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Lakefront Utilities and Railroads Educational Issues Forum

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MAXINE GOODMAN LEVIN
COLLEGE OF URBAN AFFAIRS

Cleveland State University

Prepared for:
Cleveland Lakefront Partners

Prepared by:
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May 2003

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**Lakefront
Utilities and
Railroads
Educational
Issues
Forum**

**LEVIN COLLEGE
FORUM**

**LAKEFRONT UTILITIES AND RAILROADS
EDUCATIONAL ISSUES FORUM
OCTOBER 2, 2002**

Part of
**NORTHEAST OHIO'S WATERWAYS
LAKEFRONT PLANNING ISSUE FORUMS**

Prepared for:
**CLEVELAND LAKEFRONT PARTNERS
(CITY OF CLEVELAND, GREATER CLEVELAND GROWTH ASSOCIATION, CLEVELAND
TOMORROW, AND CLEVELAND NEIGHBORHOOD DEVELOPMENT COALITION)**

By:
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INTRODUCTION

On October 2, 2002, the Levin College Forum Program and the Cleveland Lakefront Partners (the city of Cleveland, the Greater Cleveland Growth Association, Cleveland Tomorrow, and the Cleveland Neighborhood Development Coalition) sponsored a public forum on lakefront utilities and railroads. The forum was the second in a series of four intended to deepen the community's understanding of some of the issues related to the plans for the Cleveland lakefront. It was part of the Levin College Forum Program's two-year Northeast Ohio's Waterways forum series, which is focusing public attention on development of a comprehensive vision for all of Northeast Ohio's waterways. The purpose of the Utilities and Railroads forum was to inform the public about the nature of Greater Cleveland's public and private infrastructure located on the lakefront and the factors that will affect plans to redesign Cleveland's lakefront.

The issue forums are an important part of an ongoing process by the Lakefront Partners to involve the public in lakefront planning. The issues addressed in these forums emerged from the first round of city-sponsored public meetings in spring 2002 and from the February 2002 kick-off event of the Levin College Waterways series. More than 1,500 people attended these events and hundreds of comments were submitted. Summaries of the comments and proceedings can be found on the following web sites:

<http://planning.city.cleveland.oh.us/lakefront/cpc.html>

<http://urban.csuohio.edu/waterways/proceedings/feb902.htm>

Although opinions differed over what specific steps to take, the overwhelming consensus of these public meetings and comments can be summed up in one word: *access*.

Citizens of Greater Cleveland want greater access to its most unique asset, its waterways. After years of use and abuse, Clevelanders want to reclaim their waterways and usher in the next economic revolution, one that capitalizes on the region's natural environment beyond its traditional industrial use. Citizens want to make Cleveland a better place for natives to live and work and for newcomers to settle; they understand that this may be accomplished by respecting and enjoying the region's unique lakes, rivers, and valleys. The Utilities and Railroads Forum is the second in a series that was designed to help Clevelanders better understand the factors that influence decisions affecting their waterways so that the citizenry may serve as educated participants in the planning process.

BACKGROUND

According to a study done by the Cuyahoga County Planning Commission, utilities, railroads and telecommunications infrastructure currently occupy an estimated 139 acres of lakefront property. This does not include Burke Lakefront Airport, the Port of Cleveland, or railroad rights-of-way. Although small in terms of the percentage of lakefront devoted to these uses, it is important to understand the locational requirements of these facilities and their underground infrastructure both now and in the future. (See map 1.) Representatives from Cleveland Public Power, FirstEnergy Corporation, the Northeast Ohio Regional Sewer District, City of Cleveland, Division of Water, Norfolk Southern Corporation were invited to discuss their role in lakefront planning.

CLEVELAND PUBLIC POWER

Cleveland began producing its own electric power in 1907, when it annexed the Village of South Brooklyn and its power station, known today as the West 41st Station. Cleveland added a second power station in Collinwood in 1910 and in 1911 approved a bond issue to build a large-scale, steam-generated power plant. When completed in 1914, the 15,000-kilowatt Lake Road Plant (5152 North Marginal Road) was the largest municipal power plant in the United States. In 1983, the Municipal Light Company was given a new identity, Cleveland Public Power (CPP), and in September 1990, under the administration of Mayor Michael R. White, ground was broken for a citywide expansion of its system, providing all Cleveland residents with a low-cost reliable alternative power source. Today, Cleveland Public Power is the largest municipal power company in the state of Ohio and 38th nationally out of 2,000 municipal power systems.

Because it is a municipal electric company, operating only in the city of Cleveland, its owners are also its customers - the citizens of Cleveland. Under the state constitution and the charter of the city, the city has the authority to own, operate, and regulate CPP. The city's Department of Public Utilities operates CPP solely to provide electric energy to its citizen-customers.

CPP obtains most of its power and energy requirements through short-and long-term agreements with various regional utilities and other power suppliers through three FirstEnergy interconnections. The balance of CPP's power and energy requirements are satisfied with production from CPP's three 48 megawatt (MW) combustion turbine generating units, six (1.825 MW) diesel-generating units, and various arrangements for the exchange of short-term power

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and energy. CPP anticipates that it will continue to rely on wholesale purchases of power and energy to meet its customers' needs for the future.

FIRSTENERGY

FirstEnergy owns and operates the Illuminating Company, Ohio Edison, and Toledo Edison. It delivers electricity to 741,000 customers in Northern Ohio. FirstEnergy was created in 1997 from the merger of Ohio Edison and Centerior and became the owner and operator of the Lake Shore Power Plant on the South Marginal Road near East 70th Street.¹ Centerior was the result of a 1987 merger between Toledo Edison and the Cleveland Electric Illuminating Company (CEI). CEI originally built the Lake Shore Plant in 1911 and operated it until the 1987 merger.

Over the years, the Lake Shore Power Plant capacity was expanded in response to the city's growth. Its net demonstrated capacity peaked at 520 MW from 1961-1977, enough to supply 450,000 homes. Today, the Lake Shore plant's net demonstrated capacity is 240 MW. Significant transmission and distribution facilities on the site serve Cleveland area businesses and residences as well as delivering power to Cleveland Public Power. The Lake Shore plant also maintains proper voltage control to the area it serves.

