documenting all of the work that was done on the Schaaf Road site to date.
Throughout the process of creating a guide to re-develop/re-use former landfill properties, we closely analyzed the Schaaf Road landfill, which is located in the Village of Brooklyn Heights. It quickly became clear that a variety of ‘considerations’ needed to be understood or further researched before any planning could commence. Understanding the basics, the background and any history would be imperative to proceeding with the next steps for any landfill redevelopment project. In no particular order, the following were considered:

**Basics**

What kind of landfill is it? What is its history? Where is it in the closure process?

In the case of Schaaf Road Landfill, we had a solid waste landfill that was operated from 1980 through 1994. Closure proceedings were started in 1995, but due to deficiencies and violations, the Ohio EPA did not approve closure until 2000. It didn’t appear to be in compliance, nor under any sort of management or even relatively maintained. The closure process will not be complete for 8 more years. The site is visible from a multitude of roadways making it a perceived eyesore until it can be cleaned up and maintained.

**Ownership**

Who owns the land and is it possible to get access to do the necessary investigations?

Landfill ownership includes the physical and financial responsibilities for complying with the applicable regulatory requirements associated with the facility. This fact needs to be considered early and often throughout the process of investigating a landfill for a reuse or development project. If it is determined that a change in ownership is appropriate, in Ohio the proposed new owner must also pass a background check to be eligible to own the landfill (See Ohio EPA Guidance Document #1003 in Appendix D).

The Schaaf Road property was forfeited to the State of Ohio in 2008 and was purchased in 2015 by a private citizen who did not at first understand the dynamics and cost of managing a landfill. Each type of owner (individual, municipal, corporate, etc.) will create different circumstances; individuals may not have the financial resources to fund large projects, however corporations may have bureaucratic processes that could create inefficiencies. For organizations looking to redevelop a landfill, creating a positive relationship with the owner early on will help to facilitate the process, the timing and a positive end result.
While local governments may be disinclined to assume ownership of landfills, they could be in a better position to work with Ohio EPA and prospective developers to resolve maintenance issues. Land Banks for example have tools in their bylaws that allow them to facilitate the reuse of underutilized property.

Publicly available info
What information can be obtained from simple public records that would help set the stage?

Project partners sought as much information as possible from public agencies, particularly Ohio EPA. Not surprisingly, there was a plethora of history, information, data, etc. – all of which needed to be analyzed and synthesized into a digestible document that would provide a breakdown of current conditions and relevant history. Data gaps resulted in the need to collect additional information, and ultimately identify a level of risk that is tolerable.

Site and Maintenance Issues
The Schaaf Road Landfill requires maintenance for 8 more years before the closure period is complete. As can be seen in the photographs, the cap has been severely compromised by the growth of trees and the ponding of water at the surface. The slope appears to be holding, but any subsidence would endanger the flow of West Creek that runs along the toe of the landfill. The cost to re-establish the top and side cap is estimated to be close to $1.5M. Virtually all of the gas and groundwater monitoring wells have fallen into disrepair. Cost to repair will be about $475K. Even after the 8 year period, the slope, cap and methane release will need to be monitored.

Pending Litigation or Violations
Publicly available information may reveal additional layers of complexities.

Through publicly available information, it was soon discovered that a lack of post-closure care at Schaaf Road Landfill resulted in repeated notices of violation for environmental and human hazards. These violations persisted after the new owner purchased the property. This property demonstrates inherent risks of ownership, again relating back to who owns it now and how such ownership might help/hinder the process.
Interested Parties

Who has an interest in the site in its present condition? Who would be involved in its future plans?

Understanding the ‘stakeholders’ within the community is imperative to any end-result or adaptive reuse. All of the stakeholders must come together with a common vision that incorporates regulatory compliance and an end use that is achievable and maintainable.

Because Schaaf Road Landfill is located within the Village of Brooklyn Heights, the Village has an inherent and vested interest to protect its citizens and businesses. Additionally, Schaaf Road Landfill is located along a Scenic Byway, a heavily traveled and populated corridor that is visible from a multitude of viewpoints. Because of this location the Village would like to see improved optics and functionality within the site.

For 25 years, the West Creek Conservancy, with its partners has diligently worked to preserve and protect the integrity of West Creek (a tributary to the Cuyahoga River). The Schaaf Road Landfill is directly adjacent to, and drains toward, West Creek causing the Conservancy to have a mission-based concern.

Similar, yet distinct, to West Creek Conservancy’s interest, the Northeast Ohio Regional Sewer District has been making plans to restore a significant reach of West Creek which runs along the toe of the landfill (protecting infrastructure, restoring ecology and biological function). If the landfill slope were to fail, it would destroy the NEORSD’s restoration efforts and further damage public infrastructure.

Though there are most likely more stakeholders than listed above, it is imperative to understand the importance of each – and also, how to leverage public/private resources in order to properly maintain and in this case adaptively reuse such a site.
Are there private/business stakeholders - developers that should be considered? Theoretically, other stakeholders would reveal themselves throughout the planning process as well.

**Funding**

What funding sources may/may not be eligible for the opportunity?

Funding, of course, may be the make it or break it opportunity for such a project. However, at the start of the Schaaf Road landfill investigation, funding was not the lead consideration. It was rather community health/safety and associated environmental conditions. Once those conditions were understood, the funding question was inherently framed.

During our analysis of the Schaaf Road Landfill, we quickly understood the critical need to improve the maintenance of the facility and return the landfill to compliance with the applicable regulations. This included the repair and reinstallation of monitoring wells, cap maintenance, erosion repair, vegetation control, etc. The cost to accomplish all of these items was estimated to be almost two million dollars. If redevelopment were to occur, investors would need to explore funding opportunities and continue discussions with the owner.

In order to successfully redevelop a landfill, the project team needs to diligently look for funding opportunities. These could be grant opportunities, government funding, private funding, etc. End uses may also allow for the generation of funds that could help to support the project. These uses include but are not limited to cell tower leases, billboard rental, office space, and solar fields. A team that can think creatively will be best to find appropriate funding.
Visioning
What could/should the site be following its life as a landfill?

There are many examples of what landfills could be throughout our region, and though they will each have their own peculiarity the process of planning for their reuse or development should include ideas of what each site could be, as well as considerations about what each site needs from a regulatory viewpoint.

If, through discovery, you determine the landfill you are looking at is maintained and in compliance with applicable regulations, your options for reuse and development may be greater. If, through discovery, you determine the landfill you are interested in has not been maintained and is not in compliance with applicable regulations, your options will be directly affected by the costs associated with required maintenance and bringing the facility into compliance.

As part of your project, are you looking to re-develop the property to create jobs, a park, green space, or some combination? Maybe you are simply looking to bring a landfill into compliance in order to avoid larger problems and potential adverse impacts to human health and the environment.
STEPS TOWARD LANDFILL REDEVELOPMENT PLANNING

1. OHIO EPA FILE REVIEW

An excellent source of information for closed and some abandoned landfills is the Ohio EPA. Information contained in the public record will be helpful to determine the types of waste disposed of in the facility, what to expect during a field investigation, how to model the stability of the facility, etc. Conducting a file review will also help to formulate questions and spark discussion with Ohio EPA. A solid working relationship with Ohio EPA can go a long way to make your project proceed smoothly.

Appendix D contains helpful guidance documents from Ohio EPA that will steer you in the right direction and answer some initial questions.

2. AMERICAN LAND TITLE ASSOCIATION/NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS

An American Land Title Association (ALTA)/National Society of Professional Surveyors (NSPS) survey should be prepared to document and identify existing conditions. ALTA surveys include identification of monuments, the property’s address, gross land area, vertical relief, improvements, location of utilities, adjoining property owners, evidence of recent earth work or building construction observed during fieldwork, proposed changes in street right-of-way, the location of delineated wetlands, current zoning classification, setback requirements, height and floor space restrictions, and parking requirements. In addition to the ALTA survey, a title commitment should be provided and would add information such as encumbrances, easements, and zoning.

