Upper Black River Master Plan

Lorain, Ohio

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THE UPPER BLACK RIVER MASTER PLAN

Prepared For

City of Lorain
Lorain Port Authority
Ohio Department of Natural Resources

Prepared by

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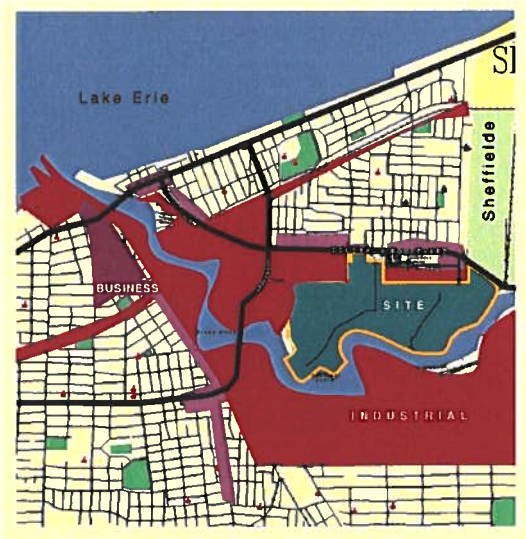
EXECUTIVE SUMMARY

Objective - The City Of Lorain has an opportunity to purchase a vacant 400-acre site located on the western border of the City, between Colorado Avenue and the Black River. As part of its due diligence of the property, the City also undertook the preparation of this Master Plan for the site. The Plan focuses on the industrial development potential of the western 200 acres and on the general development potential of the rest of the property. Three primary goals were established to guide the process and establish benchmarks for the design to achieve.

The development site between Colorado Avenue and the Black River

- Create a Catalyst for Growth for the City of Lorain.
- Stewardship of the Land and River.
- Enhance the City's Fiscal Base.

The City of Lorain had also determined that economic development, in the form of industrial development, should be an objective of the study.
Land opportunities for the primary employment base within the City are becoming scarce and are losing a competitive edge to suburban development. The City also determined that recreational opportunities should be explored. The recreational opportunities should take advantage of the large scale of the site and not duplicate nearby recreational opportunities. The master plan will help guide development and be used to determine future land values that may be realized by development.



The site is close to downtown and other industrial land

The Site - Located on the banks of the Black River, the study area lies within the northeast quadrant of the City of Lorain, and expands into the western edge of Sheffield. This area is within several miles of the Ohio Turnpike and Interstate 90 which are the major east west connectors from New York to Chicago. The development site lies less than a mile south east of Lorain's historic downtown and the shores of Lake Erie. It is directly north, across the Black River, from the USX/Kobe steel plant and extends to Colorado Boulevard. To the east lies the City of Sheffield and another bend in the river and to the west, is the American Gypsum facility. The

surrounding land uses are primarily industrial and commercial with a residential neighborhood located between the site and Colorado Avenue, and a larger residential district to the north.

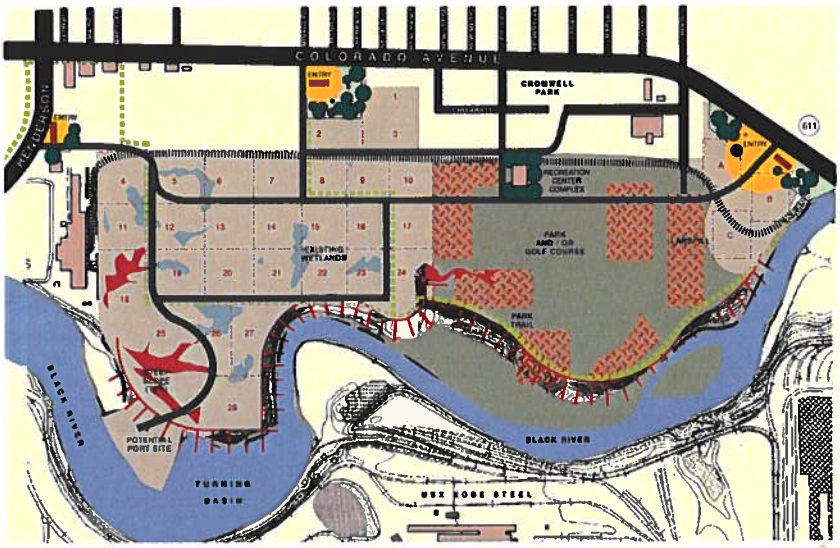
The site can conveniently be divided into two halves: western and eastern. The western two hundred acres of bluff lands are vacant and wooded and appear to have had little to no use in the recent past except perhaps agricultural. The lower portion of this half of the property was once home to a bulk port facility along the river's edge. The northern edge of the site is the abandoned Norfolk & Southern rail spur. Thus the site is separated from Colorado Boulevard by several hundred feet except for a connection between Missouri Avenue and about New Jersey Avenue. This portion of the site is fairly flat with a gentle slope down towards the Black River leading to a significant bluff at the River.

The eastern portion of the site begins at approximately New Jersey Avenue and proceeds east spilling over the City's border into Sheffield Village. The eastern portion, within the City of Lorain, contains a former municipal landfill used by the City and local businesses (the composition of the landfill is under study). Only about 60 percent of the area may have been used as a landfill. The landfill site has been greatly disturbed and is dominated by grassland cover and small scrub brush. Few trees remain on this area, except near the river slopes where they are a stabilizing factor. The 35 acres of the site located east of Root Road is in the City of Sheffield. This land is bluff lands with a steep cliff drop along the eastern and southern boundaries. The land is wooded and exhibits little to no sign of past uses.

Alternatives - Two approaches were considered for the development of the industrial portion of the site: the traditional developers approach of a standardized grid and an approach that recognized the natural features of the site. The recreational concepts for the site included regional recreation (versus neighborhood) and a golf park. Three alternative conceptual site plans were developed from these concepts

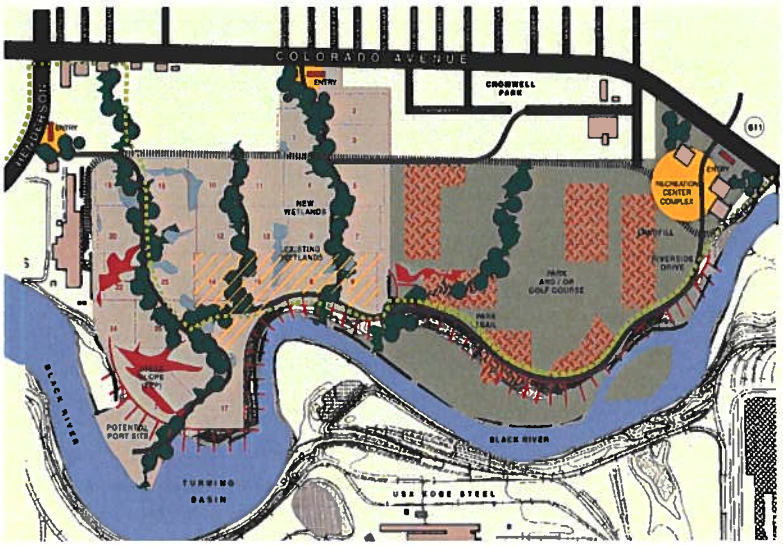
The Grid System Alternative

This alternative presents the traditional approach to industrial park development with parcels located off of the grid roadway system. This concept provides access to the site from Henderson Road, through the gypsum plant, and three locations along Colorado Avenue. The grid system required about 2.9 miles of new roadway. The industrial park would have straight roadways with one 12-foot lane in each direction. Following the City of Lorain Zoning Code, each individual site would have a 20 foot set back (code calls for 10 feet) and 10 foot side and back yards. Parking and docks would be allowed anywhere by code in order to maximize the site development potential. The grid alternative resulted in about 28 development sites in the western portion with an additional three to four sites in Sheffield Village for about a total of 170 acres of industrial land. The grid concept was combined with a regional recreation use for the eastern portion of the site. The specific recreation uses were not identified but could include both active and passive recreation.



Parkway System Alternative

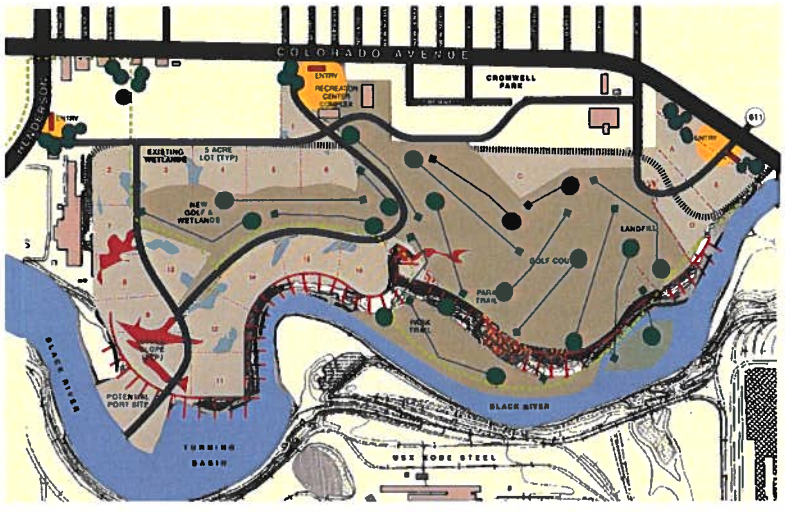
The parkway system utilizes the "green corridors" approach and tested the viability of an industrial park layout that would use the enhancement of natural amenities to maximize the value added to the land. The central feature of this concept is the natural stream/stormwater corridors that parallel each of the roadways in the industrial park. The parkways are designed with many amenities including: 1) providing stormwater retention off-site for each individual site, 2) avoiding the taking of wetlands to minimize permit concerns, 3) providing for the creation of wetlands as a mitigating measure for the necessary wetland takes, 4) Providing a park like setting for a sidewalk/jogging path for employees and residents, 5) providing a landscaped buffer for industrial sites, and 6) providing a publicly owned set back to maximize site coverage (zero set back for the owner).



The parkway system requires 2.6 miles of roadway, a third of a mile less than the traditional grid system approach. The roadway would also be 24 feet wide with two 12 foot lanes. However, the roadways would be sinuous to follow a natural terrain, accommodate the wetlands where possible, and provide the park like setting. The lots across the road from the stream channel would have a landscaped set back of 40 feet. The parkway system alternative resulted in about 26 development sites in the western portion with an additional three to four sites in Sheffield Village for about a total of 160 acres of industrial land. The parkway system concept was also combined with a regional recreation use for the eastern portion of the site.

Integration of Recreation Alternative

This concept tested the viability of maximizing the recreational open space and bringing it into the industrial park to add value to the development. The recreational activity that is most compatible with industrial development is a golf course. The integration concept combined the recreational amenity and industrial lots into a cohesive site design. The golf course is elongated into the 200-acre vacant western portion to form a centerpiece for the development to cluster around. The Golf course maximizes open space and creates a high end amenity rich image for the industrial park to bond to. The scheme anticipates some developable sites existing within the 200 acres currently defined as the landfill site. The viability of this scheme is dependent on



further investigations into the landfill. Additionally the golf course has the ability to incorporate many existing wetlands and provide creation of new ones. The integration requires nearly 2.8 miles of roadway, slightly more than the previous approach. The roadway would also be 24 feet wide with two 12 foot lanes, and the roadways would be sinuous to follow a natural terrain and accommodate the design of the golf course. The lots would have a landscaped set back of 20 feet. The integration alternative resulted in about 26 development sites in the western portion with an additional three sites in Sheffield Village for about a total of 165 acres of industrial land.

The Master Plan

The prominent idea of this design is to create an ecologically integrated amenity to distinguish the industrial development and enhance the recreational connections to the Black River. To accomplish this, the Parkway System Concept was combined with a golf course design, allowing each to develop independently. The Master Plan attempts to incorporate the advantages of all of the concepts and avoid the disadvantages.

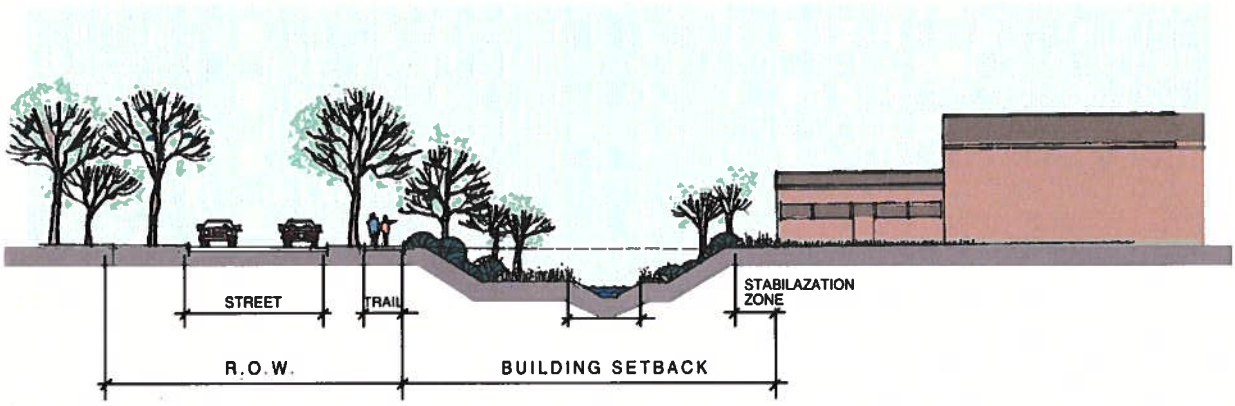
The Plan encompasses all four hundred acres of the site, however. The optimum plan for western 200 acre portion of the site provides about 160 developable acres divided into 26 five-acre parcels. Sites can be joined

The Upper Black River Illustrative Site Plan

together to form larger sites as the market dictates. The sites are zoned into heavy industrial uses to the western edge of the site, with light industrial, corporate or research sites closer to the golf course and recreational amenities. The varied natural environments offered by the sites increases the ability to accommodate diverse users. To present a competitive Industrial Park, and attract owners into the existing town fabric of the City of Lorain, a unique high quality industrial park must be created. With proper capping and monitoring, the former landfill can be sculpted into a challenging golf course. This centerpiece amenity

will be operated by a third party while generating nominal income for the city.