WATER FACILITIES

The city of Cleveland, Division of Water has owned and operated the water supply system since 1856. Today it serves 1.5 million people in 72 suburbs and the city of Cleveland. The first major water facility built on the Cleveland lakefront was constructed to accommodate Cleveland's rapid post-Civil War growth. Because the water immediately surrounding the city had become polluted, an idea was proposed to draw water from farther offshore where it remained clean. This entailed building a tunnel under the lake bed that would end in a collection point, called a "crib." Work on the 87-foot diameter crib was begun in 1867 and took seven years.

Growth continued to outstrip the capacity of the water supply system and, between 1890 and 1916, the system was greatly expanded to include a second intake tunnel. Furthermore, in 1917 the Division Avenue Water Treatment Plant, built on the site of the older Division pumping station, opened with the latest in water filtration and treatment technology.

¹ Source: Lee Pyzik, FirstEnergy Corporation

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By the 1920s, Cleveland was one of the 10 largest cities in the United States and demand for water continued to increase. In response, the Baldwin Water Treatment Plant was constructed in the “heights” east of the city. To feed its enormous reservoir, the plant was linked to the Kirtland Pumping Station on the lakefront. By the late 1950s, the water distribution system included four intakes stretching between 2.5 and 4 miles into Lake Erie.

Today, Cleveland’s Division of Water facilities include intakes, raw water pumping stations, treatment plants, potable water pumping stations, large supply mains, distribution mains, system storage reservoirs, and tanks. Two of the facilities are located on the Lake Erie waterfront: The Garrett A. Morgan Plant at 1245 West 45th Street (between the Old River Channel and the Shoreway on both sides of West 45th Street) and the Kirtland Pumping Station at 4901 South Marginal Road.

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NEORS D) WASTE WATER TREATMENT

The Northeast Ohio Regional Sewer District (NEORS D) is a political subdivision of the state of Ohio. It was formed by a court order in 1972 after the U.S. Congress passed the Clean Water Act with the goal of restoring the health of our nation's waterways. Since its creation, the District has invested over \$1.6 billion for capital improvements to the wastewater conveyance and treatment system throughout its 54-community service area.

NEORS D governs the operation of three major wastewater treatment plants and associated water pollution control facilities on Lake Erie, the Cuyahoga River, and the Rocky River. Major treatment facilities include Southerly, Easterly, and Westerly Wastewater Treatment Plants.

The Easterly Plant, located at 14021 Lakeshore Boulevard, began treating wastewater in 1908 and currently serves over 500,000 people in Cleveland and the eastern suburbs to Mayfield Village and Pepper Pike. It was expanded and updated several times by the city of Cleveland. After being absorbed by NEORS D in 1972, refurbishment continued and modernization of the bio-solids pumping facility was completed in 1997, representing an investment of over \$60,000,000.

The Westerly Treatment Plant, located at 5800 West Memorial Shoreway next to Edgewater Park, serves approximately 110,000 people in Cleveland and portions of Lakewood, Brooklyn, and Brook Park. It was originally constructed in 1922 to provide only primary treatment and upgraded to a chemical treatment plant by NEORS D in the 1970s. In the early

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1990s, a conversion of the plant to a trickling filter/solids contact biological process was implemented to make it more efficient and economical.

The Southerly Treatment Plant, located at 6000 Canal Road, serves over 530,000 people in southern Cleveland and the south and southwestern suburbs to Macedonia, Olmsted Falls, Solon, and Twinsburg. Southerly was built by the city of Cleveland in 1927 and, in 1972, NEORSD also took over and began making improvements so the plant could handle increased flows and more stringent regulatory requirements.

NEORSD also operates and maintains the Environmental and Maintenance Services Center (EMSC), which was built in 1990 to house Analytical Services, Sewer Maintenance Control, Water Quality and Industrial Surveillance, Inventory Control, and Vehicle Maintenance.

RAILROADS

Railroads have had a major impact on Cleveland's lakefront since the first operations began in 1849 when a locomotive of the Cleveland, Columbus & Cincinnati Railroad pulled a string of cars along tracks near River Street, at the mouth of the Cuyahoga River. During the 1800s and early 1900s, passenger rail stations were constructed and served as gateways for visitors and immigrants to Cleveland. Railroads were built on both sides of the mouth of the Cuyahoga River to handle shipments of finished goods for businesses in Cleveland and raw materials from the upper Great Lakes that were transferred for delivery to factories throughout the region. Three forms of rail service are present along Cleveland's lakefront today: cross-country freight rail service, intercity passenger rail, and public light rail service.

FREIGHT RAIL

Together with CSX, Norfolk Southern is one of two major railroad companies carrying freight cross country with tracks located along Cleveland's lakefront. Lakefront facilities generating train traffic include the Cleveland Cuyahoga County Port Authority's Bulk Terminal and Cargill Salt, both on Whiskey Island. The Norfolk Southern tracks on Cleveland's west side pass by Cleveland Hopkins International Airport through the West Park neighborhood, the Berea Road industrial area and along the south side of Edgewater Park through the center of Whiskey Island, and across the mouth of the Cuyahoga River on the northernmost lift bridge. The tracks continue along the north side of the Historic Warehouse District and between North Coast Harbor and Cleveland's civic center and continue to approximately East 33rd Street where

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the tracks turn south toward Cleveland's southeastern neighborhoods. Norfolk Southern operates 40 trains daily on these tracks.

CSX tracks extend from the Port Authority docks on the east side of the river and continue between North Coast Harbor and Cleveland's civic center, along the north side of the Lakeside Industrial District, and on towards the Collinwood Yards and points east. CSX operates approximately 10 trains a day on these tracks.

INTERCITY PASSENGER RAIL

Amtrak owns tracks along Cleveland's lakefront between West 3rd Street and East 26th Street and operates a passenger rail station at 200 Memorial Shoreway (between West 3rd and East 9th Streets) for passenger travel between East Coast cities and Chicago.

