Comprehensive Design Project
Department of Landscape Architecture
Ball State University

Central Canal • Walk
Broad Ripple, Indiana

*Urban Waterfront Reclamation: The Creation of Identity and Sense of Place through the Revitalization of an Urban Waterfront.*

Timothy R. Piper
May 2, 1997

John L. Motloch
Department of Landscape Architecture, Faculty Advisor

Malcolm Cairns
Department of Landscape Architecture, Secondary Faculty Advisor

Craig G. Glazier
Rundell Ernstberger Associates, Professional Advisor

Ronald Spangler
Instructor
Dedication

I would first like to thank my parents, Charlie and Linda, and my brother, Chris, for five years of unconditional support and devotion.

I also express my deepest gratitude to my fellow classmates, professors, and companions for their inspiration and friendship.

This project is dedicated to the recognition of our past, in hopes of a more conscious future.
Table of Contents

i. Comprehensive Design Project
ii. Dedications
iii. Table of Contents
iv. Abstract
1-2 Section I. Introduction
3 Section II. Problem Statement
4-8 Section III. Literature Review
9-14 Section IV. Program
9 A. Project Goals and Objectives
10 B. Assumptions
11 C. The Client
11 D. Client Goals
12-14 E. Proposed Features
14 F. Project Site Users
15-35 Section V. Design Process
15-16 A. Site, Setting & Context
17-20 B. Historical Overview
21-23 C. Site Inventory
24-29 D. Site Analysis
30-35 E. Conceptual Development
36-49 Section VI. Central Canal • Walk Master Plan
36-37 A. Master Plan
38-49 B. Detailed Site Development
38-41 I. Gateway Park
42-46 II. Canal • Walk Core Development
47-49 III. The Monon Connection
50 Section VII. Conclusion
51-55 Appendix A
56-59 Appendix B
Abstract Statement

In 1836, Indiana entered the Canal Era with the passing of the Mammoth Internal Improvements Bill. However, due to the lack of funding and the growing popularity of railroads, construction of the canals ceased after only three years, leaving portions of the system unfinished and unused. Only nine miles of Indiana's Central Canal was constructed, and after years of neglect and various ownership changes, the canal now exists as a bold reminder of a past era in our nation's historical development.

Broad Ripple, Indiana, which was established during the construction of the Central Canal, now serves as the entertainment district of Indianapolis and the location of the connection between the former Central Canal and the White River. Covered by parking areas, lined with fences and roads, and turned away from by businesses, the canal now serves as home to a large population of waterfowl.

The purpose of this project was to establish an awareness of the need for the businesses, residents, and visitors of Broad Ripple's downtown to be reconnected to the water's edge. This goal was accomplished through the development of a plan which focused on reestablishing the sense of identity once associated with the canal. Through the creation of pedestrian oriented spaces and the provision for interaction with water, art, nature, and people, the proposed Central Canal Walk design recognized the importance of water and its role in our everyday lives.
I. Introduction

It is not very often that one finds a river, stream, or lake in the urban environment left in its natural state. The processes that drive water are ever changing, yet consistently water flowing through cities is channelized, leveed, and engineered to produce minimum flood damage. Historically, bodies of water were the source of life, providing the foundations upon which most cities were built. In ancient civilization through the settlement of America, cities began to develop adjacent to bodies of water, which in turn provided a source of food and fresh water for drinking, cleaning, and bathing. Rivers, oceans, and lakes also served as a primary means of transportation, allowing for the development of large coastal and port cities (Mann 15).

The industrial revolution brought many changes to the environment. Mass production, the internal combustion engine, and advancements in technology were forefront in creating the start of large amounts of destruction to many of the world's ecosystems. Bodies of water began to be seen as dumping grounds for massive amounts of waste, forests were raped for their timber, and mountains were leveled for their iron and gold, all of which was used to fuel the needs of an increasingly materialistic society.

Rivers, lakes, and oceans became the source of water for production of electricity, cooling of machinery, and the removal of industrial waste. At the same time, the character of the waterways was being altered through damming, channelization, and contamination. As in many other countries, the United States began to construct canal systems in an effort to connect industrial urban centers with established shipping routes. Indiana began to build several portions of a planned canal system. However, the efficiency of the railroad system and the lack of funds soon replaced the need for waterway shipping routes, leaving the canals uncompleted. The mode in which materials were transported was always changing. The canals were replaced by railroads, and the railroads, in certain portions of the country, were replaced by the speed of airplanes and the destination specific characteristic of auto-
motive vehicles. Similar to the increasing number of abandoned railroad lines, large portions of the unfinished canals were covered with streets and parking lots, and separated from the public by roads or fences.

In 1970, Congress passed the Clean Water Act in an effort to curb the effects of years of pollution and bring life back to this nation's water resources (Breen and Rigby "Urban Waterfronts..." 67). In conjunction with the environmental action movement, legislative decisions established the basis upon which action was taken to return people to the banks and shores of this nation's waterways. The establishment of waterfront revitalization projects, greenway corridors, and trail systems has returned people to water for educational and recreational purposes. However, there still exists a need for many communities to accept the responsibilities of the past, and strive for change.

This comprehensive project deals with an investment in the idea of water...reevaluating Broad Ripple's former Central Canal in terms of its inherent aesthetic, environmental, economical, and historical significance, and discovering the potential benefits of reconnecting Broad Ripple to its waterway.
II. Problem Statement

The urban environment is home to most of the world's population. Although an increasing number of this nation's citizens are seeking residence in suburban or more rural locations, the city still serves as the lifeblood of our nation's economical and political structure. Cities have traditionally been located near major sources of water, such as oceans, lakes, or rivers. The importance of such waterways in terms of transportation, industry, and personal use has changed since the time of early settlement. However, the need to be directly linked to the waterways is no longer necessary. Water for drinking, cooking, cleaning, and bathing is delivered to our homes through pipes, food harvested from water bodies is sold at the grocery store, and the removal of waste is as easy as flushing the toilet. The idea of needing the canal, river, lake, or ocean as a source of sustenance has all but disappeared. The negative attitude toward waterways and physical separation of humans from its banks due to dams, levees, dikes, and concrete flood walls has caused cities and their communities to turn their backs on waterways.