The master Plan presents guidance for all aspect of the development including roadways, enterances/edges, circulation, lighting, signage and architecture. However, weaving through the plan is a unique open space system defined by the "green corridors" which flow across the site to the rivers edge. The roads and development sites are arranged to take advantage of both the naturally occurring amenities and the created ravines.



Greenway Corridor Description

The new greenway corridor will vary from 80 to 120 feet in width, although where it incorporates an existing wetland it can be as large as 300 feet wide. The width will vary to accommodate natural features and provide a natural stream corridor look. The corridor will contain the following:

- **Stream Channel** - A typical drainage way will be provided at the lowest point of the corridor. The drain channel will convey naturally occurring groundwater flows and stormwater runoff. The channel will be sinuous and rock lined to avoid erosion.

- **Wetland Floodplain** - A floodplain area averaging 20 to 40 feet wide will be created a few feet above the stream channel. The system will be designed achieve reoccurring flooding during storm events in order to create wetlands on the floodplain.

- **Sloped Sides** - The wetland floodplain will be one to several feet lower than the adjacent land. This structure will provide the real stormwater retention function of the system.

- **Flood Control Structures** - The stormwater control structures, used to create the floodplain flooding and the stormwater retention, will be constructed as part of the driveways to the sites. Driveways should be built next to each other in order to minimize the number of control structures and provide longer retention and parkway areas.

- **Walkway/Jogging Path** - An eight-foot paved trail system will be provided within the parkway corridor. The path can incorporate amenities, such as exercise stations, and be connected with paths to individual sites.

- **Roadway System** - The Industrial Park roadway system is also considered part of the parkway system. The roadway will be a concrete structure with rolled curbs and stormwater diversion to the stream channel.

- **Landscaped Area** - The high areas of the parkway corridor will be landscaped to provide screening as well as vistas into the individual sites. This will allow companies to feature their buildings and identify signage.

Master Plan Implications - The development scenario proposed by the Upper Black River Master Plan will have significant impacts on the City of Lorain and the surrounding region. This includes the impacts from industrial development, golf course development and the environmental impacts of the overall development.

Real Property Value

The real estate value of the industrial park was estimated assuming a *very conservative* average value of $40,000 per acre of land and a building valued at $32.00 per sq. ft. The conservative price was used to 1) not overestimate the property tax yields and 2) because the concept of a high end Industrial Park has not been tested within the City limits. The typical building price of $4.4 million is indicative of a structure with an attractive facade on the front and part of the sides of the buildings and special treatments of the entrance. Based on these typical costs, the total market value of the industrial park would be $137 million.

Employment Impacts

The primary objective of the City of Lorain's involvement with the land development is the creation of job opportunities for its citizens. The Industrial Park as planned should provide a broad range of job types and opportunities. The underlying premise of the Industrial Park is that it offers a unique environment that would attract higher value added types of firms. This translates into a labor force that will have high skill levels and likely a large office and professional positions. Employment estimates by skill or occupation were not made due to the uncertainty of the final business Based on the above assumptions discussed in the Master Plan, the total permanent job creation for the Industrial Park is 3,140 employees or an average of about 100 jobs per development site.

Fiscal Impacts

The development of the Industrial Park also has extensive implications for the fiscal impacts to the City of Lorain. The creation of new real estate value and new jobs will translates into tax revenues for the City.

As discussed above the Industrial Park will create a final market value of land and buildings of $137 million. The effective tax rate for this portion of the City is 64.52 mills. Applying this tax rate to the market value yields a property tax revenue of about $2,799,000 per year. In a similar fashion, the new jobs create new taxes. Annual payroll estimates were made assuming an average annual salary of $12.50 per hour or $26,000 per year for the typical Industrial Park employee. For the 3,140 employees this converts into an annual payroll of $81,640,000. Applying an income tax rate of 1.75 % this yields an annual income tax of $1,429,000. In summary the total annual fiscal benefits to the City at full build-out are $4,228,200

Project Cost Implications

Preliminary Conceptual level cost estimates were made for the industrial park. The cost estimates also include only those items for which the City of Lorain would be responsible. Therefore, cost that would be the responsibility of the private company, the golf course developer or one of the public partners such as Metroparks or the Port Authority are not included.

Total project costs, as discussed in the Master plan are estimated to be $11.3 million. This includes the roadway, recreation path, the green corridor, sewer and water lines, a pump station, signage and contingency and escalation.

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PREFACE

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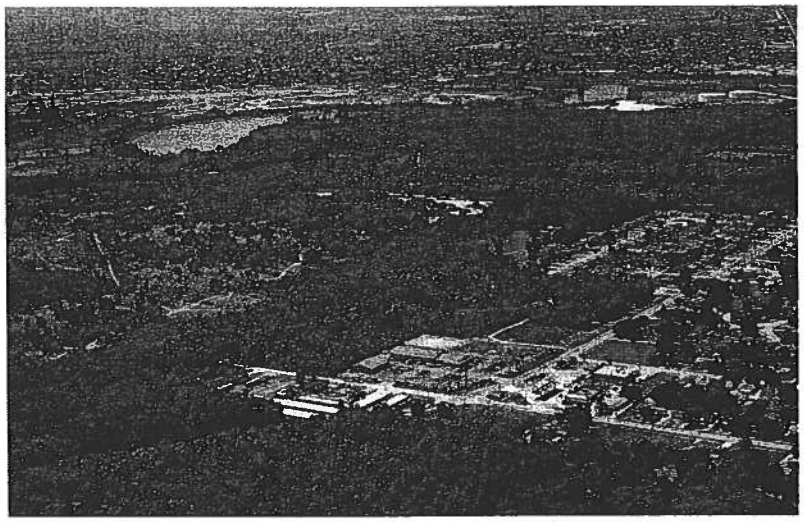
The City Of Lorain has an opportunity to purchase a vacant 400-acre site located on the western border of the City, between Colorado Avenue and the Black River. The western 200-acre half of the site is a vacant wooded site that was once farmed. The southwest corner, below the bluffline, was a former bulk materials dock area approximately 35 acres in size. The eastern 200 acres was primarily used as a landfill site operated by the City. The far eastern-most part of the site, which lies in Sheffield Village and fronts on Colorado Avenue, is vacant and open for development.



The City has an opportunity to purchase a 400-acre site for development.

Prior to purchasing the site, the City of Lorain recognized the need to first undertake a number of studies to determine the extent to which the land could be developed, the environmental constraints presented on the site and ultimately, the value of the land. The City proceeded to undertake a wetland delineation, historic and archaeological studies of the western 200 acres, and geotechnical and site characterization studies of the landfill portion of the property.

In addition, the City also undertook the preparation of this Master Plan for the site. The Plan focuses on the industrial development potential of the western 200 acres and on the general development potential of the rest of the property. The master plan will help guide development and be used to determine future land values that may be realized by development. This report presents the Master Plan for the site including:

The Master Plan will guide future development and provide decision makers with information about its implications.

- the *understanding of the setting* of the site and the context within which it is placed,

- the *synthesis* of information into alternative approaches considered for developing the site,
- the *master plan* for the site,
- the *development guidelines* for achieving the preferred site character, and
- the *master plan implications* or impacts resulting from the development.

Citizen input played an important role in the development of the Master Plan.

The Master Plan was prepared with input from the public, at three public meetings held during the Plan development process. Their participation was positive, expressive and constructive. The Plan benefitted greatly for their input, especially in the areas of connections with the neighborhood, river access and the preferred recreational use of the site.

Funding and input was provided by the City of Lorain, the Lorain Port Authority and the Ohio Department of Natural Resources.

The funding of the Master Plan was the result of a public partnership of three agencies concerned about the development of the site. The City of Lorain, through its Department of Community Development, provided overview and coordination of the development process in addition to providing funding. The Port of Lorain also funded a portion of the project and played a key role in providing direction and input to the process. Financial assistance for this Plan was also provided by the Ohio Department of Natural Resources, Division of Real Estate and Land Management, through a Coastal Management Assistance Grant, under the authority of the Coastal Zone Management Act, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration. The Division of Real Estate and Land Management also provided timely reviews and input to the planning strategies.

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UNDERSTANDING THE SETTING

UNDERSTANDING THE SETTING

The City of Lorain is located on the shores of Lake Erie at the mouth of the Black River. Founded in 1874, the city has always played a major role in the industrial and manufacturing life on the Great Lakes. Its position has allowed development of an international port where ship building and bulk shipping have thrived and the production of steel, feeding numerous related manufacturing companies, has all occurred for more than one hundred years. The city maintains a strong commitment to industry and is maneuvering to strengthen its position into the next century.

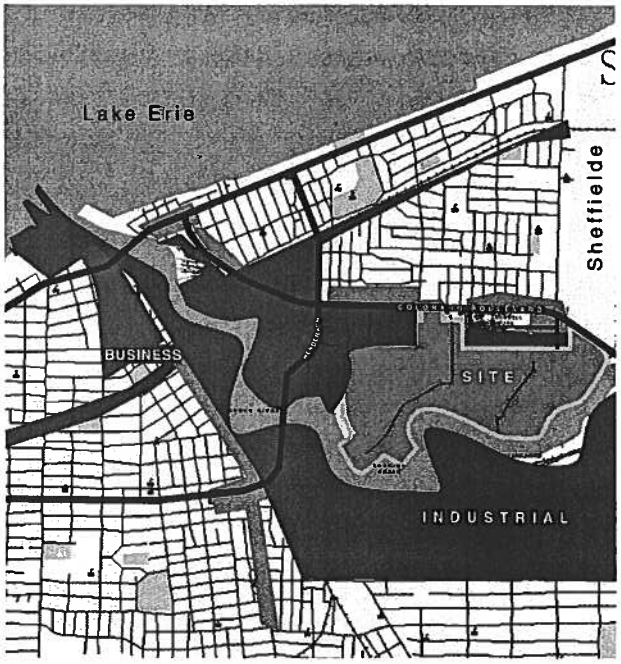
The City of Lorain remains an important manufacturing and transportation center.

The development site represents an important step in that process. The following provides an overview of the setting of the development site and its surroundings.

REGIONAL AND NEIGHBORHOOD LOCATION

Located on the banks of the Black River, the study area lies within the northeast quadrant of the City of Lorain, and expands into the western edge of Sheffield Village. This area is within several miles of the Ohio Turnpike and Interstate 90 which are the major east west connectors from New York to Chicago. The City functions as a separate urban area in northeast Ohio but it is also part of the Cleveland General Metropolitan Statistical Area. The eastern portion of the City maintains many ties to the Greater Cleveland market as a provider of industrial goods and services and as a labor supply. The City of Lorain remains one of the Great Lakes primary shipping ports, and a hub for rail services.

The development site lies less than a mile south east of Lorain's historic downtown and the shores of Lake Erie. It is directly north, across the Black River, from the USX/Kobe steel plant and extends to Colorado Avenue. To the east lies Sheffield Village and another bend in the river and to the west, is the National Gypsum facility. The surrounding land uses are primarily industrial and commercial with a residential neighborhood located between the site and Colorado Avenue, and a larger residential district to the north.



The development site location

POPULATION

The City of Lorain is home to about 71,000 residents. The City represents about a quarter of the entire population of the Lorain County with nearly 3,000 persons/sq. mi. in the City verus 550 persons/sq. mi. for the County. Relative to the development site, approximately 36,500 people live within 1½ miles of the site, an amount about half of the City's population (a 1½ mile radius from the site also includes some of Sheffield Village). The population density of 4,500 persons/sq. mi within 1½ miles of the site is even more dramatic compared to the City as a whole. The development site is thus easily accessible by a nearby large population base. The neighboring population is quite similar to the rest of the City and the County in its characteristics. The average age of a resident is about 35 years, about 70% of individuals 25 years of age or older have achieved a high school degree or more. Nearly 60% of the residents are married and there is a high home ownership rate with 60% of the residents occupying their own home. The nearby resident population does, however, display a slightly higher level of skilled and professional occupations than the City or the County.

Half of the City's 71,000 residents live within 1½ miles of the development site providing a skilled and professional labor force.

SITE ACCESS

The development site has very good access to Interstate 90 to the east along Colorado Avenue (Stater Route 611) providing easy access to the greater Cleveland and central U.S. markets. To the west, access to State Route 2 is provided by taking Henderson Avenue to Broadway/Middle Ridge Road. The Ohio Turnpike can be accessed by reaching I-90 from either State Route 57 or Colorado Avenue. The development site itself has the potential to be accessed in several locations along Colorado Avenue. The Sheffield Village portion of the property abuts Colorado Avenue directly as does a small segment near the intersection with Missouri Avenue. Additional Colorado Avenue access is possible from Root Road and Euclid Avenue. While no direct connection currently exists from the site to the west to Henderson Avenue, one would be desirable. The south west corner of the site is adjacent to the Black River Turning Basin and is accessible by Great Lakes ship traffic. The site was once serviced by a Norfolk & Southern railroad spur which terminated at the western edge of the site. These tracks have been abandoned and the remaining track have been removed in some locations.