PUBLIC TRANSIT LIGHT RAIL

The Greater Cleveland Regional Transit Authority operates the Waterfront Line light rail service, which provides public transportation access between Tower City Center and the lakefront through the Flats entertainment district with stations at West 3rd Street, East 9th Street, and the Municipal Parking Lot at approximately East 18th Street. The Waterfront Line operates throughout the day, during the evening, and on weekends on two tracks located between approximately West 10th and East 18th Streets to the north of the Norfolk Southern and CSX tracks.

PANEL DISCUSSION

Introduction: Vera Vogelsang-Coombs, Ph.D., Director, Master of Public Administration Program and Executive Leadership Programs at the Maxine Goodman Levin College of Urban Affairs

The two-hour Lakefront Utilities and Railroads Forum was held at the Maxine Goodman Levin College of Urban Affairs at Cleveland State University. Dr. Vera Vogelsang-Coombs, Director, Master of Public Administration Program and Executive Leadership Programs at the Levin College, moderated the discussion. The forum began with an introduction by Dr. Vogelsang-Coombs. After welcoming the audience, she briefly explained the context of the Utilities and Railroad Forum and announced the remaining forums in the Northeast Ohio Waterways Series: "Port Activities" and "Climate and Shoreline." She also indicated that the first forum, "Burke Lakefront Airport," could be viewed in its entirety on the Forum Program web site: <http://urban.csuohio.edu/forum/mediaplayer.htm>. Dr. Vogelsang-Coombs stressed that the purpose of the forum was not to make any decisions but rather to begin the conversation about the role of utilities and railroads in planning for the lakefront. She noted that future community meetings would be hosted by the city to "refine and discuss options for the lakefront."

After introducing the topic, Dr. Vogelsang-Coombs briefly introduced the five panelists: Robert M. Bonner, Lee Pyzik, Marlene Sundheimer, Betsy Yingling, and William Harris and explained that after all of the panelists had made their presentations, the floor would open for questions from the audience.

Robert M. Bonner, Manager of Engineering and Planning, Cleveland Public Power (CPP)

Mr. Bonner has over 30 years of diverse experience in technical areas, marketing, and management. Mr. Bonner assumed his current position in May 1998 and is currently responsible for all CPP initiatives, including systems planning, industrial and commercial conversion projects, and system enhancement/maintenance projects. He has led the engineering department's transition from a consultant-dependent environment to one in which nearly all projects are managed in house. Currently he is supervising a major effort to bring a new west side distribution substation online for load relief by 2004.

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Mr. Bonner distributed an information fact sheet entitled "CPP" or "Cleveland Public Power" and describing CPP facilities in the downtown Cleveland area. (See map 2). He began his presentation with a discussion of the Lake Road plant. Although CPP stopped generating electricity at that site during the 1970s, the Lake Road plant is Cleveland Public Power's most important plant. Most people think that because CPP no longer generates energy at the plant, it could be easily shut down or relocated. However, Mr. Bonner explained the importance of the Lake Road plant and what it means to the citizens of Cleveland. Currently, CPP has three 138,000-volt tie lines with another power supplier, FirstEnergy Corporation. CPP imports power from many utilities to serve and supply energy needs and has a tie line on the west side of Cleveland at the West 41st Street substation. It also has a tie on the far eastern end of the city at the Nottingham substation (located in the Collinwood area), and a tie downtown at the Lake Road plant on the North Marginal.

Mr. Bonner stated that the Lake Road plant is a key distribution station in the CPP system because it provides backup for both the east and the west side of Cleveland. The plant sits in the middle of the system and is the key to power flow. Its central position allows CPP to transmit power in both directions, to the east and southeast substations, and to the Division Avenue substation in the west. Sometime in October of 2002, First Energy will be taking the far eastern feed out of service. Mr. Bonner indicated that when that station is out of service, the only way CPP can supply the far east substations is through the downtown Lake Road substation. The Lake Road substation is also an important part of the system backup protection system and serves as the prime backup feed for the West 41st Street substation. Additionally, if the Collinwood network were to go down, the Lake Road substation would pick up the entire Collinwood network and keep the far east side in service.

Mr. Bonner stated that the map he distributed depicts the site of the Lake Road substation and all of the feeds that emanate from it. (See map 2.) CPP provides direct underground 11,000 volt feeds to six different substations on the east side of Cleveland: the 11th Street substation, the East 53rd Street and East 79th Street substations, and the Windsor, Arctic, and Ansel Road substations. All of these substations feed thousands of CPP customers on the east side of Cleveland. There are approximately 30 miles of underground feeds emanating from the Lake Road plant directly to these substations.

Not only does CPP feed substations directly out of the Lake Road Plant, Mr. Bonner indicated that it also feeds large commercial accounts directly off the 11 KB network. CPP serves the sewer plants, water plants, City Hall, Burke Lakefront Airport, the Rock and Roll Hall of Fame, the Science Center, the Browns Stadium, the FBI Building, Playhouse Square, the

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Postal Service, and Cleveland Public Library, just to name a few. In that particular system, there are approximately 38 miles of underground feeds or underground cable that supply all of the different commercial accounts.

Mr. Bonner stated that CPP has also received requests for future enhancements in the downtown area. CPP has received plans for a 9th Street park, and Burke Lakefront Airport has also approached CPP about a tentative expansion. Mr. Bonner stated that if all three of these projects come to fruition, CPP predicts it would have to install another two miles of underground feeds. Furthermore, if all the different substations are totaled, including the commercial accounts and the new businesses that may come on board, the sum is about 100 miles of underground distribution in the downtown Cleveland area emanating from the Lake Road substation.