The Problem

The universal problem in regard to this project report deals with the lack of appreciation of urban waterways. There exists a lack of societal realization of the potential aesthetic, educational, economic, environmental, and recreational benefits inherent in waterways, and the positive impacts associated with the reinvestment in the urban waterfront.
III. Literature Review

Waterways and Waterfronts

“Rivers are the last open valleys of the urban terrain, the last remaining paths where man may re-establish his rights of access and enjoyment” (Mann 20). The increased interest in historic preservation, increased population of urban centers, and a revival of interest in the development of urban renewal projects marks a significant transformation in the history of cities (Breen and Rigby Waterfronts 2). “It is the lure of water, its sparkle, its reflection, its endless movement and change, that both captures man’s imagination and provides a variety of opportunities from business to recreation, from active to passive activities” (Torre 3).

In a recent forum on waterfronts, several leading experts in the area of waterfront development gathered to discuss the issue of waterfront development. Athena Tacha stated, “I don’t think that the success of the waterfront can be only due to beautification or entertainment...there has to be real life there” (Thompson 57). Roy Mann also stated, “The new-generation waterfront will succeed because of the genuineness of its character and the diversity of the residents and visitors it attracts” (Thompson 57).

Placemaking

According to William Gilpin, “water is as much use in a landscape as blood is in a body; without these two essentials, it is impossible there should be life in either one or the other” (Corner 46). Eugene Walter, in discussing the concept of place, suggests that “the real ‘sense’ of place is twofold...On the one hand, people feel it; on the other hand, they grasp its meaning” (2). Place is linked to imagination, memories, images, and the past. “A place binds people together by the common emotion it elicits...Moreover, a place gathers experience and must be understood as one of the unities of experience” (Walter 133).
In the book entitled Place and Placelessness, the author discusses the six major components of the concept of place. According to Relph, “Place has spatial extension and an inside and outside... Every place is a unique entity... Although every place is unique, they are interconnected by a system of spatial interactions... Places are localized... Places are emerging or becoming, thus places have a distinct historical component... Places have meaning” (3).

Water as Environmental Art

In the book Water and Landscape, several authors attempt to establish an overview of the role of water in the landscape. The attitude one has in regards to perception of the aesthetic qualities of a setting is based on the observer’s state of mind, including such things as mode of travel, location, and preconceived or anticipated outcomes upon arrival (Litton, et al. 7). “Sound supports the most powerful expression of water that may at times be found... blue water suggests coolness; white water suggests roaring power and sound” (Litton, et al. 3). Water has the ability to associate feelings or impressions based on the perception of our senses. “Active and turbulent water, even if present in relatively lesser amounts, will tend to be more prominent in its setting than may be larger amounts of more calm water” (Litton, et al. 70). Water will also appear more prominent from an elevated viewpoint, while flatter landscapes tend to diminish the importance of horizontal water surfaces (Litton, et al. 70).

In his book entitled Water as Environmental Art, Shoichiro Higuchi attempts to show a relationship between environmental art and water, and the use of water and art in the urban landscape. In Williams Square, outside of Fort Worth, Texas, a herd of galloping horses are realistically shown clashing through an artificial creek, kicking up spray on their journey across an otherwise sterile plaza (Higuchi 53). Water in itself, if carefully orchestrated and presented, can be used as a statement of art, such as the interactive
water feature at the entrance to Chicago’s Navy Pier. Programmed jets of water are displayed in a series of dances, as if set to invisible music. “People have arrived at the conclusion that the joy, mental serenity, and peace of mind obtained from associating nature with the five senses cannot be gained from the hard, inorganic, monotonous space of cities, no matter how much the material satisfaction is increased” (Higuchi 170).

Waterfront Initiatives

Several existing and proposed urban waterfront projects of significance can be identified as being closely related to the development of this project report.

The first and most recognized urban waterfront development is that of the San Antonio Riverwalk, as shown in figure 3. Designed by Robert Hugman in 1938, and built by the Works Progress Administration, this beautification project has developed into the second largest tourist attraction in San Antonio. The riverwalk features gardens, bridges, offices, hotels, and commercial establishments (San Antonio: Past, Present, and Future leaflet). Continued expansion in the form of canal extensions and commercial development in the 1960’s, and again in the 1980’s, are tribute to the success of the Riverwalk. Commenting on the latest addition to the canal, Ken Greenberg writes, “the space works as an efficient and inviting pedestrian circulation system for the Rivercenter mixed-use development, but it also serves as a town square and stage-set for river parades and festivals, as well as for private socializing” (Breenberg 35).

A second project dealing with the restoration of an urban waterway is that of the HARP, or the Historic Arkansas River Project in Pueblo, Colorado (Figure 4). Although $30 million in funds are still being pursued, when completed the project “will embrace a two-acre lake lined by residences, a waterfall, an amphitheater, restaurants, shops, and several natural areas” (Leccese “in the San Antonio Mode” 42). Designed by Design Studio West,
creators of the St. Vrain riverfront project in Estes Park, Colorado, the concept is modeled after that of the highly successful San Antonio Riverwalk. The plan calls for a portion of the Arkansas River, which currently runs under the city in culverts, to be uncovered and revitalized. “Like every other community we turned our back on the river,” says James F. Munch, director of Planning and Development for the City of Pueblo (Lecese 42).

A third project of national recognition is Guadalupe River Park in San Jose, California (Figure 5). This three-mile park serves as a “narrative about the city and the river” (Woodbridge 40). Designed by Hargreaves Associates, the park “attempts to heighten the users awareness of natural processes through an aesthetic of abstraction which intensifies experience in a manner no mere copying of a natural scene would” (Rainey 30). Through the reinterpretation of the 19th century park, Hargreaves manipulated undulating landforms in varying size, shape, and locations to create a pedestrian experience resembling that of water as it journeys the dynamic and changing course of a flowing river (Corner 50). In essence, Guadalupe River Park “serves as a flood control facility as well as an urban park providing a strong matrix for new construction in the downtown area” (Rainey 37).