The development site is well served by the highway system and is accessible by Great Lakes ship traffic.

THE DEVELOPMENT SITE

The study site is made up of approximately 400 acres. The site can conveniently be divided into two halves: western and eastern. The western two hundred acres of bluff lands are vacant and wooded and appear to have had little to no use in the recent past except agricultural. The lower portion of this half of the property was once home to a bulk port facility along the river's edge. This area remains above the floodplain, in part due to a build up of the sand and gravel material once unloaded on the site. The northern edge of the western portion is the abandoned Norfolk & Southern rail spur. Thus the site is separated from Colorado Avenue by several hundred feet except for a connection between Missouri Avenue and about New Jersey Avenue. This portion of the site is fairly flat with a gentle slope down toward the Black River leading to a significant bluff at the River.

The 400-acre development site is approximately half vacant undeveloped and half a former landfill sitting between the Black River and Colorado Avenue.

The eastern portion of the site begins at approximately New Jersey Avenue and proceeds east spilling over the City's border into Sheffield Village. The northern boundary of the site is again the Norfolk & Southern rail Spur which is just south of the Cromwell Gardens home development. The site extends eastward along the rail spur to almost the river. After the site passes into Sheffield Village, it once again borders Colorado Avenue. The eastern portion, within the City of Lorain, contains the former municipal landfill used by the City and local businesses. Only about 60 percent of the area may have been used as a landfill. The landfill site has been greatly disturbed and is dominated by grassland cover and small scrub brush. Few trees remain on this area, except near the river slopes where they are a stabilizing factor. Stands of invasive plants, such as Phragmites, have established themselves in low pockets on the landfill and along the floodplain at the river's edge.

All-terrain vehicle paths in the eastern landfill portion of the site

This landfill is currently being studied to determine the waste material cell locations and to characterize the material in the landfill. At this time it is difficult to plan for any reuse of the landfill area except recreational. Once the cells have been clearly delineated and characterized, other more intensive uses may be possible depending upon the required remedial plan. The area north of the site, just east of Cromwell Gardens, was home to a steel production facility that was destroyed by a tornado around the turn of the century. There are few, if any remains of this building today. There is little evidence that any of this facility actually was located on the current study site. The eastern portion of the site also has a significant bluff along the river's edge. However, below the bluff is a large area of land in the Black River's floodplain. This area, as well as the entire landfill area, is used by all-terrain vehicles creating cris-crossing paths throughout the site.

The 35 acres of the site located east of Root Road is in Sheffield Village. This land is bluff lands with a steep cliff drop along the eastern and southern boundaries. The land is wooded and exhibits little to no sign of past uses.

ENVIRONMENTAL CONDITIONS

Wetlands

The western two hundred acres of the site has had a wetland delineation conducted for it. A little more than 14 acres have been identified and delineated. The delineation has been accepted by the Army Corps of Engineers. The wetlands are generally of low quality with highest quality ones occurring in the north west portion of the site. The landfill site and the 35 acres of Sheffield Village have not yet been studied. Because of the man-made nature and use of the landfill portion, the jurisdictional standing of wetlands with the Army Corps of Engineers in this area is undetermined. The Sheffield Village portion of the site is anticipated to contain wetlands due to the soil types and the plateau character of the land. The delineated wetlands are described as palustrine forested broad leaved deciduous wetlands.

Typical forested wetland on the western portion of the site

Water Quality

The site lies on the northern bank of the Black River. A Remedial Action Plan has been put in place for this river and must be respected with the future development of this site.

While the site lies near the mouth of the river, the quantity of stormwater discharged from the site during peak flows will contribute little to flood conditions. A stormwater drainage pipe has been planned to run from the Colorado Avenue and Missouri intersection through the site, to drain the neighborhood north of the site and an improved Colorado Avenue.

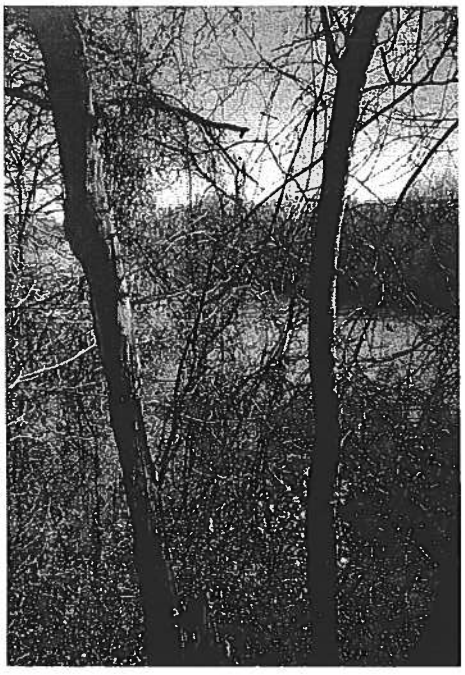
EXISTING UTILITIES

Colorado Avenue is a major conduit for utilities on the east side of the City of Lorain. Adequate electric, gas, water, and sewage are available to the study site from its northern boundary. The City of Lorain maintains a sewage treatment facility north east of the site which should be capable of handling additional waste. Municipal water supply and pressure are generally sufficient to accommodate new development within the site, however, a new water tower is planned somewhere at the eastern border of the City near Colorado Avenue to ensure adequate future service. Stormwater from the development site is anticipated to discharge directly into the Black River without entering the existing city system.

The development site is adequately served by utilities which can be easily extended onto the site.

TOPOGRAPHY

The City of Lorain is on the eastern fringe of the Great Central Lowlands, and the topography is generally flat to gently rolling. The topography gives way to the dramatic gorge of the Black River and steep cliffs along the Lake Erie shoreline. The development site lies within a short distance of the mouth of the Black River. It is situated on the north bank and reflects a typical riparian corridor character of relatively level upland bluffs and steep slopes down to the floodplain and water's edge. The soils on the developable bluff lands are primarily Mahoning silt loam. These soils are somewhat poorly drained, and nearly level. Permeability is very slow and the available water capacity is medium. The soils have a moderately deep root zone that is very strongly acid, and have a perched water table during wet periods.



View of the Black River from the site

CLIMATE

The climate of Lorain is typical of the Midwestern United States, with large annual and daily fluctuations in temperature. Northerly winds off of Lake Erie tend to lower the daily high temperature in summer, and raise it in winter. When the winds are from the south, the lake has little effect on the daily temperature. Summers are characterized by warm humid days, while winters are cold and cloudy. The north west wind is particularly important in the design of future developments. The wind influences not only building and entry placement but concern for freezing on north facing roadway and parking lot slopes.

ARCHAEOLOGICAL RESOURCES

River edge site, like the Black River Industrial Park, have often yielded archaeological resources. The City of Lorain recognizes that potential and is currently undertaking Phase I archaeological studies of the entire industrial park area. These investigations consist of taking shovel test pits at a standard 15 meter grid interval across the entire 200 acre site. Any sites that are identified as potentially eligible for inclusion in the National Register of Historic Places will undergo further study or be avoided by construction.

SYNTHESIS

The development of a vacant 400-acre site within the boundaries of the City of Lorain presents a broad range of options to the City. This broad range was narrowed by the establishment of goals and objectives by the City which were refined during the public meetings held during the planning process. The goals and objectives were then translated into physical development alternatives which are presented in this section of the report. The planning process gathered the background information, summarized in the previous chapter, and combined those with the goals and objectives. This information was then presented at a series of three well attended public meetings held at City Hall.

The range of development options was narrowed by establishing goals and objectives and gathering input from public officials and the public.

After receiving public input, physical development options were explored. The physical ramifications of the goals and objectives for the project were explored through the development of three alternative conceptual site designs. Each of these concept alternatives embodied a different emphasis toward achieving the goals. The common threads among the three alternatives were, the development of the vacant property on the east and west ends of the site with five acre business/ industrial lots and development of the central former landfill portion for recreational use. The process of synthesizing exiting information with goals and objectives and alternative development concepts led to the proposed master plan presented in the next chapter.

PROJECT GOALS AND OBJECTIVES

Three primary goals were established to guide the process and establish benchmarks for the design to achieve.

- **Create a Catalyst for Growth for the City of Lorain.** An overriding goal of the study is to create a unique, long-term development catalyst with positive implications that would carry into the rest of the City. The City is certainly presented with a unique opportunity with a 400-acre site, to create a project of scale that could achieve regional prominence.

The goal of the study process was to create a project that would spur additional development while being environmentally and fiscally sound.

- **Stewardship of the Land and River.** Proper use of natural resources is an important principal to the city. While the land has lain undisturbed for many years, the natural systems of wetlands, habitat, and landscape have thrived. Future development on this site must respect these systems and seek to

establish innovative methods for coexisting with them. In addition, the plan should consider providing public access to and along the Black River.

- **Enhance the City's Fiscal Base.** The site is 400 acres in the heart of the city which is not currently contributing to the city tax base, image or community needs. The study sought to maximize land potential to justify the city's acquisition of the property, and to realize the greatest value for the future.

The City of Lorain had also determined that economic development, in the form of industrial development, should be an objective of the study. Land opportunities for the primary employment base within the City are becoming scarce and are losing a competitive edge to suburban development. The City also determined that recreational opportunities should be explored. The recreational opportunities should take advantage of the Black River, the large scale of the site and not duplicate nearby recreational opportunities while still embracing the adjacent neighborhood. The planning process embraced these goals and objectives in the development of the conceptual alternatives presented below.

Industrial and recreational opportunities were an initial focus of the study.

INDUSTRIAL DEVELOPMENT CONCEPTS

Two approaches were considered for the development of the industrial portion of the site: the traditional developers approach and an approach that recognized the natural features of the site

Traditional

The traditional approach to laying out an Industrial Park is to grid off the property into standard parcel sizes (often five acres) with service roads as needed. The first concept alternative addressed the bluff lands in this manner. This method maximizes the number of lots and creates an orthogonal pattern of development reminiscent of historical Lorain. The grid layout is an extension of the neighborhood development north of the site, and links directly into the roadway system.

The traditional development concept is a grid system of streets and lots with minimal setbacks.

Natural Enhancement

The site has a prominent topography of bluff lands sloping down to the river's edge. Capitalizing on this unique feature, a concept was developed which organized the lots around a series of linear parkways consisting of the roadway right-of-way and adjacent green corridors. The green corridors offered the chance to address several issues, preserve existing wetlands, create new replacement wetlands, manage and treat stormwater runoff, and link the community to the river. The new roadways tie directly into the grid system of Lorain, however, once they enter the site, they take on a sinuous flowing form. The lots front onto the "green corridor" parkways which are incorporated into their setback requirements. Additionally, the enhancement of the site with an open space system will enhance industrial land values.

The natural enhancement approach creates value by incorporating natural amenities, the cost of which is not born by the future occupant.

RECREATIONAL DEVELOPMENT CONCEPTS

Regional Recreation

Regional recreation facilities often provide a variety of activities including both active and passive. The eastern portion of the site (landfill area) lends itself to recreational activities but lacks the large heavily forested areas often associated with passive regional facilities. Large complexes of active recreation facilities are good possibilities. These complexes include baseball, soccer, tennis and large play fields.

The 200-acre landfill portion of the site lends itself to large recreational complexes or regional uses.

Golf Park

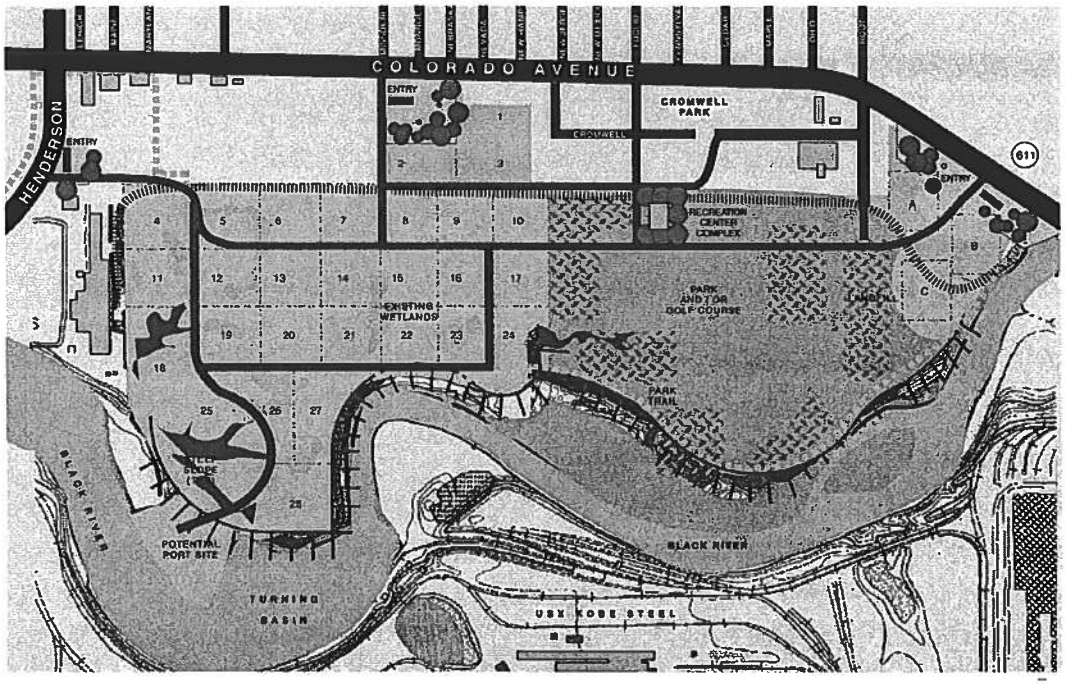
The 200-acre eastern site is a natural size for a full 18-hole golf course. The City of Lorain does not have that type of facility and it would be an added resource to the City. Development of former landfill sites as golf courses is an effective use that has been used in many communities. The need to maintain a protective "cap" over the landfill also makes a golf course compatible with the sites former use. The golf park is also seen as complimentary to the adjacent industrial/business park development.

