Burke Lakefront Airport Development Opportunity

Engineering Feasibility Memo – March 2026

Project Overview

The North Coast Waterfront Development Corporation (NCWDC) is interested in the redevelopment of the area north of the Shoreway that is currently occupied by Burke Lakefront Airport (Burke). Burke, named for Cleveland Mayor Thomas A. Burke, opened in 1947 and occupies approximately 450 acres along Cleveland's north coast of Lake Erie. To best understand the existing conditions and associated development considerations, Osborn Engineering has been engaged to perform a preliminary due diligence assessment of the existing site and infrastructure that is summarized in this memo. The purpose of this memo is to provide potential developers with additional information and existing knowledge of potential development considerations in the area.

Project Site

Existing Conditions

- Soils

  The existing soils within the proposed redevelopment area are all classified as Urban Land (Ub). Urban land soils that have been manipulated by human activities and have been altered from their original state (see Rule 513 Section). In addition, this area of downtown Cleveland is naturally located on loose silts and sands with poor bearing capability. In the example of Burke, the area north of the railroad tracks and Shoreway were previously used for landfill and material dumping. Nearby projects, like the RHF, the addition to the RHF that is currently under construction, the GLSC and both the Verandas and Nuevo Modern Mexican & Tequila Bar (Nuevo) are all believed to be on various types of deep foundations or large thick mat foundations and incorporate methane mitigation measures.

  A geotech report, developed by Hull & Associates for Port Cleveland, shows a number of borings that were performed within the northern and northeastern sections of Burke. On average, groundwater was encountered 10' to 12' below the current surface elevation and the top 10' to 12' of soils are typically comprised of soft, wet, grey/black clay with silt. Sand and gravel enter

the clayey mix below 12' and continue to at least 20' below the surface. Additional borings should be obtained once a more specific redevelopment plan is created to ensure that accurate site conditions are accounted for in the areas of proposed improvements.

- City Roadways/Rights-of-Way

  The southern frontage of Burke is North Marginal Road. All vehicular points of access to the site currently come off North Marginal Road. Just south of North Marginal Road is the Cleveland Memorial Shoreway.

- Shoreline

  Where the western, northern and eastern edges of Burke meet Lake Erie, the existing edge treatment is comprised of stone revetment. This approach, complemented by the existing breakwall to the north, adequately protects the edges of the property from erosion. The existing stone revetment should not significantly limit redevelopment opportunities as they do not typically have tieback systems that would prohibit new structures to be situated within their limits. As is referenced in the Soils section above, since new buildings and structures may need deep foundation systems, soil improvements or a combination of the two, their respective loadings independent of the stone revetment areas that are currently in place. As the design of the redevelopment is determined, proposed areas of fill will need to be studied to ensure that they do not apply too much of a load on the existing revetment areas.

Development Constraints

- Environmental Actions/Considerations/Resolutions

  There are three historical land use environmental implications with Burke Lakefront Airport all with different federal and Ohio EPA regulations:

  - Ohio EPA Rule 513 – Since much of Cleveland's Lakefront from the bluff to the water is fill, it is regulated by Ohio EPA Rule 13 (OAC 3745-513). Rule 513 basically requires Ohio EPA approval prior to any intrusive activity or construction that could disturb buried waste. Due to frequent expansion and normal operations that would qualify as intrusive, the City of Cleveland negotiated a blanket exemption from the Ohio EPA in 1993. While the exemption is for specific project types and activities, it demonstrates Ohio EPA's understanding and cooperation level and is consistent with the Ohio EPA's stance on the city of Cleveland fill between the bluff and Lake Erie outside of Burke. Since the exemption was granted, multiple projects proceeded at Burke without major environmental impediment.

  - The Federal CERCLIS List – Originally under CERCLA (Comprehensive, Environmental, Response, Compensation and Liability Act of 1980) commonly referred to as Superfund, there were over 10,000 sites that were identified for ultimate ranking and potential remediation. In 1987, the city of Cleveland received a letter from the EPA noting that Burke was on the list and that certain activities and investigations needed to be conducted to determine the hazard levels to human health and the environment. Through a series of investigations and studies including a Human Health Risk Assessment conducted in 1992, the City of Cleveland received a no further action letter from the EPA on April 11, 1995. The sampling conducted as part of this study represents the most extensive data on any residual background levels of metals, semi-volatile organic compounds (SVOCs) and VOCs due to the original fill activities and/or any kind of release prior to that time.