Mr. Bonner stated that if it is assumed that CPP can relocate this plant and only have to replace 50 percent of the infrastructure instead of all 100 miles of underground infrastructure, a cost analysis indicates that the cost to design and install one mile of new underground infrastructure is still about one million dollars per mile. He indicated that this scenario also assumes that CPP could pick up and move this plant elsewhere. CPP is currently in the process of planning a new distribution substation, for which it hopes to break ground in 2004 on the west side of Cleveland. The cost to design and build that particular substation, which has only one-fifth the electrical capacity of Lake Road, is approximately \$15 million. Included in that \$15 million are a transmission line, a station, and underground and overhead feeds out to the various communities. If the new project cost is estimated to be \$15 million, Mr. Bonner suggested that the cost to move the Lake Road plant would be \$50 million to \$100 million.

Returning to the key questions surrounding the Lake Road plant, Mr. Bonner doubted that the plant could be decommissioned because it serves too many valuable businesses and other entities in the city of Cleveland. He suggested that it was possible to relocate the plant, but whether this would be economically feasible is a question that the audience and the rest of the citizens of Cleveland would have to decide.

Lee Pyzik, Technical Services Manager and Acting Director of Consolidated Plants North, First Energy Solutions, a subsidiary of FirstEnergy Corporation

Dr. Vogelsang-Coombs introduced the second panelist and informed the audience that Consolidated Plants North includes the Ashtabula, Eastlake, and Lake Shore power plants. Mr. Pyzik began his presentation with a photo and description of the Lake Shore plant site. He

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reported that the Lake Shore plant operates at an intermediate-load following mode. In the electricity world there are three different types of plants: base-load plants, intermediate-load plants, and peaking plants. Mr. Pyzik indicated that base-load plants are the type that run on almost full output all the time, while peaking plants run for only limited periods of time on the hottest or coldest days of the year. The Lake Shore plant operates between those two in a manner that is described as the intermediate-load following mode.

The plant also helps to maintain proper voltage in the area. If electricity is transported too far over lines, the voltage starts dropping. When the voltage drops to a certain point, damage can occur in appliances and motors, which can cause serious problems within homes, businesses, and industries. Mr. Pyzik added that it is important to have generating equipment close to the location of the load.

The Lake Shore plant is maintained in compliance with all environmental regulations. Mr. Pyzik emphasized that there are significant transmission and distribution facilities on the site that serve Cleveland area businesses, residences, and CPP. For example, even though the CPP plant is not generating electricity, the distribution and transmission network on the CPP site, as well as on the Lake Shore plant site, is vital to the area.

Mr. Pyzik addressed a few of the access and infrastructure needs at the plant. At about 150,000 gallons per minute, the Lake Shore Power plant is a big user of water (the plant was designed for 350,000 gallons per minute). The water intake and the discharge structures pass directly under I-90. He showed a photo of the location of the intake structure in relation to I-90 and noted that the freeway spans more than 250 feet over both the intake and discharge structures.

Mr. Pyzik indicated that there is a need for rail access to the Norfolk Southern rail spur to deliver coal to the plant. In 2002, the plant will burn about 500,000 tons of coal, depending on load demand, equal to one to two trains per week. The rail spur enters directly into the Lake Shore plant on the southwest side of the site. There are also numerous high voltage lines, between 11,000 to 138,000 volt circuits, exiting the property. Mr. Pyzik put that into perspective, by comparing those numbers to that of a house, which uses 120 volts. He indicated that the extremely high voltage lines are mostly underground.

As an example, Mr. Pyzik held up a 11,000-volt cable. The cable is 6-8 inches in diameter and its type runs for miles out of the Lake Shore plant in multiple directions, as far west as downtown Cleveland, serving many businesses in the downtown area, and as far east as East 105th Street. There are over 300 cables of that size underground.

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Mr. Pyzik's next photo was of the transmission and distribution facilities located at the Lake Shore plant. He indicated that there are two buildings on the site. One is the original building and one is the new distribution substation that was recently installed to the south of the older plant. The southern edge of the new building is only about 100 feet from one of the railroad rights-of-way. Mr. Pyzik said that he was not sure if its location would interfere with plans under consideration to relocate I-90.

The next slide was of the above-ground switchyard at the site. Mr. Pyzik said that most of the above-ground cables are 138,000 volts, and most of the underground cables are 11,000 volts. He indicated that the future of the plant was difficult to predict at the present time because FirstEnergy might not own the power plant in the future. FirstEnergy may be looking for interested parties to buy the plant. He noted, however, that even if FirstEnergy sold the power plant, the transmission and distribution facilities would not be part of the sale.

In closing, Mr. Pyzik said that FirstEnergy supports any development that would improve the Cleveland lakefront. He reminded the audience that the Lake Shore Plant facility is very important because it serves a large portion of Cleveland and relocating the facilities would be extremely costly and labor intensive. He concluded his presentation by thanking all for the opportunity to participate in the public forum.

Marlene Sundheimer, Deputy Commissioner, Cleveland Water Division

Ms. Sundheimer began by indicating that she would present several aspects of the water division and its importance to the city of Cleveland. The city of Cleveland is very committed to maintaining its public water system and to investing whatever is necessary to assure that the Division of Water continues to serve the citizens of the city and the surrounding communities with safe, reliable drinking water. She began her presentation with a brief history of the early water system, then described the water system today and the investments that Cleveland is now undertaking to make improvements, and how the water system can be incorporated into the lakefront plan.

Lake Erie has always been the focal point of the city. It was not only the port for commerce and settlers into the region, but it was from the very early days the source of drinking water for the community. In about the 1850s, the city was debating whether it should supply its citizens with a public water system. Before that, one just took a bucket to the lake and drew water for drinking and other purposes. There may have been some small pumps, but in planning a true system for the citizens, there was much debate about where to put a facility.

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The facility would require an intake, a pipe into the lake, which would draw water, and a series of pumps that would pump it up to an open reservoir to be distributed to the city.

In 1854, the city of Cleveland annexed Ohio City and city officials decided to locate the first pump station on the lakefront in Ohio City, where the current Garrett Morgan Plant is located (then called the Division Plant). The Kentucky Street Reservoir was also constructed along Franklin Avenue in Ohio City to collect water from the pump. Ms. Sundheimer showed slides of the first pump station on Division Avenue and an old lithograph of the Kentucky Street Reservoir.