3. MONITORING SYSTEMS

As discussed in the Background Information, depending on the type and age of the landfill facility there will be varying degrees of regulatory requirements. Monitoring systems to be aware of include:

- Groundwater monitoring networks;
- Explosive gas monitoring networks;
- Explosive gas control systems (may be active or passive);
- Surface water management structures (ditches and sedimentation ponds);
- Site-specific monitoring plans that may be required by a Facility Closure/Post-Closure Plan; and,
- Closure/Post-Closure plans (5 to 30 years of post-closure monitoring).
Any monitoring systems that remain in place should be evaluated to determine the usability of the devices. A field investigation should include locating gas monitoring probes, gas extraction wells, groundwater monitoring wells, and surface water structures and evaluating the condition of each based on as-built documentation that may be available.

If the condition of the monitoring systems is suspect or failing, the cost of upgrades and replacement must be included in the project budget.

4. NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) is not specific to landfills. As you are looking at redeveloping a landfill, NEPA may become applicable depending on the end use you choose, or if you need any federal authorizations, or if you want to use any federal money (grants).

The NEPA process begins when a federal agency develops a proposal for a major federal action per Code of Federal Regulations (CFR) 1508.1. A major federal action includes approval of specific projects, such as construction or management activities with actions approved by permit or other regulatory decision as well as federal, federally-assisted activities, or federally-funded projects. Federal agencies have developed specific requirements that vary based on the relationship to the federal action. The NEPA regulations assess the environmental effect of proposed actions, including making decisions on permit applications, adopting federal land management plans, and constructing highways or publicly owned facilities. For example, NEPA studies are required for cell tower projects and may be required for digital billboard construction projects. Federal funding for a solar array would also likely trigger the NEPA process. A list of federal agencies and their associated NEPA procedures is included in Appendix B.

A NEPA review may involve three different levels of analysis. First, a federal action may be “categorically excluded (CE)” from NEPA requirements if the action normally does not have a significant effect on the human environment. If it is determined that the proposed action may significantly affect the environment, the action requires an Environmental Assessment (EA). An EA, which is the second level of analysis, will determine if the leading federal agency can issue a Finding of No Significant Impact (FONSI) or whether an Environmental Impact Statement (EIS) is necessary. The EIS process, which is the third level of analysis and can be quite time-consuming, includes publishing a public Notice of Intent (NOI) in the Federal Register and public review of the study. EA or EIS studies may include the analysis of environmental justice, cultural resources, floodplain studies, wetland delineations, air quality studies, water quality studies, and/or endangered species surveys.

NEPA Checklist Review

As an example of the NEPA process, a NEPA Checklist Review used by the Federal Communication Commission (FCC), outlined in 47 CFR Part 1.1307(a), for the installation of a communications tower would include the following information:
- The applicability of the Nationwide Programmatic Agreement (NPA) per Section 106 of the National Historic Preservation Act (NHPA) and the NPA for the Collocation of Wireless Antennas.
- An example of a NEPA procedure, developed by the FCC, is included in Appendix C and is an example of a preliminary assessment used to assist in identifying potential environmental issues and serve as guidance for project requirements.
- Conduct a database search of federal wilderness areas; federal wildlife preserves; county/state threatened or endangered species; listed or eligible National Register historic sites, places and/or Indian religious sites; Federal Emergency Management Agency (FEMA) 100-year floodplains; registered FCC antenna/towers and AM radio towers; and Federal Aviation Administration (FAA) sites within one mile of the property.

5. 513 AUTHORIZATION

Redevelopment of any closed landfill will likely require a 513 Authorization from Ohio EPA. A 513 Authorization is required for any filling, grading, excavating, building, drilling or mining on land where a hazardous waste facility or solid waste facility was operated. The intent of this authorization is to ensure that the activities planned to take place on a closed landfill are done with care and thought so as not to cause harm to human health or the environment.

For more information, refer to Ohio EPA Guidance Document in Appendix D.

Contact a consultant that specializes in landfill regulation and design for assistance with the preparation of a 513 Authorization request.

6. WETLAND DELINEATION

Depending on the potential land uses for the facility, a wetland delineation should be completed in the areas outside of the limits of waste. The presence of wetlands will have an impact on the ability to use these areas as part of the redevelopment of the property.

Any areas within the limits of waste that have been neglected and exhibit ponding water or suspected wetland vegetation should be managed through a cap maintenance program or 513 authorization through Ohio EPA depending on the level of effort needed to repair the engineered component. Open dialogue with Ohio EPA will help facilitate the necessary actions.

Contact a consultant that specializes in ecological projects for assistance with wetland delineations and associated studies.
7. PRELIMINARY GEOTECHNICAL INVESTIGATION

Depending on the configuration of the facility and the potential reuse plans, varying degrees of geotechnical investigation may be necessary. At a minimum any cap should be evaluated to ensure the engineered component is competent. For more complex redevelopments geotechnical investigations could include an evaluation of the waste material and the potential for settlement. Landfills will need to be individually evaluated and a unique geotechnical investigation planned based on each facility's characteristics.

For assistance with a geotechnical investigation contact an engineering consultant that specializes in landfills and geotechnical engineering.

8. LAND USE ASSESSMENT

When looking to redevelop a landfill, the priority goal should be to maintain regulatory compliance to ensure public health and the environment are protected. In addition to establishing regulatory requirements and identifying the existing conditions for a facility, determining the best use or combination of uses requires planning. The presumption is that an end user may desire or require a use that generates a revenue stream to fund the landfill maintenance and/or ongoing monitoring activities. The land use assessment should include the identification of the surrounding land uses, evaluation of land use regulations, local zoning, specialty zones, local master plans, incentive land use planning, infrastructure serving the property, and a real estate market study.

Examples of Land Use Assessments

- **Redevelopment (max revenue)** - focuses on revenue-generating reuses that include commercial/light industrial space, solar arrays, telecommunication towers, and digital billboards. Although limited redevelopment is intended to generate income, public access via trails or other limited methods could also be incorporated.

- **Green spaces (limited revenue)** - focuses on recreational reuses that include ballfields, trails, and playscapes. Green space development replaces office space with sufficient parking to accommodate public use of ballfields and trails. Potential revenue-generating uses that could be incorporated along with the green space could include telecommunication towers, limited solar arrays, and digital billboards.
- **Mixed use** - Mixed use presents a balance between redevelopment and green space. Potential uses could include ample parking to support publicly accessible trails, ball fields, etc., while increasing the solar arrays and including telecommunication towers, and digital billboards. Depending on the size of the property small buildings could be incorporated as well.

**New Office/Industrial Construction**

A cursory evaluation of revenue that may be generated through commercial office/light industrial space ranges between $3.50 to $9.50/sq. ft./year according to Cityfeet.com.

**Billboards**

Fitssmallbusiness.com notes the installation of a digital billboard ranges between $20,000 and $30,000 per billboard. Cost of digital billboard advertising averages $1,600 per month. Billboard earnings range between 40 to 60% of the net revenue yielded. A digital billboard may earn $39K to $91K/year for the billboard owner x 20% for landlord yields $7,800-$18,200/year for the ground lease.

**Cell Towers**

According to Towergenius.com cell tower lease rates range between $19,200 to $36,000 yearly and is based on location. According to landmarkdividend.com, cell tower leases could pay out anything from $10 per month for small niche carriers to more than $10,000 a month with the larger companies.

**Solar Farms**

Strategicsolargroup.com Solar Farm Land Lease ranges between $300 to $2,000 per acre per year and is subject to location and market demand.
Regulations associated with each landfill vary with respect to licensing, operation, operational monitoring, closure, and post-closure care. The technical and regulatory aspects of a landfill redevelopment project can be complex and confusing. An environmental consultant that specializes in landfill regulation and compliance should be retained to assist potential owners/redevelopers with the project.