- US Army Corps of Engineers Nike Site – Since Burke Airport was operated by the US Army Corp of Engineers, early on, the use on the site was controlled by the USACE. A historical report, dated June 8, 2010, shows that the USACE operated a Nike Site in Cleveland (not uncommon for urban areas) and that south of the bluff was the designated control area and an area of Burke was considered the launch area. These sites were part of a Nationwide Defense system that was operated by the US Army from the 1950s to the 1970s. As part of CERCLA, these sites were all investigated by the USACE, including Burke, as detailed in the above referenced report. Contaminated sites were then designated for the USACE FUDS (Formerly Used Defense Sites) Program. Burke was not recommended for the FUDs program.

- Fuel Handling, Storage, Transfer and Incidental Spillage Actions/Considerations

  Ohio created the Bureau of Underground Storage Tank Regulations (BUSTR) in 1987 to administer USEPAs federal program for Underground storage tanks which was created under Subtitle I of the Solid Waste Disposal Act. The BUSTR actions at Burke from 1987 through today include:

  - Million Air
  - Airplane Companies Inc
  - Landmark
  - Signature
  - City owned Tanks

  For each of the above sites, BUSTR requires documentation of the condition of the tanks, prevention spill plans, levels of any contamination release into the environment, on-site or offsite remediation of contaminants above BUSTR acceptable levels if there was a release, tank upgrade and replacement and clean backfill if the tank was compromised or below BUSTR tank standards and monitoring and confirmation of acceptable levels around operating tanks and in excavation areas. Once all these activities have been completed, BUSTR will issue a No Further Action Letter (NFA) for the area if there has been a release. The City has NFAs for all BUSTR incidents involving a release. It should be noted that the city is currently operating two 1000 gallon tanks for on-going fueling operations at Burke.

- Other Environmental Data/Considerations

  - In 1994, Ohio EPA through ORC 3746 and Rules under OAC 3745-300 instituted the Ohio Voluntary Action Program. This program is designed to define parameters for development that result in a No Further Action Letter (NFA) and a Covenant Not to Sue (CNS) from the State. There are two significant historical actions that involve Burke Lakefront Airport.

    1. Geis Development Plan and Cuyahoga County Grant/Study of 2015 – As part of a Cuyahoga County Grant and potential redevelopment of the area south of the main terminal building at Burke, a Phase 2 VAP investigation was conducted by Tetra Tech in January of 2016. The result of this investigation ended with further medial evaluation is required; however, the cumulative cancer and non-cancer risk ratios for the site-wide data population meet applicable standards for the construction/excavation scenario.

    2. City of Cleveland Urban Setting Designation – Under the Ohio VAP, it is possible to get an Urban Setting Designation for specific ground water sources, which basically, means that this source will never be used for drinking water and as such, requires less consideration from potential leaching from contaminated soils directly above the source. It is very common for old industrial urban areas slated for redevelopment. Burke Lakefront Airport is inside of the city of Cleveland USD granted by the Ohio EPA on February 16, 2011.

- Confined Dredge Spoil Facilities (CDFs)

    1. At and around Burke Lakefront Airport there are multiple CDFs including 9,12 and 10B. These sites are managed by the USACE and the Cleveland Cuyahoga County Port Authority. They include dredge material taken from the Cuyahoga River and Lake Erie to maintain proper shipping channel depths. These facilities are engineered to contain any environmental or unsuitable soils and are monitored accordingly in in accordance with Section 404 of the Clean Water Act. Due to the unlikely nature of future intrusive development in these areas as well as their limited size in relation to the overall site, it is unlikely that the chemical composition of the soils is a reason for future use concern.