She went on to explain that from the very early days, the city's Water Division incorporated its facilities into the community and created scenic places for the general public to enjoy. Ms. Sundheimer showed slides of people strolling along the grassy area above the Kentucky reservoir and said that this was a popular pastime for that era. As the city grew, more industry entered the area and dumped contaminants into the Cuyahoga River. Raw sewage was also discharged into the river and the lake, which resulted in city residents experiencing serious health problems. Complaints were brought to city officials to do something to improve water quality, especially after the typhoid outbreak in 1910. The city then decided to build filtration and treatment plants, chlorine was added to the water, and sand filtration was introduced as a means of filtering out some of the contaminants. Water officials also decided to construct intakes further out into the lake.

Today, the Division of Water serves over 1.5 million people in Cleveland and the surrounding suburbs. There are four connected service areas, including Cuyahoga, Medina, Summit, and Geauga counties. The waterworks facilities have also become more and more complex. There are a series of raw intake tunnels and cribs that bring water from the lake into treatment plants and then pump the water out into the system. The raw water is drawn through large diameter intake tunnels into the treatment plants, treated and, through a series of booster pumps, pumped out into the system. The treated water is stored in reservoirs, tanks, and towers and eventually enters into the distribution mains and homes through service lines.

Ms. Sundheimer then turned to the impact of the water facilities in planning the lakefront, specifically the Kirtland pump station, which is located along the South Marginal, and the Garrett Morgan facility at approximately West 45th Street and Division Avenue. The function of the Kirtland pump station is to take raw water from an intake crib, which is five miles offshore, and pump that water up to the Baldwin Fairmont Complex where it is treated. The Baldwin Facility serves the near east side of Cleveland and the southeastern and southern suburbs of the system. The Garrett A. Morgan Plant is a major treatment facility, producing about 150 million

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gallons of water per day and serving the near west side of Cleveland and the southwest suburbs.

Ms. Sundheimer showed a slide of the network of trunk mains, which are approximately 60-inch diameter pipes that connect the various treatments plants and distribute the supply of water to the system. She indicated that in some places, the trunk mains located around the Morgan plant are actually underneath the Shoreway. To the commonly asked question of why the Division of Water does not relocate the trunk mains and facilities, Ms. Sundheimer responded: “the simple answer is, we're not going to relocate our treatment plants and our facilities because we've invested a lot of money in them. And it's not practical, and it's not cost effective.” She added that there are water pressure considerations for relocating trunk mains even if the right routing is available.

Pressure issues are a very serious consideration in a water system. The trunk mains were designed to deliver water under consistent pressure throughout the life of the pipe. When a pipe is relocated the pressure may change in other parts of the system, which could cause catastrophic water main breaks. Ms. Sundheimer showed a slide of a water main break that occurred in downtown Cleveland a few years ago. She noted that, as time has gone by, other utilities have located their facilities next to the water lines, which complicates repairs. Restoring the street damage also becomes a major task and costs millions of dollars.

Ms. Sundheimer also warned of the environmental and financial impacts of excavating fill area. She went on to say that the Division of Water did consider rerouting some of the trunk mains at the Garrett Morgan plant but added that the Division of Water estimates that it will cost approximately \$14 million just to relocate a few of the trunk mains.

Ms. Sundheimer proceeded to outline future plans for the water division. She indicated that they are now engaged in a three-phase renovation or modernization effort, over a 10-year period. The cost to completely renovate the three major treatment plants is approximately \$750 million. This is the largest investment in facilities since the original construction. Much of the renovation process is driven by regulatory standards that have changed over the years. Ms. Sundheimer showed a rendering of a proposal for a new pump station that will be constructed at the Garrett Morgan facility.

The Phase One price tag is estimated to be around \$66 million. At the Baldwin Plant, which includes the Kirtland pump station, the Phase One cost is expected to be approximately \$89 million. Ms. Sundheimer showed slides of the construction at the Morgan and Baldwin Plants and noted that all of the current improvements are financed through the sale of

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waterworks revenue bonds and that any cost of improvements to the facilities related to the lakefront plan would also have to be funded through revenue bonds.

She proceeded to address security issues at the plants. Prior to 9-11, the Division of Water always invited the public into its facilities for tours. School children were frequent visitors and the grounds were open to the public. Some of the plant sites are very similar to park facilities, which some visitors used for golf practice. But after 9-11 things changed drastically and, unfortunately, the Division of Water had to close everything down to the public. Ms. Sundheimer stated that the Division of Water is investing a great deal of money in improving security and can no longer offer tours of the facilities. In addition, water rates were affected by 9-11.

She closed by saying that the Division of Water is engaged in the planning process with the mayor and the community and will certainly incorporate any of the lakefront plans into its facility's plans and projects to make sure that they are aesthetically consistent. She added that, where it is feasible, the Division of Water is sensitive to maintaining open spaces along the lakefront.

Betsy Yingling, Planning Engineer, Northeast Ohio Regional Sewer District

Ms. Yingling has served as Planning Engineer with the Northeast Ohio Regional Sewer District (NEORS) since January 1990. She began her presentation with a brief history of the sewer system to give the audience an understanding of the system today as a background to plans for the future. She noted that much of NEORS's history correlates with the history of the Division of Water.

During the 1800s, cities first built storm sewers to decrease flooding problems in the streets. In 1856, the city began to use Lake Erie as a public water supply. Ms. Yingling noted that once a steady supply of water and indoor plumbing was brought into homes, there was a need to dispose of a lot more wastewater. In the past, individual homes only had a cesspool in the backyard, but it soon became apparent that a means to get rid of all the extra wastewater had to be developed.

The first measure taken was to connect homes to the existing storm sewers. The result was combined sewers that essentially took all the water, all day long, whatever was in it, into the nearest stream, river or directly to Lake Erie. Eventually people realized that the practice was neither healthy nor aesthetically pleasing. The next step was taken in the early 1900s with the construction of large interceptor sewers that would take the water flow directly to either Lake

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Erie or the Cuyahoga River. In those days, Ms. Yingling noted, the prevailing thought was that “dilution is the solution to pollution” and that if everything were thrown into the lake the problem would be solved. Consequently, three large interceptor sewers were built.