**Appendix A** contains Land Development and Landfill Regulatory checklists that are intended as a starting point for you and your consultant to determine what may be necessary for your redevelopment project.

These checklists were prepared to identify general due diligence that may be necessary when considering redevelopment of a landfill. They are not exhaustive.
APPENDIX A
Environmental and Redevelopment Checklists
# LAND DEVELOPMENT CHECKLIST

## General Information

**Project Title:**

**Site Address:**

- **Township:**
- **County:**
- **Parcel Number:**
- **Current Use:**
- **Current Owner(s):**
  - **Address:**
  - **Telephone:**
  - **Email:**
- **Prior Owner(s):**
- **Area:**
  - __ Square Feet
  - __ Acres
- **Zoning District(s):**
  - __

**Adjacent Street(s):**

- **Corner Lot?**
  - __ Yes
  - __ No

**Adjacent Properties:**

- **East**
- **West**
- **Rear**
- **Across Street**

**Parcel Numbers:**

**Current Uses:**

**Area:**

- __ Square Feet
- __ Acres

**Zoning District(s):**

## Development Restrictions

- **Potential Wetlands?**
  - __ Yes
  - __ No

- **Oil / Gas Wells?**
  - __ Yes
  - __ No

- **Earthquake / Sink Holes?**
  - __ Yes
  - __ No

- **Steep Slopes?**
  - __ Yes
  - __ No

- **Utility / Highway Easements?**
  - __ Yes
  - __ No

*Note: Ponding atop a capped landfill may be exempt.*

## Authorities Having Jurisdiction

- **Municipality / Township:**

- **Address:**

- **Telephone:**

- **Email:**

- **Planning / Zoning Official:**

- **Email:**

- **Planning Commission Clerk:**

- **Email:**

- **Engineer:**

- **Email:**

- **Other:**

- **Email:**

- **Soil & Water Conservation District:**

- **USACE / State Dept of Natural Resources:**

---

**REDEVELOPING OHIO LANDFILLS**
Due Diligence

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes/No</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I Environmental Site Assessment</td>
<td>Yes</td>
<td>_______</td>
</tr>
<tr>
<td>Phase II Environmental Site Assessment</td>
<td>Yes</td>
<td>_______</td>
</tr>
<tr>
<td>Traffic Study</td>
<td>Yes</td>
<td>_______</td>
</tr>
<tr>
<td>Wetlands Delineation</td>
<td>Yes</td>
<td>_______</td>
</tr>
<tr>
<td>US Army Corps of Engineers Permit</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Ohio EPA Isolated Wetlands Permit</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Geotechnical Investigation</td>
<td>Yes</td>
<td>_______</td>
</tr>
</tbody>
</table>
## Land Survey

### Boundary Survey
- Existing Available?  
  - Yes
  - No

  Date: ____________________  
  Surveyor: ____________________

### Topographic & Location Survey
- Existing Available?  
  - Yes
  - No

  Date: ____________________  
  Surveyor: ____________________

### ALTA Survey (Note items required on Table A from Minimum Standard Details for ALTA Land Title Surveys)
- Existing Available?  
  - Yes
  - No

  Date: ____________________  
  Surveyor: ____________________

### Title Commitment Available?  
- Yes
- No

  Issued by: ____________________  
  Effective Date: ____________________  
  On Order

### Lot Split/Consolidation
- Yes
- No

### Planning Code Section

### Authority Having Jurisdiction

### Review Process

### Subdivision Plat
- Yes
- No

### Planning Code Section

### Authority Having Jurisdiction

### Review Process

### Preliminary Plan Available?
- Yes
- No

### Author:

### Desired Number of Sublots

### Minimum Lot Size

### Mortgage Location Survey
- Yes
- No

### Date Needed:

### Mortgage Identification Survey
- Yes
- No

### Date Needed:

### Construction Phase Surveys

#### Rough Grading Stakeout
- Yes
- No

  Approx. Start Date: ____________________

#### Utilities Stakeout
- Yes
- No

  Approx. Start Date: ____________________

#### Building Stakeout
- Yes
- No

  Approx. Start Date: ____________________

#### Foundation Survey
- Yes
- No

  Approx. Start Date: ____________________

#### Pavement Stakeout
- Yes
- No

  Approx. Start Date: ____________________

#### Pavement Stakeout
- Yes
- No

  Approx. Start Date: ____________________

#### As-Built Survey
- Yes
- No

  Approx. Start Date: ____________________

#### Other
- Yes
- No

  Approx. Start Date: ____________________
# Planning & Zoning

<table>
<thead>
<tr>
<th>Code / Ordinance Title:</th>
<th>Code Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Date:</td>
<td></td>
</tr>
<tr>
<td>Last Revised:</td>
<td></td>
</tr>
<tr>
<td>Available On-line at:</td>
<td></td>
</tr>
</tbody>
</table>

| Permitted Uses: | Code Section |               |
|-----------------|--------------|
| Site:           |              |
| Suitable for Intended Development? | Yes | No | (See process below) |

| Adjacent East: | Code Sections |               |
|----------------|---------------|
| Adjacent West: |               |
| Adjacent Rear: |               |
| Across Street: |               |

## Area Requirements:

<table>
<thead>
<tr>
<th>Code Sections</th>
<th>Minimum Lot Area:</th>
<th>Front Yard Setback:</th>
<th>Side Yard Setback:</th>
<th>Rear Yard Setback:</th>
<th>Maximum Coverage (Density):</th>
<th>Minimum Landscaped / Green Space Area:</th>
<th>Variance(s) Required:</th>
<th>Yes</th>
<th>No</th>
<th>(See process below)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Building:</td>
<td>Parking/Drives:</td>
<td></td>
<td>Building:</td>
<td>Impervious Area:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Parking Requirements:

<table>
<thead>
<tr>
<th>Code Sections</th>
<th>Number Required:</th>
<th>Number Accessible:</th>
<th>Van Accessible:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>How Calculated:</td>
<td></td>
</tr>
<tr>
<td>Location:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size:</td>
<td></td>
<td>Length:</td>
<td>Width:</td>
</tr>
<tr>
<td>Angle:</td>
<td></td>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>Variance(s) Required:</td>
<td>Yes</td>
<td>No</td>
<td>(See process below)</td>
</tr>
</tbody>
</table>

## Loading Requirements:

<table>
<thead>
<tr>
<th>Code Sections</th>
<th>Number Required:</th>
<th>How Calculated:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Setbacks / Special Considerations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variance(s) Required:</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Variance Process

Lead Authority having Jurisdiction
Name: ___________________________ Title: ___________________________
Address: __________________________
Phone: ___________________________ Email: ___________________________

Use Variances
Allowed? ___ Yes ___ No Code Reference ____________________________
Referendum? ___ Yes ___ No Code Reference ____________________________
Election Schedule: ____________________________
Public Hearing? ___ Yes ___ No

Area Variances
Allowed? ___ Yes ___ No Code Reference ____________________________
Referendum? ___ Yes ___ No Code Reference ____________________________
Election Schedule: ____________________________
Public Hearing? ___ Yes ___ No

Variances Needed
Use ___ Yes ___ No Describe ___________________________________________________________________
Area ___ Yes ___ No
Lot Size: ___ Yes ___ No
Building Area: ___ Yes ___ No
Setback: ___ Front ___ Side ___ Rear
Parking: ___ Front ___ Side ___ Rear ___ Count
Drives/Dimensions: ___ Yes ___ No
Loading: ___ Yes ___ No

Describe Variances: ___________________________________________________________________
_____________________________________________________________________________________

Pre-Submittal Conference Required? ___ Yes ___ No

Board of Zoning Appeals
Meeting Schedule: ____________________________ Time: ____________________________
Clerk/Chairperson Name: ____________________________ Title: ____________________________
Submittal Deadline: ____________________________
Electronic Submittals: ___ Yes ___ No Email: ____________________________
Who should attend? ___________________________________________________________________
Approval Process