A fourth project consists of a riverfront restoration initiative in Breckenridge, Colorado (Figure 6). This $6.5 million riverwalk reclaimed a portion of the Blue River from its previous status, described by project landscape architect William Wenk as being a “big, dusty ski parking lot with a ditch running through it” (Lecese “The Commerce of Ecology” 104). “Key to the rescue of this mining-ravaged river was the conversion of four and a half acres of barren rock tailings into native wildflower meadows and aspen groves” (Lecese 109). The eleven-acre riverwalk serves as the backbone to the downtown area, providing a draw to commercial establishments and improving the environmental and aesthetic quality of the community.

A final project of international significance is the Parc de la Villette in Paris, France (Figure 8). Bernard Tschumi’s design won the competition for the Parc de la Villette in 1982. The competition’s objectives were to “both
mark the vision of an era and to act upon the future economic and cultural development of a key area in Paris” (Tschumi I). The site is intersected by the Canal de L'ourcq, once used as a shipping canal for the 125-acre central slaughter house of Paris (Tschumi II). The park makes use of points, lines, and surfaces, as shown in figure 7, represented in form by follies, axial pathways, and expanses of horizontal space in order to establish an overall ‘cinematic’ promenade of spaces (Tschumi 7). “During the 20th century we have witnessed a shift in the concept of park, which can no longer be separated from the concept of the city” (Tschumi 1). In essence, the design for the Parc de la Villette begins to establish the idea of the “urban park for the 21st century” (Tschumi II).
IV. Program

A. Project Goals and Objectives

The following goals were produced in response to the problems associated with this comprehensive project.

1. To increase appreciation of urban waterways. This goal was accomplished through the increased connection and interaction of people with the canal.

2. To increase the level of identity associated with the urban environment. This goal was accomplished through the creation of spaces programmed to provide activity in the form of recreation, socialization, and special events.

3. To increase the level of connection of the canal with downtown Broad Ripple. This goal was accomplished by creating pedestrian links and corridors through the restructuring and revitalization of unproductive urban spaces, and through the provision of commercial establishment along the canal.

4. To increase the quality of life of the urban resident and site user. This goal was accomplished through the creation of spaces which focused on providing opportunities to experience and interact with water.

5. To increase the aesthetic and functional values of an existing urban waterway. This goal was accomplished through the revitalization, pedestrianization, and beautification of an urban canal.
B. Assumptions

In order to complete this comprehensive project in a timely manner, the following assumptions were made.

1. The designer’s services were acquired by the client and the chosen site was in need of revitalization.

2. Funding for the proposed design was available.

3. The success of the final design rested in the acceptance of the proposal by the client and proposed users.

4. Sense of place and significance could be designed at the time of realization.

5. Further steps would be taken in the pursuit of improving the quality of our nation’s water resources.

6. The proposed design followed A.D.A. regulations.

7. The proposed Canal Greenway Trail, Monon Rail-Trail, and White River Greenway Trail will be completed.

8. Broad Ripple Village would construct additional parking complexes in response to the elimination of the canal parking deck structure.
C. The Client

The primary clients of the comprehensive project were the following: Broad Ripple Village Association and Indianapolis Department of Metropolitan Development. The secondary clients for the comprehensive project were the residents and taxpaying citizens of the City of Indianapolis, Marion County.

D. Client Goals

1. To establish pedestrian connection between canal greenway trail, Monon trail, and downtown Broad Ripple.

2. To provide space for socializing, strolling, gathering, and performing.

3. To propose treatment for existing structures along the canal, and the potential connection of the existing and proposed businesses to the canal promenade.

4. To provide for the display of temporary and/or permanent art.

5. To create unity and an overall design aesthetic through the use of water, materials, signage, lighting, vegetation, and details.

6. To establish an overall theme which responds to the history and culture of Broad Ripple and the canal system.
E. Proposed Features

This section of the report established the programmatic requirements of the comprehensive project through the reinterpretation of the client’s goals. The proposed features of the comprehensive project were as follows:

1. Treatment of existing buildings and parking.

The existing buildings located directly on the canal's edge would be renovated and/or retrofitted to provide access to the canal. This process would include the addition of outdoor gathering and seating areas, landscaping, and pedestrian oriented lighting and signage. Due to the high percentage of paved area and low percentage of pedestrian and open space, 50-75% of parking areas located on the site would be converted to useable pedestrian oriented space.

2. Treatment of the canal, canal walk, and connection of the canal to other amenities.

The water level in the canal is maintained by the Indianapolis Water Company, the current owner of the canal. The additional use of water in the form of water features, fountains, or sculptural interventions would be used to enhance the overall character of the site. This play on water would be located at various locations within the project site, as determined by the design. Walkways, overlooks, and pedestrian bridge crossings would create variations in the treatment of the canal's edge. The canal walk itself would be located on both the north and south banks of the canal. The height of the walks above the surface of the canal would fluctuate according to the location of buildings, bridges, and canal entryways. The primary walkways
would maintain a width of at least 10' and serve as the connection between the canal Greenway Trail and the Monon trail. Walkways connecting the canal, downtown, and residential areas would serve as secondary connections, 5' to 8' in width. The surface material would reflect the chosen colors, textures, and theme of the overall design concept.

3. Theme, Style, and Experience.

Interaction with Water

Water would be used as an agent for personal interaction and attraction to the canal promenade. Attention would be centered primarily on the surface of the canal, which would be manipulated to form variations in water level and current, while the secondary use of water in the form of waterfalls, cascades, or fountains would establish a draw to the canals edge.

Daytime and Nighttime Experience

The site would maintain a level of character similar to that of the downtown area. Due to the variety in style, atmosphere, and character of Broad Ripple Village, as well as the White River corridor connection, the overall theme of the site would represent the integration of natural and human-made materials. Limestone and various forms of metal would combine with native and exotic landscape materials to establish the base language of design. The qualities of the site at night would be enhanced by various forms, colors, and dynamics of lighting, which included illumination of signs, trees, walkways, water surfaces, and bridges.
Features of the Canal Walk.