ALTERNATIVE CONCEPTUAL SITE PLANS

The Grid System Alternative

This alternative presents the traditional approach to industrial park development with parcels located off of the grid roadway system. This concept provides access to the site from Henderson Road, through the National Gypsum plant, and three locations along Colorado Avenue: across from Missouri Avenue, at Root Road and in Sheffield Village. The grid system required about 2.9 miles of new roadway. The industrial park would have straight roadways with one 12-foot lane in each direction. If the alternative generally followed the City of Lorain Zoning Code, each individual site would have a 20 foot set back (code calls for 10 feet) and 10 foot side and back yards. Parking and docks would be allowed anywhere by code in order to maximize the site development potential. The grid alternative resulted in about 28 development sites in the western portion with an additional three to four sites in Sheffield Village for about a total of 170 acres of industrial land. The grid concept was combined with a regional recreation use for the eastern portion of the site. The specific recreation uses were not identified but could include any of the activities mentioned above. The advantages and disadvantages of the grid alternative are outlined below.

The grid system alternative would provide about 31 development sites and 170 acres of developable land.



The grid system concept plan

The Grid System Concept
Advantages and Disadvantages

Advantages	Disadvantages
• Maximizes developed acres	• Maximizes roadway costs
• Familiar with buyers	• Maximum wetland takes - permit problems
• Good connections to exterior streets	• Minimizes public access to the river
• New recreation resources	• Maximizes utility costs
	• Adds least value from development
	• Regional recreation incompatible with industrial development

Parkway System Alternative

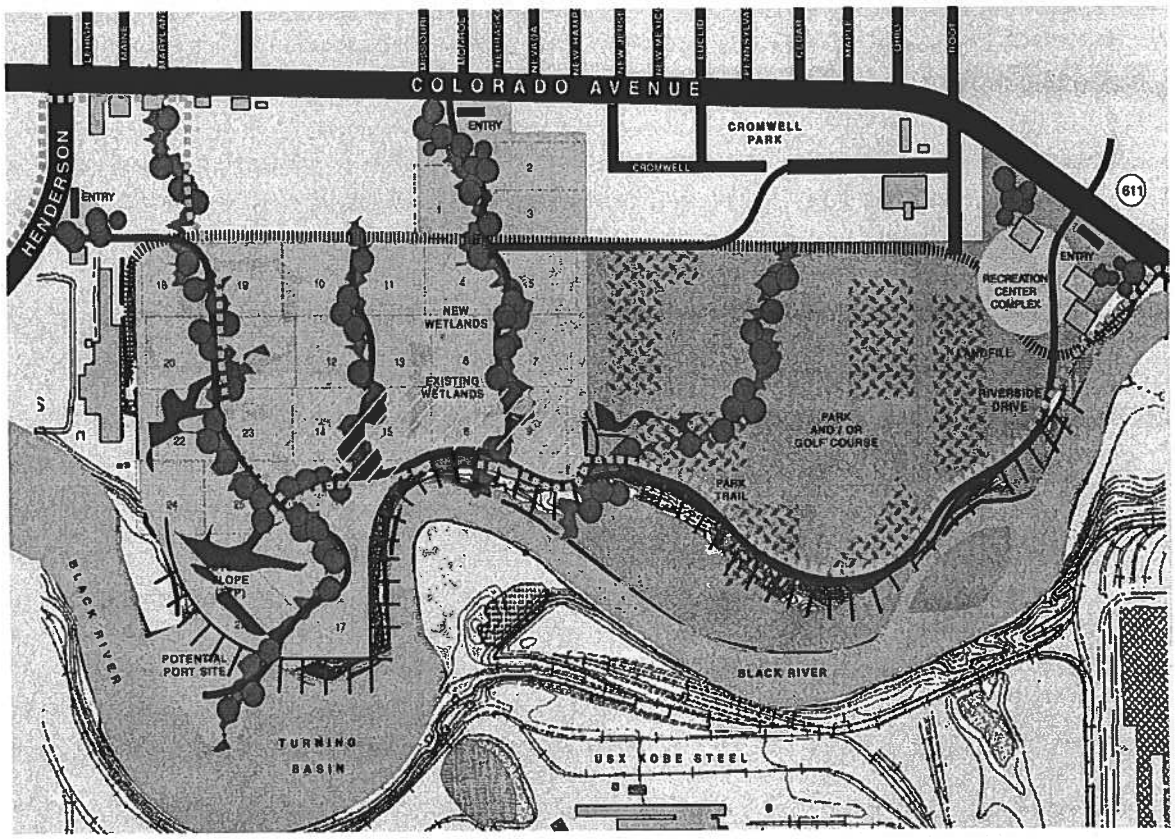
The parkway system utilizes the "green corridors" approach and tested the viability of an industrial park layout that would use the enhancement of natural amenities to maximize the value added to the land. The central feature of this concept is the natural stream/stormwater corridors that parallel each of the roadways in the industrial park. The parkways are designed with many amenities including:

Green corridors that enhance and replace lost natural site amenities are the central feature of the parkway system.

- Providing stormwater retention off-site for each individual site,
- Minimizing the taking of wetlands to minimize impacts and address permit concerns
- Providing for the creation of wetlands as a mitigating measure for the necessary wetland takes,
- Providing a natural setting for a sidewalk/jogging path for employees and residents,
- Providing a landscaped buffer for industrial sites,
- Providing a publicly owned set back to maximize site coverage (zero set back for the owner).

The parkway system requires 2.6 miles of roadway, a third of a mile less than the traditional grid system approach. The roadway would also be 24 feet wide with two 12 foot lanes. However, the roadways would be sinuous to follow a natural terrain, accommodate the wetlands where possible, and provide the park like setting. The lots across the road from the stream channel would have a landscaped set back of 40 feet. The parkway system alternative resulted in about 26 development sites in the western portion with an additional three to four sites in Sheffield Village for about a total of 160 acres of industrial land. The parkway system concept was also combined with a regional recreation use for the eastern portion of the site. The specific recreation uses were not identified but could include any of the activities mentioned above. The advantages and disadvantages of the parkway system alternative are outlined below.

The parkway system alternative provides about 30 development sites and 160 acres of developable land.



The parkway system concept plan

Parkway System Concept
Advantages and Disadvantages

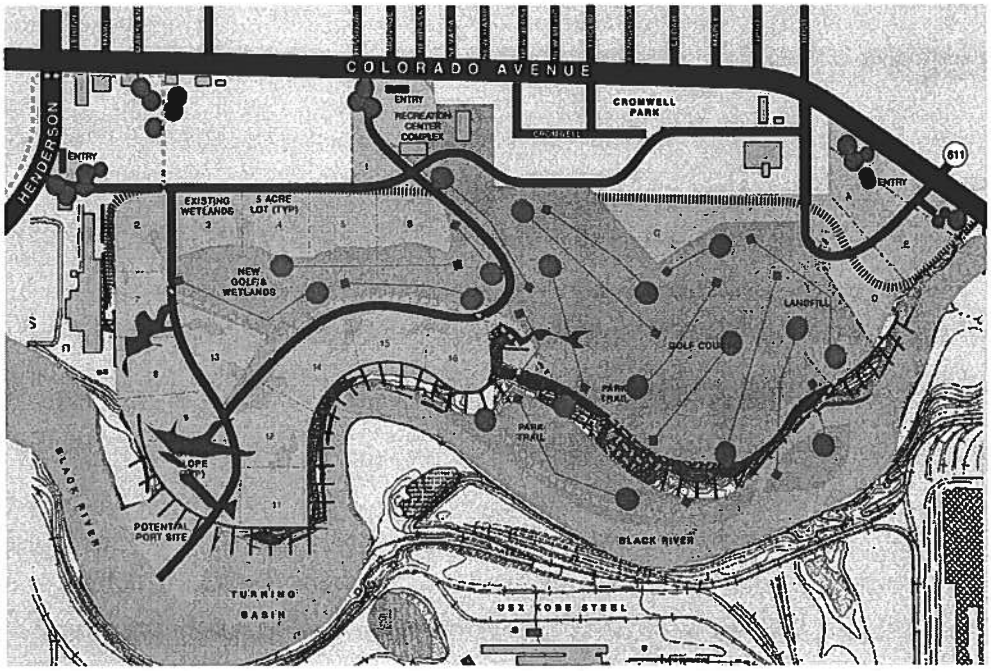
Advantages	Disadvantages
• Maximizes "value added" from development	• Provides less land for industrial development
• Minimizes wetland takes and permit issues	• Fewer but more defined access points
• Provides for stormwater management off-site for buyers	
• Provides replacement wetlands	
• New recreation resources to the City	
• Maximizes community access to River	

Integration of Recreation Alternative

This concept tested the viability of maximizing the recreational open space and bringing it into the industrial park to add value to the development. The recreational activity that is most compatible with industrial development is a golf course. The integration concept combined the recreational amenity and industrial lots into a cohesive site design. The golf course is elongated into the 200-acre vacant western portion to form a centerpiece for the development to cluster around. The golf course maximizes open space and creates a high end amenity rich image for the industrial park to bond to. The scheme anticipates some developable sites existing within the 200 acres currently defined as the landfill site. The viability of this scheme is dependent on further investigations into the landfill. Additionally the golf course has the ability to incorporate many existing wetlands and provide creation of new ones. The integration requires nearly 2.8 miles of roadway, slightly more than the previous approach. The roadway would also be 24 feet wide with two 12 foot lanes, and the roadways would be sinuous to follow a natural terrain and accommodate the design of the golf course. The lots would have a landscaped set back of 20 feet. The integration alternative resulted in about 26 development sites in the western portion with an

The integration of recreation alternative brings the recreational resource into the industrial park and provides about 26 development sites and a55 acres of developable land.

additional three sites in Sheffield Village for about a total of 155 acres of industrial land. The advantages and disadvantages of the integration of recreation alternative are outlined below.



The integration of recreation concept plan

Integration of Recreation Concept Advantage and Disadvantages

Advantages	Disadvantages
• Approaches maximum value added from development	• Maximizes roadway costs due to lack of development on both sides
• New recreation resource for the City	• Utilizes prime developable land for the golf course
• Recreation use compatible with industrial use	• High utility costs
• Provides access to the River	• Industrial sites are discontinuous
	• Does not separate industrial and recreations traffic well
	• Development of structures may not be feasible in landfill area

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THE MASTER PLAN

THE BLACK RIVER MASTER PLAN

The Master Plan Concept

The primary goal of the Master Plan design is to create a catalyst for development in Lorain. A well conceived and designed approach can create a distinctive Industrial Park which:

- can set a new standard for work environments,
- can become a leader in attracting and maintaining quality employers near to the downtown,
- will provide significant competitive marketing advantages over competing 'greenfield' suburban or rural industrial parks,
- provides a mechanism for good stewardship of the land,
- minimizes the impact on surrounding ecosystems,
- provides the special attention to water management and quality.

Master Plan Concept

The prominent idea of this design is to create an ecologically integrated amenity to distinguish the industrial development and enhance the recreational connections to the Black River. To accomplish this, the Parkway System Concept, as described in the previous chapter, was combined with a golf course design, allowing each to develop independently. The Master Plan attempts to incorporate the advantages of all of the concepts and avoid the disadvantages.

The Master Plan expands on the ideas introduced in the Parkway System Concept with additional integration of public access.