Zoning / Site Plan Reviews / Approvals
Pre-Submittal Conference: _____ Yes _____ No
Who should attend? ___________________________________________________________

Planning / Zoning Commission Meetings
Meeting Schedule: ______________________________________________________________
Submittal Deadline: _____________________________________________________________
Electronic Submittals: _____ Yes _____ No   Email Address: ____________________________
Who should attend? _____________________________________________________________

Council / Trustees Meetings
Meeting Schedule: ______________________________________________________________
Submittal Deadline: _____________________________________________________________
Electronic Submittals: _____ Yes _____ No   Email Address: ____________________________
Who should attend? _____________________________________________________________

Typical approval timeline? ________________________________________________________

Building Permit Review / Approval
Chief Building Official: _________________________ Title: _____________________________
Phone: ______________ Email: ____________________________
Electronic Submittals: _____ Yes _____ No
Submittal Portal: _________________________________________________________________
Typical Review Timeline: ________________________________________________________

Utilities
Water: _________________________________________ ___ Public ___ Franchise
Sanitary Sewer: _______________________________ ___ Public ___ Franchise
Storm Drains: ___________________________________ ___ Public ___ Franchise
       Detention/Retention? ___ Yes ___ No   Code Reference: ___________________________
Natural Gas: _________________________________ ___ Public ___ Franchise
Electricity: _________________________________ ___ Public ___ Franchise
Telephone: _________________________________ ___ Public ___ Franchise
CATV/Internet: ______________________________ ___ Public ___ Franchise
Other: _________________________________________ ___ Public ___ Franchise

Notes/Comments: ________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
LANDFILL REGULATORY CHECKLISTS

General Information

Proposed Reuse: ____________________________________________
Address: _________________________________________________
Name: ____________________________________________________
Alias: _____________________________________________________
Current Owner(s): __________________________________________
Prior Owner(s): ____________________________________________
Acreage: _________________________________________________

Active Facility: ____ Yes ____ No
Closed Facility: ____ Yes ____ No

Date of Closure: __________________________________________

What is the permitted landfill type?

OAC 3745-27 Solid and Infectious Waste _____ Yes _____ No
OAC 3745-29 Industrial Solid Waste _____ Yes _____ No
OAC 3745-30 Residual Solid Waste _____ Yes _____ No
OAC 3745-400 Construction and Demolition Debris _____ Yes _____ No
OAC 3745-560 Composting Program _____ Yes _____ No
Municipal Solid Waste - OAC 3745-27

Sanitary landfill facility or solid waste landfill means an engineered facility where the final deposition of solid waste on or into the ground is practiced in accordance with OAC 3745-27, 3745-29 or 3745-30 as appropriate and OAC 3745-37 and includes the units within the limits of waste placement, all ground water monitoring and control system structures, buildings, explosive gas monitoring, control, and extraction system structures, surface water run-on and runoff control structures, sedimentation ponds, liner systems, and leachate management system structures. The sanitary landfill facility includes all portions of the facility described above and those areas within three hundred feet of the limits of waste placement unless an alternate setback is deemed acceptable by the director.

Does the facility have a permit to install per OAC 3745-27-02/06? __Yes__  __No__

Does the facility have an operating record per OAC 3745-27-09? __Yes__  __No__

Is there an explosive gas management system per OAC 3745-27-11(B)(4)? __Yes__  __No__

Is there an explosive gas monitoring system per OAC 3745-27-11(B)(8)? __Yes__  __No__

Erosion control measures implemented per OAC 3745-27-11(B)(9)? __Yes__  __No__

Is there a final cap system per OAC 3745-27-11(G)? __Yes__  __No__

Is there a surface water management program per OAC 3745-27-11(H)(2)? __Yes__  __No__

Is there a groundwater monitoring system per OAC 3745-27-11(H)(3)? __Yes__  __No__

Post Closure Care Activities per OAC 3745-27-14(A)(1)

Have the Leachate, Surface Water, Explosive Gas Extraction, Explosive Gas Monitoring and Ground Water Monitoring Systems been operating and maintained per OAC 3745-27-14(A)(1)? __Yes__  __No__

Has the cap system been maintained per OAC 3745-27-14(A)(2)? __Yes__  __No__

Have any leachate outbreaks occurred and repaired per OAC 3745-27-14(A)(3)(a)-(c)? __Yes__  __No__

Have quarterly inspections of the landfill been conducted per OAC 3745-27-14(A)(4)? __Yes__  __No__

Have the ground water, explosive gas, landfill emissions, monitoring and reporting been conducted per OAC 3745-27-14(A)(5)? __Yes__  __No__

Has a post closure care cost estimate been prepared per OAC 3745-27-14(A)(6)? __Yes__  Amount: ____________

__No__  __N/A__
Industrial Solid Waste - OAC 3745-29

An Industrial solid waste or industrial waste is a type of solid waste generated by manufacturing or industrial operations and includes, but is not limited to, solid waste resulting from electric power generation; fertilizer/agricultural chemicals; food and food-related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay and concrete products; textile manufacturing; and transportation equipment. Industrial solid waste does not include solid wastes generated by commercial, agricultural, or community operations. An industrial solid waste landfill facility or industrial waste landfill facility means a sanitary landfill facility where one or any combination of industrial solid wastes are exclusively disposed, and which has not during its operating life, disposed of significant amounts of municipal solid waste. Nontoxic fly ash, nontoxic bottom ash, nontoxic spent foundry sand, slag, or construction and demolition debris may also be disposed at a residual waste facility.

Is a permit to install available per OAC 3745-29-06(A)?

____ Yes  ____ No

Does the permit to install establish the facility’s construction per OAC 3745-29-08?

____ Yes  ____ No

Was there additional criteria per OAC 3745-29-07 for approval of the industrial solid waste landfill?

____ Yes  ____ No

Has a Final Closure/Post-Closure Plan per OAC 3745-29-11 been prepared for the facility?

____ Yes  ____ No

Is the Final Closure/Post-Closure Plan available?

____ Yes  ____ No

Have Post-Closure care activities been implemented?

____ Yes  ____ No

Operation/maintenance of leachate management system?  ____ Yes  ____ No  ____ N/A

Maintaining the integrity and effectiveness of cap system?

____ Yes  ____ No

Have quarterly inspections of been conducted?

____ Yes  ____ No

Have annual reports been prepared/submitted to Ohio EPA?

____ Yes  ____ No

Are the records and reports kept at one location?

____ Yes  ____ No

Does the facility have a ground water monitoring program per OAC 3745-30-08?

____ Yes  ____ No

Are the monitoring reports available?

____ Yes  ____ No

Has a Post-Closure Care Certification report per OAC 3745-29-14(B) been prepared?

____ Yes  ____ No

Is the Post-Closure Care Certification report available?

____ Yes  ____ No
Residual Solid Waste - OAC 3745-30

Residual solid waste or residual waste is a type of solid waste and includes wastes generated by:
- Fuel burning operations such as coal, foundry operations such as air pollution control dust, wastewater treatment plant sludge, unspent foundry sand, spent foundry sand;
- Pulp and papermaking operations such as wastewater treatment plant sludges, lime mud, lime grit, sawdust, wood chips, bark, hydropulper rejects;
- Steelmaking operations such as air pollution control dust, wastewater treatment plant sludges, dust from steel processing and finishing operations, water softening sludge, flux material;
- Gypsum processing plant operations such as gypsum wallboard waste, paper surface preparation dust, wastewater treatment plant sludge;
- Lime processing operations such as air pollution control dust and/or sludge; and
- Portland cement operations such as air pollution control dust.