The site would be furnished with lighting, signs, seating areas, and various other necessities. The history and culture of the area would be the source of inspiration for the details of the project site. This information would also be used as an educational and interpretation tool. A series of seating areas and the provision for an amphitheater of approximately 10,000 square feet would provide for the need of an outdoor gathering and performance area. The use of sculpture and environmental art in the form of both temporary and permanent installation would be displayed at various locations on the site, as determined by the design. Vegetation would be used to establish unity, color, form, and texture to the entire project site.

F. Project Site Users

The users of the project were broken into two groups, the residents of Broad Ripple Village and the visitors. The first group included business owners and patrons, adolescents, residents of adjacent apartment complexes and residential areas, and rescue personnel from the fire station. The second group consisted primarily of young adults, due to Broad Ripple's popular night scene. This grouping of users included tourists, local business customers, and students from nearby Butler University.
V. Design Process

A. Site Location, Setting & Context

The project site for the final comprehensive project is found along the former Central Canal in Broad Ripple, Indiana. Broad Ripple is located in Central Indiana, approximately 7 miles north of downtown Indianapolis (Figure 9). Annexed by the City of Indianapolis in 1922, the Village of Broad Ripple is located in Washington Township, Marion County (Figures 10, 11). Broad Ripple is bounded to the north and west by the White River, and now serves as a residential, entertainment, and art community of Indianapolis. The following landmarks are located within a two mile radius of downtown Broad Ripple: Broad Ripple Park, Broad Ripple High School, the White River and White River Greenway Trail, Indianapolis Arts Center, Marott Park, Indiana School for the Blind, Park-Tudor School, Holiday Park, and Friedmann Park (Figure 13). Within a four mile radius of downtown Broad Ripple and the project site are the Indianapolis Museum of Art and Butler University located along the Indianapolis Water Company Canal, and Canterbury Park, Arsenal Park, School for the Deaf, State Fairgrounds, and Fall Creek, located along the Monon Rail Trail (Figure 12).

The comprehensive project site is located north of Broad Ripple Avenue in downtown Broad Ripple. The existing Canal Greenway Trail terminates west of College Avenue due to the presence of a Revco parking lot, thus marking the west boundary. Because the White River is inaccessible to pedestrians, due to the presence of a pumping system for the IWC Canal, the Monon Rail Trail marks the eastern boundary of the site. The north and south boundaries fluctuate due to the juxtaposition of the canal against the standard north and south street configuration.

The Village of Broad Ripple is primarily a residential community of Indianapolis. However, the downtown area is known for its night clubs, restaurants, and specialty shops, making it one of the most popular destinations.
in Indianapolis. Night clubs such as the Vogue, Patio, and Eden's, along with Renee's and the Corner Wine Bar establish the character of downtown Broad Ripple, which is also known as an art community.

Figure 12. "Monon Rail Trail System"

Figure 13. "Greenway Trail Systems and the Regional Context of Broad Ripple"
B. Historical Overview

The history of Broad Ripple is directly related to the history of the Central Canal. Canals were being built to connect the Mediterranean and Red Sea as far back into history as 1800 BC. Canals, derived from the Latin word “canalis” or channel, have served the country of England as major transportation corridors since the late 18th century (Swanson 4). The Erie Canal, connecting Lake Erie to the Hudson River, built between 1817 and 1825, began the Canal Era in America, influencing other states with its success to establish vast canal systems (Swanson 5). Indiana entered the Canal Era with the establishment of the $10 million Mammoth Internal Improvements Bill of 1836, which authorized the construction of turnpikes, railroads, and canals (Shaw 137). This plan called for the construction of over 1,289 miles of canals, of which the principle project was the Wabash-Erie Canal (Figure 14). The proposed Central Canal was to connect Indianapolis with the Wabash-Erie Canal. Construction began in 1837 on a segment of the Central Canal from Indianapolis to what is now Broad Ripple, Indiana (Larson Encyclopedia of Indianapolis 395).

In April 1837, Jacob Coil platted Broad Ripple north of the present day canal. A month later, James and Adam Nelson established the community of Wellington on the south bank. These two communities served as the homes for many African American and Irish canal builders (Walker Encyclopedia of Indianapolis 352). In 1839, after only three years, the State of Indiana went bankrupt and most of the construction associated with the Mammoth Improvements Bill ceased. Only 13 miles of the Central Canal were built, connecting the White River at Broad Ripple with Indianapolis (Figure 15). “The great Central Canal that was supposed to have brought urbanization and wealth by linking Indianapolis with New York and New Orleans had lamentably failed...but socially it was useful as a means of recre-
The canal diggers (Fatout 120). At a total cost of $882,088, the Central Canal was never used for its original purpose of shipping and transportation. Instead, as part of a debt retirement program, the canal was auctioned to private parties in 1850 for a mere $2,245 (Fatout 143).

After passing through several owners in the mid to late 1800's, the Central Canal was purchased by the Water Works Company of Indianapolis in 1871 to drive their pumps (Larson Encyclopedia of Indianapolis 395). However, the Water Works Company was charged with a law suite in 1873 for maintaining a public nuisance, and was forced to sell the southern portion of the canal for sewage removal (Larson Encyclopedia of Indianapolis 395). In 1881, the Indianapolis Water Company purchased the remaining portion of the canal. The canal became a source of drinking water for the City of Indianapolis and a popular recreational area (Fatout 183). The IWVC developed Fairview Park, now the campus of Butler University, and established a ferry system that brought picnickers from the city to the country on a steam powered ship named Cleopatra (Larson Encyclopedia of Indianapolis 395).

The interest in travel associated with the ferry, and later the interurban in the early 1900's, helped to establish Broad Ripple as a popular destination and summertime retreat for residents of Indianapolis. In 1906, White City Amusement Park, modeled after Chicago's 1893 World's Columbian Exposition, opened for business in what is now Broad Ripple Park (Vanderstel Encyclopedia of Indianapolis 353). After several ownership changes, due to a fire in 1908, 60 acres of the former White City Park was purchased by the Board of Park Commissioners in 1945, and renamed Broad Ripple Park (Vanderstel Encyclopedia of Indianapolis 354).