- Wind Loads

  The North Coast Waterfront sits along the edge of Lake Erie. As a result, the development would likely be subject to Exposure Category D, as defined by ASCE 7-22. Exposure Category D is used for buildings within 1 mile of a large, open water surface like Lake Erie. The structural engineer of record for any proposed buildings or structures will need to factor these loads into their design. In Cleveland, there are several wind studies that have previously been conducted in the area, including:

  - Wind Study for Lobby Expansion of the Anthony J. Celebrezze Building at 1240 East 9th Street in 2006
  - Huntington Bank Stadium design in 1997 completed for the HOK Sports Design team
  - Cleveland - Cuyahoga Port Authority Dock 20 Bulkhead Design in 1994

  In each case the studies showed that the prevailing wind was from the northwest and at times was a significant factor that had to be considered in the design.

- Methane Gas

  Due to the makeup of materials underneath the surface, other developments north of the Shoreway have experienced the need for methane gas extraction. The Rock and Roll Hall of Fame currently has an extraction system under the I.M. Pei pyramid and separate system is currently being installed underneath the new Rock Hall expansion.

Interaction with North Coast Connector

The North Coast Connector (NCC) project will serve to better join the north and south sides of the existing railroad tracks and Shoreway. By downgrading the Shoreway to a boulevard scheme, the reduced footprint of the roadway network will be repurposed into developable and accessible space. In addition, a Land Bridge is planned to make a formal north-south connection from Mall C of the Convention Center to the area in between the Great Lakes Science Center and Huntington Bank Stadium.

Given the timing of this development RFP and the timing of the environmental, planning and design of the NCC project, this development opportunity could further inform alignment and final design of these core infrastructure components as well as any public spaces that are included. Additionally, construction and construction staging could also be coordinated.

The NCC envisions a 4-way intersection at E 15th Street and the downgraded Shoreway. The northern leg of this intersection will be the new primary access point to the Burke site.

Subsurface Infrastructure Availability/Capacity

Osborn understands that the desired redevelopment of Burke will include several low density buildings, shelters and a combination of both active and passive recreation uses. These uses will not present demands that would exceed the existing utility network in the area. Snapshots of existing utility maps can be found in Exhibit B.

- Sanitary & Combined Sewer

  Existing sanitary sewer infrastructure is limited on the existing Burke site to the four (4) existing buildings along the southern portion of the property. These buildings are served by a total of three (3) sanitary sewer pump stations that send effluent through two (2) 8" forcemains, under the Shoreway, and into existing combined sewer infrastructure at E 20th Street & Davenport Avenue and E 40th Street & the railroad tracks, where they ultimately join each other at E 40th Street & Lakeside Avenue. From there, the existing combined sewer, referred to as the Easterly Interceptor, continues east until it reaches the Easterly Wastewater Treatment Plant.

  The Northeast Ohio Regional Sewer District (NEORSD) has a total of seven (7) combined sewer overflows (CSO) that travel through the Burke site and outfall into Lake Erie. The seven (7) CSOs that travel through the Burke site are numbered 94, 95, 96, 97, 98, 99 and 200. As the redevelopment plans for Burke proceed, discussions with NEORSD are recommended to determine if any of these existing CSOs need to remain in service, can be taken out of service or can be combined with others to avoid conflicts with proposed improvements. In the event the CSOs need to remain in service, the proposed development can span or bridge over them to avoid negative impacts to either the existing sewer or proposed improvements above.

- Storm Sewer & Stormwater Management

  In addition to the seven (7) CSOs referenced above, another five (5) storm sewer outfalls into Lake Erie are also present within the Burke site. Due to the importance of drainage within airport operations, the existing storm sewer infrastructure underneath Burke is adequate for the size and type of envisioned redevelopment.

  Due to its use, Burke likely has an active industrial NPDES permit which will need to be closed once the industrial activities with the airport are closed. The specifics of this process will need to be further investigated early in the redevelopment master planning phase. Once the site is no longer under the definition of an industrial use, it is likely that the general construction permit would govern once the site is redeveloped.

  The NPDES Construction Stormwater General Permit (OHC000006) requires water quality volume (WQv) storage before storm runoff enters Lake Erie. Stormwater quantity, however, is not required due to the proximity to Lake Erie. The current Burke site includes roughly 100 acres of impervious area. The nature of the proposed concept for redevelopment may decrease this total. Decreasing the impervious area, or increasing the pervious surfaces incorporated within the redevelopment, will reduce the amount of WQv needed.