A residual waste landfill facility or residual waste landfill is a sanitary landfill facility where one or any combination of residual solid wastes described above are exclusively disposed. Residual waste landfill facilities include four classifications: Class I, Class II, Class III, and Class IV and are based on the levels of contaminants in the leachate. Each class of landfill can accept only those wastes that do not exceed contaminant limits for that class. For example Class II residual waste landfill can accept waste that can also go to a Class III or Class IV residual waste landfill.

Is the facility:
- Class I? ___ Yes ___ No
- Class II? ___ Yes ___ No
- Class III? ___ Yes ___ No
- Class IV? ___ Yes ___ No

Has a permit to install been prepared for the facility per OAC 3745-30-05? ___ Yes ___ No

Does the facility have a ground water monitoring program per OAC 3745-30-08? ___ Yes ___ No

Are ground water monitoring reports available? ___ Yes ___ No

Has a Final Closure/Post-Closure Plan been prepared per OAC 3745-30-09? ___ Yes ___ No

Operation/maintenance of leachate management system? ___ Yes ___ No ___ N/A

Maintaining the integrity and effectiveness of cap system? ___ Yes ___ No

Have quarterly inspections been conducted? ___ Yes ___ No

Have annual reports been prepared/submitted to Ohio EPA? ___ Yes ___ No

Are the records and reports kept at one location? ___ Yes ___ No

Have Post-Closure care activities been implemented per OAC 3745-30-10? ___ Yes ___ No

Is a certification of post closure activities been submitted to the Ohio EPA per 3745-30-10(D)? ___ Yes ___ No
Construction and Demolition Debris - OAC 3745-400

Construction and demolition debris or debris means those materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure, including, without limitation, houses, buildings, industrial or commercial facilities, or roadways. Construction and demolition debris does not include materials identified or listed as solid wastes, infectious wastes, or hazardous wastes pursuant to Ohio Revised Code 3734 or materials from mining operations, nontoxic fly ash, spent nontoxic foundry sand, and slag; or reinforced or non-reinforced concrete, asphalt, building or paving brick, or building or paving stone.

For the purpose of this definition, materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure, are those structural and functional materials comprising the structure and surrounding site improvements, such as brick, concrete and other masonry materials, stone, glass, wall coverings, plaster, drywall, framing and finishing lumber, roofing materials, plumbing fixtures, heating equipment, electrical wiring and components containing no hazardous fluids or refrigerants, insulation, wall-to-wall carpeting, asphalitic substances, metals incidental to any of the above, and weathered railroad ties and utility poles. Materials resulting from the alteration, construction, destruction, rehabilitation, or repair do not include materials whose removal has been required prior to demolition, and materials which are otherwise contained within or exist outside the structure such as solid wastes, yard wastes, furniture, and appliances. Also excluded in all cases are liquids including containerized or bulk liquids, fuel tanks, drums and other closed or filled containers, tires, and batteries.

Does the facility have a valid license that contains the facility’s construction and monitoring plans per OAC 3745-400-11(C)?

---

Has a Cap System per OAC 3745-400-07(G) been completed?

---

Have leachate outbreaks occurred at the facility and have they been managed per OAC 3745-400-11(O)?

---

Does the facility contain a leachate management system per OAC 3745-400-11(P)?

---

Have there been any surface water management issues per OAC 3745-400-11(Q)?

---

Is the facility subject to groundwater and/or leachate monitoring per OAC 3745-400-11(R)?

---

Has the owner/operator established and maintained financial assurance per OAC 3745-400-11(S)?

---
Class I: The owner/operator of a Class I solid waste composting facility may accept yard waste, agricultural plant materials, dead animals, raw rendering material, animal waste, food scraps, mixed solid waste, bulking agents, additives, and authorized alternative materials.

Is the facility Class I?  ____ Yes  ____ No

Is the Permit to Install per OAC 3745-560-100(B) available?  ____ Yes  ____ No

Has a Class I facility been established per OAC 3745-560-100?  ____ Yes  ____ No

Are the applicable documents for establishment available?  ____ Yes  ____ No

Composting – Log of Operations and Annual Report Forms per OAC 3745-560-04/OAC 3745-560-115

Log of Operations per OAC 3745-560-04(A)?  ____ Yes  ____ No

Annual Report per OAC 3745-560-04(B)?  ____ Yes  ____ No

Self-Inspection Checklist Class II per OAC 3745-300-110?  ____ Yes  ____ No  ____ N/A

Composting – Closure Cost Estimate per OAC 3745-300-05: The owner or operator of a Class I composting facility shall determine the closure cost estimate.

Is a Class I closure cost estimate available?  ____ Yes  Amount: ______________________

 ____ No  ____ N/A

Operational Requirements Class I Composting per OAC 3745-560-110: The owner or operator shall operate the facility in accordance with applicable authorizing documents including but not limited to maintaining the design and operational capacities specified in the plan view drawing. The owner or operator shall have a copy of applicable authorizing documents available for inspection.

Is a plan view drawing available?  ____ Yes  ____ No

Closure and Termination Class I Composting Facility per OAC 3745-560-135(A)-(D)

Is a letter from the Ohio EPA or approved Board of Health stating the facility is in compliance with the closure requirements?  ____ Yes  ____ No
Composting Program - OAC 3745-560

**Class II Composting Facility**

Class II: The owner/operator of a Class II solid waste composting facility may accept yard waste, agricultural plant materials, dead animals, raw rendering material, animal waste, food scraps, bulking agents, additives, and authorized alternative materials.

Is the facility Class II?  __Yes__  __No__

Is the Solid Waste License per OAC 3745-560-200(B) available?  __Yes__  __No__
Is the Registration Application per OAC 3745-560-200(C) available?  __Yes__  __No__
Has a Class II facility been established per OAC 3745-560-200?  __Yes__  __No__
Are the applicable documents for establishment available?  __Yes__  __No__

Composting - Log of Operations and Annual Report Forms per OAC 3745-560-04/OAC 3745-560-215

Log of Operations per OAC 3745-560-04(A)?  __Yes__  __No__
Annual Report per OAC 3745-560-04(B)?  __Yes__  __No__
Self-Inspection Checklist Class II per OAC 3745-300-210?  __Yes__  __No__  __N/A__

Composting - Closure Cost Estimate per OAC 3745-300-05: The owner or operator of a Class II composting facility shall determine the closure cost estimate.

Is a Class II closure cost estimate available?  __Yes__  Amount:  ____________
__No__  __N/A__

Closure and Termination Class II Composting Facility per OAC 3745-560-235(A)-(D)

Is a letter from the Ohio EPA or approved Board of Health stating the facility is in compliance with the closure requirements?  __Yes__  __No__
Composting Program - OAC 3745-560

Class III Composting Facility

Class III: The owner/operator of a Class III solid waste composting facility may accept yard waste, agricultural plant materials, dead animals, raw rendering material, animal waste, bulking agents, additives, and authorized alternative materials. The material placement area is limited to a maximum of one hundred thirty-five thousand square feet.

Is the facility Class III? ___ Yes ___ No

Class III Composting Facility Establishment OAC 3745-560-300

Is a registration form/application available? ___ Yes ___ No

Composting – Log of Operations and Annual Report Forms per OAC 3745-560-04/OAC 3745-560-315

Log of Operations per OAC 3745-560-04(A)? ___ Yes ___ No
Annual Report per OAC 3745-560-04(B)? ___ Yes ___ No

Operational Requirements for Class III facility OAC 3745-300-310

Has the Ohio EPA or the approved board of health requested the owner/operator to submit a written narrative describing the current or planned management practices for any/all of the areas of management under paragraphs per OAC 3745-300-310(C) to (Q)? ___ Yes ___ No ___ N/A

Closure and Termination Requirements Class III Composting Facility OAC 3745-560-335

Did the owner/operator submit a written notification to the Ohio EPA, the approved board of health, and the solid waste management district of the last date of waste material acceptance? ___ Yes ___ No
Did the Ohio EPA provide a letter of concurrence regarding closure per OAC 3745-560-335(D)? ___ Yes ___ No
Did the owner/operator, after closure, request authorization for a Class I or II facility OAC 3745-560-335(E)? ___ Yes ___ No
Did the owner/operator, after closure, request authorization for a Class III or IV, or change to yard waste only transfer facility per OAC 3745-560-335(F)? ___ Yes ___ No
Did the owner/operator submit written notification to Ohio EPA the approved board of health and the solid waste management district and is a copy available? ___ Yes ___ No
Composting Program - OAC 3745-560

Class IV Composting Facility

Class IV: The owner/operator of a Class IV solid waste composting facility may accept only yard waste, agricultural plant materials, bulking agents, additives limited to source-separated spent coffee and tea grounds, urea, and bacterial or fungal inoculum, and authorized alternative materials.