The city of Indianapolis annexed Broad Ripple in 1922, which enabled residents to build higher levees along the White River, as well as modernize their fire departments (Walker Encyclopedia of Indianapolis 353). As the community developed and society changed, Broad Ripple businesses became threatened by newly established malls and commercial areas located outside the downtown area. In 1969, the Broad Ripple Village Association was formed.
to help revitalize Broad Ripple’s commercial and residential areas (Walker Encyclopedia of Indianapolis 353). The success of this group can be seen in Broad Ripple’s downtown, which is now known for its thriving economy, nightclubs, specialty shops, and dining establishments.

The IWC Canal received designation as an American Water Landmark in 1971 (Larson Encyclopedia of Indianapolis 396). In Indianapolis, the canal has become a part of the city’s identity as many portions of the canal are being revitalized. It is my hope that the community of Broad Ripple will follow in the footsteps of Indianapolis and other cities and establish a plan for returning residents, businesses, and identity to the former Central Canal.
Central Canal

1836 - 1839
Part of the Mammoth Internal Improvements Bill. Only 9 miles of the Central Canal were built, from Indianapolis to Broad Ripple, at the cost of $82,088.

1850
Central Canal sold to private parties for $2,245.

1871
After passing through several owners, Water Works Company of Indianapolis purchased the Central Canal to drive pumps.

1881
Indianapolis Water Company purchased the canal. IWC Canal used for recreation, ferrying passengers to and from Broad Ripple.

1971
Remaining portions of the IWC Canal designated as an American Water Landmark.

Motors Bridge
Built in 1911

Guilford Ave. Bridge
Built in 1966

Parking Deck
Built in 1961

Pumping Station
Former lock system connecting Central Canal with the White River.

Figure 20. "Historical Inventory of Broad Ripple and the Central Canal"

1836
Mammoth Internal Improvements Bill authorized construction of the Central Canal.

1837
Jacob Coil platted Broad Ripple, north of the canal.

1839
James and Adam Nelsor established Wellington to the south of the canal.

1884
Construction on Indiana's canal system ended due to the lack of funds.

1890 - 1930
Broad Ripple became summertime retreat for Indianapolis residents.

1906
White City amusement park opened, now known as Broad Ripple Park.

1922
City of Indianapolis annexed Broad Ripple.

1950 - present
Broad Ripple Village Association formed to help revitalize commercial and residential areas. Downtown now known for specialty shops, restaurants, and nightclubs.
C. Site Inventory

The project site is located along the IWC Canal, between Westfield Boulevard and College Avenue. The site, similar to that of the adjacent context, consists of a diverse mix of business, commercial, and residential areas. The IWC Canal connects to the White River in Broad Ripple, which provides the source of water for the canal. A pumping station, located at the intersection of the IWC Canal and the White River, maintains a standard canal water level. A dam located down river from the site establishes a relatively consistent water level for the White River, except during times of drought or flood. The pumping station and White River Ivey, located east of the Westfield Avenue Bridge, is kept off limits by a series of fences. Unfortunately, because of this fence, physical connection between the project site and the White River is prohibited.

The Monon Rail Trail, located on the former Monon Railway grade, runs through the eastern portion of the site. This trail will eventually connect Broad Ripple with Indianapolis and Carmel, and represents a tremendous asset to the site. The Canal Greenway Trail, which runs from Indianapolis through Butler Campus to Broad Ripple along the edge of the IWC Canal, ends just west of College Avenue in the Revco Pharmacy parking lot.

The main feature of the IWC Canal, within the project site boundary, is the parking deck structure. Built in 1961, the parking deck was placed on top of the canal in an effort to increase the amount of available parking in the downtown area. College Avenue, Guilford Avenue, and Westfield Avenue Bridges, along with the Monon Rail Trail Bridge and Parking Deck represent existing vehicular and pedestrian canal crossings.

The north bank of the canal is dominated by small businesses, apartment complexes, and residences. The south bank of the canal is characterized by downtown Broad Ripple, parking areas, Indianapolis Fire Station #32,
and Westfield Avenue businesses and restaurants. The inventory board used in the final presentation, shown in figure 25, lists all of the businesses found on the project site.

The treatment of the canal’s edge varies from gravel and riprap to turf, scrub vegetation, and a few native trees. The following section of the report begins to establish an evaluation of the site in terms of existing features.
D. Site Analysis