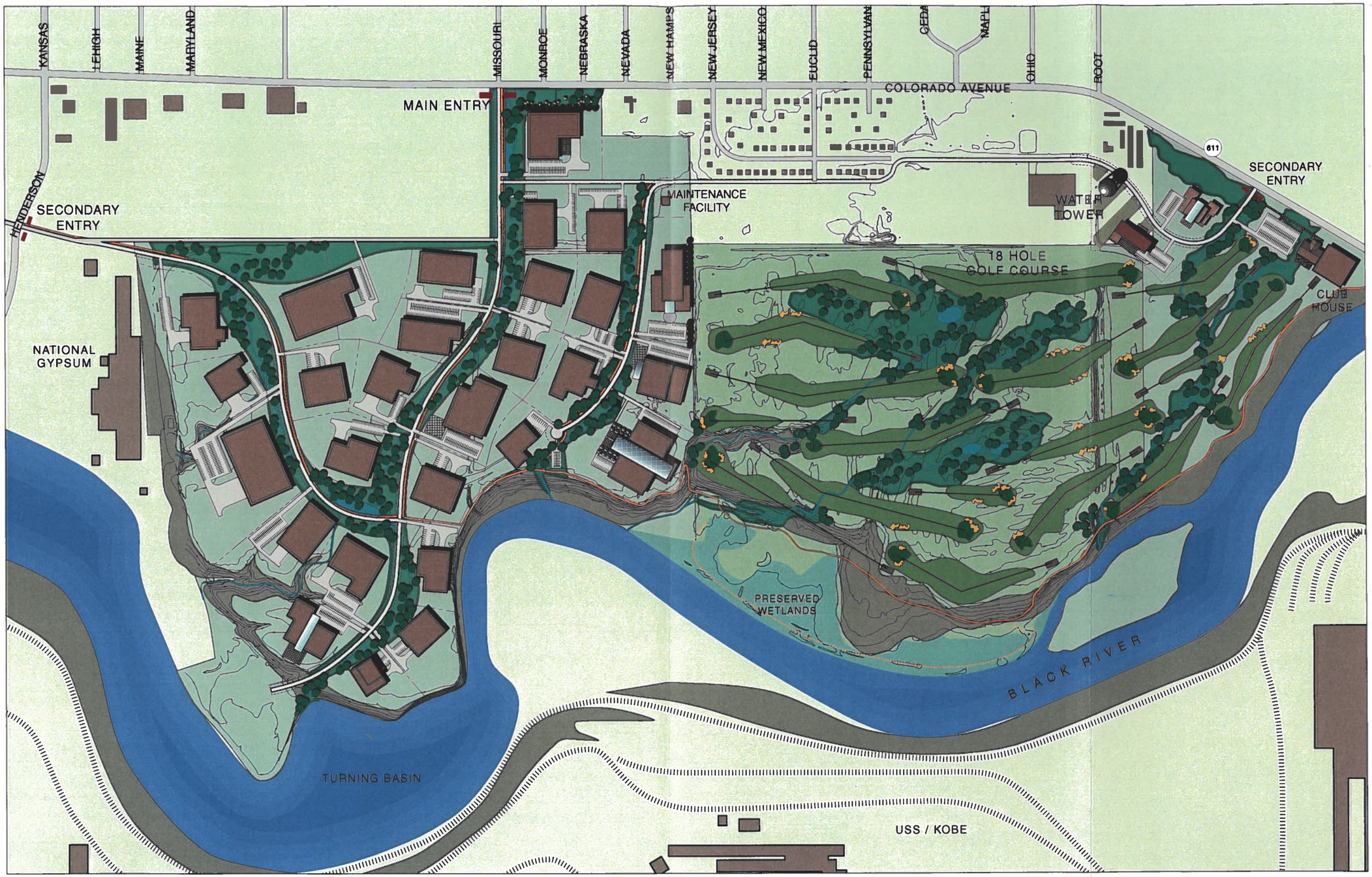
The Upper Black River Master Plan encompasses all four hundred acres of the site, however, nearly half of this land rests on the former municipal landfill. For the purposes of this study, and until full knowledge of the contents and location of the cells delineated, that area has been designated for recreation. The remaining two hundred plus acres are planned for industrial development. The optimum plan for this portion of the site provides about 160 developable acres divided into 26 five-acre parcels. Sites can be joined together to form larger sites as the market dictates. The sites are planned as heavy

industrial uses along the western edge of the site, with light industrial, corporate or research sites closer to the golf course and recreational amenities. The varied natural environments offered by the sites increases the ability to accommodate diverse users.

Weaving through the plan is an open space system defined by the "green corridors" which flow across the site to the rivers edge. The roads and development sites are arranged to take advantage of both the naturally occurring amenities and the created ravines.

The Lorain Industrial Park Master Plan addresses all of the site development issues with a 'Green Infrastructure'. A wide right-of-way is proposed to contain streets, utilities, walking trails, stormwater conveyance, stormwater management, stormwater treatment, wetland mitigation, public park acreage, and provide borrow for landfill capping. Alongside the road will be a naturalized stream channel and riparian corridor containing wetland basins in a park like greenway.

The concepts of the Master Plan are illustrated in the Illustrative Site Plan shown on the following page and discussed in the rest of this chapter. The main features on the western side of the site are the winding parkway roads and the green corridors, which serve the businesses in the development. The north-south central spine travels from Colorado Avenue down to a river-side site which is proposed as a potential port facility. The roadway system allows for east-west travel beginning at Henderson Road and going through the development to Root Road on the east. The golf course is illustrated as the central feature on the western half of the site. It contains wooded areas where wetlands can be preserved and created and is kept out of the Black River's flood plain. A combined recreational center and club house is proposed at the eastern most edge of the site. A hiking path is also proposed along the edge of the Black River coming up the slope and into the industrial park where there is a parking lot for residents and with the path using the green corridors through the rest of the industrial park. The path will connect the Metroparks with areas to the north and west of the site.



LORAIN PORT AUTHORITY

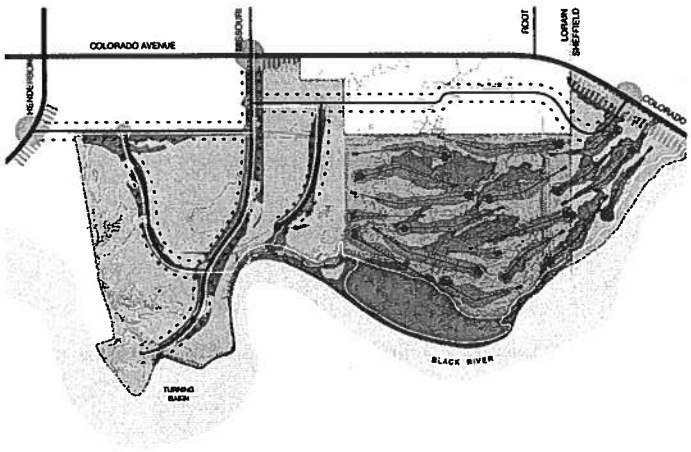
UPPER BLACK RIVER MASTER PAN

URS Greiner Woodward Clyde

Standards for the Master Plan

The character of the Industrial Park is established through the consistent use of elements throughout the Park. The use of these design elements will set the standard for all individual site developments. The design treatment of the common areas are the most specific and least flexible of all guidelines. The Industrial Park Standards are, therefore, more concretely set than guidelines for individual parcels.

Translating concepts into design requires the creation design approaches or strategies. These resulting standards for the site plan are outlined below and discussed in more detail in the following sections



Entrances, circulation and edges set standards for the Project

1. Green Infrastructure and Open Space System - The creation of the green parkway corridors which flow down the bluff lands of the site form an open space system throughout the Industrial Park. The parkway system provides the basic framework for public access, wetland preservation and creation, and stormwater and sedimentation management. The consistent design treatment of these zones will provide a major common physical theme and expression of character for the site.

2. Golf Course - To present a competitive Industrial Park, and attract owners into the existing town fabric of the City of Lorain, a unique high quality industrial park must be created. The adjoining landfill site permits a large number of undeveloped acres to be combined into an amenity for both the Industrial Park and city itself. With proper capping and monitoring, the former landfill can be sculpted into a challenging golf course. This centerpiece amenity will be operated by a third party while generating nominal income for the city.

3. Entrances / Edges - The entrances to the site present the major character reference for the community and site visitors. These play an important role in setting the general image of the development. While this is a large site, it has limited public exposure except at select points along Colorado Avenue and the treatment of the entrances will determine how the project is perceived in the community. Edges within the Industrial Park are also important. The use of signature trees, common vegetation and massing them will contribute to the identity and cohesiveness created at development entries.

4. Circulation - The layout and detailing of the circulation system and general image presented to those passing through the park is critical to how the development is perceived. The treatment of the building setbacks along the roads also impacts its quality and cohesiveness. The commonality of the internal intersections treatment will further link the entire project.

5. Lighting and Signage - The unified system of lights and signs presents a constant image to anyone passing through the park, and the sense of the entire development as an identifiable unit is strengthened. This is particularly important for the inclusion of the golf course in the image of the Industrial Park.

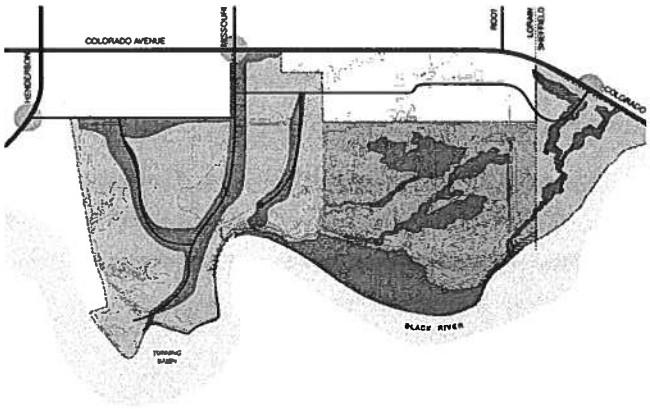
These five areas of standards are discussed in detail in the following sections

GREEN CORRIDORS AND OPEN SPACE SYSTEM STANDARD

The creation of green corridors which flow across the bluff lands and down to the river form an open space system throughout the Industrial Park creating the unique identity for the entire development. This system provides a basic framework for parkway linkages, trail systems, roadway alignments, wetland preservation, stormwater management, and site parcelization. The consistent design treatment of these open space zones will provide a major common physical component and expression of character for the site.

Greenway Corridor Description

The new greenway corridor will vary from 80 to 120 feet in width, although, where it incorporates an existing wetland, it can be as large as 300 feet wide. The width will vary to accommodate natural features and provide a natural stream corridor appearance. The corridor will contain the following:



Open space is a dominant feature of the project

- **Stream Channel** - A typical drainage way will be provided at the lowest point of the corridor. The drain channel will convey naturally occurring groundwater flows and stormwater runoff. The channel will be sinuous and rock lined to avoid erosion.

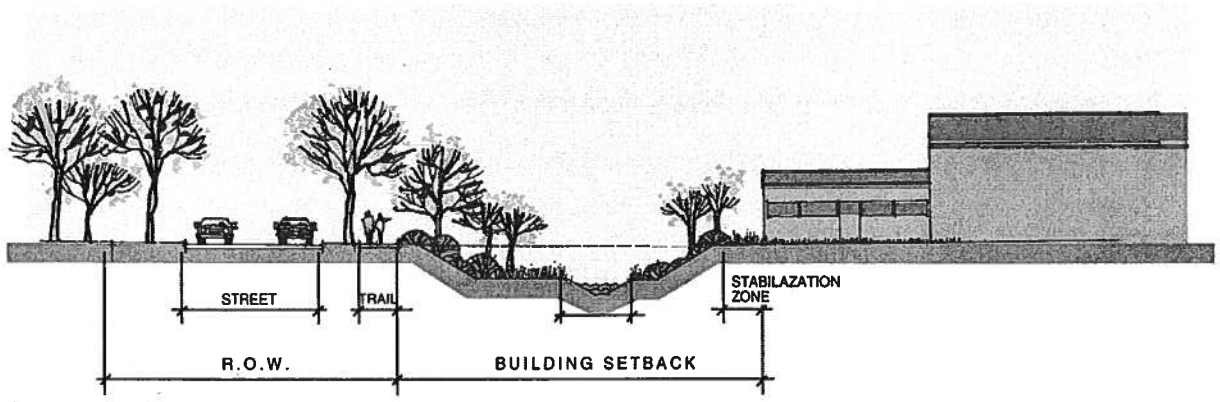
- **Wetland Floodplain** - A flat floodplain area averaging 20 to 40 feet wide will be created a few feet above the stream channel. The system will be designed achieve reoccurring flooding during storm events in order to create wetlands on the floodplain. Although this will create some stormwater retention functions, the goal is frequent flooding to create wetlands. Plantings in this area will be specially selected to tolerate roadside contaminants and to be controlled within the channel.

- **Sloped Sides** - The wetland floodplain will be one to several feet lower than the adjacent land. The transition from the wetland floodplain to the adjacent land will be a sloped area

with 3:1 slopes. This structure will provide the stormwater retention function of the system. It is anticipated that the system will function to retain the 20-year storm.

- **Flood Control Structures** - The stormwater control structures, used to create the floodplain flooding and the stormwater retention, will be constructed as part of the driveways to the sites. Driveways should be built next to each other in order to minimize the number of control structures and provide longer retention and parkway areas.

- **Walkway/Jogging Path** - An eight-foot paved trail system will be provided within the parkway corridor. The path can incorporate amenities, such as exercise stations, and be connected with paths to individual sites. Where appropriate, the path will also be used for maintenance access to the channel system.



Greenway corridor cross section

- **Roadway System** - The Industrial Park roadway system is also considered part of the parkway system. The roadway will be a concrete structure with rolled curbs and stormwater diversion to the stream channel. Additionally, the roadway is designed to convey additional stormwater run-off to the river. The roads occur at a lower elevation than their adjoining parcels to prevent flooding.

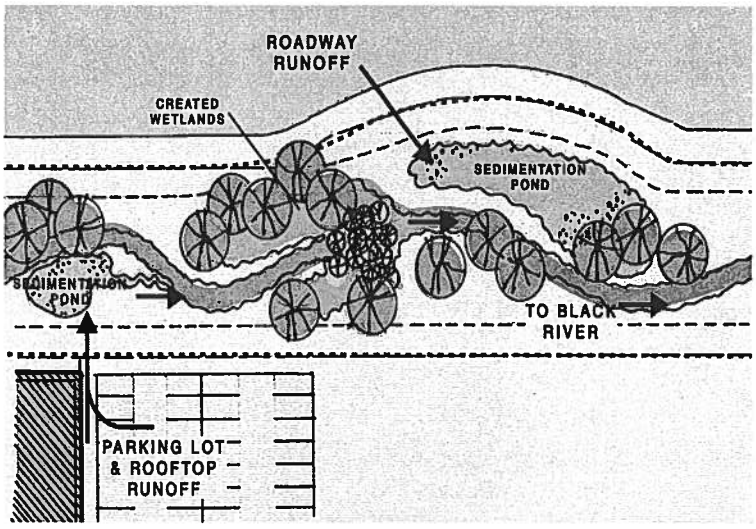
- **Landscaped Area** - The high areas of the parkway corridor will be landscaped to provide screening as well as vistas into the individual sites. This will allow companies to feature their buildings and identify signage.