Is the facility Class IV? Yes No

Class IV Composting Facility Establishment OAC 3745-560-400

Is a registration form/application available per OAC 3745-560-400(B)? Yes No
Are the letters of intent to establish a Class IV facility available per OAC 3745-560-400(D)? Yes No

Operational Requirements for Class IV facility OAC 3745-300-410

Has the Ohio EPA or the approved board of health requested the owner/operator to submit a written narrative describing the current or planned management practices for any or all of the areas of management under paragraphs per OAC 3745-300-410(O)? Yes No

Closure and Termination Class IV facility per OAC 3745-560-435

Has closure been completed per OAC 3745-560-435 (B)? Yes No
Did the owner/operator submit a written notification to the Ohio EPA, the approved board of health, and the solid waste management district of the last date of waste material acceptance? Yes No
Did the Ohio EPA provide a letter of concurrence regarding closure per OAC 3745-560-335(D) Yes No
APPENDIX B

National Environmental Protection Act Procedures
Executive Departments and Sub-agencies

Agriculture
- Agricultural Research Service
- Animal and Plant Health Inspection Service
- Farm Service Agency
- Forest Service
- Natural Resources Conservation Service
- Rural Development (Rural Business-Cooperative Service, Rural Housing Service, Rural Utilities Service)

Commerce
- Economic Development Administration
- FirstNet
- National Oceanic and Atmospheric Administration

Defense
- Defense Logistics Agency
- Defense Threat Reduction Agency
- Department of the Air Force
- Department of the Army
  - U.S. Army Corps of Engineers
  - U.S. Army Corps of Engineers - Regulatory
- Department of the Navy
- Missile Defense Agency

Energy
- Health and Human Services
  - Food and Drug Administration
  - Indian Health Service
  - National Institutes of Health

Homeland Security

Housing and Urban Development
- Community Development Block Grant Program

Interior
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Minerals Management Service (Bureau of Ocean Energy Management / Bureau of Safety and Environmental Enforcement / Office of Natural Resources Revenue)
- National Park Service
- Office of Native Hawaiian Relations
- Office of Surface Mining
- U.S. Fish and Wildlife Service
- U.S. Geological Survey

Justice
- Bureau of Prisons
- Drug Enforcement Agency
- Federal Bureau of Investigation
- Office of Justice Assistance, Research, and Statistics
- U.S. Marshals Service
Labor
State
Transportation
  Federal Aviation Administration
  Federal Highway Administration
  Federal Motor Carrier Safety Administration
  Federal Railroad Administration
  Federal Transit Administration
  Maritime Administration
  National Highway Traffic Safety Administration
  Saint Lawrence Seaway Development Corporation
Treasury
  Community Development Financial Institutions Fund
Veterans Affairs

Other Agencies:
  Advisory Council on Historic Preservation
  Agency for International Development
  Armed Forces Retirement Home
  Committee for Purchase from Persons who are Blind or Severely Disabled
  Consumer Product Safety Commission
  Denali Commission
  Environmental Protection Agency
  Export-Import Bank of the U.S.
  Federal Communications Commission
  Federal Deposit Insurance Corporation
  Federal Energy Regulatory Commission
  Federal Maritime Commission
  Federal Trade Commission
  General Services Administration
  Gulf Coast Ecosystem Restoration Council (RESTORE Council)
  International Boundary and Water Commission
  Marine Mammal Commission
  National Aeronautics and Space Administration
  National Capital Planning Commission
  National Endowment for the Humanities
  National Indian Gaming Commission
  National Science Foundation
  Nuclear Regulatory Commission
  Presidio Trust
  Securities and Exchange Commission
  Small Business Administration
  Surface Transportation Board
  Tennessee Valley Authority
  U.S. Postal Service
### FCC Desktop NEPA Checklist

#### Schaff Road Landfill
1329 East Schaff Road, Brooklyn Heights, Cuyahoga County, Ohio

<table>
<thead>
<tr>
<th>FCC Rule</th>
<th>Rule Summary</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>47 CFR 1.1307 (a)(1)</td>
<td>Is the Facility located in an officially designated wilderness area?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(2)</td>
<td>Is the Facility located in an officially designated wildlife preserve?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(3)</td>
<td>Does the Facility likely affect listed threatened or endangered species or designated critical habitats; or likely jeopardize the continued existence of any proposed endangered or threatened species; or likely result in the destruction or adverse modification of proposed critical habitats?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(4)</td>
<td>Does the Facility likely affect districts, sites, buildings, structures, objects, or other significant American history, architecture, archeology, engineering or culture, that are listed, or eligible for listing, in the National Register of Historic Places?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(5)</td>
<td>Does the Facility affect Indian religious sites?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(6)</td>
<td>Is the Facility located in a 100-year floodplain?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(7)</td>
<td>Will the planned collocation/construction involve significant change in surface features (e.g., wetland fill, deforestation and/or water diversion)?</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>47 CFR 1.1307 (a)(8)</td>
<td>Is the proposed Facility located in a residential neighborhood and required to be equipped with high intensity white lights?</td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>47 CFR 1.1307 (b)</td>
<td>Does the proposed Facility fall within the categories listed in Table 1 of Section 1.1307(b) and cause exposure of workers or general public to levels of radio-frequency radiation in excess of the limits in Section 1.1310 and 2.1093?</td>
<td></td>
<td>NA</td>
</tr>
</tbody>
</table>
Purpose
This educational guideline presents frequently asked questions about implementation of Ohio Administrative Code (OAC) Chapter 3745-513 (Chapter 513), formerly known as Rule 13 (OAC Rule 3745-27-13). Chapter 513 establishes the procedure for obtaining authorization from the director to fill, grade, excavate, build, drill or mine on land where a hazardous waste or solid waste facility was operated.

Frequently Asked Questions

Does Chapter 513 apply to an unpermitted, unlicensed solid waste or hazardous waste facility?
Yes, these are referred to as 'historic' sites. However, it does not apply to sites of indiscriminate roadside dumping or littering.

Does Chapter 513 apply to just the limits of waste placement or area of hazardous waste treatment, storage and disposal?
No. For the purposes of the chapter, Ohio EPA defined facility in OAC Rule 3745-513-02(F), to also include any areas within 300 horizontal feet of the limits of waste placement if the filling, grading, excavating, building, drilling or mining might impact the integrity of the waste placement or the ancillary structures associated with the monitoring and operation of the facility. Ohio EPA is concerned about hazards associated with explosive gases generated by landfills, potential stability issues of the landfill, release of contaminated leachate to surface and ground water, and potential contact with waste materials previously disposed at the facility.
Thus, if your proposed activity is either within the limits of waste placement, or within 300 feet of the limits of waste placement and it may impact the limits of waste placement, slope stability, or other ancillary structures such as the leachate collection, ground water monitoring, gas extraction systems, etc., then you are required to obtain a Chapter 513 authorization unless the proposed activity meets the exception criteria outlined in OAC Rule 3745-513-05.