A series of studies were developed in order to gain a broad level of understanding of the project site and adjacent context. The first study conducted was that of a figure ground analysis, as shown in figure 26. The buildings were highlighted in black, contrasting existing built spaces with the surrounding ground plane. The second study dealt with a figure ground study of parking and paved surfaces, shown in figure 27. All paved surfaces, such as roads and parking, were highlighted and contrasted against existing open space and buildings. A tremendous percentage of the ground plane of the site was found to be paved. When the two figure ground studies were overlaid, it was discovered that the entire site was either covered with pavement or buildings, except for small areas of lawn or water surfaces.
The second study dealt with analyzing existing pedestrian and vehicular circulation patterns. As shown in figure 28, the primary pedestrian circulation areas were located in downtown Broad Ripple, south of the canal. Intersections of high foot traffic were found at the corner of Broad Ripple Avenue and College Avenue, as well as the corner of Westfield Avenue and Guilford Avenue. North of the canal existed pedestrian routes of secondary nature, connecting residential areas with the Canal Greenway Trail and the Monon Rail Trail, as well as downtown Broad Ripple. As shown in figure 29, primary vehicular patterns were located on College and Broad Ripple Avenues. Guilford and Westfield Avenues acted as secondary routes, due to the presence of vehicular bridges. The parking deck structure established areas of high traffic intensity as a result of the parking area. Overall, the two studies on circulation began to establish areas of importance and intense use.
The third study dealt with analyzing four sections of the canal within the project site boundary. The first section, shown in figure 30, showed the relationship between pedestrians and the canal near College Avenue. The Revco parking lot extended over the north bank of the canal, causing the discontinuation of the Canal Greenway Trail. Pedestrians were forced to walk behind parked vehicles, and views of the canal were decreased. The second section, shown in figure 31, established the relationship between the apartment complex, Laverock Road, Westfield Boulevard, and the canal. Although the apartment provided walkways for pedestrians, Laverock Road and on-street parking blocked visual connection between pedestrians and the canal. All along the canal, the treatment of the canal's bank, which ranged from riprap to eroding turf and scrub vegetation, maintained poor aesthetic quality. Westfield Boulevard, along with utility poles and guard rails, established an effective blockade to pedestrian's visual and physical interaction with the canal.
The third section, as shown in figure 32, examined the portion of the canal that contained the parking deck structure. The parking deck completely covered the sixty foot wide canal, severing all connection between pedestrians and the canal. The businesses on the north bank of the canal, however, faced the parking structure, which provided a strong relationship between pedestrians, parking, and businesses. On the other hand, a series of fences and retaining walls effectively blocked pedestrian access to businesses on the south bank of the canal. The final section, shown in figure 33, illustrated a section through the canal just west of the Monon Rail Trail bridge. The connection between pedestrians and the canal was strong on the north bank of the canal. However, the treatment of existing trees and the bank itself established an undesirable aesthetic. The south bank of the canal was dominated by scrub vegetation, native trees, utility poles, parking areas, and trash receptacles. Overall, the sectional study of the site determined that the canal existed as an undesirable urban remnant space, surrounded by roads, turned away from by buildings and businesses, and covered with parking.
Finally, in order to gain an understanding of the adjacent context, a district analysis was conducted. As shown in figure 36 on page 29, each area that contained unique characteristics was highlighted, placed in a category, and described. This study began to identify the external forces acting upon the project site area. The area north of the canal, entitled the residential conversion zone, maintained a residential character while existing primarily as a business and commercial district (Figure 34). The downtown zone maintained an architectural character typical to that of most Indiana downtowns (Figure 35). Other zones, such as apartment, rail conversion, and commercial existed at the periphery of the project site area.
Figure 36. "District Analysis"
E. Conceptual Development

The establishment of distinct zones was key to the development of the project, and also to the development of an overall concept. In conjunction with the program, inventory, and analysis, the concept diagram established the basis for the comprehensive project design. The concept diagram focused on establishing a core development, connected to bookends through pedestrian transition areas, as shown in figure 37. The Monon Rail Trail served as the eastern bookend, while a park development served as the western bookend. The concept also focused on connecting the users of the Canal Greenway Trail with the proposed park, and the Monon Rail Trail.

The core development area was established at the intersection of the residential conversion area and the downtown Broad Ripple district. As of April 1997, and according to the program, the parking deck structure was slated to be removed from the site. Therefore, the core also represented an area in need of redevelopment due to the removal of the parking structure.

Three concepts were developed using the original concept diagram as a model. The first concept, shown in figure 38 on page 32, established a strong linear pedestrian corridor along the canal, connecting the Canal Greenway Trail to the Monon Rail Trail. The focus of the design was on the Core, which was enhanced through the use of water features, overlooks, an esplanade development, and pedestrian bridges. A small park was established at the intersection of Broad Ripple and College Avenues. Westfield Avenue was routed between two existing commercial banks, and a parking structure was located next to Renee’s Restaurant.

The second concept focused on establishing an overall theme to the design, as shown in figure 39 on page 33. The presence of the White River to the east of the site served as an inspiration for the reinterpretation of natural
forces. These forces were represented through the manipulation of undulating mass plantings of vegetation and curvilinear walkways. The Core development served as the endpoint for the reinterpretation of natural forces in a highly developed series of water features, sculptural elements, and pedestrian plaza areas. Again, the canal served as the linear pedestrian corridor between various trail systems. The entry park at the intersection of Broad Ripple and College Avenues began to become more of an integral part of the design. Westfield Avenue was routed between the commercial bank and Ossip Optometry, and the extension of Carrollton Avenue, in the form of a pedestrian and vehicular bridge, established a physical connection between the north and south banks of the canal.

The third concept concentrated on the development of the Core and Gateway Park, as shown in figure 40 on page 34. The Gateway Park, making use of the land currently occupied by two commercial banks, established a dynamic entryway for the project design. The park provided for interaction with the canal, temporary and permanent art installations, as well as an outdoor amphitheater. The core development began to establish a strong connection between existing businesses and the proposed canal esplanade. Through the use of water features and vegetation, the Core also established a pedestrian oriented character. The transition area between the Core and the Monon was treated in a linear fashion, which provided for a parking structure on the south bank of the canal. Carrollton Avenue was extended across the canal to Broad Ripple Avenue, and Laverock Road was eliminated entirely.

The final concept combined features of each concept into an overall package, as shown in figure 41 on page 35. Reinterpreting the natural forces of the White River, creating a dynamic entrance park, and the providing for a pedestrian oriented and interactive Core established the essence of the final concept. The canal served as the focal point for the design, while three separate, yet unified, portions of the canal supported the development of the Canal-Walk experience. The evolution of the concept into the final master plan was documented in the following section of this report.
Figure 41. "Final Concept"
VI. Central Canal-Walk

A. Master Plan

The final concept established the basis for the overall master plan design. As shown in figure 43, the master plan was broken into three areas. The first section is that of the Gateway Park, a celebrated entrance to the Canal Walk located at the intersection of Broad Ripple and College Avenues. The second section of the plan was the core of the Canal Walk development, which established pedestrian interaction with businesses and the canal itself. The third and final section of the Master Plan connected users of the Canal Walk with the Monon Rail Trail. Each of these sections is more thoroughly documented in the following pages of this report.