She continued by saying that the sewers were fine in dry weather when the diminished flow was mostly wastewater. During a heavy rainfall when the sewers filled up, however, they would overflow into the nearest stream due to regulating structures that were incorporated when the sewers were constructed. As a result, in dry weather everything flowed into the lake or the Cuyahoga River, but in wet weather debris and waste were still overflowing to the nearest streams.

Ms. Yingling noted that once the wastewater was directed to just two locations on the lake, the situation deteriorated quickly at those sites and the consensus was to start treating the wastewater. Between 1922 and 1938, treatment plants were built at the three existing outfalls. Decades later, the Northeast Ohio Regional Sewer District (NEORS) would be formed to manage the growing system.

Ms. Yingling stated that NEORS serves a 295-square-mile area, which includes nearly all of Cuyahoga County and parts of Summit County and 59 other communities. Over one million people live in the NEORS service area, and approximately 230 million gallons of wastewater are treated per day. NEORS is funded solely by user fees and has no tax base of any kind. Ms. Yingling showed a slide of the NEORS service area that indicated the areas served by the old combined sewers and the areas where separate sewers are in place, one pipe for sanitary and one pipe for storm water.

When NEORS was formed in 1972, it took over operations of the three original wastewater plants from the city of Cleveland. In addition, NEORS owns and operates over 200 miles of interceptor sewers. Ms. Yingling noted that NEORS does not own every sewer in every street. Each community owns the smaller pipes and NEORS owns the large interceptors, which collect the waste from each community and take it to the three treatment plants.

On a map, Ms. Yingling indicated the site of the Westerly Wastewater Treatment Plant, at the lakefront near Edgewater Beach, and the Easterly Wastewater Treatment Plant, at East 140th Street and Lakeshore Boulevard, on the eastern edge of Bratenahl. She stated that the Westerly Plant is situated on 14 acres and is the smallest treatment plant, treating 30 million gallons of wastewater a day on average and serving about 110,000 people. The Easterly Plant sits on a larger, 82-acre site, treats 100 million gallons a day, and serves about 370,000 people.

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Her next slide was of the easterly interceptor. She noted that it travels under Lakeside Avenue, bringing all the wastewater from downtown out to the Easterly Plant. This was one of the plants built in the early 1900s. Ms. Yingling noted that it is in much the same condition today as it was when it was built. She illustrated its size by showing a picture of a canoe and stated that even though the pipes were built long ago, most of them are 10 to 14-foot diameter pipes. When NEORS staff goes down into the pipes for inspections, they wade through the pipes but carry their equipment in a canoe.

NEORS is also responsible for the combined sewer overflow structures, which are the pipes that allow the large interceptors to overflow in wet weather. She noted that overflow interceptors are located along the Lake Erie shore and along the Cuyahoga River, Doan Brook, and other waterways.

Ms. Yingling reported that, over the past 30 years, the Sewer District spent approximately \$1.5 billion upgrading the water treatment plants and building new interceptor sewers out to areas that did not have enough capacity. Currently, the pipes carry the overflows directly to Lake Erie. Over the next 20 or 30 years, NEORS will be building large storage tunnels to store the combined sewer overflow and then send it on to the wastewater treatment plants after the rains are over. As required by the Ohio Environmental Protection Agency (OEPA) and the U.S. Environmental Protection Agency (USEPA), NEORS will construct storage tunnels on the east and west side of the region that will lead to the Easterly and Westerly plants. The tunnels will collect flows from the biggest overflow areas; the largest section of the tunnel will begin around East 55th Street and connect to the Easterly plant. There will also be consolidation pipes that will bring the flows from the various overflow structures into the large tunnel. This system will control overflows that are currently occurring in the downtown area. The tunnels are generally between 20 and 24-foot diameter pipes and will be built between 100-150 feet below ground. Once they are built, all that will be visible on the surface is a manhole.

In closing, Ms. Yingling stated that if it were not for the investment the community has already made in wastewater utilities, there would be no community here to discuss the future of the lakefront.

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William J. Harris, Resident Vice President for Public Affairs for the State of Ohio, Norfolk Southern Railway Corporation

Mr. Harris has worked for Norfolk Southern Corporation for 23 years, and his work as Resident Vice President for Public Affairs brings him into contact with elected officials and many state agencies, cities, and communities throughout Ohio

Mr. Harris began his presentation by welcoming the opportunity to share some facts about the railroad and the rail lines along the lakefront. He indicated that he thought Cleveland has been doing a great job on the lakefront initiative and was approaching it in an orderly fashion. He also appreciated the educational awareness forums that are bringing information about issues that need clarification to the general public, some of which relate to moving or removing the railroad.

Mr. Harris discussed some of the benefits of the railroad and the rail system's role as an asset for the city of Cleveland. The rail system provides benefits directly and indirectly to the city. He indicated that, historically, routes and facilities along the lakefront were very important to expanding rail systems. Initially, railroads were an integral part of a community and towns grew up around the railroad. Today, however, railroads are considered intruders in a community.

Ohio is still a very important state for railroads, and Cleveland is extremely important because the city is on a direct path along the Great Lakes. Freight railroads are especially important for Cleveland, Mr. Harris stated, because the eastern boundary of the Great Lakes funnels all the traffic from the Northeast headed to the Midwest and the West through Cleveland. Cleveland's geographic position also accounts for heavy truck volumes.

Mr. Harris indicated that Chicago envies Cleveland's rail network. Currently, there are major efforts underway to get federal support for billions of dollars in funding to smooth out the freight and passenger rail lines going into and through Chicago because of the bottleneck for freight going from east to west and vice versa. In contrast, Cleveland maintains a very efficient rail system.

Mr. Harris explained the impact of the railroads, stating that they carry over 40 percent of intercity freight, more than any other single mode, including trucks, which make more money than rail because they carry different materials. He went on to say that the efficiency of Cleveland's freight networks gives the city an advantage in several areas. One advantage is with respect to service for businesses located in Cleveland. The other is that the Norfolk Southern and CSX lines along the lake are key routes for uninterrupted east-west freight flow through the city. The smooth flow of freight can run on rail or on parallel routes of intermodal

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traffic that also move goods from the East Coast through the city, and to the Midwest and West Coast.