What is routine maintenance?
Ohio EPA considers routine maintenance to be any activity necessary to maintain the performance of the cap system, pollution control systems, and monitoring systems at the site. For example, mowing the grass to maintain vegetative cover, replacing a ground water monitoring well that is no longer serviceable, or placing soil on the landfill in select areas to correct settlement problems or leachate outbreaks would be considered routine maintenance.
However, activities such as installing a perimeter leachate collection system, installing an explosive gas control system, or covering the entire landfill with soil, are not considered routine maintenance and would require a Chapter 513 authorization unless the proposed activity meets the exception criteria outlined in OAC Rule 3745-513-05. These are only a few examples of the rule's application. If you believe your proposed activity may be considered routine maintenance, we recommend that you contact your district office to confirm this before initiating work activities.

Does Chapter 513 apply to a facility in which all waste has been removed (for instance, a clean-closed hazardous waste facility or a solid waste facility where all waste was removed)?
No. If the facility meets the criteria established in OAC Rule 3745-513-05(A)(1)(a), then Chapter 513 does not apply.

Does Chapter 513 apply to a site which is in post-closure care?
Yes, if the activity is not authorized through the permit, license, plan approval, judicial order or other authorization that is a final action of the director. Authorizations that are not a final action of the director (for example alterations, authorizations by rule), cannot replace the need for a Chapter 513 authorization.

epa.ohio.gov • 50 W. Town St., Ste. 700 • P.O. Box 1049 • Columbus, OH 43216-1049 • (614) 644-3020 • (614) 644-2737 (fax)
**Does Chapter 513 apply to a site which is out of its post-closure care period?**
Yes. Unless the proposed activity meets the exception criteria outlined in OAC Rule 3745-513-05, a Chapter 513 authorization will be required for any activity at a solid or hazardous waste facility that has completed its post-closure care period.

**Does Chapter 513 apply to RCRA treatment or storage facilities?**
It does not apply if the site has either (1) been clean-closed and no residual contamination exists on the property, or (2) been clean-closed by demonstrating successful decontamination through a human health-based risk assessment, under an unrestricted (residential) future land use scenario.

Chapter 513 may apply if the site has been clean closed to risk-based standards and residual contamination exists, and the activity does not meet the exception criteria outlined in OAC Rule 3745-513-05. Chapter 513 may also apply if a site under deed restrictions or other restricted future land use scenario where human health risk assessment was employed (for instance, an industrial scenario) and the activity meets the exception criteria outlined in OAC Rule 3745-513-05. It is recommended that you contact your local district office regarding any facility with one or more units under evaluation by the risk assessment process prior to proceeding with the proposed activity.

**Does Chapter 513 apply to sites eligible for the Voluntary Action Program (VAP)?**
Yes, if the site accepted solid, hazardous, residual or industrial wastes, as they are defined in rule, and if activities that do not meet the exception criteria outlined in OAC Rule 3745-513-05 are proposed for the site. Participation in the VAP does not exempt or preclude a site from the requirements of Chapter 513. A Chapter 513 authorization is required prior to initiating the work. If the operations and maintenance agreement doesn't contain a Chapter 513 authorization for activities such as periodic sampling to confirm remedial progress, then Chapter 513 authorization is required each time such work is performed.

**Does Chapter 513 apply if the facility’s permit application indicated that the site will be utilized for development following the closure of the facility?**
Yes. Ohio EPA must have adequate information to determine that the proposed activity will not create a nuisance and is unlikely to adversely affect public safety, health or the environment. Therefore, unless the proposed activity meets the exception criteria outlined in OAC Rule 3745-513-05, authorization pursuant to Chapter 513 is required.

**Does Chapter 513 apply to open dumps?**
Yes. However, it is expected that all the illegally disposed waste on the property you control will be removed and disposed at a permitted disposal facility. If not, enforcement may be taken to clean up the dump.

**What facilities does Chapter 513 not apply to?**
Chapter 513 does not apply to sites which have solely accepted wastes that are excluded from the definition of solid waste. The definition of solid waste is found in OAC Rule 3745-500-02(S) and excludes the following materials: earth or material from construction, mining or demolition operations, nontoxic fly ash and bottom ash, spent nontoxic foundry sand and slag. It is important to note, however, that if a facility disposed of this material with industrial solid waste, residual solid waste or municipal solid waste, the facility is subject to Chapter 513 unless the proposed activity meets the exception criteria outlined in OAC Rule 3745-513-05.

Chapter 513 does not apply to facilities exempted from regulation as solid waste facilities. These exemptions are found in OAC Rule 3745-27-03 and include: solid wastes generated within a single-family residence and disposed on the premises, junk yards, lime sludge and sewage sludge disposal approved under ORC Chapter 6111, and sites approved under ORC Chapter 6111 where certain wastes were land applied.

Although these facilities are not required to obtain a Chapter 513 authorization prior to initiating work, they may be subject to requirements of ORC Chapter 6111. Contact a Division of Surface Water representative at your local district office to determine the type of authorization needed.

**If the activity is in an area with a history of dumping, but it’s not certain that waste will be encountered, does Chapter 513 apply?**
Ohio EPA recommends the applicant take advantage of the provisions for sampling, testing, or delineating the limits of waste placement (OAC Rules 3745-513-400 to -470). If waste is encountered, the applicant can proceed with obtaining a Chapter 513 authorization prior to conducting the planned activity.
What happens if waste is discovered while filling, grading, excavating, building, drilling or mining on a site not known to be a solid or hazardous waste facility?
Depending on the circumstances, you may be required to cease work and to obtain authorization pursuant to Chapter 513 before undertaking any additional activities. Ohio EPA may also take enforcement action. If any liquid is released from the waste, pursuant to ORC Section 3750.06 Emergency Planning, you may be required to immediately call Ohio EPA's emergency spill hotline at (800) 282-9378 (see epa.ohio.gov/derie/). Regarding the excavation of potentially solid or hazardous waste, you should immediately contact the appropriate Ohio EPA district office and local health department.

As part of authorized Chapter 513 activities, do contaminated soils have to be managed as a solid waste?
Contaminated soil associated with a Chapter 513 authorization is a waste. The issue of whether contaminated soil is a waste is addressed through Ohio EPA Fact Sheet #610 Frequently Asked Questions About the Management of Soils. This fact sheet is available at epa.ohio.gov/portals/34/document/guidance/gd_610.pdf.

As part of authorized Chapter 513 activities, can waste be reconsolidated or does it have to be removed and disposed at a permitted disposal facility?
Illegally disposed waste should be removed and not reconsolidated. Otherwise, the waste may be reconsolidated in accordance with OAC Rule 3745-513-350(C)(1)(a). It must be placed within previously existing horizontal limits of waste placement. Waste cannot be used to backfill any excavated areas outside the limits of waste placement as per OAC Rule 3745-513-350(C)(4).

Previously existing limits are established by the cap/closure certification report. If a certification report does not exist, the previously existing limits are established by the approved limits of waste placement. However, if the facility closed without reaching the approved limits, the previously existing limits are what are in existence when the Chapter 513 authorization is requested (or notification sent).

My project involves multiple properties where waste was disposed. Are separate requests for each property required, or can one request be submitted to address all of them?
The Division of Materials and Waste Management (DMWM) recommends submitting one Chapter 513 request showing the entire project with a discussion of proposed procedures for identification, management and closure. This saves you time by enabling you to follow the approved plan if waste is encountered rather than having to stop work while awaiting approval.

If a new solid waste, infectious waste or construction and demolition debris facility is to be established on an old facility, are the authorizations for the new activity enough, or is a Chapter 513 authorization also necessary?
A Chapter 513 authorization is required. However, if the authorization for the activity is granted through an action of the director (for example, a permit or license, but not a registration), you have the option of either obtaining two separate actions, one for the new facility and one for the Chapter 513 activities, or addressing the Chapter 513 issues in the new facility application, thus combining the two actions into one.