Along with the establishment of an overall master plan was the creation of design details. Although the design was broken into three separate sections, the overall plan was unified through the use of materials, signage, vegetation, and site details. The inspiration for the details was established through the reinterpretation of the cultural history of Broad Ripple. The Central Canal, as discussed earlier, was the reason for the establishment of Broad Ripple. The amount of effort and strength that went into building miles of canals is hard to comprehend as we approach a time in history dominated by computers and instant gratification. The canals were built primarily by hand with tools such as the shovel, wooden scoop, and wheelbarrow, as shown in figure 42. Teams of three mules pulled barges along miles of canals, and human strength, with the help of gravity and water pressure, operated numerous canal locks. The canals represented movement, transportation, and physical exertion. The idea of motion and mechanism associated with the canal can be represented in the concept of the gear. The gear also represented the capability of creating change. Therefore, the gear became an integral member of the site design language throughout the master plan, as shown in figure 44.
Figure 43. "Master Plan"
B. Detailed Site Development

I. Gateway Park

Located at the intersection of Broad Ripple Avenue and College Avenue, Gateway Park served as an entry to the Central Canal Walk development (Figure 47). Because of the high level of both pedestrian and vehicular traffic on College and Broad Ripple Avenues, the park became an essential bookend and point of entry for the overall master plan design.

The main feature of the park was the performance amphitheater, located in the center of the park along the south bank of the canal (Figure 49). This 10,000 square foot amphitheater provided for large scale activities such as festivals, concerts, and other performances. Through the use of limestone block retaining walls, the eight foot descent from the top of the bank to the canal surface was used to create a stepped seating area for the amphitheater. The walls acted as seat walls, which contained expanses of turf as opposed to hardscape materials in an effort to reduce the already overwhelming presence of paved surfaces in downtown Broad Ripple.

Figure 44. "Canal Walk lighting element"
The use of vegetation in the park was key to the design. Mass plantings of native and ornamental grasses, ornamental trees, and ground covers dominated the site, while large deciduous shade trees lined walkways and enhanced the character of adjacent streets.

A variety of sculptural elements were used to provide interest and interaction between the users and the site. Large limestone blocks carved smooth on one side, and engraved with various design patterns, enhanced the entry to the park at both the corners of College and Broad Ripple Avenues, and Broad Ripple and Carrollton Avenues (Figure 45). Because of the large population of waterfowl, the park presented a flock of bronze ducks taking flight over a field of native grasses (Figure 46). Water itself was also treated as an art form, through the manipulation of the canal's surface. Change in the canal's water level provided a draw to the park and the water's edge.

On the north bank of the canal, the Canal Greenway Trail system was continued across College Avenue to the previous location of Laverock Road. Removing the Laverock Road provided apartment residents with direct access to the canal.
Figure 47. "Gateway Park"
Figure 48. "Elevation of Carrollton Avenue bridge"

Figure 49. "Section through Gateway Park's amphitheater"
II. Canal Walk Core Development

Located between the Carrollton and Guilford Avenue Bridges, this portion of the master plan represented the heart of the project design. In this section of the site, interaction between canalfront businesses, gardens, overlooks, and sculptures established the essence of the Central Canal • Walk (Figure 54).

The south bank of the canal, due to the proximity of Westfield Avenue and downtown, received the most attention in terms of design development. The walkway became an elevated esplanade, which provided overlooks of the canal, as well as seating and gathering spaces. Lined with elevated planters, a continuous railing detail, benches, and shade trees the esplanade provided a series of dynamic interconnected pedestrian oriented plazas (Figure 55).

The first overlook, located near the Carrollton Avenue Bridge, viewed a series of carved boulders, which created a slight change in the water level of the canal (Figure 53). The overlook itself was centered around a spiral carved boulder. Water ran down the spiral of the boulder and over the edge of the overlook structure into the canal (Figure 52). Existing businesses along the canal, most of which did not provide access to the canal prior to the design, established dining and gathering spaces under vine covered oak beam trellis and arbor elements (Figure 55). These spaces were key to the interaction between the user, canal, and businesses.
The second overlook structure, located north of Fire Station #32, provided a stepped seating area and views of the water cascade, created by the presence of a ruined, moss and vine covered, arched structure (Figure 57). A series of belt and pulley driven sculptural light elements, manually operated by a crank, established interaction and attraction to the overlook structure from Guilford Avenue (Figure 51). As the crank was turned, a belt and pulley system then turned each element of the sculpture. The sculptural elements each had their own light sources, which created various lighting effects on the ground plane and adjacent trees when rotated.

The north and south banks were connected by a pedestrian bridge in an effort to establish an overall identity and applied equality to the entire site, as well as to attract users to the businesses along the north bank of the canal (Figure 56). The north bank was characterized by gardens, views of the canal, a reflecting pool, stone sculptures, and Canal Walk signage.

Figure 51. "Pulley operated light sculptures"

Figure 52. "View of the carved boulder water feature and esplanade overlook structure"

Figure 53. "Canal esplanade overlook structure."
Figure 54. "Canal-Walk Core Development"
Figure 55. "Elevation of the south bank canal esplanade"

Figure 56. "Elevation of the pedestrian bridge"
Figure 57. "Aerial view of canal esplanade overlook structure and water cascade"
III. The Monon Connection

The final section of the master plan, located between the Guilford Avenue Bridge and the Monon Rail Trail, established the remaining link between users of the Canal Greenway Trail, users of the Monon Rail Trail, and downtown Broad Ripple (Figure 59).

Based on the reinterpretation of the natural forces of the White River, the design exhibited curvilinear forms and the establishment of a nature area. The nature area was represented by wetland species, lowland shrubs, understory vegetation, floodplain forest species, and native grasses. As shown in figure 60, the design focused on establishing a variety of colors and textures through the use of various plant materials. Pedestrian pathways were provided on both banks of the canal, winding along mass planting of native grasses, and highlighted with bollard lighting elements, as shown in figure 58. These elements created various patterns and colors of light across the walkway and within the native grasses.