Mr. Harris explained that if Cleveland did not have an efficient freight network, much of those materials would not go by rail because it would not be time competitive. The preferred method would be transport by truck, which would result in added traffic on local highways. The lines also provide both Norfolk Southern and CSX direct access to the Port of Cleveland, which represents, in his opinion, a tremendous economic opportunity that has not yet been fully realized.

Mr. Harris noted that there is a lot more opportunity to serve businesses and enhance economic development in Cleveland through the ship-rail-truck interface at the Port of Cleveland, particularly for ship and rail. The railroads own the rights-of-way, which were all privately assembled and are privately owned. However, because they are already assembled, they are the preferred pathways for fiber optic cables. The result is that the railroads have optioned their rights-of-way to fiber optic cable companies, which makes Cleveland a hub of fiber optic communication. The railroads have subsequently become Cleveland's link to the rest of the world. In addition, Mr. Harris noted, the rights-of-way have the potential for high-speed passenger rail use.

Mr. Harris emphasized the point that the major source of value of the railroad is in the continuity of their assembly and ownership of rights-of-way that continue to have worth today. In the past, the rights-of-way provided a transportation pathway for freight and passengers, which now has expanded into a fiber optic and information pathway. He noted that the railroads do not move passengers as much today, although the Norfolk Southern line is used by about four Amtrak trains a day from Cleveland to Chicago and back. However, those continuous rights-of-way also pose lake access and safety issues in local communities. Mr. Harris stated that Norfolk Southern would fully cooperate with all communities in resolving issues of providing public access across rail lines in a safe manner.

One of the aspects of the rights-of-way, Mr. Harris noted, is that they are privately owned by publicly traded companies, which makes the stockholders the owners of the rights-of-way. In addition, the railroads have federal common carrier requirements that are imposed on them for the benefit of the national economy and are federally regulated because of their role in interstate commerce. Issues surrounding the railroads are very complex because they involve not only local issues, but also interstate commerce issues and federal issues that might not be readily apparent.

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Mr. Harris indicated that the railroads are learning how to provide better service to businesses, particularly within intermodal business, and they intend to increase their share of intercity tonnage as long as public policy decisions do not work against them and favor other modes of transportation.

According to Mr. Harris, the railroad system has other value-added features: they move goods more efficiently through the city, they are more fuel efficient and environmentally friendly than other modes, and they are safer because they travel only on their own rights-of-way and do not compete with the public for the roadways or add to highway costs or congestion. In addition, private railroads are not subsidized with tax dollars. The railroads compete among themselves in a free market system on the strength of providing useful services to businesses

QUESTIONS AND DISCUSSION

The question and answer session lasted for approximately one hour, during which two questioners posed four lengthy questions.

The first question was about the cost of moving the infrastructure under discussion and the railroad rights-of-way. The question posed to the panel was that, considering the expense, who would absorb the cost to relocate the infrastructure and would federal and state funds be available. The second question was addressed to Mr. Harris and concerned whether available alternative railroad rights-of-way can be economically upgraded to handle all the re-routed trains or whether new rights-of-way would need to be assembled and built if the Innerbelt were relocated.

Mr. Bonner addressed the first question by saying that, in terms of the electrical infrastructure, CPP has not been invited to the table to speak about its concerns. CPP has compiled a five-year plan, which does not identify funds to relocate any of its facilities, and Mr. Bonner was not sure at this point where the money would come from. Ms. Sundheimer, speaking on behalf of the Water Division, said that she does not anticipate that the Division would have to relocate any of its treatment plants or facilities because that would not be practical or cost effective. She indicated, however, that the Water Division might consider rerouting some of its major trunk veins if they interfere. She went on to say that the proposed plan to change the Shoreway into a boulevard would actually be very beneficial to the Division of Water because it would provide safer access for repairs considering that repairs are currently made underneath a high-speed freeway, which is very risky and complicates traffic patterns. In answer to the question of cost, the funding for any capital improvement projects for the Water Division would come from the sale of revenue bonds, which in turn are repaid through water service rates. The Water Division does not use federal funds, although some of its projects are eligible for federal funding. Only a small portion of its capital improvement programs are eligible for federal funds or state of Ohio revolving loan funds.

Ms. Yingling stated the same answer applies to wastewater facilities. It would burden the design of the system over the next 20 or 30 years and burden the ratepayers by costing hundreds of millions of dollars to move treatment plants and associated infrastructure.

Mr. Pyzik responded that FirstEnergy is an investor-owned utility and any funding for this would not be supported by FirstEnergy as an entity. He noted that there would have to be other funding available and did not know whether funding would be available from federal or state sources.

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Mr. Harris responded for the railroads by indicating that the issue is not only the tracks, but also the fiber optic cable that runs along all the rail lines from the East Coast to the Midwest through Cleveland; many of them are in the right-of-way lines along the lakefront. The cost would be in the millions of dollars per mile to relocate the fiber optic lines along the Norfolk Southern and the CSX lines. The railroads are private property, and the rights-of-way were assembled through private investment without any government assistance. It is unclear as to how they can be moved. The rights-of-way are a key part of the railroads' future business strategy for making intermodal traffic from the east coast to the Midwest and to the West Coast. Anything that changes this very efficient route would pose large customer service and fiscal problems for the railroads. Funding for changes would not come from the railroads but would have to be sourced from public funds. Mr. Harris indicated that he was not aware of any federal funds for relocating rail lines at this time and surmised that money would have to come from city or state funds. He added that it would be much more expensive to move the railroad tracks than the fiber optic cables.

The next question concerned the issue of actual data for projects, evaluation of options suggested by the public, and cost of various proposed options for the lakefront. A specific question was directed to Ms. Yingling concerning the age of sewer pipes and how a natural replacement schedule fits with plans for the lakefront.