Contact
If you have questions regarding this document or would like more information, please contact the appropriate DMWM supervisor or the Central Office Authorizing Actions and Engineering Unit at (614) 644-2621.
Central District Office (614) 728-3778
Northeast District Office (330) 963-1200
Northwest District Office (419) 352-8461
Southeast District Office (740) 385-8501
Southwest District Office (937) 285-6357

Disclaimer
The procedures set out in this document are intended solely for guidance of government personnel. The procedures are not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party against Ohio EPA. While this guidance document is not legally binding, all statutes and rules referenced herein are binding and enforceable. Ohio EPA reserves the right to vary this guidance or to change it at any time without public notice and also reserves the right to deviate from this guidance on a case-by-case basis.
Considerations for Development On or Adjacent To a Closed Solid Waste Landfill

Introduction
Over the past decade, Ohio has seen a significant increase in development on closed solid waste landfills. The purpose of this document is to provide developers, as well as planning and development agencies, an outline of the general requirements and expectations of Ohio EPA when development is proposed on or adjacent to a closed solid waste landfill.

The primary authorization required from Ohio EPA to proceed with construction on, and in some cases adjacent to, a closed landfill is prescribed by Ohio Revised Code (ORC) Section 3734.02(H) and Ohio Administrative Code (OAC) Rule 3745-27-13. This is often referred to as a “Rule 13” authorization. In addition, other authorizations may be required from Ohio EPA to move forward with the project, including permits for air pollution control, installation of a public drinking water system, and surface water and storm water management. Authorizations may also be required from local and federal agencies, including the U.S. Army Corps of Engineers, the local Soil and Water Conservation district, and other agencies. It is also important to note that every landfill and every proposed development activity is unique. The local Ohio EPA office should be contacted early in the planning process to discuss the specifics of the project. The contact number for the Ohio EPA District Offices can be found at www.epa.ohio.gov/Directions.aspx.

Where Do I Start?
When a landfill is being proposed for redevelopment, a number of items must be considered. These include: age of the landfill, depth and height of waste, type of waste disposed, the need to relocate waste, any unique post closure issues or environmental impacts, and the actual redevelopment activities proposed. Ohio EPA’s experience has shown that for landfill redevelopments to be protective of human health, public safety, and the environment, engineering enhancements and administrative controls are necessary.

These may include the installation and operation of a final cover system meeting or exceeding current design standards, vapor barrier systems, a perimeter leachate collection system, an explosive gas management system, and activity and use limitations enacted through recorded environmental covenants. In addition, adequate financial assurance for a landfill construction project will likely be required prior to the time when waste will first be disturbed.
It is also important that the design of all utility systems (gas, electric, drinking water, telecommunications, storm water, and sanitary sewer) be constructed in a manner protective of human health, public safety, and the environment. Ohio EPA permitting requirements will likely apply to the construction of storm and sanitary sewer lines and public water supply lines.

Below is a broad list of additional items which must be considered when there is a proposed construction project on or adjacent to a closed solid waste landfill. This is not an exhaustive list and further items may need to be considered based on site specific conditions.

**Environmental Considerations when Developing on or Near a Closed Landfill**

**Solid Waste**

- Authorization under Rule 13 is necessary for all environmental and geotechnical investigatory work.
- Engineering controls and gas monitoring may be necessary to ensure there is no vapor intrusion or gas migration into buildings or leaving the project area through utility trenches.
- Construction of buildings on a landfill may require buildings to be constructed on pilings or other specialized support systems. This geotechnical design needs to be considered in the Rule 13 application.
- Settlement of the landfill throughout the life of the redevelopment needs to be considered for building, parking lot, and utility maintenance. Significant settlement should be anticipated if waste is to be relocated and recompacted as a part of the project.
- Leachate management may be necessary as part of the project. Leachate is any liquid which comes in contact with waste. Added weight on the landfill may cause leachate outbreaks.
- Relocation of waste presents a number of concerns that must be addressed. These include operational issues, odor control concerns, engineering challenges, and potential for future settlement. Any waste or leachate which is removed from the site must be characterized in accordance with OAC Rule 3745-52-11 to determine if the waste is a hazardous waste.
- Any public and private entities that may become part of the chain of title as new property owners are subject to background check requirements in ORC Sections 3734.41 through 47.
- Construction on a landfill will likely require financial assurance for closure and post closure care. Post closure care can be extended by the director of Ohio EPA. It is not uncommon for Ohio EPA to require financial assurance for 30 years of post-closure care. The financial assurance provides Ohio EPA insurance that if a project is started but not completed, Ohio EPA has the financial resources to adequately close and monitor the site.
Surface Water

- A general NPDES construction site storm water permit is required for any construction project disturbing one or more acres of land. The permit requires the applicant to develop a pollution prevention plan and ensure that storm water run-off from the site is properly controlled during and after construction.
- Any impact to “waters of the state” such as wetlands or streams on the property requires a 401 Water Quality Certification from Ohio EPA and may also require a 404 permit from the U. S. Army Corps of Engineers.
- A permit to install (PTI) is required from the Ohio EPA Division of Surface Water for the installation of a sanitary sewer, on-site septic system or package treatment system, holding tank, or other wastewater treatment system.

Drinking Water

Waterline alignments must avoid sources of contamination. Waterlines cannot be located in liquid waste or in waste located within soil subject to seasonal or permanent ground water. There will likely be special construction techniques, such as clay backfill, plugged hydrant weep holes, plastic pipe restrictions, and alternate alignments for routing of waterlines around areas of known or suspected areas of contamination. Applicants are required to submit detailed plans for public water supplies to Ohio EPA Division of Drinking and Ground Waters before construction can begin. The plans must be prepared and submitted by a professional engineer registered in the State of Ohio. The plans and supporting information must include the following:

- A site development map which clearly shows the following items within the project limits:
  - the proposed waterline(s) and all existing waterline(s);
  - buildings, roads, railroad tracks, and easements;
  - all underground utilities, including sanitary and storm sewers, storm ditches and outfalls, and surface water drainage ways;
  - all on-site ground water wells (private and public potable, non-potable, monitoring, test, and geotechnical);
  - all potential sources of sanitary risk, including known or suspected limits of waste placement (vertical and horizontal limits), underground storage tanks, etc.
- Environmental sampling/boring data collected along the waterline alignment. The data must include the following, at a minimum:
  - depth to ground water and direction of flow;
  - information regarding any perched water table(s);
  - information regarding high ground water levels, including seasonal variations;
  - boring material characterization (boring logs);
  - chemical analysis results for contaminants of concern along the waterline alignment (generally from the boring holes).
- Ownership information for the waterline. This includes identifying who the owner will be, who will bill for the water supplied, and who will maintain/repair the waterline(s).
Considerations for Development On or Adjacent to a Closed Solid Waste Landfill

Air Pollution
- Development on closed landfills and waste relocation projects will require reasonably available control measures (RACM) for fugitive emissions from the construction activities.
- Contingencies in the event that regulated asbestos materials are discovered should be considered.

Conclusions and Recommendations
Redeveloping on or adjacent to a closed landfill can be challenging and complex, from both a technical and regulatory perspective. That is why it is very important that any prospective developer or planning agency interested in a landfill property contact Ohio EPA early in the planning process to help determine the feasibility of redeveloping the landfill and to help ensure that all parties have a clear understanding of the scope of the project, regulatory requirements, and typical time frames for processing various authorizations for the project. Early and up front communication can help avoid costly mistakes and set the stage for successfully moving a project through redevelopment.

As a starting point, anyone interested in knowing more about landfill redevelopment should contact their local Ohio EPA district office, Division of Solid & Infectious Waste Management. The contact number for the Ohio EPA District Offices can be found at www.epa.ohio.gov/Directions.aspx. For additional guidance regarding Rule 13 please see Ohio EPA Guidance Document #631, Implementation of Rule 13 [OAC 3745-27-13].