- Water Service

  An existing 12" water main, owned and operated by Cleveland Water, exists along the northern side of North Marginal Road, immediately to the south of the Burke property. The existing buildings on the airport site have water service connections that could be repurposed should they align with the proposed redevelopment plans. Existing fire hydrants are also located along

the northern side of North Marginal Road and a few are located near the existing buildings within the airport property. This existing infrastructure provides a number of connection options for redevelopment on a multiphase basis.

- Electric Service

  Burke's current electrical service is provided by Cleveland Public Power (CPP). Additionally, an existing 11kV electrical duct bank, owned and operated by CPP is located within North Marginal Road. If the redevelopment area could not be provided by the existing service or this line, it could be served from a new ductbank that heads west to an existing manhole in the intersection of E 9th Street and North Marginal Road/Erieside Avenue to extend service.

- Natural Gas Service

  Enbridge is the regional provider of natural gas in this part of Cleveland. Once more is known about the desired redevelopment demands for natural gas, conversations should be had with Enbridge to ensure they have both capacity and pressure available.

- Telecommunication Service

  There are a number of local telecommunication providers available in this part of Cleveland. Once more is known about the redevelopment demands for telecommunication service, conversations can be had with one or more of these providers to review available options.

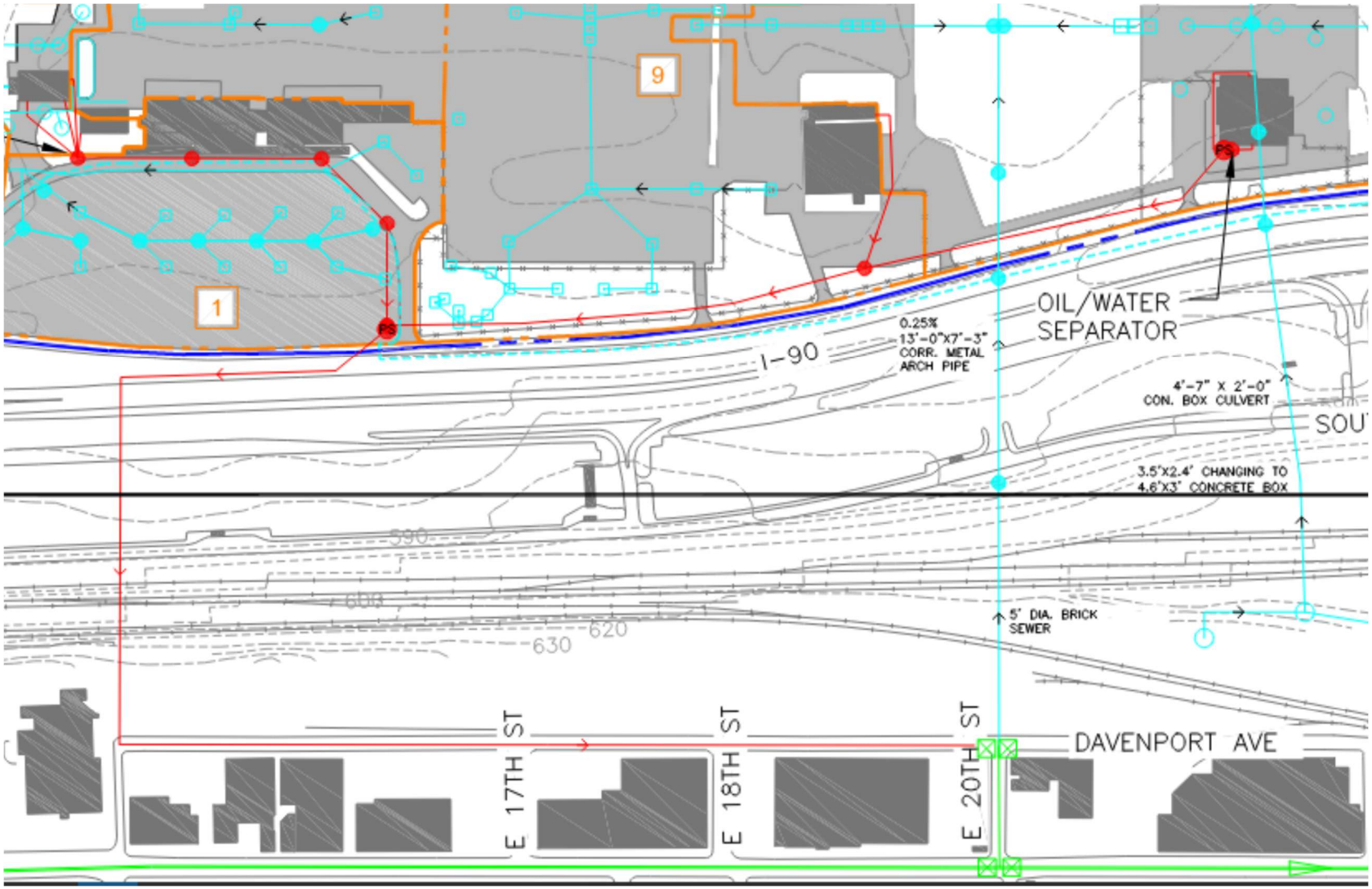
Conclusions

There are historical environmental actions and likely low level environment residuals/contaminants located in disparate areas of Burke (to be further documented by the authority as an appendix). As such, future reuse should consider a human health risk assessment (HHRA) corresponding to the proposed development usage followed by recommended remedial monitoring or actions as required.

However, it should be noted that due to numerous successful construction activities previously conducted, location in an urban setting designation, the amount of clean material and compacted fill throughout the majority of the site, paved areas and likely future uses, large costly environmental remediation as part of future development would not be anticipated at this time based on known historical data from the 1980s through today.