With the parkway corridors, over 24 acres of the western two hundred acre Industrial Park will be composed of open space. The prominent features of this system are the green corridors which transverse the site north to south. This linear park system allows a connection to be established between the neighborhood to the north and the Black River. Extending from Colorado Avenue through the Industrial Park, the paths all connect into the planned Lorain County Metroparks riverfront trail.

Dealing with wetlands is an issue for any project. Measures to avoid and minimize taking wetlands is a feature of the Industrial Park Greenway Corridor.

Water Quality

The corridors create a green infrastructure that can improve water quality through non-structural approaches to stormwater management. Situated adjacent to buildable land sites, the corridors will accept run-off from roadways, parking lots and rooftops. The first point of collection into the system are into small ponds which allow the water to be released slowly into the stream channel.



An integrated system for water management

Water quality improvement in the Black River is a concern of Ohio Environmental Protection Agency, and a primary goal of the Black River RAP. Stormwater wetlands and retention ponds have been demonstrated as a proven, cost effective, and low maintenance strategy for stormwater treatment. Properly sized stormwater wetlands can reduce many runoff pollutants from 30-80%. Soon to be implemented USEPA Phase II NPDES regulations will require communities to develop programs to address stormwater discharges which contribute to water quality violations. Stormwater wetlands incorporated into the Lorain Industrial Project may qualify as a significant compliance strategy.

Wetlands

The green corridor open space system incorporates wetland preservation and new wetland construction into its long parkway boundaries. Wetland permitting requirements represent an important factor in the Industrial Park design. Ten and a half acres of wetlands have been delineated on the western 200-acre portion of the site A successful permit applicant to develop the Industrial Park must demonstrate reasonable attempts at 'avoidance and minimization' of wetland impacts. The existing wetlands will be separated from the stormwater management system except where flooding is necessary to maintain the life of the wetland system.

Master planning wetland impacts and wetland mitigation for the total 400-acre site into a single Individual 404 Permit and 401 Water Quality Certification submittal will save time and money. Additionally avoidance of any wetland permitting issues for individual industrial developers will be a major benefit. The Master Plan not only saves 8.5 acres of the 14.2 acres of jurisdictional wetlands but will create an additional 6.2 acres in the green corridors and preserve approximately 20 acres of the floodplain wetlands along the Black River south of the landfill area.

River Front Trail System

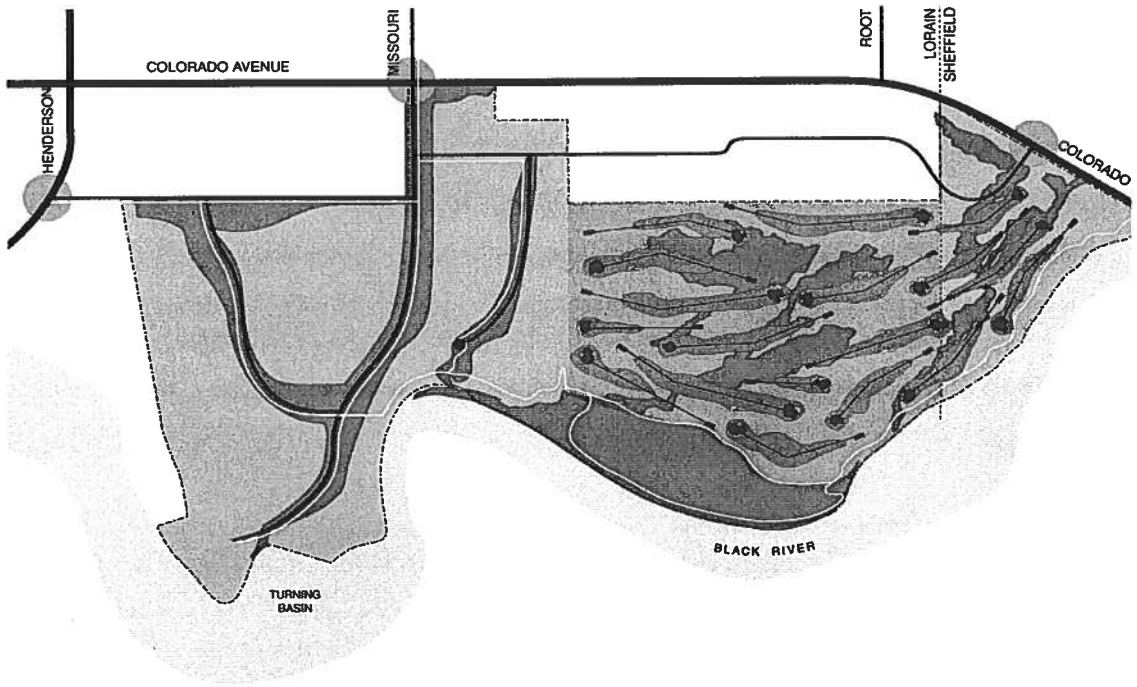
The green parkway corridors run north to south. To connect the system together, an east-west riverfront trail system is planned to extend from Colorado Avenue in Sheffield Village to the Henderson Avenue and Colorado Avenue intersection. The trail will establish one of the missing links in the Lorain County Metroparks Black River trail system. The trail will contain a section that dips down off of the bluff and onto the floodplain in the wetland preservation area, for viewing access to the water. It is anticipated that the trail in the floodplain area will be a raised wooden boardwalk in sensitive areas as needed. The public trail system, coupled with the parkway corridor, will permit access throughout the site

A scenic walkway can be created along the Black River

and establish a long deprived community presence on the shores of the Black River in this neighborhood.

GOLF COURSE

The success of the Industrial Park is dependent on its ability to attract and maintain tenants who will provide a diverse employment base for the area. Competing with suburban and rural undeveloped greenfield sites with easy access to the interstates and enticing tenants into the city is a challenge. To create an inviting destination, the adjoining two hundred acre landfill site has been utilized to

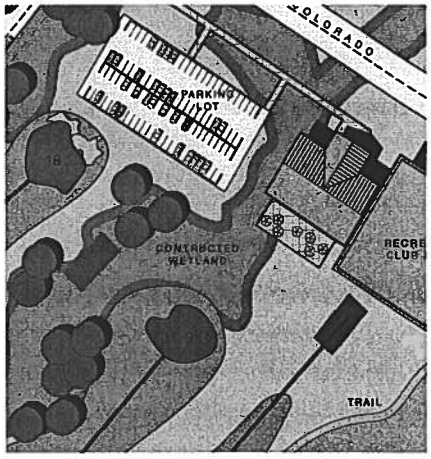


A challenging 18-hole golf course will provide amenities for businesses and residents

create an unprecedented amenity for the Industrial Park and City of Lorain itself. With proper capping and monitoring, the former landfill can be sculpted into a challenging eighteen hole golf course. This open space amenity would be operated by a third party while generating income for the city. While the golf course is a separate entity, it is anticipated that the entire 400 acres would be treated as one development and developed in a cohesive fashion.

The golf industry is experiencing a boom. The development of a course in Lorain should be viable if nation wide statistics are

applicable. The number of golfers and rounds played is expected to increase by 35% between now and the year 2004. The new facility will also exert a positive economic influence upon a local community. As a recreational, business and employment resource, the golf course will create jobs at various levels for local residents, and will be a positive attraction for surrounding real estate and businesses near and in the Industrial Park. The project has been designed to create a number of highly desirable lots with direct frontage on to the course. These facilities lend themselves to corporate/business or research functions and provide increase diversity in the tenant base.



Clubhouse and parking on Colorado Boulevard

The golf course is designed to incorporate the green corridors which are the character defining elements of the entire development. These naturalized stream channels and created wetlands will filter runoff from the course and help create replacement wetlands for those displaced during landfill capping and golf course layout. All of the eighteen holes are designed to occur on the bluff lands with the green corridors weaving throughout creating natural hazards and defining the links image of the course.

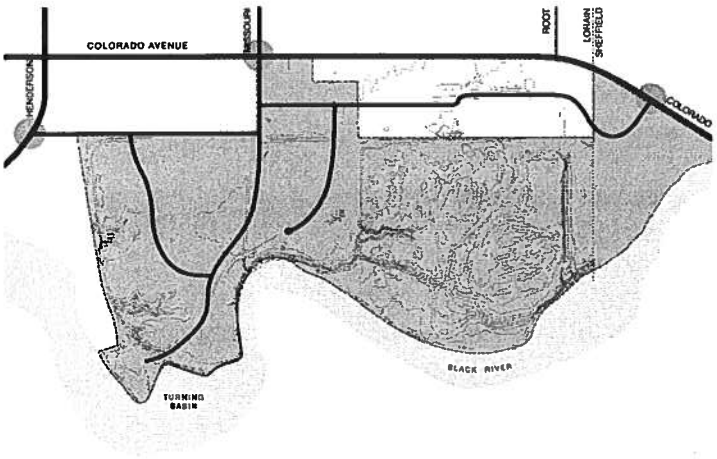
The club house has the potential to expand outside of its normal duties. It could provide additional recreational facilities or offer day care, banquet and meeting room facilities to further meet the needs of the neighboring business community.

Capping the landfill and creating a challenging and aesthetically diverse course will require a substantial amount of earthwork requiring additional soil. The large amount of dirt which will need to be removed to create the parkway system in the Industrial Park, will be needed if the site is to be reclaimed. Once the actual landfill cells are located, a system of containment will be designed. This system can utilize several different methods, however they all require a minimum of two feet of clean cap soil to be placed over the area. Landfill capping, closure and reclamation of 200 acres of riverfront land is a expensive item, and this on-site borrow method is the most cost effective.

A golf course on a landfill outside of Chicago

ENTRANCES / EDGES

The entrances to the site present the major character reference for the community, employees, site visitors and travelers along Colorado and Henderson Avenues. These play an important role in setting the general image of the development. While this is a large site, it has limited public exposure except at selected points along Colorado Avenue. Combined with the treatment of the project edges, the entrances will determine how the project is perceived in the community.



First impressions count - entrances are key concerns

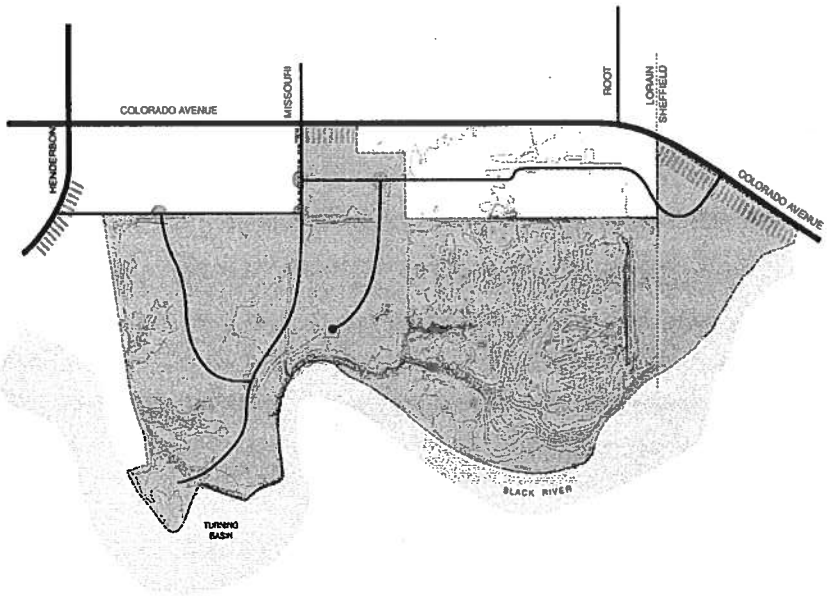
The initial divided roadway at the entrances creates an elegant and welcoming statement at each entry to the project and it then dissolves into the green corridors which weave through the site. One hundred feet back from the roadway, an arch of formally spaced trees and the picturesque shrub plantings will allow for the placement of signature project signage and illumination.

A formal continuation of this planting pattern along Colorado Avenue will unify the sporadically occurring property edges into a cohesive identifiable project. These edges preserve existing vegetation and augment it with flowering trees and shrubbery. Additionally, a back drop of a evergreen trees will create a year-round buffer. This extensive edge treatment will separate individual site activity from public view, and preserve the project identity in all seasons.

CIRCULATION

The layout and detailing of the circulation system and general image presented to those passing through the park is critical to how the development is perceived.

The roadways weave through the green corridors parallel the trails so that both automobile and pedestrian traffic have a similar park-like experience. The placement of the roadways through the corridors allows the extensive setbacks which form the open space to double as building setbacks. The treatment of the setbacks along the roads also impacts the quality and cohesiveness of the entire project.



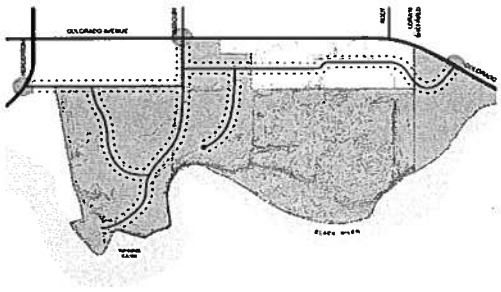
Setback along the roads vary with lot location The bulk of the green corridors are located on one side of a road at a time, and are balanced by a smaller 40' setback on the other side of the street.

The design of the internal street system and associated green corridor emphasizes the spaciousness associated with a high quality Industrial Park development. The street is a gracious 25' wide with 55' radius on all corners. All roads will be edged with curbs and gutters to provide a manicured appearance and endure the heavy use of semi-trailers. A right-of-way will define the minimum green area and allow for underground utility corridors. Provisions for pedestrian and bicycle circulation are removed from the roadway pavement because of the anticipated truck traffic and are included within the larger green corridors trail system.