Mr. Bonner replied to the first question that Cleveland Public Power has not yet been asked for an estimate of costs to relocate its infrastructure to accommodate plans to move the Shoreway/freeway (there is a 138,000-volt and a 69,000-volt cable running parallel to the freeway). Mr. Bonner stated that, for this particular forum, he did not have official numbers but only a good engineering guess as to what it would cost. The numbers are large and the issue of who would supply the funds would be a negotiated process.

Ms. Yingling then responded to the pipe replacement question and reiterated her previous answer that many of the pipes in use today are nearly 100 years old but are in surprisingly good shape. The service life of those pipes is hard to determine and, currently, much of NEORSD's work is repairing them in place so there's little or no surface disturbance, as long as they are not collapsing. If replacement is required, NEORSD will do an open-cut and restore whatever is there to the original condition, including resurfacing the road. At this time there are no major open-cut projects planned along the lakefront. All of the large combined sewer output holes will be done by tunnel-boring machines with very little disturbance on the surface except for the actual shaft sites placed approximately every 3,000 feet. There is not much opportunity for incorporating that process into lakefront improvements.

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Mr. Pyzik made a comment on the estimates by stating that this project is no different than any other project except for its very massive scope. A typical project will go through a conceptual phase and then into preliminary engineering and design. The next phase is detailed engineering and design, and then an implementation phase. He indicated that this project is still in the conceptual phase and the forums are being held to seek public input on the concept. He suggested that as the process goes forward, there will be many estimates put together and many more hard numbers will emerge when the process gets more detailed.

Mr. Harris stated that the costs will come after the conceptual stage and one reason for the forum is to begin to increase awareness of potential expenses, many of which will be extremely high for each of the utilities and facilities mentioned. He also elaborated on the Innerbelt question by saying that a Parsons Brinckerhoff study of the rail lines through Cleveland indicated that the Norfolk Southern route along the west side of the lakeshore is a critical route for the intermodal part of the railroad business.

PANELIST BIOGRAPHIES

Robert M. Bonner
Manager of Engineering and Planning
Cleveland Public Power

Robert Bonner assumed the position of Manager of Engineering and Planning in May of 1998 and brings a combined total of thirty years of diverse technical, marketing and managerial experience to the position.

Cleveland Public Power (CPP) is the city of Cleveland-owned 300 megawatt electric utility. CPP is the largest electric municipal utility in the State of Ohio and second largest in the country serving approximately 80,000 residential, commercial and industrial customers.

Mr. Bonner is currently responsible for all CPP initiatives inclusive of systems planning, industrial and commercial conversion projects, and system enhancement/maintenance projects.

He has creatively transitioned the engineering department from a consultant dependent environment to one in which 98% of all projects are now managed in-house. He is currently supervising a major effort to bring a new West Side distribution substation on-line for load relief during 2004.

Mr. Bonner holds a Bachelor of Science in Electrical Engineering degree from Hampton University and is a 2002 graduate of the Professional Fellows Program of the Weatherhead School of Management at Case Western Reserve University.

Lee Pyzik
Acting Director of Consolidated Plants North
FirstEnergy Solutions

Lee Pyzik is the Technical Services Manager and Acting Director of Consolidated Plants North for FirstEnergy Solutions, a subsidiary of FirstEnergy Corp. Consolidated Plants North includes the Ashtabula, Eastlake and Lake Shore power plants.

He joined the company in 1973 as an engineer at the Bay Shore Plant in Toledo, Ohio. Through a series of promotions, Lee served in a variety of positions with Toledo Edison, the former Centerior Energy and FirstEnergy.

He held management positions in plant maintenance and technical support at FirstEnergy's Acme, Bay Shore, Ashtabula, Eastlake and Lake Shore plants. He also managed central design engineering groups at Toledo Edison and Centerior Energy.

Mr. Pyzik earned a Bachelor of Science degree in Mechanical Engineering from the University of Toledo and is a Registered Professional Engineer in Ohio and Michigan. He is a long-term member of the American Society of Mechanical Engineers, a past member of the Executive Committee of the Northwestern Ohio Section of ASME, and a supporter of Ohio Boys Town.

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Marlene Sundheimer Deputy Commissioner City of Cleveland Water Division

Marlene Sundheimer is the Deputy Commissioner of the City of Cleveland Water Division. Ms. Sundheimer began her career with the city in 1989 as the Water Division's chief legal advisor.

In 1992, she joined the Water Commissioner's staff as its first Risk Manager to develop environmental and safety programs and maintain regulatory compliance.

In August 2002, Ms. Sundheimer was appointed Deputy Commissioner, the second-in-command position for the Division, and is a key part of the senior management team responsible for the Water Division's operations.

Ms. Sundheimer is a graduate of Hiram College and Cleveland-Marshall College of Law.

Betsy Yingling, P.E. Planning Engineer Northeast Ohio Regional Sewer District

Betsy Yingling has been employed as Planning Engineer at NEORSD since January 1990. She served as Project Manager for Mill Creek and Doan Brook Watershed Studies, as well as Easterly and Southerly Combined Sewer Overflow (CSO) Facilities Plans.

Ms. Yingling holds a Bachelor of Science degree in Environmental Engineering from Worcester Polytechnic Institute, Worcester, MA, and a Master of Engineering degree in Ocean Engineering from Stevens Institute of Technology, Hoboken, NJ.

William J. Harris Resident Vice President, Public Affairs Norfolk Southern Corporation

William J. Harris has worked for Norfolk Southern Corporation for 23 years. He is currently Resident Vice President for Public Affairs for the State of Ohio. In that capacity, he works with elected officials and various agencies in the state and in cities and communities around the state. He spent most of his career in Norfolk Southern's technical departments, first in Research & Tests and then as Director of Environmental Protection in the Safety and Environmental Department.

Mr. Harris holds a Bachelor's degree in Chemistry from the University of Chicago and a Master of Engineering Management from George Washington University.

APPENDIX

Cleveland Lakefront Map

Map Key

Map – Cleveland Public Power – Lake Road Distribution