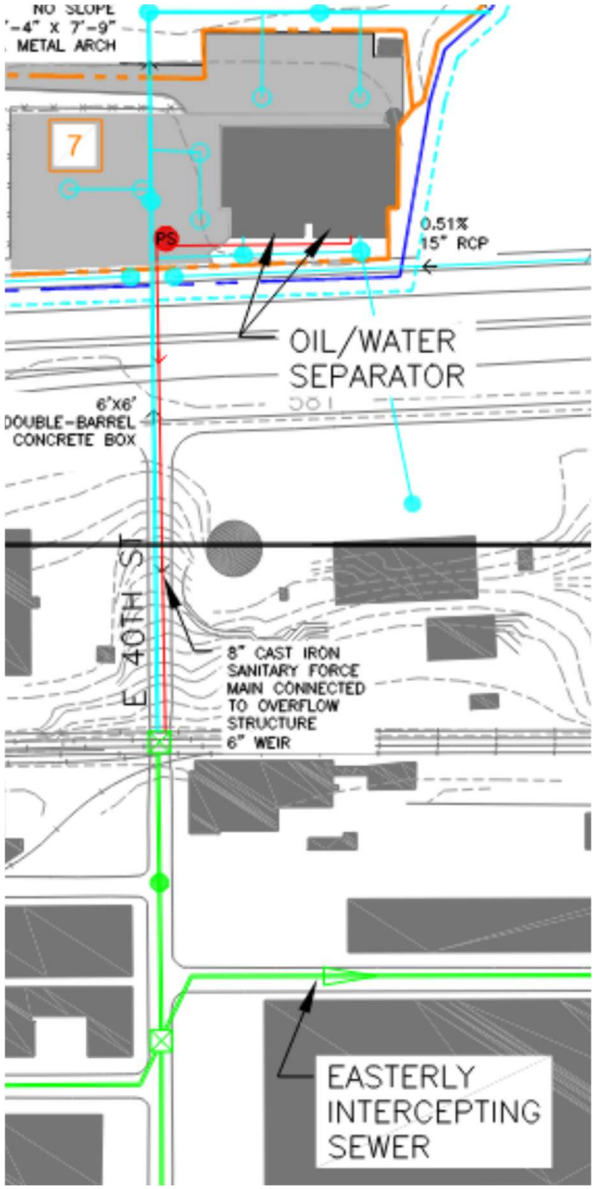
Exhibit A
Existing Utility Plans

Sanitary Sewer



Western Portion of Existing Sanitary Sewer at Burke

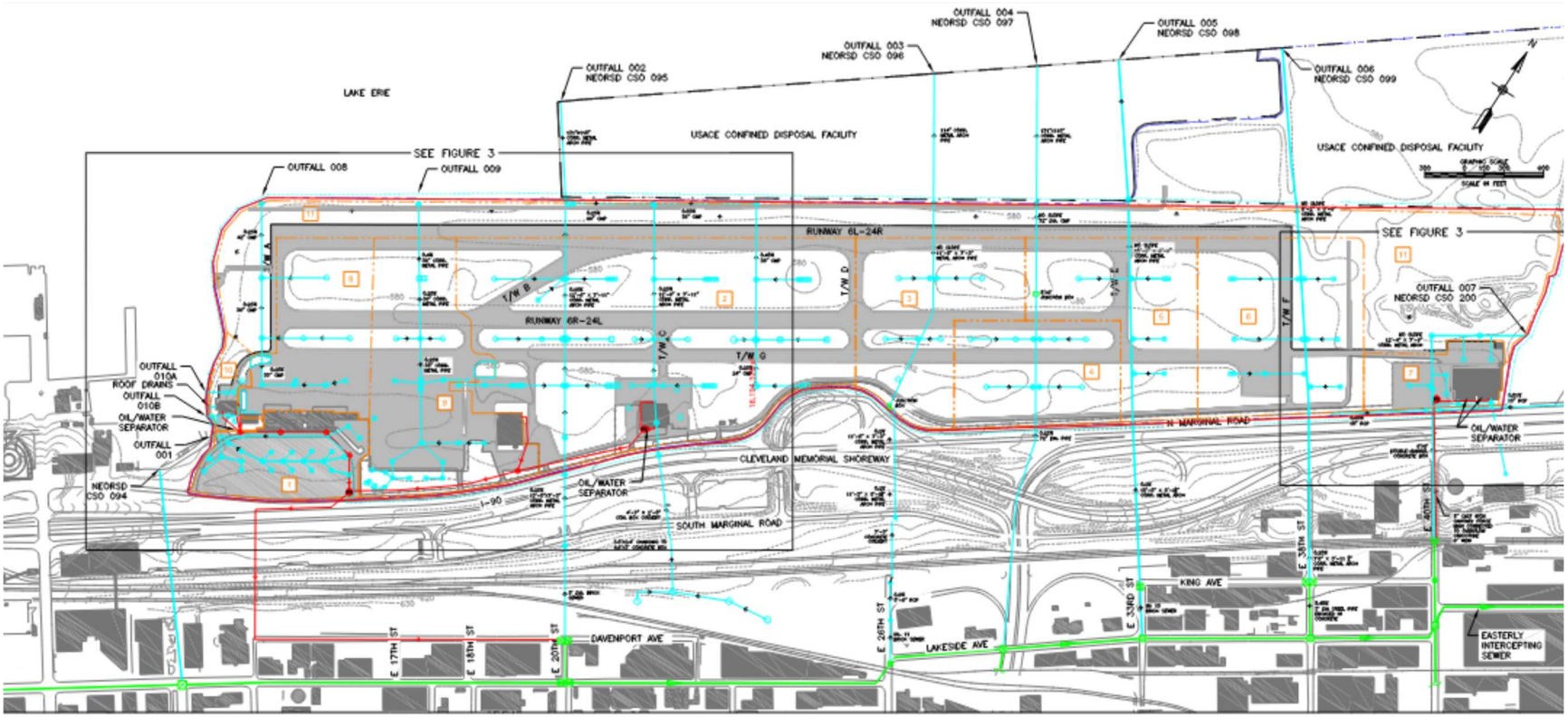
(Red Lines are Sewer Forcemain, Red Circles with "PS" are Pump Stations & Green Lines are Combination Sewer)



Eastern Portion of Existing Sanitary Sewer at Burke

(Red Lines are Sewer Forcemain, Red Circle with "PS" is a Pump Station & Green Lines are Combination Sewer)