This portion of the master plan served as a link to the Monon Rail Trail, and the White River Corridor Trail. Therefore the design established a transition from the dynamics of a riverine ecosystem to that of the completely contrived characteristics of a canal.
Figure 60. "Section through the nature area along the south bank of the canal"
VII. Conclusion

"Water is as much use in a landscape as blood is in a body; without these two essentials, it is impossible there should be life in either one or the other" - William Gilpin

This project presented the idea of reconnecting people to the water's edge, establishing pedestrian oriented spaces, and creating interaction with water, art, and nature. The Central Canal • Walk design was divided into three separate, yet unified, sections. The Gateway Park established a celebrated entrance to the Canal • Walk, the Core Development created a dynamic collection of interactive pedestrian spaces, and the Monon Connection established a natural transition between the Monon Rail Trail, White River Corridor, and the core of the project site.

The Central Canal • Walk Master Plan will once again connect the village of Broad Ripple to the banks of the canal, enabling water to become an integral part of its residents and visitors everyday lives.
Appendix A

Figure 1, page 5  "Williams Square, Texas"  Source: Higuchi, Water as Environmental Art: Creating Amenity Space, page 53.

Figure 2, page 5  "Williams Square, Texas"  Source: Higuchi, Water as Environmental Art: Creating Amenity Space, page 53.

Figure 3, page 6  "San Antonio Riverwalk, San Antonio, Texas"  

Figure 4, page 6  "Historic Arkansas River Project, Pueblo, Colorado"  Source: Leccese, In the San Antonio Mode, page 46.

Figure 5, page 7  "Guadalupe River Park Model, California"  Source: Hanson, Hargreaves: Landscape Works, page 50.

Figure 6, page 7  "Blue River Plaza, Breckenridge, Colorado"  Source: Leccese, The Commerce of Ecology, page 104.

Figure 7, page 8  "Parc de la Villette, Paris, France"  Source: Tschumi, Cinegramme Folie: Le Parc de la Villette, page 9.

Figure 8, page 8  "Parc de la Villette folie"

Figure 9, page 15  "Map of Indiana"

Figure 10, page 15  "Map of Marion County"

Figure 11, page 15  "Map of Washington Township"  Source: Washington Township Comprehensive Land Use Plan, page 12.

Figure 12, page 16  "Map of Monon Rail Trail System"  Source: Monon Rail Trail Comprehensive Project Report, figure 6.

Figure 13, page 16  "Map of Greenway Trail Systems in Broad Ripple"  Source: Indianapolis Greenway Plan, page 85.

Figure 14, page 17  "Map of the proposed canals in Indiana"  Source: Fatout, Indiana Canals, page 144.
Figure 15, page 17  "Completed canals of Indiana"  Source: Shaw, Canals for a Nation, page 136.

Figure 16, page 18  "Historic photograph of the canal diggers"  Source: Gieck, A Photo Album of Ohio's Canal Era, page 8.

Figure 17, page 18  "Historic photograph of the canal mules"  Source: Gieck, A Photo Album of Ohio's Canal Era, page 128.

Figure 18, page 19  "Historic photograph of a canal lock"  Source: Gieck, A Photo Album of Ohio's Canal Era, page 17.

Figure 19, page 19  "Illustration of a typical lock system"  Source: Gieck, A Photo Album of Ohio's Canal Era, page 16.

Figure 20, page 20  "Historical Inventory of Broad Ripple and the Central Canal"

Figure 21, page 21  "Photograph of a billboard on Broad Ripple Avenue"

Figure 22, page 21  "Photograph of the Monon Rail Trail bridge"

Figure 23, page 22  "Photograph of the south bank of the canal from the parking deck structure"

Figure 24, page 22  "Photograph of the canal from the parking deck, looking west"

Figure 25, page 23  "Final presentation Inventory board"

Figure 26, page 24  "Figure/Ground Analysis study for existing buildings"

Figure 27, page 24  "Figure/Ground Analysis study for paved surfaces"

Figure 28, page 25  "Analysis diagram for Pedestrian Circulation"
Figure 29, page 25  "Analysis diagram for Vehicular Circulation"
Figure 30, page 26  "Illustration of Sectional Analysis I"
Figure 31, page 26  "Illustration of Sectional Analysis II"
Figure 32, page 27  "Illustration of Sectional Analysis III"
Figure 33, page 27  "Illustration of Sectional Analysis IV"
Figure 34, page 28  "Residential Conversion zone north of the canal"
Figure 35, page 28  "The Corner Wine Bar south of the canal"
Figure 36, page 29  "District Analysis"
Figure 37, page 30  "Concept Diagram"
Figure 38, page 32  "Concept I"
Figure 39, page 33  "Concept II"
Figure 40, page 34  "Concept III"
Figure 41, page 35  "Final Concept"
Figure 42, page 36  "Tools of the canal digger"  Source: Gieck, *A Photo Album of Ohio's Canal Era*, page 10.
Figure 43, page 37  "Final Presentation Master Plan board"

Figure 44, page 38  "Canal Walk lighting element"

Figure 45, page 39  "Artisan carved boulder detail"

Figure 46, page 39  "Flying ducks sculpture"

Figure 47, page 40  "Gateway Park Site Plan"

Figure 48, page 41  "Elevation of Carrollton Avenue Bridge"

Figure 49, page 41  "Section through Gateway Park's amphitheater"

Figure 50, page 42  "Canal Walk entry signage"

Figure 51, page 43  "Illustration of pulley operated light sculptures"

Figure 52, page 43  "Elevation of the carved boulder water feature and esplanade overlook structure"

Figure 53, page 43  "Canal esplanade overlook structure"

Figure 54, page 44  "Canal Walk Core Development Site Plan"

Figure 55, page 45  "Elevation of the south bank canal esplanade"

Figure 56, page 45  "Elevation of the pedestrian bridge"
Figure 57, page 46  "Aerial view of canal esplanade overlook structure and water cascade"
Figure 58, page 47  "Illustrations of the pathway lighting element"
Figure 59, page 48  "The Monon Connection Site Plan"
Figure 60, page 49  "Section through the nature area along the south bank of the canal"
Selected References

A. Text Sources


B. Periodical Sources


C. Supplemental Sources