The green corridor and water management system must have adequate length to function adequately. Each lot will maintain its own driveway, however these will be paired at adjacent property lines. A planting strip will occur between each drive.

LIGHTING AND SIGNAGE

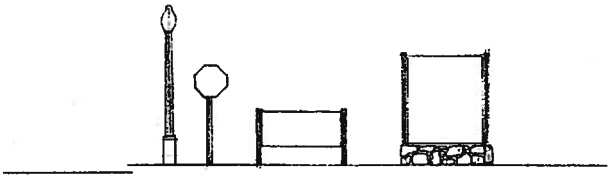
The unified system of lights and signs presents a constant image to anyone passing through the park, and the sense of the entire development as an identifiable unit is strengthened. This is particularly important given the fragmented appearance of the project along public streets. Additionally the location of the golf course on the eastern edge of the site must contribute to the image of the entire Industrial Park.



A unified system of lights and signs presents a constant image

A single lighting fixture will occur throughout the project site. This fixture must be no more than 30' high with poles in a neutral, preferably dark color. All parking road and security lights should be cut off luminaries. Safety (perceived and real) is the greatest concern when specifying lighting, however, the intensity of lighting should be highest at the project entrances and less intense in the individual site parking lots. The light pole will match that within the existing Colorado Industrial Park as a method of linking the two projects into a cohesive development.

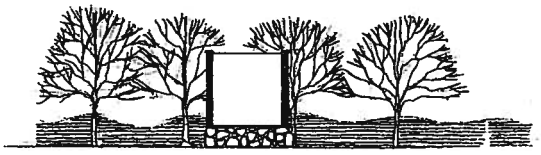
The Signage system developed for the Industrial Park should present a feeling of quality and permanence. All of these signs should be consistent and match or compliment the chosen light pole. A consistency of site identity will be maintained through a readily identifiable combination of color, type, material and theme.



Signs and poles should have a consistent design

Entry signs will set the tone for the development, and be substantial in nature. All of these monument signs should rest on a common base material, and be no more than eight feet in height. The upper portion of the sign will be constructed out of the Industrial Park signage material preferably a consistent neutral color.

Text on all project development signs will follow the lead of the Entry Monument sign. The Monument sign will be lit from the ground level, and no internally illuminated signs will be permitted within the development.



The signage system should convey quality and permanence

Directional signs should resemble the entry signage system but rest on legs. Signs on building facades should not extend above the

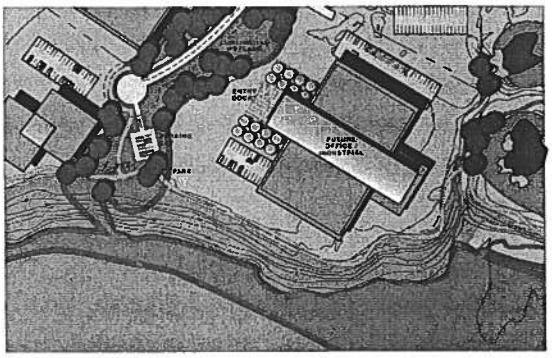
height of the structure and should consist of only letters and/or a symbol.

GUIDELINES

The design treatments outlined thus far are standards for overall park development. The following set of design guidelines establishes principles of site development for individual tenants. These guidelines are less specific to allow for greater individual expression. This is a cohesive planned development and each project refers to its neighbors and all sites are governed by the design of the Park Standards.

ARCHITECTURE

The major emphasis is that the Lorain Industrial Park be an architecturally integrated complex. Buildings must relate to their neighbors in terms of massing, scale, color, and to the total site development. Orientation of buildings to basic site considerations, adjacent buildings and their sitings will achieve a unified character and strengthen the desired image. *All structures will need to be submitted before the Industrial design review board for approval.* The black river Industrial Park should be established as it own review district with its own review board established by legislation of the City. The review board would have review and recommendation responsibilities.



Bluff edge sites should have special consideration for design elements

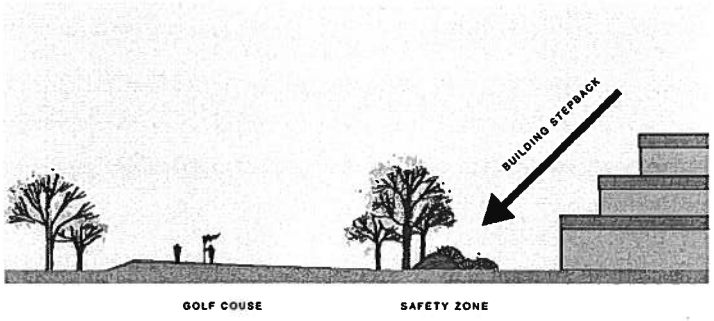
Buildings should maintain an urban orientation. The building wall needs to be placed on the setback line to create a rhythmic pattern of development. Where appropriate the office component of the building should address the street and be designed to incorporate a front door, windows, finer detailing and quality finishes. All buildings should incorporate simple and uniform texture patterns to create shadow patterns which will reduce the high visibility of the building. Buildings should have a horizontal appearance brought about by the use of horizontal bands and fascia to minimize the verticality of the structure.

Occurring behind the office structures, the larger industrial buildings should relate in color and detailing. All structures will maintain a pallette of muted earth tones and relate harmoniously to their surroundings and one another.

All outdoor refuse areas and containers will be visually screened. These areas have an impact on neighboring properties and should be designed as an architecturally integrated screen, of non combustible material. No refuse areas will be permitted between the street and the building.

Exterior components of mechanical equipment should be screened by an architecturally integrated element. Units mounted on top of a building should be disguised by a parapet wall or housing. Unit color should match or compliment that of the building. should

Building height limits are dictated by the parcel location within the Black River Industrial Park. Buildings heights range from a high of 60' in the heavy industrial sites to a stepped requirement at the eastern edge where light industrial and corporate functions occur near the golf course amenity. To insure long term integrity of the entire development, structures fronting the golf course should not be visually disruptive or overbearing in scale, massing and color.



Buildings should be coordinated with site amenities

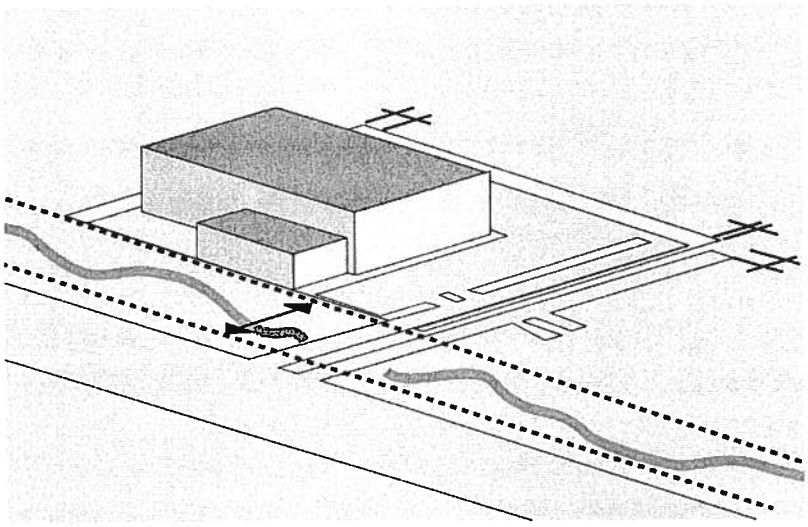
No loading docks are permitted to the street side of the building. All docks should be placed with consideration of noise, lighting and disturbance and away from neighboring office locations.

SITE ORIENTATION

Open bluff land parcels within the development should be developed more formally than woodland or riverfront sites. Physical order will establish the Industrial Park as an extension of the city fabric of Lorain and create a quality urban character for the development.

Setbacks

Building placement is governed by the lot location. Parcels which front on the river corridor steep slopes or those fronting on the golf course have special stipulations for design. While bluff land development is more standardized.

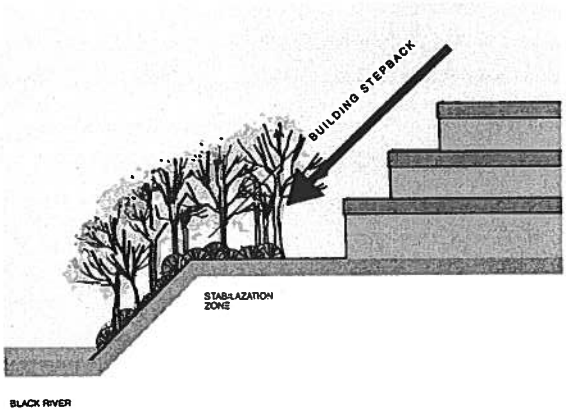


Setbacks will vary, with zero setbacks along the green corridors

Parcels on the bluff lands are required to place a building edge on the front yard setback line. The side yard setbacks will correspond with those in the City of Lorain ordinance of fifteen feet. There is an exception for properties with shared driveways, where on site roadways have a five foot setback. All of these properties have also have a fifteen foot setback to the rear.

Parcels along the cliffs of the river or adjacent to the golf course exert a greater influence over the image of the entire development, and must abide by more guidelines.

Building masses in these locations must be placed no closer than forty feet to the property line with the amenity. Additionally, these structures which exceed twenty feet in height must continue to step back as they grow in height. The step back ratio is two to one, with each two feet of building height stepping back one foot horizontally.



Example of designing with the site bluffs

Loading docks are not permitted fronting either on the streets or the golf course. These docks should be sensitively laced so as not to disrupt or degrade neighboring properties.

Parking lots should all be paved. Where possible, large canopy trees should be placed on lots edges and sporadically throughout the paved area to reduce heat gain and buffer activity. Additionally

landscape or earthen buffers should surround lots which abut the front yard setback.

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MASTER PLAN IMPLICATIONS

The development scenario proposed by the Upper Black River Master Plan will have significant impacts on the City of Lorain and the surrounding region. This section discusses the impacts from industrial development, golf course development and the environmental impacts of the overall development.

INDUSTRIAL DEVELOPMENT IMPLICATIONS

The discussions which follow focus on the industrial park portion of the Plan and includes an overview of the industrial market, the employment impacts and the fiscal impacts of the plan at full development.

Industrial Market Overview

- The East-North Central region (Ohio, Illinois, and Michigan) of the U.S. continues to be the leading area for industrial growth. In fact, this region attracted 1,824 new industrial facilities in 1996, the most of any region in the U.S. according to *Site Magazine*. Over the 1994-1996 period, this region attracted 4,358 corporate facilities, again, the most of any region in the US.

Lorain is in a leading U.S. region for manufacturing in terms of number of firms and growth.

- Ohio has continued to lead not only the East-North Central region but also the U.S. in terms of industrial development. In 1996, Ohio attracted 175 new manufacturing facilities, the most of any state in the U.S.

Ohio has consistently led the nation in new and expanded manufacturing facilities.

- Ohio's manufacturing base continues to dominate the growth in industrial firms. Over the 199_-1996 period, Ohio attracted 555 manufacturing facilities the most of any state in the U.S. In terms of new and expanded global facilities or non U.S. company investments, Ohio attracted 155 facilities, again, the most of any state in the US.

- For industrial/manufacturing/warehouse distribution development, Lorain is strategically located to serve many industries in the Mid-West including the auto industry, has a good base of skilled and educated labor, provides competitive incentive programs, and has a large mass of existing industries from which new industries spin off.

Lorain provides an excellent labor force and competitive government incentives.

MASTER PLAN IMPLICATIONS

- The scarcity of modern, functional space which began in 1994 has resulted in many companies relying on built-to-suit industrial product. Approximately 85 percent of 1995's industrial construction activity was built-to-suit, down 10 percent from 1994. Nearly all new construction has been free standing, owner-occupied buildings with light manufacturing the most common type of facilities built. Despite the amount of new construction, little rehabilitation has taken place due to many obsolete older buildings containing low ceilings, narrow column widths, some with wood floors, and multiple floors.

Compared to other regions, this areas has a preference for free standing, owner-occupied buildings.

- Of the estimated total 297.0 million square feet inventory of industrial space in the Lorain-Cleveland metropolitan market area 27.3 million or 9.2 percent remains vacant, however, this is deceptive due to much of the vacant space being older and functionally obsolete.

- Of the total 297.0 million square feet industrial space, 205.5 million (69 percent) is located in suburban markets.

The suburbs continue to dominate the industrial market with nearly 70% of the floor space.

- Of the greater Lorain-Cleveland industrial market, 57.0 percent is warehouse/distribution space, 35.0 percent is manufacturing and only 8.0 percent is R&D/Flex space.

- Eastern Lorain County and western Cuyahoga County are viewed as a good industrial location due to its centralized location, easy access to interstates and rail, proximity to markets in the Mid-West, proximity to the central city and proximity to the airport as well as a stable employment base.

Lorain has a centralized location, easy access to interstates and rail, proximity to markets in the Mid-West.

- In 1996, 3.2 million square feet of industrial space was under construction some of which was attributable to the Ford auto plant expansion and Nordstrom's equipment factory.

- While sales and lease prices of industrial space are expected to increase between one and five percent annually over the next couple of years, industrial land prices are projected to increase by 6 to 10 percent. This follows a 15 percent increase over the last five years.

MASTER PLAN IMPLICATIONS

- There has been little speculative construction. Demand for light industrial manufacturing and distribution facilities has caused a substantial regional shortage in the availability of space of 100,000 square feet and less.

The strongest demand is for buildings under 100,000 square feet.