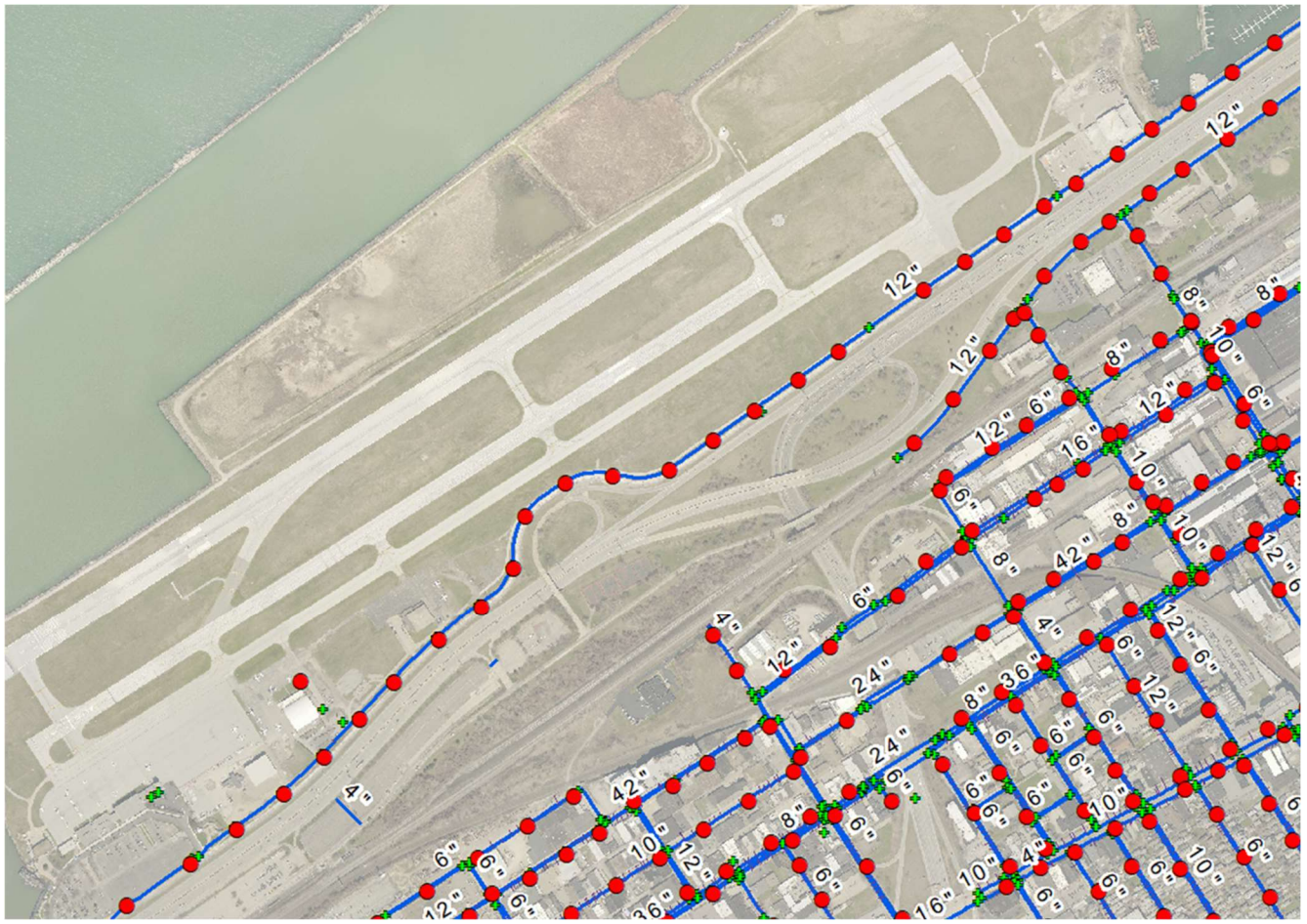
Storm Sewer



Existing Storm Sewer at Burke

(Cyan Lines are Storm Sewer Forcemain, Outfall Locations are Labeled with their Corresponding Numbers)

Water



Existing Water at Burke
(Blue Lines are Water Mains& Red Circles are Fire Hydrants)