- Industrial land prices in suburban areas around Lorain are as high as $60,000 to $80,000 per acre with $55,000 per acre the standard. Examples of "asking" prices for nearby industrial parks range from $55,000 per acre at Midway Industrial Park in Elyria to $70,000 at Taylor Woods in North Ridgeville. The Lear Industrial Park in Avon has raised prices from $60,000 to around $75,000 per acre but prices are being influenced by a potential new development by The Jacobs Group and Robert Stark. City of Lorain industrial land varies widely from $35,000 to $60,000 per acre. Local Realtors believe the Master Plan area prices could average $50,000 to $60,000 per acre depending on the type of development. Industrial prices have reached a level where closer-in, in-town locations are cost competitive if site preparation costs can be kept low and negative perceptions eliminated.

Land prices for undeveloped sites around Lorain are as high as $60,000 to $80,000 per acre with $55,000 per acre the standard.

- Lease rates reportedly average $1.60 to $3.75 per square foot in the City and $2.60 to $5.65 in the suburban markets. R&D/Flex space lease rates reportedly average $9.50 per square foot.

- Industrial land sales in Lorain County have been brisk for the last several years. Most industrial parks are full or have one or two sites left. This tight market is inducing some industrial parks to embark on expansion plans. Both the Oberlin Industrial Park and LaGrange Industrial Park are beginning 50 acre expansions of improved land. A new park is being planned on 38 acres between SR 254 and SR 57. Currently in an undeveloped state, the 38 acres is selling for just under $30,000 per acre but will go to $60,000 per acre after it is subdivided and improved.

The industrial park market is tight in Lorain County with most industrial parks being full or having one or two sites left.

Industrial Market Implications

There is strong market support for light manufacturing and distribution space. Many users will require built-to-suit product providing 100,000 square feet or less of space. The space should be flexible allowing for the physical growth and contraction of many manufacturing firms which occurs during changing market cycles. While a few manufacturers will require rail access, most buildings should provide easy access for truck traffic to and from the site including loading dock facilities. New tenants/buildings will require approximately 10 - 15 percent of the space dedicated for office. Typical floor area ratios will be between 0.2 and 0.4 and lot coverage of 40 to 60 percent.

The project should look individual or built-to-suit product providing under 100,000 square feet of space. The space should be flexible allowing for the physical growth.

As a conservative figure, the City of Lorain can estimate that land sales would be between $35,000 and $45,000 per acre. The lower prices would be at the western sites adjacent to the National Gypsum plant. These occupants would likely have greater outdoor storage and parking needs which, in turn, demand a lower economic rent and land price. The land value of parcels will go higher to the east, where the golf course land is located. An average land value of $40,000 was used for estimating the overall land values of the Industrial Park development. It is our opinion, however, that the parcels adjoining the golf course will demand a much higher price. The type of facility attracted there may include manufacturing with a much higher office content serving as corporate or regional headquarters locations for multi-facility operations. These facilities may also have a much higher public visitation rate because of the headquarters aspect and perhaps the occurrence of showrooms or other sales facilities. Along the eastern edge of the Industrial Park the land values could exceed $70,000 per acre given the right environment and marketing program.

Planning estimates should use a conservative estimate of $35,000 and $45,000 per acre.

The Industrial Park will be a unique facility for both the City and the entire Lorain-Cleveland metropolitan area. As a consequence, there will be a learning curve, for both realtors and industrial investors, to understand the benefits of the Industrial Park. These benefits include:

- Phase I environmental clearances on the property,
- Stormwater management requirements (existing and anticipated) are already achieved,

- More buildable area at some sites (no front yard set backs),
- An urban location with a diverse labor force within 10 miles with a suburban setting,
- Amenities for workforce use - linear park for jogging and work-out stations, golf course, riverwalk.

This learning curve will result in a low absorption rate in the initial years (averaging two site sales per year) to a more typical absorption rate of 3 - 5 site sales per year. We believe the uniqueness of the site will result in higher land values but not necessarily increased absorption rates.

Project benefits include:

- *Phase I environmental clearances on the property,*
- *Stormwater management requirements achieved,*
- *More buildable area,*
- *A diverse labor force,*
- *Amenities for workforce use.*

Industrial Area Physical Development Summary

As summarized previously, the total acres of developable industrial land on the western half is summarized below. The master plan illustrates how 30 sites can be developed on the available 156 acres. The Park layout was designed for about average five acre, however, the layout allows for up to four sites to be effectively combined into a maximum 20 acre site. The value of most sites is maximized because of the City owned Stormwater channel which acts as the front yard of the site and allows for a zero setback from the front property lines. Side and back yard set backs are set at 15 feet. Given these constraints, the lot coverage approaches 90 % for a specific site (e.g., with large paved outdoor storage areas) where the side and back yard setbacks take up only 10% of the site.

The master plan provides 30 sites on 156 developable acres with 15 foot side and back yards and up to 90% lot coverage.

Summary of Industrial Development Sites

Item	Site Characteristic
Developable Land	156 acres
Development Sites	30 sites
Average Parcel Size	5.3 Acres
Average Building Size	87,270 Sq. Ft.
Average Site Coverage	41 Percent

Recommended design guidelines will vary for sites fronting the parkway corridors and those across the street from the corridors. These guidelines, presented below, are generally more restrictive for sites fronting the street than the existing light industrial zoning. The building coverage is for structures only and does no include parking. The buildable area excludes sloped areas, natural (e.g., wetlands) areas and common space easements.

Setbacks will be greater than the minimum required by current zoning, pointing towards the need for a new zoning category or overlay district.

Recommended Setback and Coverage Guidelines

Item	Fronting Parkway Corridor	Fronting Street
Front Yard - Building set back	0 feet	35 feet
Front Yard - Parking set back	0 feet	25 feet
Side Yard	10 feet	10 feet
Building Coverage	55 % of gross lot	5 % of gross lot
Maximum Building Coverage	75 % of Buildable Area	75 % of Buildable Area
Landscaped Coverage	5% of total site	15% of total site

Real Property Value

The real estate value of the industrial park was estimated assuming a *very conservative* average value of $40,000 per acre of land and a building valued at $32.00 per sq. ft. The conservative price was used to 1) not overestimate the property tax yields and 2) because the concept of a high end Industrial Park has not been tested within the City limits. The building price is indicative of a structure with an attractive facade on the front and part of the sides of the buildings and special treatments of the entrance

The real estate value was estimated assuming a very conservative average value of $40,000 per acre of land and a building valued at $32.00 per sq. ft.

Real Estate Value Summary

Real Estate Feature	Value
Average Building Value	$ 4,363,500
Total Market Value	$ 137,231,600
• Land	$6, 326,600
• Buildings	$130,905,000

Employment Impacts

The primary objective of the City of Lorain's involvement with the land development is the creation of job opportunities for its citizens. The Industrial Park as planned should provide a broad range of job types and opportunities. The underlying premise of the Industrial Park is that it offers a unique environment that would attract higher value added types of firms. This translates into a labor force that will have high skill levels and likely a large office and professional positions. Employment estimates by skill or occupation were not made due to the uncertainty of the final business mix in the Park. Estimates were made based on the following assumptions:

The Industrial Park, as planned, should provide a broad range of job types and opportunities with an emphasis on skilled and professional occupations.

- 1,000 sq. ft per employee for heavy manufacturing,
- 800 sq. ft. per employee for light manufacturing/R&D,
- 700 sq. ft per employee for assembly,
- 1,200 sq. ft per employee for commercial,
- Building square footage was actually taken from the footprints in the master plan and are only one floor including office space.

These assumptions should be viewed as conservative. In a high end Industrial Park the office employment is often higher an offices are often multistory attached to a factory. The Taylor Woods Industrial Park, a high end development in North Ridgeville, has one 66,000 sq. ft. building of which 44,000 sq. ft is office. Based on the above assumptions, the total permanent job creation for the Industrial Park is 3,140 employees or an average of about 100 jobs per development site.

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Fiscal Impacts

The development of the Industrial Park also has extensive implications for the fiscal impacts to the City of Lorain. The creation of new real estate value and new jobs will translates into tax revenues for the City.

As discussed above the Industrial Park will create an estimated final market value of land and buildings of $137,231,500. The effective tax rate for this portion of the City is 64.52 mills. Applying this tax rate to the market value yields a property tax revenue of about $2,799,000 per year. In a similar fashion, the new jobs create new taxes. Annual payroll estimates were made assuming an average annual salary of $12.50 per hour or $26,000 per year for the typical Industrial Park employee. For the 3,140 employees this converts into an annual payroll of $81,640,000. Applying an income tax rate of 1.75 % this yields an annual income tax of $1,429,000. In summary the annual fiscal benefits to the City at full build-out are:

The Industrial Park will create an estimated final market value of land and buildings of $137,231,500 and an annual payroll of $81,640,000.

- Annual property Taxes $2,799,500
- Annual Income Taxes $1,428,700
- Total Annual Taxes $4,228,200

The annual tax yield to the City at full build-out is $4,228,200.

PROJECT COST IMPLICATIONS

Preliminary Conceptual level cost estimates were made of the western portion of the site, specifically the industrial park. The cost estimates also include only those items for which the City of Lorain would be responsible. Therefore, cost that would be the responsibility of the private company, the golf course developer or one of the public partners such as Metroparks or the Port Authority are not included.

Total project costs are estimated to be $11,274,900. The development of project cost is discussed below and the project costs are presented on the following page. These costs will be refined during preliminary and final engineering. The present costs should not be used for the development of a pro forma or otherwise used for obtaining financing.

Total project costs are estimated to be $11,274,900.

The right-of way costs were estimated together to identify the project costs as if the green corridor concept was not used for the development. Generally, all of the development expected to occur within the 60 foot right-of-way are included here exclusive of utilities. All of the costs associated with construction of the green corridor (upland sloped areas, wetland floodplain and stream channel) are presented separately.

The roadway itself is envisioned as a two-lane concrete truck route with rolled curbs. The road will have a 6" subbase with a 4" concrete surface, it will include stormwater inlets and laterals which will discharge to the green corridor. The path system will be an eight foot wide asphalt path designed to accommodate maintenance vehicles for the green corridor. The width of the path is compatible with the Metroparks path system to which the industrial park path will connect. Additional allowances were provided for lighting and landscaping to achieve a safe and secure path within the parkway concept.

Many of the cost items are typical for any industrial park such as roadways, utilities and signage. Project costs also include the walkway path and the green corridors with its landscaping.

The green corridor construction costs include an extensive amount of earthwork, topsoil maintenance and landscaping. The stream channel itself will need some rock channel protection which will create a better substrate than a concrete gutter. The corridor costs also includes control structures. These include the cost of a 36" culvert under the driveways plus the flood control structure box. The system will also include headwalls at each end of the culvert.

The sanitary system was envisioned to accommodate an industrial park of 3,500 employees with a use factor of 200 gallons per day (GPD) or 700,000 GPD for the system. The gravity system was sized for 8" mains with 6" laterals which would provide for even a larger employment size. The wastewater will all flow downhill to be collected in the southwest corner of the site where the port related site is planned. Here a pump station is planned with dual pumps for back-up safety measures. From here the wastewater will be pumped back up to approximately Henderson and Colorado Avenue.

For estimating purposes it was assumed that the project may still require the creation of replacement wetlands over and above those created in the green corridors. It was assumed that four acres of new wetlands would be created and 20 acres of wetland will be preserved and enhanced in the floodplain.

Project Development Costs

Item	Total Cost
Clearing & Grubbing	$53,800
Right-of-Way	
Roadway	$3,840,000
Lighting	$350,000
Sidewalk/Jogging Path	$384,000
Landscaping	$180,000
Green Corridor	
Earthwork	$1,147,500
Topsoil Strip and Spread	$94,500
Channel Protection	$124,700
Control Structures	$520,000
Landscaping	$396,000
Waterline / Hydrants	$812,000
Utility Run	$252,000
Gravity Sewer Lines	$1,050,000
Pump Station	$200,000
Sewer Main Line	$44,000
Entry Signage	$50,000
Replacement Wetlands	$35,000
Wetland Enhancement	$35,000
Subtotal	**$9,568,400**
Contingency @ 10%	$992,800
Escalation for 2-years @ 3.5%	$777,900
TOTAL	**$11,274,900**

ENVIRONMENTAL IMPLICATION

The wetland delineation for the industrial park area identified 12 wetlands ranging in size from 0.1 acres to 2.8 acres for a total of 10.5 acres of wetland. Nearly all of the acreage is identified as palustrine forested broad-leaved deciduous.

The Master Plan went to great lengths to avoid or incorporate existing wetlands into the green corridor. As a consequence, the project should preserve 8.5 acres and take only 5.7 acres of wetlands, mostly the very small wetlands. The large wetlands, the ones with the highest functions and values, were incorporated as the large areas in the green corridors shown in the Master Plan. In addition, the plan calls for the enhancement of approximately 20 acres of floodplain south of the landfill area. This 20 acres will be enhanced by some limited grading and multi-season control of the extensive growths of phragmites (common reed) and seeding of selected indigenous wetland plants.

The project should preserve 8.5 acres and take only 5.7 acres of wetlands, mostly the very small wetlands. The green corridors can create about 6 acres of new wetlands and the Black River floodplain will be preserved.

The Master Plan calls for the creation of wetlands in the floodplain created in the green corridors. Using an average floodplain width of 30 feet will produce approximately 6.2 acres of emergent wetlands.

SUMMARY

The 400-acre development site represents an opportunity for the City of Lorain to create a unique industrial park setting and a recreational opportunity for its residents. The development can occur in a fiscally and environmentally prudent manner. The demand for industrial space is there and the development costs are in line with the revenue that can be realized from the land sales. It is recommended that the City proceed to the next steps of its development process.

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